

**Direct and Indirect Effects of the New Saudi Company
Regulations on Financial Reporting Quality**

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Abstract

This research aims to examine the direct and indirect effects of the New Saudi Company Regulations (NCR) on financial reporting quality (FRQ) on the Saudi stock market (Tadawul) for the period between 2015 and 2017. The main aim of the NCR, which includes extensive amendments to the regulations of the Saudi corporate business environment, is to improve the investment environment of the Saudi market and attract foreign capital and retain local capital to be consistent with one of the main objectives of Vision 2030. Such institutional changes are expected to affect FRQ in Saudi Arabia. Thus, this research aims to theoretically and empirically investigate how Saudi company-specific characteristics influenced FRQ in the context of the changing Saudi institutional environment (i.e. the NCR). This study reviewed recent changes in the NCR against the outcomes of prior studies. The review was used to assess whether the changes by Saudi regulators in the NCR to improve the FRQ are aligned with the findings reported in prior studies. The study drew on a combination of agency theory, institutional theory and codification theory to interpret the effect of NCR on FRQ in Saudi Arabia.

This thesis primarily employed the modified Jones model as the primary proxy for measuring the dependent variable FRQ. The final sample of this study comprised 60 companies (180 observations). In addition to the modified Jones model, this study employed the performance-controlled Kothari model and the modified Kothari model, which were used as robustness tests to measure FRQ. To achieve the purpose of this study, a statistical comparison was made prior to and after the introduction of the NCR, by employing a quantitative method that depends on secondary data.

The analysis of the NCR's effect has been divided into two different pathways. First, the direct effect represents the direct pressure on FRQ brought by the Saudi government through the introduction of the NCR. It is represented through the year variables, as illustrated in the main models of this study. Second, the indirect effect is where the introduction of NCR indirectly influences FRQ through bringing about changes in company characteristics that affect FRQ.

This thesis concludes that there was a direct significant effect, after controlling for the impact of changes in explanatory variables, on FRQ in Saudi Arabia after the introduction of the NCR. This result confirmed that there is a broad level of institutional pressure by the Ministry of

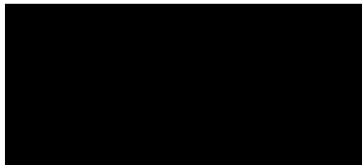
Commerce and Investment of the Kingdom of Saudi Arabia to improve FRQ in Saudi companies, enabling them to achieve one of the main objectives of Vision 2030. In terms of the indirect pathway, the findings of this thesis show that FRQ was not affected by the changes in the characteristics of board of directors or factors that influence audit quality, as a result of the introduction of NCR. This result is attributed to one or more possible reason(s). Saudi companies need more time to comply with the NCR effectively, and (or) the NCR are not powerful enough to significantly affect some variables identified in this study as being relevant to FRQ, and (or) Saudi companies did not fully comply with the NCR and (or) some NCR regulations need further improvement. The findings of this thesis show consistency with agency theory, institutional theory and codification theory.

Student Declaration

I, Abdulaziz Saud Al Naim, declare that the PhD thesis entitled ‘Direct and indirect effects of the new Saudi Company Regulations on financial reporting quality’ is no more than 80,000 words in length, including quotations and exclusive of tables, figures, appendices, bibliography, references and footnotes. This thesis contains no material that has been submitted previously, in whole or in part, for the award of any other academic degree or diploma. Except where otherwise indicated, this thesis is my own work.

I have conducted my research in alignment with the Australian Code for the Responsible Conduct of Research and Victoria University’s Higher Degree by Research Policy and Procedures.

Signature:



Date: 20/06/2022

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In the name of Allah, The Most Gracious, The Most Merciful, unto Him belongs the highest praise and gratitude for all the blessings and for enabling me to conduct this work and making my thoughts readable. All thanks to Almighty Allah for allowing me to share the knowledge and contribute to the development of our world.

My PhD journey began nearly five years ago. It has had many tears, challenges, and suffering. I would not have been possible to complete this thesis without the help and support of the kind people around me.

First, I dedicate this thesis to my dear father, who passed away in November 2020 due to COVID-19. Dear Dad, I wish that you were here with me and share my happiness of completing this thesis. I pray to Allah to bestow His mercy and grant you the loftiest abode in Jannah.

I also dedicate this thesis to my dear mother who has been standing by me, supporting, and praying for me along this challenging journey.

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List of Abbreviations

AC_Chair	Audit committee chairperson independence
ACEXP	Audit committee financial expertise
ACIND	Audit committee independence
ACLEGEXP	Audit committee legal expertise
ACMEETING	The frequency of audit committee meetings
ACSIZE	Audit committee size
AUDITFEE	Audit fees
AUDITREPORT	Auditor report
BIG_4	Audit firm size
BODIND	Board Independence
BODMEET	Board meeting frequency
BODSIZE	Board Size
CMA	Saudi Capital Market Authority
CPI	Consumer Price Index
FRQ	Financial Reporting Quality
GAAP	US Generally Accepted Accounting Principles
GAZT	Saudi General Authority of Zakat and Tax
GDP	Gross domestic product
GEE	Generalised estimating equations
GLM	General linear model
IASB	The International Accounting Standard Board
IFRS	The International Financial Reporting Standards
LEVERAGE	Financial leverage ratio
LOSS	Companies experiencing loss
MCI	Ministry of Commerce and Investment
MENA	Middle East and North Africa
NCGR	New Saudi Corporate Governance Regulations (2017)
NCR	New company regulations (2015)
OCR	Old Saudi companies' regulations (1965)
OLS	Ordinary linear regression
OWNERSHIP	Government ownership
PIF	Saudi Public Investment Fund
ROA	Return on Assets
SAMA	Saudi Central Bank
SAR	Saudi Arabian Riyal
SIZE	Company size
SME	Small and medium-sized enterprises
SOCPA	Saudi Organization for Chartered and Professional Accountants

SSRC	Saudi Share Registration Company
Tadawul	Saudi Stock Exchange Market
UK	United Kingdom
US	United States of America
VIF	Variance inflation factors
Vision 2030	Saudi Vision 2030

Chapter 1: Introduction

1.1 Research Background and Motivations

Attention on financial reporting quality (FRQ) has grown in the wake of accounting scandals that occurred across the United States (US) and Europe in the late 1990s. The collapse of Enron and other companies led the US federal government to issue the Sarbanes–Oxley Act (SOX) in 2002. This provision states that CEOs and boards of directors take responsibility for any fraudulent financial actions and financial statement manipulation. Since then, countries across the world have given corporate governance more attention and have issued legislation similar to the SOX. Developing countries have also followed suit to issue corporate governance regulations (Al Mulhim, 2014).

Practitioners and policymakers have paid increasing attention to earnings management as a proxy for the quality of financial reports over the last 20 years. Earnings management is more salient in many developing countries than developed countries, due to the weak rule of their legal institutional environments (Beuselinck, Cascino, Deloof, & Vanstraelen, 2019). In this regard, Degiannakis, Giannopoulos, Ibrahim and Rozic (2019) report that countries with a less well-established stock market, a higher concentration of ownership, and lower transparency levels had higher levels of earnings management than countries with a more developed stock market, more distributed ownership and more transparency in information disclosure. Prior research—see Almarayeh, Aibar-Guzmán and Abdullatif (2020), Elghuweel, Ntim, Opong and Avison (2017) and Waweru and Riro (2013)—suggests the need for more research into FRQ in emerging economies to gain a deeper understanding of the factors that influence FRQ in those countries. This thesis attends to the factors that influence FRQ in an emerging country context of Saudi Arabia, which is under-represented in the current literature.

Saudi Arabia's vast geographical size and its strategic position in the Middle East region render it suitable for this study. The country is a large emerging economy and is a member of the G20 (a group comprising the world's largest 20 economies) (Albassam, 2014; Piesse, Strange, & Toonsi, 2012). The Saudi stock market is the largest equity market in the Middle East, encompassing a market capitalisation of about US\$452 billion in 2017 (Rehman, 2018). According to the World Bank (2018), Saudi market capitalisation was approximately 66% of

gross domestic product (GDP) in 2017. Therefore, it is important to research the factors that influence FRQ in Saudi Arabia.

Apart from its size of economy, Saudi Arabia's changing institutional environment is marked by the launch of Saudi Vision 2030, offering a unique empirical setting for this study. Vision 2030 (Vision.2030, 2016) is a national strategic plan for economic development that aims to transform Saudi Arabia from an oil-dependent to a knowledge-based economy (Nurunnabi, 2017b). A key objective is to attract inbound foreign investment. In response to the realisation of Vision 2030, NCR (2015) was issued by the Ministry of Commerce and Investment (MCI) of the Kingdom of Saudi Arabia. The NCR was accompanied by a series of laws and new regulations in all fields of industry, trade and investment, in line with Vision 2030. The NCR became effective on 1 May 2016. All companies are required to comply with the new law within one year of its effective date. NCR's main objective is to develop the investment environment of the Saudi market, as well as to attract foreign capital and retain local capital. As such, improving FRQ is essential to improve the investment environment in any market (Al Shetwi, 2020; DeFond & Jiambalvo, 1994). This thesis will investigate the direct and indirect effects of the NCR on FRQ in Saudi Arabia.

This chapter is structured as follows. Section 1.2 outlines the research objectives and questions. Section 1.3 presents the theoretical framework. Section 1.4 presents an overview of the research methodology used. Section 1.5 outlines the thesis's contributions and significance. Section 1.6 identifies the research scope of this study. Section 1.7 presents a brief introduction of each chapter, and Section 1.8 provides a summary.

1.2 Research Objectives and Questions

The research aims to measure and assess the recent changes and decisions of Saudi Company Regulations issued on 9 November 2015 (i.e. the NCR) by the MCI in Saudi Arabia and the extent of their influence and effectiveness on improving the FRQ of Saudi listed companies. Specifically, this thesis will examine the direct and the indirect effect of the NCR on FRQ in Saudi Arabia. This leads to the following research questions:

Research question 1 (RQ₁): Has FRQ been affected as a result of the introduction of NCR?

Research question 2 (RQ₂): Are the findings consistent with agency theory, institutional theory and codification theory?

To answer RQ₁ the following sub-questions are addressed:

Q_{1.1}: Is there an increase in the FRQ resulting directly from the introduction of NCR?

Q_{1.2}: Has FRQ been affected by a change in audit committee independence as a result of the introduction of NCR?

Q_{1.3}: Has FRQ been affected by a change in audit committee size as a result of the introduction of NCR?

Q_{1.4}: Has FRQ been affected by a change in audit committee meeting frequency as a result of the introduction of NCR?

Q_{1.5}: Has FRQ been affected by a change in audit committee chairperson independence as a result of the introduction of NCR?

Q_{1.6}: Has FRQ been affected by a change in the audit firm size as a result of the introduction of NCR?

Q_{1.7}: Has FRQ been affected by a change in the board independence as a result of the introduction of NCR?

Q_{1.8}: Has FRQ been affected by a change in the board size as a result of the introduction of NCR?

Q_{1.9}: Has FRQ been affected by a change in the board meeting frequency as a result of the introduction of NCR?

Sub-question Q_{1.1} concerns the direct path of NCR's effect on FRQ and sub-questions Q_{1.2} to Q_{1.9} centre on the indirect path of NCR's effect on FRQ.

In relation to sub-question Q_{1.1}, the Saudi government undertook initiatives to improve financial report quality in order to strengthen the country's inbound foreign investment environment. Issuing an NCR (2015) is one of several measures to address deficiencies and a lack of clarity in the old Saudi company regulations (OCR). Improving the quality of financial reporting in Saudi companies may not be limited to the key characteristics of board of directors, or the factors that influence audit quality, as highlighted in this study. This is because there is an institutional trend in Saudi Arabia towards improving the quality of Saudi company financial reports in general. As a result, sub-question Q_{1.1} reflects the direct effect of the institutional pressure resulting from this trend, and is analysed through testing changes in FRQ beyond what resulted from the changes to explanatory variables from the introduction of NCR (before 2015 to after 2017).

In relation to sub-questions Q_{1.2} to Q_{1.9}, this thesis addresses recent changes to the NCR against the outcomes of prior studies (as reviewed in Chapter 3; the variables identified in this study are relevant to FRQ). The variables are as follows: audit committee independence, audit committee size, frequency of audit committee meetings, audit committee chairperson independence, audit firm size, board independence, board size and board meeting frequency. Sub-questions Q_{1.2} to Q_{1.9} reflect the indirect effect of the introduction of NCR on the relationship between those variables and FRQ as a result of NCR's introduction.

In regard to RQ₂, many theories have analysed the effectiveness of corporate governance. These include agency theory, institutional theory, stakeholder theory, and stewardship theory (see Section 4.1). A review of the literature reveals the lack of consensus regarding the theories that underlay corporate governance studies. Agency theory has been applied widely by researchers in corporate governance (DeZoort, Hermanson, Archambeault, & Reed, 2002). Agency theory is concerned with resolving the issues arising from the conflicts of interest between principals and agents that may impair the achievement of firm objectives (Deegan, 2012). According to agency theory, the board of directors and its sub-committees, such as the audit committee, will improve the quality of financial reporting by monitoring managerial actions (Peasnell, Pope, & Young, 2005). This hegemony of agency theory is explained by the fact that corporate processes, external audits and earnings management are all examples of agency costs (Jiraporn, Miller, Yoon, & Kim, 2008).

In addition to agency theory, institutional theory is known for its adaptability to the unique circumstances of different countries (Mallin, 2010). Institutional theory is regarded as more exhaustive than other political and economic theories (Clarke, 2004). According to institutional theory, companies respond strategically to coercive, normative and mimetic institutional pressures to increase organisational legitimacy (DiMaggio & Powell, 1983; Scott, 2008). This theory views corporate governance regulations as pressures from legislators that sit beyond organisational boundaries to improve organisational legitimacy (Oliver, 1991). Further, this theory asserts that corporate governance is the result of interactions between perceived external pressures and internal organisational characteristics (Fogarty, 1996). Cohen, Gaynor, Krishnamoorthy and Wright (2007) found that the institutional pressures exerted by regulators or stock exchanges on companies will lead companies to comply with corporate governance regulations.

Stakeholder theory is also applied to corporate governance. This theory supports the view that firms should consider their responsibilities to society in addition to their responsibilities to shareholders, because society should be involved and play a significant role in a firm's vision (Kiel & Nicholson, 2003). According to stakeholder theory, companies with poor stakeholder performance may have difficulty in obtaining sufficient support for their business (Adams, Hoque, & McNicholas, 2006). Stakeholder theory is more beneficial to corporate governance models, particularly in times of crisis, because crises can be managed when a firm's relationship with its stakeholders is strong (Alpaslan, Green, & Mitroff, 2009). Thus, stakeholders can exert significant influence over monitoring mechanisms by serving as external directors (Mallin, 2010).

Stewardship theory, which is based on psychological and sociological behaviour, presupposes that managers are trustworthy and motivated to make the best decisions for the owners' interests. Non-financial motivations are significant in stewardship theory because it assumes that managers seek personal success through the firms for which they work, as well as prioritising work ethics (Davis, Schoorman, & Donaldson, 1997). Stewardship theory supports that managers' performance varies according to a company's operating environment, and that managers can work transparently if they find an appropriate work environment (Donaldson & Davis, 1991). According to stewardship theory, managers strive to invest company assets optimally to maximise shareholder wealth, which is ultimately consistent with corporate governance objectives (Nicholson & Kiel, 2007). Additionally, because insider directors have a better understanding and sufficient knowledge of a business, monitoring a firm's operations is superfluous (Donaldson & Davis, 1991).

Contrary to previous corporate governance studies, this study explores codification theory to understand the effect of NCR on a company's characteristics. Many studies, such as Cooke and Wallace (1990), Xiao, Dyson and Powell (1996), assert that any regulations are subject to change through influence by surrounding factors. One of the few studies that discusses codification theory as a theoretical framework for corporate regulations is von Alberti-Alhtaybat, Hutaibat and Al-Htaybat (2012) who find that current practices play a significant role in forming mandatory disclosure requirements. This view is supported by Wardrop (2012), who determined that many regulations of Australian corporate governance issued in 2004 codified the existing practices of large companies.

Saudi Arabia is a developing country with political, economic and cultural environments that differ from the well-established capital markets of developed countries. Additionally, Saudi Arabia is an absolute monarchy governance system characterised by high power distance (see Chapter 2). Applying Western theories is not appropriate because they do not fit with the Saudi context (e.g. stakeholder and stewardship theories). As a result, this thesis will seek in-depth understanding into three different theories (agency, institutional, and codification theories) to interpret the findings; and RQ₂ will provide a holistic understanding of corporate governance in the Saudi context.

1.3 Theoretical Framework

The main objective of this thesis is to examine the direct and indirect effects of the NCR on FRQ in the Saudi context. For this purpose, this study adopts a multi-theoretical perspective—a combination of agency, institutional and codification theories—to explain the direct and indirect effects of the NCR on FRQ. This combination of theories (see Figure 4.1) will result in a more integral understanding of the effect of the NCR on FRQ in Saudi Arabia.

Agency theory has been used widely in the Saudi context to explain the relationship between company characteristics (such as audit quality and board of directors characteristics) and FRQ. In addition to agency theory, institutional theory plays an important role in Saudi studies for explaining the institutional pressures exerted by the Saudi government to improve FRQ (as the NCR's main aim) in the Saudi market. Also, this thesis adopts codification theory to interpret changes in company characteristics that result from codifying the existing voluntary practices of Saudi companies.

To gain a holistic understanding of corporate governance in the Saudi context, this thesis draws on agency, institutional and codification theories to interpret the direct and indirect effects of NCR on FRQ in Saudi Arabia, through the following nine hypotheses:

H₁: There is an increase in the FRQ resulting directly from the NCR.

H₂: FRQ has been affected by a change in audit committee independence as a result of the introduction of NCR.

H₃: FRQ has been affected by a change in audit committee size as a result of the introduction of NCR.

H₄: FRQ has been affected by a change in audit committee meetings as a result of the introduction of NCR.

H₅: FRQ has been affected by a change in audit committee chairperson independence as a result of the introduction of NCR.

H₆: FRQ has been affected by a change in audit firm size as a result of the introduction of NCR.

H₇: FRQ has been affected by a change in board independence as a result of the introduction of NCR.

H₈: FRQ has been affected by a change in board size as a result of the introduction of NCR.

H₉: FRQ has been affected by a change in board meeting frequency as a result of the introduction of NCR.

1.4 Research Methodology

This thesis adopts a quantitative methodology to address the research questions. This thesis uses publicly available secondary data. The final sample for this study comprises 60 companies (180 observations), as shown in Table 5.1.

This thesis identifies the most common variables that influence audit quality and their relationship with FRQ, and the board of directors' characteristics and their relationship with FRQ based on a review of literature (Chapter 3). The explanatory variables are audit committee independence, audit committee size, the frequency of audit committee meetings, the audit committee financial expertise, the legal expertise of the audit committee, audit committee chairperson independence, audit fees, audit firm size, auditor report, board independence, board size and board meeting frequency (see Chapter 5, Section 5.3.2).

In terms of estimating the dependent variables, all accrual models use the period between 2004 and 2014 to calculate discretionary accruals (as a proxy for measuring FRQ). The primary accrual model used in this study is the modified Jones (1995) model. Both the performance-controlled Kothari model and a modified Kothari model are used as a robustness test to measure the dependent variable: FRQ (see Chapter 5, Section 5.3.1).

1.5 Contribution to Knowledge

The main objective of this study is to examine the direct and the indirect effect of NCR on FRQ. This thesis is, to the best of the author's knowledge, the first to consider the relationship

between the variables (commonly used in the prior literature) that influence audit quality, and the board of directors' characteristics and their relationship with FRQ in light of NCR.

This study is among the few to draw on a multi-theoretical perspective as an analytical framework (see Chapter 4, Figs. 4.1 and 4.2) that grasps the Saudi context as having different characteristics from other countries (see Chapter 2). Considering the institutional context of Saudi Arabia will help this study gain a deeper understanding of the motivations behind the NCR. This study bridges the gap in the literature on corporate governance and FRQ in the Saudi context, which is relatively limited in comparison with the literature on developed countries.

This thesis employs the modified Jones model developed by Dechow, Sloan and Sweeney (1995) and the performance-matched model of Kothari, Leone and Wasley (2005) as a proxy for measuring FRQ. Employing two different models will provide reliable findings and help the researcher to obtain a broader view of the results. Regarding the performance-matched model of Kothari et al. (2005), this study is among the few to examine two forms of the Kothari model, one as presented by Kothari and the other amended to be theoretically consistent with the modified Jones model.

The importance of this study lies in its examination of the direct and indirect effects of the NCR on FRQ. The findings of this study will contribute to the continual growth of the Saudi economy in general, and the improved financial reporting performance of Saudi companies in particular. Specifically, the study's findings will inform Saudi policymakers of the effect of the NCR on FRQ, assisting them to evaluate whether NCR has achieved its intended purpose. In addition, the findings will provide feedback on whether or not the NCR has changed FRQ through the characteristics of boards of directors, or through factors that influence audit quality. This research will also inform the stakeholders of Saudi companies about the current findings on audit committees, board of director roles and their effect on FRQ. The study's findings will help stakeholder groups, such as shareholders, investors and financial analysts, to gain a better understanding of the FRQ of Saudi listed companies.

1.6 Research Scope

This thesis aims to measure the direct and indirect effects of the NCR on FRQ in Saudi Arabia for the period between 2015 and 2017. All data related to company characteristics are collected

from annual reports between 2015 and 2017. All data are publicly available in the form of a PDF file on Saudi stock exchange, the ‘Tadawul’ website; and information is extracted and processed manually. For all other variables, data are collected directly from the ‘EIKON with Datastream database’.

This thesis will include all listed companies, except financial companies because they have special and different corporate governance practices (Habbash, 2010; Van Tendeloo & Vanstraelen, 2008). This study will also eliminate companies that apply the Islamic calendar (Hijri) and companies that use a financial year starting 1 April and ending on 31 March, because it is impracticable to compare these companies to others that use a financial year starting 1 January and ending on 31 December.

Ten years of historical data will be used in all accruals models employed in this thesis to compute the discretionary accruals. The limitation of using only 10 years of historical data is due to the relevant short history of the Saudi capital market (see Chapter 5, Section 5.1).

1.7 Thesis Structure

This thesis consists of eight chapters. Chapter 1 introduces the thesis by presenting the background and motivations of the research. This is followed by research objectives and questions. This chapter also provides a brief introduction to the theoretical framework and research methodology. It then outlines the significance and research contributions of this study. Last, the chapter addresses the research scope.

Chapter 2 provides an overview of the institutional context of Saudi Arabia. This will reveal the empirical context of the Saudi business and regulations environment. This chapter will start with an overview of the cultural traditions, and the legal and economic systems of Saudi Arabia. This is followed by introducing the key regulatory bodies that monitor and control the Saudi market. Finally, the chapter will highlight the major amendments of the NCR (2015) that are directly relevant to the key objective of this thesis.

Chapter 3 presents a comprehensive review of the prior literature on different measures to capture the quality of financial reporting as a dependent variable. The chapter also reviews the literature on the factors influencing audit quality and their relationship with FRQ, and the relationship between the board of directors characteristics and FRQ. The chapter includes a

review on research into the implementation of International Finance Reporting Standards (IFRS) on FRQ in the Saudi context.

Chapter 4 gives an overview of the theoretical framework and hypothesis development. It reviews different theories in the literature that have been used to explain the factors influencing audit quality, board of directors characteristics and FRQ. This is followed by a justification for the multi-theoretical perspective adopted in this thesis. The theoretical framework presents a comprehensive analysis of Saudi corporate governance regulations, especially the NCR. It also examines the development of hypotheses to meet the main objective of this study, which is measuring the direct and indirect effects of the NCR on FRQ.

Chapter 5 justifies the quantitative methodology used here to empirically examine the direct and indirect effects of the NCR on FRQ. This chapter also presents a justification for the sample selection and data collection process. This is followed by the model specifications of this study, which include a justification of the study period and a description of the measurements of variables. The chapter provides details of the empirical models to be tested.

Chapter 6 reports the descriptive statistics results. This includes a summary of descriptive statistics for all accruals models employed in this study, and the descriptive statistics for observations from all explanatory variables in this study for the period between 2015 and 2017. This is followed by year-by-year descriptive statistics for all variables to clearly distinguish the pre- and post-NCR environment. This chapter will conclude with a summary of yearly changes for all explanatory variables to better understand the effect of NCR's introduction.

Chapter 7 presents the empirical test results of the direct and indirect effects of the NCR on FRQ. This includes a justification for the choice between nominal and real variables in the accrual models. This is followed by the statistical results needed to test the direct and indirect effects of the NCR on FRQ. The chapter tests all hypotheses outlined in this study.

Chapter 8 concludes this study by providing an in-depth analysis and discussion of the results presented in previous chapters. This includes a summary of the descriptive statistics for the firm-specific parameters estimated in each accrual model used in this study. The chapter will present the statistical results needed to test the direct and indirect effects of the NCR on FRQ. The implications and contributions to knowledge are discussed. The limitations of this thesis and directions for future research are also provided.

1.8 Summary

This chapter has presented an introduction to the thesis. It has outlined the background and motivations of this thesis. The main purpose of this thesis is to measure the direct and indirect effects of the NCR on FRQ. Thus, two main research questions pursued here have been presented. The chapter has introduced the theoretical framework and the research methodologies, and the structure of the thesis. The implications and significance of the research are also described in this chapter. Chapter 2 will present an overview of the institutional context of Saudi Arabia.

Chapter 2: The Institutional Context of Saudi Arabia

2.1 Introduction

The main purpose of this chapter is to present the institutional context of Saudi Arabia, which is essential to gain a deeper understanding of the motivation behind issuing the new 2015 version of company regulations (the previous version dates to 1965) in Saudi Arabia, as a large emerging economy (Albassam, 2014).

The new version of Saudi Company Regulations contains many changes in relation to corporate governance principles for Saudi companies. This chapter will focus on explaining the key changes in terms of the company characteristics (i.e. the characteristics of boards of directors or those that influence audit quality) that are relevant to the main purpose of this study. Further, this chapter will highlight Saudi Vision 2030 and its main objectives, especially the economic aspects that reflect the changing institutional context of Saudi company operations.

This chapter is structured as follows. Section 2.2 presents an overview of Saudi cultural traditions, and its legal and economic systems. Section 2.3 describes the key administrative bodies that monitor and control the Saudi market. Section 2.4 reviews the key corporate regulations and laws in the Saudi business environment. Section 2.5 summarises the chapter.

2.2 Overview of Saudi Arabia's Cultural Traditions, and Legal and Economic Systems

The Kingdom of Saudi Arabia was founded in 1932 by King Abdulaziz Al-Saudi. According to the World Bank (2018), the Kingdom is located on 80% of the Arabian Peninsula region, with a total area of 2,1490,690 km². It is the largest country in the Middle East and the fourteenth largest in the world (Albarrak, 2011). Riyadh, located at the centre of the country, is its capital city. It is also known as the 'Land of the Two Holy Mosques', which serve as the holiest of places for the Muslim community (Nurunnabi, 2017b). The country has one dominant religion: Islam. The Arabic lunar calendar (Hijri) is the main calendar used in the country (Shoult, 2006). The main language of communication in Saudi Arabia is Arabic; however, English is commonly used in the business environment (Albader, 2015). According to the Saudi Central Bank (2021), the Saudi Arabian Riyal (SAR) is the national currency. In 2020, the total population of the Kingdom was 35,013,414. Out of this population, it is

estimated that 38% were foreigners, with 42.2% female and 57.8% male. The majority of the population is aged between 0 and 34, and this age group represents 67% of the total population (Saudi General Authority for Statistics, 2020). According to Ritchie and Roser (2020), the median age of Saudi's population was 31.9 years in 2020. This number is a lower median age compared with Australia (37.9), the US (38.3 years), and the UK (40.8) in 2020. This indicates that Saudi has younger workforce than many Western countries.

2.2.1 Cultural Traditions

According to Rice (2004), the Islamic religion and Arabian tribal dominance define the culture of Saudi Arabia. Sharia law is primarily anchored on Islamic religion and teachings. It is foundational to the country's constitutional dispensation. In other words, the country relies on Sharia laws, which are deeply rooted in Islamic culture and teachings, as its primary law under the constitution. Islam is considered a part of life for all people in the country, and it determines the citizens' behaviours and beliefs. According to Hamid, Craig and Clarke (1993), Islamic codes define the people's way of life and shapes their opinions and decisions. Abdal-Haqq (2002) shares the same sentiments and acknowledges the sacred roles of prayer rooms and mosques. Lewis and Algaoud (2001) acknowledge that Sharia laws do not allow the Muslim community to divide their actions into secular and religious dimensions. Ethnicity is also a common theme among the Muslim community because of the dominant culture and the Arab-based ethnicity that characterises society. Generosity, prestige, justice, privacy, conservatism, secrecy, and loyalty are common attributes among the Arabian tribal traditions, and that are important in Saudi society. All of these attributes affect one's social standing within Saudi society (Hussainey & Al-Nodel, 2008; Rice, 2004). In terms of loyalty, the family comes first, closely followed by the tribe or clan. Loyalty to the nation comes third. Prestige is also a dominant concept, with most people preferring to be identified by their titles. Chastity and gender segregation are also common cultural values that result from the influence of Islam and Arabian tribal traditions.

Hofstede (2011) has classified the national culture into six primary dimensions: (1) large versus small power distance; (2) strong versus weak uncertainty avoidance; (3) masculinity versus femininity; (4) individualism versus collectivism; (5) long- versus short-term orientation; (6) indulgence versus restraint. Hofstede (1980, 2011) classifies Arab countries into these six dimensions depending on the specific traits in each country. The cultural dimension of Saudi Arabia is described as having long power distance, high levels of uncertainty avoidance,

masculinity, collectivism, a short-term orientation and restraint. According to Alkhtani (2010), long power distance is evident in the country in its distribution of resources and wealth that result from a long-term institutional system of an absolute monarchical political system. A few people own the largest share of the economy, and most of the population depends on these few wealthy individuals for employment and survival.

Uncertainty avoidance is also common in Saudi Arabia because of a culture in which most people use Islamic religion and teachings to shape their behaviours and decisions. In particular, Islam encourages people to avoid high-risk initiatives. In some instances, high-risk ventures such as gambling are outlawed because of Islamic teachings (Gambling & Karim, 1986). In addition, uncertainty avoidance is normally correlated with a long power distance national culture. Saudi Arabia has a strict regulatory system that helps to reduce levels of uncertainty (Cassell & Blake, 2012). Here, people are generally risk-averse and do not readily accept change. They accept a disparity between those with power and those who do not have it; they also look to those in power for guidance (Cassell & Blake, 2012).

Saudi Arabia's culture has remained steadfast throughout the colonial era, even as most countries succumbed to pressure and adopted new cultures (Al-Rumaihi, 1997). Saudi Arabia was isolated from the world because of its resistance towards Western colonialism. The net effect of this isolation was that the country did not incorporate technological advancements from other countries at the most opportune time. For example, the country failed to acknowledge the existence and use of modern-day technologies for a long time because of their poor relationship with Western colonialism (Al-Faisal, 1992).

However, this situation changed in 1938 with the discovery of oil, which attracted Western countries, especially the US and the UK. The discovery of oil led to the creation of effective relationships between Western countries and Saudi Arabia. The US and the UK provided financial assistance to support oil exploration and the establishment of a foundation for the realisation of economic growth and development. To a great extent, this relationship with Western countries has influenced Saudi culture, especially because people from Saudi Arabia had to work with people from other cultures and nations (Melikian, 2020). Additionally, the discovery of oil transformed Saudi Arabia from a poor into a wealthy country, and this enabled Saudi people to discover Western culture through media and travel.

Saudi Arabia's education system exhibits the most significant and evident influence of Western culture on the country. Melikian (2020) identifies the diffusion of ideas in the education system as an important aspect of culture erosion. However, other scholars suggest that the influence of the US on the Saudi education system is far-reaching. In the 1980s, the US signed an agreement with the Saudi government to restructure the country's education system (Roy, 1992). The primary objective of the US was to align the Saudi education system to its own (Roy, 1992). With this trend continuing, it is more likely than not that US perceptions of education will diffuse into Saudi education systems. Scholarships to Western countries have also significantly affected the realisation of cultural diversity in Saudi Arabia. Most Saudi students travelling to Western countries for education acquire new cultural practices that influence those in their home country.

Similar to many other developing countries, Saudi Arabia tries to imitate the strategies and regulation systems in the business environments of developed countries to minimise the differences between them (Thapa & Sæbø, 2014). The first version of the Saudi Company Regulations (1965) was derived from the British Companies Act (Al Mulhim, 2014). Additionally, political and institutional pressures can lead countries such as Saudi Arabia to adopt certain practices. For example, in applying the concept of corporate social responsibility, Saudi Arabia has sought to convince the West of Saudi leadership in the hope of sending the message that Saudi Arabia is a developed country (Ali & Al-Aali, 2012).

2.2.2 The Legal System

Saudi Arabia has a unique political and legal system because of its governance approach, which is largely based on the monarchy. The country's legal system is defined by Islamic Sharia laws and teachings. The Saudi Arabian king has legislative, executive and judicial powers (Kechichian, 2012). The king rules the country using two legislative bodies: the Council of Ministers (Cabinet) and the Council of Consultation (Majlis al-Shura). The Council of Ministers has the final authority and power over all issues touching on the country's economy, executive, financial and administrative matters. The king acts as the country's prime minister, and the crown prince is the deputy prime minister.

The Council of Consultation is responsible for discussing and making recommendations to the Council of Ministers on issues that affect the people's lives and wellbeing. For example, they offer opinions on health, economic growth and development concerns for the community.

However, the Council of Consultation has no authority to enact laws and legislation. Ordinarily, the Council consists of at least 150 members that includes religious leaders, experts, professionals, academicians and businesspeople. The members of the Council are directly appointed by the king. All appointments to the Council by the king are issued through royal decrees. All legislation in the country must be derived from the Quran and the Sunnah, or the interpretations of these documents, which constitutes Islamic religious beliefs (Alghamdi, 2012).

Even though evidence suggests that the Saudi constitution draws entirely from Islamic law, it was not documented until 1992, when it was subjected to a royal decree (Albader, 2015). The foundation of the Saudi constitution is that the law must be consistent with the teachings of the Quran and Islamic religion (Rice, 2004). To ensure that every piece of legislation conforms to Islamic laws and regulations, it is imperative to understand that the Council of the Assembly of Senior Religious Scholars (Majlis Kibar al-Ulama), consisting of 20 religious leaders, assesses and examines each piece of legislation before it is enacted to become law in the country.

2.2.3 The Economic System

Prior to the discovery of oil, and the construction of wells in 1938, Saudi Arabia was a relatively poor country with no significant economic activity. The country relied entirely on agriculture to sustain its population (Almansour, 2019). However, with the discovery of oil, the country's fortunes changed, and it now accommodates robust economic activities, and has become one a leading global economic powerhouse (World Bank, 2020). The oil booms of the 1960s and 1980s created a tremendous revenue stream for the country and made Saudi Arabia a leading exporter of oil; it is the second largest producer after the US (Organization of the Petroleum Exporting Countries, 2020; US Energy Information Administration, 2020). It is estimated that in 2019, the GDP stood at US\$793, up from US\$645 in 2016 (World Bank, 2020). The country's strong economic development means it is now eligible to be a member of the G20.

Saudi Arabia's revenue generated from the proceeds of oil supports the country's economic growth in various ways. Evidence shows that the proceeds of oil harvests are used for infrastructure development and to improve education and healthcare through the development of a robust 5-year economic plan (Al Mulhim, 2014). Since 1970, the country has had nine development plans, ending in 2014. The total expenditure for the plans ranges between

SAR57.2 billion and SAR1,444.6 billion in the first phase of development, which took place between 1970 and 1974, to the ninth development plan, which took place between 2010 and 2014.

In terms of the economy, these plans contributed to the creation of the Saudi Arabian General Investment Authority (SAGIA) in 2000. This entity has the responsibility to improve investment levels in Saudi Arabia, including privatising multiple sectors in 2002. SAGIA's objective is to reduce dependence on the government as the sole contributor to economic growth and development. The creation of the Capital Market Authority in 2003 was intended to regulate the Saudi stock market and enhance success in economic growth and development.

2.2.4 Saudi Vision 2030

The ambitious Saudi Vision 2030 was launched by His Royal Highness the Crown Prince Mohammed Bin Salman, the Deputy Prime Minister and Chairman of the Council of Economic and Development Affairs on the 25 April 2016. Vision 2030 focuses on three primary issues: the development of a vibrant society, an ambitious nation and a thriving economy. Vision 2030 was expected to be achieved by the end of 2030. Some of the objectives include:

1. increasing small and medium-sized enterprise (SME) contributions to GDP from 20% to 35%
2. increasing non-oil GDP from 16% to 50%
3. lowering unemployment rates from 11.6% to 7%
4. raising Saudi Arabia's global ranking in the Logistics Performance Index from 49 to 25 and ensure the Kingdom is a regional leader
5. increasing private sector contributions from 40% to 65% of GDP
6. increasing foreign direct investment from 3.8% to the international level of 5.7% of GDP
7. rising from the current position of 25 to the top 10 countries on the Global Competitiveness Index.
8. increasing the Public Investment Fund's assets from SAR600 billion to over SAR7 trillion
9. moving from the current position of the 19th largest economy in the world into the top 15
10. increasing the localisation of oil and gas sectors from 40% to 75%

11. increasing women's participation in the workforce from 22% to 30%.

The Saudi government has launched many transformative programs aimed at achieving these objectives. For example, the Fiscal Sustainability Program, which aims to strengthen and maintain the Kingdom's financial stability, has so far contributed to the growth and development of the economy. The Fiscal Sustainability Program has contributed to reducing the GDP deficit ratio from 15.8% in 2015 to 4.5% in 2019 (Vision 2030, 2016). The growth and development of the economy has been an important element of Vision 2030. It is imperative to understand that Vision 2030's achievement is anchored on the growth and development of various segments of the economy. Several examples demonstrate the movement towards the attainment of Vision 2030 in Saudi Arabia. At the commencement of the journey, Saudi Arabia had shown a commitment towards attaining desired economic activities in the country. Apart from development in several industries, there has been a growing concern about management of the country's financial institutions. The net effect of this initiative can be seen in the launch of the derivatives market by the end of 2020. In the same year, at least 13 financial technology payment firms were licenced, and the Saudi stock market successfully joined the global emerging market indices (e.g. MSCI, Standard & Poor's Dow Jones and FTSE Russell).

Through the Public Investment Fund (PIF), Saudi Arabia has created at least 365,000 job opportunities with the establishment of over 30 companies (Vision 2030, 2016). There have been significant improvements in the PIF's roles in promoting the realisation of Vision 2030. The shareholder return of PIF has also improved, from an initial 3% between 2014 and 2016 to 8% between 2018 and 2020.

Further, to reduce dependency on the government and enhance the role of the private sector in driving the attainment of Vision 2030, the country launched a privatisation program in 2018. One notable initiative of this program is the state-owned oil company, Saudi ARAMCO through the sale of the company's shares in 2019.

Vision 2030 remains a vital pillar of economic growth and development in Saudi Arabia. Moshashai, Leber and Savage (2020) argue that transforming from an oil-dependent economy to a more diversified one will be vital to the timely realisation of Vision 2030. However, Moshashai et al. (2020) urge that Saudi officials should be careful, as there are many doubtful assumptions used in Vision 2030 that may restrain the restructuring of the Saudi economy. For

example, uncertainty about the stabilisation of the world's energy market may affect the path of Vision 2030. Therefore, keeping updated periodically on these assumptions is necessary to meet the Vision's objectives (Moshashai et al., 2020).

2.3 Monitoring Bodies

This section will highlight the bodies that play an important role in monitoring the Saudi market, giving a brief overview of each of these bodies to ensure a better understanding of their roles in the Saudi market.

2.3.1 The Saudi Central Bank

The Saudi Central Bank (SAMA), previously known as the Saudi Arabian Monetary Authority, was formed in 1952 by two royal decrees. In its early stages, SAMA controlled financial systems and improved efficiency and effectiveness in managing and responding to financial crises at different levels. SAMA has the sole responsibility to license, supervise and regulate banks, insurance companies and investment institutions. It ensures that Saudi Arabia's financial institutions are stable and efficient. It is a requirement that all banks and financial institutions must keep at least 15% of the total money they hold at SAMA. It also has the responsibility of regulating banking operations, including printing and minting the national currency. It handles the government's banking affairs and manages the national exchange reserves. Before the establishment of the Saudi Capital Market Authority (CMA), SAMA acted as the sole regulator of the Saudi stock market and worked through the Department of Securities Control (Albarrak, 2011). Listed firms in the financial industry must comply with the regulations issued by SAMA.

2.3.2 The Ministry of Commerce and Investment

Established in 1953, the MCI ¹(formerly, Ministry of Commerce) in Saudi Arabia develops, enforces, monitors and ensures high-level compliance with the trade rules, regulations and policies that control all commercial activities in the country. The MCI enacted the Companies' Act in 1965. In 2015, this act was subjected to substantial amendments (i.e. the NCR) to increase its efficiency and relevance. Since its inception, the MCI has regulated all listed firms. However, in 1984, the establishment of SAMA removed responsibility for regulating listed

¹ In 2020, the name of the ministry was changed back to the Ministry of Commerce.

companies in the Saudi stock market from the MCI. In 2003, the responsibility of regulating Saudi listed companies was taken from SAMA and transferred to the CMA, which became the sole regulator of the Saudi stock market and listed companies. Currently, the ministry oversees the functions of many monitoring entities, such as the Saudi stock market, the CMA and the Saudi Organization for Chartered and Professional Accountants (SOCPA).

2.3.3 The Saudi Organization for Chartered and Professional Accountants

External audit firm characteristics, as factors that influence audit quality, have an important role in this study, and it is necessary to investigate the administrative body that monitors the audit firm market in Saudi Arabia. SOCPA is a professional organisation established in 1991. The organisation works under the control and supervision of the MCI and is responsible for promoting and enhancing the principles of auditing and accounting in the job market (SOCPA, 2021). The entity has the following duties and responsibilities:

1. reviewing and developing accounting and auditing principles and standards
2. monitoring the performance of certified public accountants to enhance professionalism, regulations and standards
3. preparing and establishing SOCPA fellowship examination rules and the management of CPA courses.
4. performing research regarding the accounting and auditing profession to promote the growth and development of work and careers
5. encouraging accounting research, professionalism and ethics.

2.3.4 The Saudi Capital Market Authority

The CMA operated as an unofficial organisation in the 1950s. In 2003, the CMA was recognised formally and now reports directly to the country's prime minister. The organisation worked successfully until the Saudi government developed more effective structures and regulations to monitor and control its activities and operations (CMA, 2022). The CMA regulates and develops Saudi companies by offering effective rules and regulations that encourage investment and enhance transparency and disclosure standards.

Additionally, the rules and regulations protect investors and dealers from potential illegal activities in the market (CMA, 2022). The CMA has legal and financial autonomy. It has a 5-member board appointed by the prime minister to oversee its duties and responsibilities. Board

members are prohibited from undertaking commercial activities or developing interests in the market and its operations.

The CMA issues regulations and instructions to the commercial market and ensures strict rules. CMA's duties and responsibilities are summarised as follows:

1. developing and regulating the Saudi stock market and enhancing and promoting practical standards and transaction procedures
2. creating greater security and protecting investors from potential unethical and unfair practices, such as fraud and manipulation that violate the country's laws
3. increasing market efficiency and encouraging transparency and accountability in all transactions
4. reducing the risks of transactions by encouraging and fast-tracking the development of practical standards
5. monitoring the commitment of Saudi listed companies to the extent of disclosing all required information

The CMA plays an essential role in developing and regulating the stock exchange. It issues necessary rules and regulations to enhance company performance in the market. In addition, it protects investor interests in the market: it encourages continued growth and development and contributes to trust and confidence in the market's operations. In so doing, the CMA promotes the safety and security of all stakeholders. However, many investors have raised concerns over the role of the authority in the global financial crisis (2007 and 2008) that rocked the market.

2.3.5 Saudi Stock Exchange Market (Tadawul)

'Tadawul' is an Arabic term referring to the exchange of goods and services in the stock market. The growth of the Saudi economy depends on a similar reflection regarding the increased exchange of goods and services in the country. It is essential to recognise, organise and properly execute the exchange of goods and services to fast-track economic growth and development. Currently, the Saudi stock exchange self-regulates. However, its transactions are overseen by a 9-member committee nominated by the Saudi CMA and appointed by the prime minister. The committee has fair representation from Saudi governmental organisations, such as the Ministry of Commerce and Industry, the Ministry of Finance and the Monetary Agency. The committee also has two members representing listed companies and four representatives from licenced brokerage firms (Saudi Exchange, 2022).

Although the first joint-stock company in Saudi Arabia, Arabian Automobiles Company, was founded in the mid-1930s, the Saudi stock market remained unregulated until 1984. On 23 November 1984, the Saudi government issued a royal decree to establish the Saudi Share Registration Company (SSRC). The SSRC was founded as the official registration centre for Saudi joint-stock companies. The SSRC is the primary reference for investors in Saudi joint-stock companies, and it is responsible for managing shareholders' records and issuing share certificates.

In July 2003, the CMA became responsible for regulating and monitoring stock market trading. On 19 March 2007, the CMA issued a decision to establish 'Tadawul' as a joint-stock company operating as the sole authorised entity to conduct securities trading in Saudi Arabia. Currently, Tadawul is the authorised reference to act as the Securities Exchange for Saudi joint-stock companies, and it is the official source of all market information. The Saudi stock exchange was established with a very limited number of listed companies. Figure 2.1 summarises the evolution of the Saudi stock exchange.

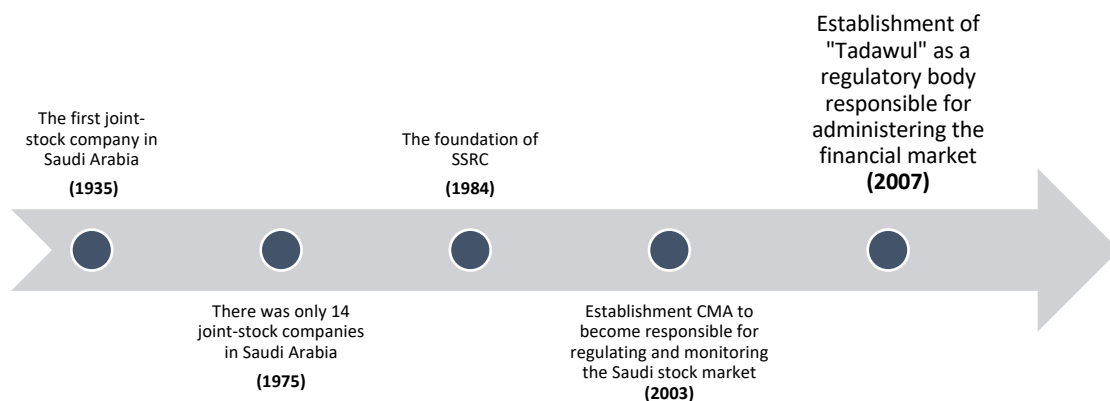


Figure 2.1 Evolution of Saudi Stock Exchange

The number of Saudi listed companies in the stock market has increased rapidly since the beginning of the 21st century. The number of listed companies more than doubled from 57 firms in 2003 to 146 firms in 2010. By the end of 2017, the total number of Saudi listed companies in the Tadawul was 179 firms. Table 2.1 shows the growth in the number of Saudi listed companies over the last 15 years covered by this thesis (from 2003 to 2017).

Table 2.1 Growth in the Number of Saudi Listed Companies (from 2003 to 2017)

Year	Number of listed companies	Yearly change%
2003	57	–
2004	73	28%
2005	76	4%
2006	84	11%
2007	111	32%
2008	127	14%
2009	135	6%
2010	146	8%
2011	150	3%
2012	158	5%
2013	163	3%
2014	169	4%
2015	171	1%
2016	176	3%
2017	179	2%

Source: Saudi Stock Exchange (Tadawul)

2.4 Key Regulations and Laws in the Saudi Business Environment

Among the many regulations and laws in the Saudi business environment, this section will focus on the most important regulations and laws; those that play a substantial role in regulating Saudi firms. Similar to many developing countries that follow developed countries, Saudi Arabia has been trying to catch up with the progress that developed countries have made, such as the US and the UK (Alghamdi, 2012). Therefore, the Saudi government established company regulations and the first laws concerning Saudi companies; these were issued by royal decree in 1965. The Saudi Companies Act 1965 was set for all Saudi companies. However, this law has not been modified for a long period (over 50 years) so that it can keep up with the rapid development in Saudi Arabia as a large emerging economy.

Since the discovery of the country's enormous oil reserves in 1930, Saudi Arabia's economy has relied heavily on its oil resources. These constitute more than 70% of the country's total budget revenue (Ministry of Economy & Planning, 2015). However, the country's economy has been challenged by oil price volatility in the past. As a result, Saudi Arabia has issued a

series of long-term decisions and plans to develop non-oil resources and improve the investment environment in various fields in the Saudi market, in line with Vision 2030.

In 2015, a series of new laws and regulations were issued by the Saudi government in all fields of industry, trade and investment. The main objective of these changes was to improve the investment environment of the Saudi market, attract foreign capital and retain local capital. One important change was the new version of company regulations, which are the main focus of this study.

2.4.1 The Old Version of Company Regulations in Saudi Arabia

In 1965, the Saudi Companies Act ('old company regulations' OCR) was enacted by Royal Decree No M/6, consisting of 234 articles. According to Alghamdi (2012), the first version of the OCR was derived from the British Companies Act and intended to regulate all companies in Saudi Arabia. The OCR provided a general outline of the management and running of companies, including the registration process, the expected number of partners, the minimum capital requirements and the number of directors in any company. The OCR also defined company structures and the legal forms of organisations (Alghamdi, 2012). However, the OCR has been criticised because these regulations do not provide a safe environment for investors. Al-Zahrani (2013) investigated the effectiveness of the OCR in terms of improving the level of protection for shareholders in the Saudi stock market. Al-Zahrani (2013) concluded that the OCR had many deficiencies in regard to shareholders rights, and that the OCR needed significant reform to improve the investment environment and attract more investors into the Saudi financial market.

2.4.2 The New Version of Company Regulations in Saudi Arabia

On 9 November 2015, the MCI in Saudi Arabia issued a new law: the NCR (in Arabic, نظام الشركات الجديد). This is concerned with Saudi companies and includes extensive amendments to the regulation of the Saudi corporate business environment. The NCR (2015) is considered a more comprehensive set of regulations for companies than the previous version (the 1965 OCR). The NCR became effective on 1 May 2016, and all companies are now required to comply with these new laws within one year from the effective date. The aim of the NCR was to improve the investment environment of the Saudi market, attract foreign capital and retain local capital, which is a significant objective of Vision 2030. The NCR contains several new regulations (consisting of 227 articles) that regulate listed and non-listed companies in Saudi

Arabia. This study will focus on the aspects (company characteristics) that are applied to Saudi listed companies.

The main amendments of the NCR focus on the requirements around the number, appointment process and duration of members on a board of directors. The NCR also gives a general meeting of shareholders the power and authority to dismiss any director who does not attend meetings across three consecutive times. Further, it gives any member with shares above 10,000 the power and opportunity to self-nominate as a member of the board of directors. Additionally, the NCR requires a full disclosure of the method and amount of any remuneration received by members of a board of directors in the annual report. In another major amendment, the NCR imposed regulations on the relationships between a company and external auditors (Art. 133 of the NCR). In terms of the external auditor, people (such as auditors, board members, or chief executive officers) may be subject to a SAR500,000 fine, and up to SAR5 million and/or five years of prison if they fail to comply with the NCR or intentionally provides false or misleading information in the auditor's report about a company's financial statements (Art. 135 of the NCR).

The NCR contains many changes to Saudi corporate governance principles, including capital formation, conflicts of interest and remuneration for directors. Regarding audit committees in Saudi companies, the NCR obligates audit committees to review financial reports and evaluate the work of external auditors after the audit, as well as review the policy of internal audit systems. Also, the NCR demands that an audit committee issues an annual report on the work the committee has completed to shareholders and the general public. The report should be available to shareholders and the general public 10 days prior to the Annual General Assembly (Art. 104 of the NCR).

The NCR initiated a prominent change that affects the relationship between companies listed in the Saudi Tadawul and the audit market. The Saudi audit firm market has been dominated by the Big Four international accounting firms, which represented 74% of the market in 2014 (Nurunnabi, 2018). Prior to the NCR, the OCR did not regulate the contractual relationship between Saudi companies and audit firms. According to NCR (2015) Article 133, Saudi companies may contract with an auditing firm for a period not exceeding five consecutive years; those who finish this period may be reappointed after two years. Article 133 may have a significant influence on audit committee member decisions. This is because one of the main responsibilities of an audit committee is to select appropriate audit firms for a company and

determine the fees of these audit firms. According to an interview with the Secretary-General of SOCPA (Dr Almeghames), changing an audit firm at least every five years (Article 133 of the NCR) will help to avoid conflict between auditor decisions and the length of their stay with a company (Al-Morkie, 2016). Additionally, the NCR expects that audit firms will not combine the work of audit financial reports in a company and other service(s) (with the same company) simultaneously with consultation services (Art. 133 of the NCR). These new regulations support the view that the NCR encourages diversification in the Saudi audit market, an approach that is more likely to support local Saudi audit firms. It also aligns with Vision 2030's objective of increasing Saudi SMEs' contributions to Saudi GDP.

Regarding the boards of directors in Saudi companies, the NCR determines the lower and upper limits of the board's size, which must be not less than three members and not more than 11 members. In contrast, the OCR only specified the minimum size of the board (i.e. not less than three members), without specifying a maximum size. Further, the new rules mandate that directors hold a minimum of two meetings per year instead of a minimum of four meetings per year (Art. 83.1 of the NCR). In relation to directors' remuneration, the OCR did not contain any item related to the financial rewards of members of a board of directors. However, the NCR places a cap on the maximum remuneration to members of a board (SAR500,000 per year as per Art. 76.2 of the NCR). Table 2.2 shows a summary of the key changes of the NCR against the OCR in regard to company characteristics.

Table 2.2 Key Changes of the NCR in Terms of Company Characteristics against the Old Company Regulations

Company characteristics	NCR and NCGR*	OCR
Audit committee independence	At least one independent director	Not specified
Audit committee size	No less than 3 and no more than 5	A minimum of three
Audit committee meetings	At least 4 meetings per year	Not specified
Audit committee financial expertise	No change	At least one director is specialised in finance and accounting

Company characteristics	NCR and NCGR*	OCR
Audit committee legal expertise	No change	Not specified
Audit committee chairperson independence	Independent director	Non-executive director
Audit firm size	Promoting local Saudi firms	Not specified
Board Independence	At least two independent directors or one-third of directors are independent (which one is greater)	One-third of directors are independent
Board size	No less than 3 and no more than 11	No less than 3
Board meeting Frequency	At least 2 meetings per year	Not specified

NCR: New Saudi company regulations (2015); *NCGR: new Saudi Corporate Governance Regulations (2017), which are a subset of the NCR

**OCR: old Saudi company regulations, (issued 1965)

Further theoretical analysis and comparisons between the OCR and NCR will be applied in Chapter 4.

2.5 Summary

Saudi Arabia differs from other countries in many of its characteristics. Saudi Arabia is an Islamic state, where the constitution is based on Islam (Shariah). This is considered a lifestyle for the people of the country, and it affects the behaviours and beliefs of citizens. Additionally, the Saudi context has special cultural aspects, such as an absolute monarchy political system and Arabian tribal affiliations. Economically, Saudi Arabia rose from small agricultural production to become a robust economy that relies on its rich oil wells. In the Middle East, Saudi Arabia remains one of the most powerful states under the leadership of a monarchical leader. Saudi has adopted and implemented much legislation aimed at improving its economic and political power and fortunes.

The NCR is the main focus of this thesis; therefore, this chapter has generally revealed the institutional context of Saudi Arabia, especially the monitoring bodies that play an important

role in monitoring the Saudi market (i.e. MCI, CMA, Tadawul, SOCPA and SAMA). This has been done to gain a better understanding of the Saudi business environment. Also, Vision 2030 has been highlighted. This is considered a national and unique plan for Saudi Arabia to reform its economic and social position.

This chapter has explained the key changes that occurred from the NCR's implementation in terms of company characteristics, which will be used as the main axis of the thesis. The NCR, regulating all Saudi companies, includes comprehensive amendments to the regulation of the Saudi corporate business environment, and aims to improve the investment environment of the Saudi market, attract foreign capital and retain local capital. This is in accord with one of the main objectives of Vision 2030.

The following chapter will discuss the literature in relation to FRQ and the variables that directly and indirectly influence FRQ.

Chapter 3: Literature Review

3.1 Introduction

This chapter has three objectives. First, to review various ways of capturing FRQ as a dependent variable in the literature. Second, to review the literature on the key factors that influence audit quality and their relationship with FRQ. Finally, to review research on the relationship between the mandatory adoption of IFRS and FRQ because of overlaps between the NCR and IFRS introduction.

The chapter is structured as follows. Section 3.2 defines the concept of FRQ used in this thesis. Section 3.3 presents the different measurements used to measure FRQ in prior studies. This is followed by the FRQ measurement employed in this study, outlined in Section 3.4. Section 3.5 highlights different accruals models used to measure earnings management as a proxy for FRQ. Section 3.6 provides a definition of audit quality from this thesis' perspective. This section also determines the key characteristics that influence audit quality and their relationship with FRQ. Section 3.7 considers the IFRS and the possibility that it may affect FRQ in the Saudi context. Section 3.8 presents a brief summary of the chapter.

3.2 Financial Reporting Quality

Financial reporting plays an important role in transferring financial information to internal and external users in a timely and trustworthy manner (Y. Xiong, 2006). FRQ is a difficult concept to define. However, Gaynor, Kelton, Mercer and Yohn (2016) provide a good explanation of FRQ. Gaynor et al. (2016) review the previous literature on audit quality and FRQ and conclude that 'higher quality financial reports are those that are more complete, neutral, and free from error and provide more useful predictive or confirmatory information about the company's underlying economic position and performance' (p. 14). Gaynor et al.'s (2016) description of FRQ is consistent with the fundamental and enhancing qualitative characteristics (such as relevance, faithful representation, and determining whether or not the information is available) of financial reporting as prescribed in the 'Conceptual Framework for General Purpose Financial Reporting by the International Accounting Standard Board' (IASB). Hence, this thesis will adopt the same definition of FRQ as defined in Gaynor et al. (2016).

3.3 Financial Reporting Quality Measurements

Prior studies have used different measures to capture the quality of financial reporting; each measurement captures FRQ differently (Gaynor et al., 2016). These measurements include the level of voluntary disclosure, earlier loss recognition and earnings persistence among others. For example, some studies (Botosan, 1997; Botosan & Plumlee, 2002) use the level of voluntary disclosure in determining the quality of financial reporting. The level of voluntary disclosure is one of various measures to capture FRQ in a company². This measurement often uses the corporate governance index to explore the level of compliance with corporate governance in a certain country. The corporate governance index model is used to examine the relation between corporate governance mechanisms and a company's financial performance. Barth, Landsman and Lang (2008) use earlier loss recognition as an indicator to measure the quality of financial reporting. Accruals quality measurement is another method used to capture the quality of financial reports. The accruals quality method, developed by Dechow and Dichev (2002), tests short-term accruals into cash flows. Another method to measure FRQ is through experimental studies that ask participants about their perceived quality measure of financial reporting (McDaniel, Martin, & Maines, 2002). Other studies use earnings persistence measurement to determine FRQ (Dechow et al. 2010). The concept of FRQ has many aspects; assessing quality is always linked with a relevant decision (Chua, Cheong, & Gould, 2012; Dechow, Ge, & Schrand, 2010; Wang, 2006). Informed by the prior studies, this study will classify measures of FRQ in two main classifications: market-based and accounting-based.

3.3.1 Market-based Measures

Market-based measures essentially rely on market data, such as share price and returns, in addition to financial statements data to assess the quality of financial reports (Devalle, Onali, & Magarini, 2010; Francis, LaFond, Olsson, & Schipper, 2004; Ngurumin Iorchir, 2015). A market-based estimation is concentrated on the association between share prices or returns and accounting earnings (Barth et al., 2008; Basu, 1997; Francis et al., 2004; Ngurumin Iorchir, 2015). Two commonly used market-based measures of FRQ are value relevance and timely loss recognition (Ball, Kothari, & Robin, 2000; Basu, 1997; Dechow et al., 2010).

² This study uses the terminology 'company' instead of 'firm', although some prior studies use 'firm'.

3.3.1.1 Value Relevance

Hung (2000) defines the value relevance of accounting information as the ability of financial statements to evaluate information that affects a company's value. Specifically, value relevance depends on an evaluation of the relationship between accounting information and stock market values or returns. This approach basically measures the relevance and reliability of accounting information and how this information is reflected in the share price (Barth, Beaver, & Landsman, 2001). Beaver (2002) notes that value relevance is a combination of valuation theory and accounting theory. This combination helps to predict the behaviour of the relationship between accounting variables and market value. This method has various measurements, including the explanatory power of the earnings-returns regression, and the earnings response coefficient in a price-earnings and book value regression (Barth et al., 2008; Bartov, Goldberg, & Kim, 2005; Ngurumin Iorchir, 2015). One of the most common measures used to detect value relevance is the return model developed by Easton and Harris (1991). Easton and Harris' (1991) model includes the level of earnings and the changing of earnings as independent variables to explain the annual market return as a dependent variable. Subsequently, another measure commonly used to measure value relevance is the modified price model developed by Ohlson (1995). Ohlson's modified price model has been employed to measure the value relevance of financial reporting in several studies (Khanagha, 2011). Ohlson's (1995) model relies on three variables to measure value relevance: the market value of equity; the book value of equity per share; and the earnings per share.

The value relevance approach, however, has its limitations. For example, Lang, Smith Raedy and Wilson (2006) argue that the motivation of the changes in stock market price depends on earnings news. Some of this news is useless and does not influence share price or return, which ultimately affects the valuation of accounting information. Francis and Schipper (1999) highlight the obstacles in employing value relevance. This requires the accounting value reported in the financial reports to align with the fair value in share prices and return; further, some managers cannot handle discretion in accounting figures. Other studies, such as those of Holthausen and Watts (2001) and Barth et al. (2001), note that the value relevance approach does not reflect the actual information of financial reports in some cases.

3.3.1.2 Timely Loss Recognition

Timely loss recognition is considered one of the important methods to capture FRQ (Ball & Shivakumar, 2005; Gaynor et al., 2016). This method is a form of conditional conservatism. It expects large losses with higher frequency earnings because companies generally recognise losses on a timeliness basis (Duong, Schuldt, & Gotti, 2018). The timely loss recognition method recognises larger losses as they occur, rather than delaying this to later periods. The approach leads to higher quality financial reporting (Barth, Landsman, Lang, & Williams, 2006). Brown, He and Teitel (2006) note that ‘when managers are allowed greater accounting discretion via accruals, conditional conservatism resulting from stronger legal institutions would prevent managers from opportunistically recognizing gains and require more timely loss recognition’ (p. 606). Earlier loss recognition is interpreted as an important indicator of FRQ, and companies that recognise losses earlier have higher quality financial reporting (Barth et al., 2008; Gaynor et al., 2016). Ball and Shivakumar (2005), Basu (1997) and Duong et al. (2018) argue that timely loss recognition reduces agency problems. Managers have the incentive to recognise operational investments with anticipated economic losses and provide lenders with information at a proper time in regard to contractual restrictions. Among different models, Basu’s (1997) model is employed to measure the relation between the timeliness of earnings and stock returns. Basu (1997) argues that recognising losses earlier will produce a larger coefficient estimate on bad news earnings in a regression of earnings on returns.

Basu’s (1997) model is considered the most common in conservatism literature. In this model, a cross-sectional regression is used to estimate the association between accounting earnings and stock returns. Basu (1997) has two measures of timely loss recognition (tendency-to-reverse measure and reverse earnings-returns regression), but the most frequently used measure is the reverse earnings-returns regression. The model used in Basu (1997) has been critiqued by later studies, such as Brown et al. (2006) and Dechow et al. (2010). For example, Dechow et al. (2010) argues that ‘If bad news is recognized on a more timely basis than good news, negative earnings changes will be less persistent and will tend to reverse more than positive earnings changes’ (p. 363). Brown et al. (2006) notes that conditional conservatism resulting from the power of legal institutions can restrain managers from opportunistically recognising gains and imposing more timely loss recognition.

3.3.2 Accounting-based Measures

Accounting-based measures depend on accounting information from financial statements data, such as cash flow and earnings, to detect FRQ (Francis et al., 2004). An accounting-based measure is constructed using accounting information only, ignoring capital market data. The accounting-based measures reviewed in the literature are earnings persistence and predictability, and earnings management, as proxies for FRQ.

3.3.2.1 Earnings Persistence and Predictability

Earnings persistence is another common measure used to detect FRQ. It analyses the sustainability of earnings across time (Francis et al., 2004; Penman & Zhang, 2002). Penman and Penman (2007) define earnings persistence as the ability of a company to generate recurring earnings for a sustained period. Lipe (1990) states that ‘persistence describes the time series relation between the current-period earnings shock and future earnings’ (p. 52). Perotti and Wagenhofer (2014) indicate that high persistent and sustainable earnings ensure that earnings quality is high, while earnings that are less persistent and sustainable are considered lower quality. Scott and O’Brien (2003) observe that persistent earnings are more desirable for analysts because they make predictions of company performance easier. There are various methods to capture earnings persistence. One of these is to observe the coefficient from a regression of current earnings on lagged earnings; this method is commonly used to capture earnings persistence (Dechow et al., 2010).

Although earnings persistence provides a useful concept in analysing earnings and a good measure for equity valuation, some argue that earnings persistence is largely affected by the accounting policies applied (see Scott & O’Brien, 2003). In addition to Scott and O’Brien (2003), Dechow et al. (2010) also express concern about measuring earnings persistence. They think this measurement is less reliable: it may be useful in the short term but not in the long term. Dechow et al. (2010) report that short-term accrual components are less persistent than long-term components, which means the measurement is more appropriate for short-term operating assets than for financial assets.

Earnings predictability is defined as the ability of past and current earnings to forecast future earnings (Lipe, 1990). A higher quality of earnings predictability means a higher ability to predict future earnings, while a lower quality of earnings predictability is viewed as a lesser ability to predict future earnings (Lipe, 1990). Dechow et al. (2010) observe that a high quality

of earnings predictability would indicate a strong association between a company's earnings series, and that persistence in earnings plays a substantial role in predicting earnings. Earnings predictability is measured using the square root of the error variance from the equation of earnings persistence (Francis et al., 2004).

3.3.2.2 Earnings Management

The earnings of any company are the overall measure of its performance over a certain period (Dechow, 1994). Some studies consider earnings management as a major concern of financial information quality. Curbing earnings management has drawn significant attention from regulatory reforms globally (Blue Ribbon Committee, 1999; Smith, 2003).

Earnings management is the conduct through which management can manipulate financial information to produce a company's financial position and its performance (Alghamdi, 2012). According to Walker (2013), earnings management is defined as 'the use of managerial discretion over accounting choices, earnings reporting choices, and real economic decisions to influence how underlying economic events are reflected in one or more measures of earnings' (p. 446). Healy and Wahlen (1999) state that:

earnings management occurs when managers use judgment in financial reporting in structuring transactions to alter financial reports to either mislead some stakeholders about the underlying economic performance of the company, or to influence contractual outcomes that depend on reported accounting numbers (p. 368).

The prior literature reached consensus on definitions of earnings management: this is that managers tend to manipulate earnings to influence financial reports, rather than reporting the actual underlying economic performance of a company.

Any company may manipulate its earnings based on its motivation. Using accrual accounting is considered the most common practice in earnings management because it gives managers a great deal of discretion to manipulate the timing of earnings or (and) expenditures that can be linked to opportunistic management behaviour (Healy & Wahlen, 1999). Accruals are the time lag between the timing of cash flows and the accounting recognition of a transaction (J Ronen & Yaari, 2008). For example, some companies try to increase their income to raise their stock price to meet analysts' predictions, while others try to decrease their income to avoid the costs

of regulation. Thus, discretionary accruals play a significant role in earnings manipulation (Islam, 2016).

Many studies (see Carrera, Carmona, & Sohail, 2017; Dou, Hope, Thomas, & Zou, 2018; Jiang & Chen, 2019; Kamolsakulchai, 2015; Kanukuntla & Seyed Masoud Sajjadian, 2017; Salehi & Shirazi, 2016) use earnings management and the level of discretionary accruals as a proxy to measure the quality of financial reports. Carrera et al. (2017) and Walker (2013) both emphasise that earnings management indicates poor FRQ, in which the relationship between earnings management and FRQ is adverse. Measuring earnings management relies on the level of discretionary accruals in a company; minimising the level of discretionary accruals leads to a higher FRQ (Walker, 2013).

3.4 Financial Reporting Quality Measurements Employed in the Study

Earnings management is one of the most decisive measures in determining the quality of financial reporting (Armstrong, 1993; Dechow et al., 2010). It has been used widely as an indicator of the measure of FRQ (Carcello, Neal, Palmrose, & Scholz, 2011; Ghafran, 2013; Kamolsakulchai, 2015; Salehi & Shirazi, 2016). Perotti and Wagenhofer (2014) evaluate eight different measures of FRQ to identify the best measure of FRQ (what they refer to as ‘earnings quality’ in their study) in the context of US non-financial companies for the period 1988 to 2007. The study uses different measurements that are derived either from market-based or accounting-based measures. They include value relevance, accruals quality, earnings persistence and predictability. They find that accruals measurements are the most useful measures to detect the quality of earnings. DeFond and Zhang (2014) find that earnings management is considered a primary measure as a proxy of FRQ due to its strong relationship with audit quality. DeFond and Zhang’s (2014) findings are consistent with Jones (1991), who confirms that earnings management is widely used by researchers and is one of the best measures to detect the quality of financial reporting.

Earnings management has always been a major concern in corporate regulatory reforms (Smith, 2003). In addition, the importance of reported earnings is directly related to the value of a company; thus, earnings management represents a significant tool that any top management uses to align with the earnings expectations related to their companies (Loomis, 1999). Further, earnings management is considered an important topic in developing countries and emerging markets. Some studies find that the level of earnings management is higher in

developing countries than in developed countries. Leuz, Nanda and Wysocki (2003) conclude that developing countries show less investor protection and a higher level of aggressive earnings management than developed countries. Leuz et al. (2003) attributes these findings to the concentration of ownership and weak legal enforcement in developing countries. In addition to Leuz et al. (2003), Beuselinck et al. (2019) and Dyreng, Hanlon and Maydew (2012) emphasise that the level of earnings management increases remarkably in an environment with weak legal enforcement. Saudi Arabia is considered a developing country with a high concentration of governmental ownership and less investor legal protection; thus, the possibility of occurrence earnings management in Saudi companies is high.

Among various FRQ measurements, this study uses earnings management as proxy to measure the direct and indirect effects of the NCR on FRQ in the Saudi context. Saudi Arabia is a less developed country, and the prior literature asserts that the regulatory environments within which companies work affect the possibility of occurrence earnings management.

Abdul Rahman and Haneem Mohamed Ali (2006) claim that managers may increase their wealth by taking advantage of agency problems to conspire against owners. Habbash (2010) considers that managers are more likely to practice earnings management through managing accruals because this is less obvious and not easy to detect. From an institutional theory perspective, S. Li, Selover and Stein (2011) consider that enactment of laws and regulations by governments may create constraints for companies, and these formal constraints can motivate managers to manipulate earnings. This study will use earnings management to measure FRQ in the Saudi context, consistent with the commonly accepted indicator of earnings measurement in prior literature.

3.5 Model for Capturing Earnings Management

The earnings management measurement is challenging for many studies because earnings management is difficult to detect (Alghamdi, 2012; Habbash, 2010). Therefore, the process of earnings management detection has to be a fully integrated study where it is treated as a phenomenon. Many studies have found multiple ways to measure earnings management through employing statistical methods. However, manipulating accruals is the preferable instrument for earnings management, and not manipulating cash earnings, because cash earnings are difficult to manipulate (Schipper, 1989). Therefore, most studies focus on the proportion of earnings that are not managed (accruals) to measure earnings management in

companies. Among different accruals measurement studies, the level of discretionary accruals is the most accepted approach used in the accounting literature for measuring earnings management. Many studies (see DeAngelo, 1986; Healy, 1985; Jones, 1991) favour the level of discretionary accruals approach because this can detect and measure a level of discretionary accruals that is not directly observable.

There have been abundant studies using the level of discretionary accruals as a proxy for FRQ (Carrera et al., 2017; Ghafran, 2013; Kamolsakulchai, 2015; Y. Li, Dong, & Bao, 2008; Salehi & Shirazi, 2016). Prior studies have built various models to detect and measure the level of discretionary accruals properly using different statistical analysis methods. Different models have been used by prior studies to calculate accruals. These include the DeAngelo (1986) model; Healy's (1985) model, the Jones (1991) model, the modified Jones model (Dechow et al., 1995), and the industry model (Dechow et al., 1995), the performance-matched model (Kothari et al., 2005), Dechow and Dichev's (2002) approach, and discretionary estimation errors (Francis, Olsson, LaFond & Schipper, 2005). This thesis will focus on the models presented by Jones (1991), the modified Jones (Dechow et al., 1995), performance-matched (Kothari et al., 2005), Dechow and Dichev's (2002) approach, and discretionary estimation errors (Francis et al., 2005). These models have been selected based on Dechow et al. (2010), who find that these models are the most common accruals models to estimate the level of discretionary accruals. This section summarises each accruals model independently to choose the most effective model appropriate to this study.

3.5.1 Jones (1991) Model

Jones (1991) proposes that this model controls for both discretionary and non-discretionary accruals in a company's economic position. The Jones (1991) model assumes the accrual model is that working capital accruals and depreciation expenses is a function of revenue growth and property, plant and equipment (PPE). The model has been used as a proxy to detect earnings management. The Jones model (1991) has been employed widely in various studies (such as Becker, Jiambalvo, DeFond, & Subramanyam, 1998; Guay, Kothari, & Watts, 1996; Subramanyam, 1996) to detect earnings management, and is considered more powerful than past models, such as the Healy (1985) or the DeAngelo model (1986).

However, the Jones (1991) model has been critiqued by later studies (see Bernard & Skinner, 1996; Francis et al., 2005; Schipper & Vincent, 2003). Researchers note that the Jones (1991)

model does not measure earnings management properly. Bernard and Skinner (1996) find that the Jones model estimates the level of discretionary accruals imprecisely because the estimated coefficients of the model are not accurate. In addition to Bernard and Skinner (1996), Aljifri (2007) claims the Jones model does not consider the manipulation of revenue over time and that the Jones model assumes that all revenues over a period are non-discretionary, which may generate a biased model. The Jones (1991) model assumes wrongly that managers do not exercise discretion over revenue; however, the truth is that discretionary accruals can be manipulated by managers (Habbash, 2010). Another study by Dechow et al. (2010) found that the explanatory power of the Jones model is low, as it explains less than 10% of the variation in accruals. Dechow et al. (2010) explain that this low explanatory power is due to the managers' control over the accrual process.

3.5.2 Modified Jones Model (Dechow et al., 1995)

Many studies have considered the arguably incorrect assumption of the Jones (1991) model and claim that their studies reduce potential errors (about the assumption that managers do not exercise discretion over revenue) in the Jones model (Ronen, 2008). Dechow et al. (1995) address the limitations of the Jones (1991) model (built on the assumption of non-discretionary revenue that leads to discretionary accruals being calculated incorrectly). While Jones (1991) defines the accruals process as a function of revenue growth and PPE, the modified Jones model (Dechow et al., 1995) is an adjusted form of the model (1991). It excludes the growth in credit sales in years identified as manipulation years. This modification—of Dechow et al. (1995)—made the model more capable of detecting revenue manipulations when managers do exercise discretion over it. According to Dechow et al. (1995), the modified Jones model 'is designed to eliminate the conjectured tendency of the Jones model to measure discretionary accruals with error when discretion is exercised over revenues' (p. 199). Dechow et al. (2010) point out that this modification increases the explanatory power of the Jones model.

The modified Jones model (1995) has gained wide support from the accounting literature, which considers this version as the most powerful for detecting earnings management because it focuses on detecting cases of revenue manipulations, while other models do not (Aljifri, 2007).

3.5.3 Dechow and Dichev's (2002) Approach

Subsequently, Dechow and Dichev (2002) developed a new model to measure earnings management. The Dechow and Dichev (2002) approach assumes that the accruals model is the association between the current-period working capital accruals and operating cash flows from different time periods. McNichols (2002) discusses various models that measure accruals quality. McNichols (2002) finds that the Dechow and Dichev (2002) approach captures a significant factor of earnings quality that is based on the relationship between accruals and cash flows. However, McNichols (2002) argues that prior models, such as Dechow et al. (1995) and Jones (1991) can also detect earnings quality based on the relation between accruals and cash flows. In addition to McNichols (2002), Dechow et al. (2010) has critiqued the Dechow and Dichev (2002) approach. Dechow et al. (2010) notes that Dechow and Dichev's (2002) approach is unsigned, which can reduce the power of tests, and it also focuses on short-term accruals and does not address errors in long-term accruals.

3.5.4 Performance-matched Model

Kothari et al.'s (2005) performance-matched model has become the focus of accounting studies (Habbash, 2019; Idris, Siam, & Nassar, 2018; Jiang & Chen, 2019). Kothari et al. (2005) argue that the Jones (1991) and the modified Jones (1995) model may not measure discretionary accruals properly because they do not consider company performance. Kothari et al. (2005) notice that there is a significant positive relationship between discretionary accruals, calculated by the Jones model or the modified Jones model, and return on assets (ROA).

The performance-matched model presented by Kothari et al. (2005) matches companies by choosing two companies from the same industry that have similar ROAs; it calculates the difference between those two companies to generate 'performance-matched' residuals. Dechow et al. (2010) determine that Kothari et al.'s (2005) model may reduce the power of the test, but it can be applied when company performance is a concern. Dechow et al. (2010) note that Kothari et al.'s (2005) approach 'is likely to add noise to the measure of discretionary accruals, and it is best applied when correlated performance is an important concern' (p. 359).

3.5.5 J. Francis et al.'s (2005) Model

Francis et al. (2005) propose a new model to measure earnings management. Francis et al.'s (2005) model, which some call 'discretionary estimation errors', is based on a combination of

Dechow and Dichev's (2002) and McNichols' (2002) model. Francis et al. (2005) use two methods. The first is consistent with McNichols (2002) and Francis et al. (2005), and includes growth in revenue to reflect performance, and PPE to make the model more extensive in measuring accruals. However, this method does not examine whether those adjustments help misclassification errors (Dechow et al., 2010).

The second method is to decompose the standard deviation of the residual into company-level measures of innate estimation errors and discretionary estimation errors. This helps to include 'managerial choices' (i.e. intentional errors). Dechow et al. (2010) raise concerns about the second method. They note that innate characteristics could also reflect estimation errors and corrections, which can consequently reduce the power of tests. This can also lead to bias in the proxy for discretion.

Many prior studies have developed different models to calculate the level of discretionary accruals properly. This section has summarised a number of commonly used models in the accounting literature, according to Dechow et al. (2010). They are the Jones (1991) model, the modified Jones model (Dechow et al., 1995), the performance-matched (Kothari et al., 2005) model, Dechow and Dichev's (2002) approach, and discretionary estimation errors (Francis et al., 2005). Among the different models that have been used by prior studies to detect earnings management, the modified Jones (1995) model is the most developed. It is designed to calculate discretionary accruals, which give greater explanatory power, and it has been used widely by prior studies to detect earnings management as a proxy for FRQ.

3.6 Audit Quality

Although audit quality has a substantial role in influencing FRQ, prior studies have not given an explicit and generally accepted definition of audit quality. Gaynor et al. (2016) define audit quality as 'the provision of a higher level of assurance and that the auditors have adequate evidence that the financial reports of the company represent the financial position of the company fairly and reflect the current economic situation of the company' (p. 5). The definition of audit quality in Gaynor et al. (2016) is consistent with DeAngelo (1981a), who defines audit quality as the likelihood that financial statement errors or omissions will be detected and reported. Additionally, the Public Company Accounting Oversight Board (PCAOB, 2013a) defines audit quality as 'meeting investors' needs for independent and reliable audits and robust audit committee communications' (p. 3).

Audit quality evaluation is based on audit inputs, audit processes and audit outcomes (PCAOB, 2013a). Bonner (2008) summarises the factors to determine audit quality. These relate to three main aspects: personal characteristics, tasks and the environment. Much of the current literature on audit quality pays particular attention to the characteristics of auditors to determine audit quality and their auditors' effect on the quality of financial reporting (Al-Lehaidan, 2006; Becker et al., 1998; DeZoort et al., 2002; Gaynor et al., 2016; Inaam & Khamoussi, 2016; Jayanthi, Yuan, & Wanli, 2011; Kamolsakulchai, 2015; Baxter & Cotter, 2009; Vlaminc & Sarens, 2015).

The current literature has identified a number of individual characteristics that affect audit quality. For instance, audit committee independence (Almarayeh, Abdullatif, & Aibar-Guzmán, 2022; Inaam & Khamoussi, 2016; Mardessi & Fourati, 2020; Owens-Jackson, Robinson, & Waller Shelton, 2009; Pomeroy & Thornton, 2008), audit committee size (Abdullah Mohammed, 2015; Al-Matari, Al-Swidi, Fadzil, & Al-Matari, 2012; Kamolsakulchai, 2015), audit committee activity (Al-Matari et al., 2012; DeZoort et al., 2002; Owens-Jackson et al., 2009), auditor's financial expertise (Al-Lehaidan, 2006; Jayanthi et al., 2011; Pike & Mangena, 2005), and audit committee chairperson independence (Leung, Richardson, & Jaggi, 2014; Mujeeb Saif Mohsen, Ku Nor Izah Ku, & Sitraselvi, 2019; J. Xiong, 2016). Informed by the prior research, this study will investigate the key characteristics and variables that influence audit quality and their relationship with FRQ.

3.6.1 Audit Committee Characteristics

Audit committees play a critical role in protecting investor interests and in monitoring a company's opportunistic managerial behaviour (Ebrahim, 2007; Mardessi & Fourati, 2020; Samaha, Khelif, & Hussainey, 2015). Buchalter and Yokomoto (2003) state that the main objective of audit committees is to ensure that financial reports are correct. Agency theory postulates that an audit committee improves FRQ by monitoring managerial actions (Peasnell et al., 2005).

The audit committee is a sub-committee of the board of directors. This committee manages formal communications among the board of directors, the internal audit and the external auditor. Prior literature has explored the vital characteristics that may determine the effectiveness of audit committees. Many studies, such as Alghamdi, (2012), Constantatos (2018), Ghafran (2013), Habbash (2010), Zgarni, Hlioui and Zehri (2016) agree that the key

characteristics of audit committees include their independence, size, meeting frequency and financial expertise. Other studies, such as Belal Ali Abdurraheem, Shaker Dahan and Abdulwahid Ahmed (2020), Jayanthi et al. (2011) and Omer and Al-Qadasi (2019) also include the legal expertise of an audit committee and the chairperson's independence as key characteristics. The following sub-sections will review each of the key audit committee characteristics identified in the prior literature.

3.6.1.1 Audit Committee Independence

An audit committee's independence is the most commonly used characteristic to measure audit committee effectiveness, as indicated by Owens-Jackson et al. (2009), who note that auditor independence can be described as being independent of parties that may have a financial or a non-financial interest. Prior studies (Almarayeh et al., 2022; Ghafran, 2013; Inaam & Khamoussi, 2016; Lin & Hwang, 2010; Mardessi & Fourati, 2020; Owens-Jackson et al., 2009; Pomeroy & Thornton, 2008; Vlaminc & Sarens, 2015) have specifically tested the effects of audit committee independence on FRQ, finding that fully independent audit committees have a significant positive effect on FRQ.

Ghafran (2013) investigated the association between the characteristics of audit committees and FRQ in the context of UK companies between 2007 and 2010. Ghafran (2013) found that fully independent audit committees have a statistically significant positive effect on FRQ. Inaam and Khamoussi (2016) undertook a meta-analysis of 58 empirical studies to examine the relationship between a number of different audit committee characteristics, and FRQ in general and earnings management in particular. Inaam and Khamoussi (2016) analysed the period between 2001 and 2014 across countries including the US, the UK, Australia and Korea. Inaam and Khamoussi (2016) found that the relationship between the independence of an audit committee and earnings management was negative, and hence it has a positive effect on the quality of financial reports. Another study by Alzeban (2019) examined the effect of audit committee characteristics on FRQ based on data collected from four European countries: the UK, France, Italy and Spain between 2015 and 2017. Alzeban (2019) found that the percentage of independent directors on an audit committee had a statistically significant positive effect on mitigating earnings management and thus a positive effect on FRQ. Similar findings were also reported by Almarayeh et al. (2022), Lin and Hwang (2010), and Soliman and Ragab (2014).

A study based in Canada by Pomeroy and Thornton (2008) demonstrates the relationship between the independence of audit committee members and the quality of financial reporting through meta-analysis. The study found that the independence of an auditor is the most common measure of audit committee quality. Thus, they conclude that raising the independence of audit committee members increases FRQ. In the US, Owens-Jackson et al. (2009) examined the characteristics of audit committees outlined in the SOX and the probability of financial reporting fraud. They found an inverse relationship between fraud in financial reporting and the independence of the audit committee. Vlaminck and Sarens (2015) focused on the connection between the quality of an audit committee and financial statement quality. This study was based in Belgium and examined the period between 2008 and 2009. Their study found that the independence of audit committee members was positively associated with FRQ. Vlaminck and Sarens (2015) also found that the quality of the financial reports was related to an audit committee with independent members and no more than three directorships. Sharma and Kuang (2014) investigated the association between audit committee characteristics and earnings management, based on the New Zealand context for the period between 2004 and 2005. They also found that the independence of the audit committee had a negative effect on earnings management. Salleh and Haat (2013) investigated the impact of the revised Malaysian code of corporate governance on the relationship between audit committee characteristics and earnings management, in relation to Malaysian listed companies for the period between 2005 and 2009. Salleh and Haat (2013) found that audit committee characteristics played an effective role in improving FRQ by reducing earnings management. Specifically, the findings showed a negative association between the independence of an audit committee and earnings management after the implementation of the Malaysian code of corporate governance.

Most prior studies support the notion that the independence of an audit committee constrains earnings management. Exceptions to this do exist (see Kent, Routledge, & Stewart, 2010; Kukah, Amidu, & Abor, 2016), with some studies finding that the independence of an audit committee has no effect on the level of earnings management. Kent et al. (2010) found that the independence of an audit committee has no effect on the earnings management practices of Australian listed companies. Similarly, Kukah et al. (2016) found no significant relationship between an audit committee's independence and earnings management; this was based on data collected from the Ghana stock market during the period between 2003 and 2013.

3.6.1.2 Audit Committee Size

DeZoort et al. (2002) found that the size of an audit committee is an important factor when measuring the effectiveness of an audit committee: a larger sized audit committee has a positive effect on audit quality. In addition to the importance of size in the effectiveness of an audit committee, the size of an audit committee plays a significant role in enhancing the quality of financial reports. A larger number of the audit committee members are likely to have a better position due to the advantages of a wider knowledge base and diversified expert members, ultimately improving the committee's effectiveness (Vafeas, 2005). This is consistent with Baxter and Cotter (2009) who found that a larger audit committee size is likely to enhance the quality of financial reports because larger committees have more variety of experience in their members, which affects FRQ positively.

A number of studies (see Alghamdi, 2012; Enny Susilowati & Yahn-Shir, 2020; Kamolsakulchai, 2015; Kanukuntla & Seyed Masoud Sajjadian, 2017; Lin & Hwang, 2010; Phuong & Hong, 2021; Vlaminck & Sarens, 2015) postulate a positive relationship between audit committee size and FRQ. Prior studies (Kamolsakulchai, 2015; Kanukuntla & Seyed Masoud Sajjadian, 2017; Lin & Hwang, 2010) found a significant positive correlation between the size of audit committees and the quality of financial reporting. Kamolsakulchai (2015) found a positive relationship between the size of audit committees and the quality of financial reporting for companies listed on the Thailand stock market between 2008 and 2012. Kanukuntla and Seyed Masoud Sajjadian (2017) examined companies listed on the Bombay Stock Exchange between 2002 and 2012. They found a significant positive correlation between audit committee size and FRQ. Lin and Hwang (2010) also found a positive association between the size of an audit committee and the quality of financial reporting. Kent et al. (2010) investigated the relationship between corporate governance mechanisms and accruals quality on Australian listed companies in 2004. This study found that higher number of audit committee members is positively associated with accruals quality. Enny Susilowati and Yahn-Shir (2020) found that larger audit committee size can lead to minimising earnings management for companies listed on the Indonesian stock market between 2013 and 2018. Similar findings were also reported by Phuong and Hong (2021).

In contrast, Vlaminck and Sarens (2015) found that the size of an audit committee is not related to the quality of financial reports on companies listed on the Belgian stock market, although the Belgian Corporate Governance Code (2009) requires that an audit committee has at least

three members (without specifying a cap on the number of members). J. Sun, Lan and Liu (2014) investigated the effectiveness of audit committee characteristics on constraining earnings management. This study was based on US companies for the period between 2007 and 2010. They found that the size of the audit committee had no effect on earnings management practices, and thus no effect on FRQ. Further, this study found that audit committee members who held additional directorships were less effective in constraining earnings management. J. Sun et al. (2014) linked this relationship to the smaller size of the audit committee, which resulted in negligence by the committee members through reducing their ability to constrain earnings management. Another study by Habbash (2010) found that the number of audit committee members had no effect on constraining earnings management practices and was not positively associated with FRQ. Similar findings were also observed by studies based in the UK (see Ghafran, 2013), Egypt (see Soliman and Ragab, 2014), and Jordan (see Almarayeh et al., 2022).

3.6.1.3 The Frequency of Audit Committee Meetings

Many studies assert that the frequency of audit committee meetings plays a considerable role in monitoring the quality of financial reports and constraining earnings management (Song & Windram, 2004; Xie, Davidson, & DaDalt, 2003). Therefore, several studies such as (Alghamdi, 2012; DeZoort et al., 2002; Ghafran, 2013; Inaam & Khamoussi, 2016; Kanukuntla & Seyed Masoud Sajjadian, 2017; Lin & Hwang, 2010; Owens-Jackson et al., 2009; Baxter & Cotter, 2009; Vlaminck & Sarens, 2015) focus on investigating the relationship between the frequency of audit committee meetings and FRQ, observing the number of meetings and how this plays a role in constraining earnings management.

Several studies (DeZoort et al., 2002; Inaam & Khamoussi, 2016; Kanukuntla & Seyed Masoud Sajjadian, 2017; Lin & Hwang, 2010) have found a positive relationship between the number of meetings that are held across an entire year and FRQ. For example, based on data collected from the US stock market, DeZoort et al. (2002) found a positive association with the number of meetings held throughout an entire year, which reflects the audit committees' diligence, and FRQ. Mohammed, Che-Ahmad and Malek (2019) found that the frequency of audit committee meetings can lead to minimising earnings management. They assert that the frequency of audit committee meetings has a positive and significant effect on constraining earnings management, and hence a positive effect on the quality of financial reports. Further, Lin and Hwang (2010) conducted a meta-analysis by integrating results from 48 prior studies to investigate whether

there was a relationship between a different number of audit committee characteristics and earnings management, as a proxy of the quality of financial reporting. Lin and Hwang (2010) found a negative relationship between the number of meetings and earnings management, and thus a positive effect on FRQ. Garven (2015) investigated the role of audit committee characteristics in constraining earnings management practices from the post-SOX period. Garven (2015) found that the number of audit committee meetings was associated negatively with earnings management after the enactment of SOX. In addition to Garven (2015), another study by Salleh and Haat (2013) found that the relationship between the number of audit committee meetings and earnings management was more effective in constraining earnings management after the implementation of the Malaysian code of corporate governance (on Malaysian listed companies between 2005 and 2009). They conclude that the implementation of the Malaysian code of corporate governance enhanced FRQ of Malaysian companies by mitigating earnings management practices. Based on data collected from UK companies, Ghafran (2013) found that a high number of audit committee meetings was positively associated with FRQ for the period between 2007 and 2010. Similar findings were also observed by studies based in Malaysia (see Salleh and Haat, 2013; Mohsen, Ku, Sitraselvi, & A, 2020), India (see Kanukuntla & Seyed Masoud Sajjadian, 2017), Tunisia (see Inaam & Khamoussi, 2016), Egypt (see Soliman & Ragab, 2014), and Jordan (see Abbadi, Hijazi & Al-Rahahleh, 2016).

However, some studies, such as Alghamdi (2012), Habbash (2010), Baxter and Cotter (2009) and Vlaminck and Sarens (2015), report that the number of meetings has no significant effect on FRQ. For example, Vlaminck and Sarens (2015), based in Belgium, note that larger companies had a greater number of meetings; however, the number of audit committee meetings was not significantly associated with earnings management. Vlaminck and Sarens (2015) attribute this finding to the audit committees in Belgium listed companies having a relatively short history compared with other countries that have adopted corporate governance regulations at an earlier point. Habbash (2010) analyses the reasons to determine why some studies have not found a significant relationship between the number of meetings and FRQ. Habbash (2010) observes that most studies did not examine the relationship in more than one financial year, which makes the generalisation of the results unreliable. In another example, based on the Australian context, Baxter and Cotter (2009) found a considerable variation in audit committee characteristics in 2003, and that the formation of an audit committee had a positive effect on earnings quality, despite the number of meetings not being significantly

related to earnings quality. Similar findings were also observed by studies based in the UK (see Habbash, 2010), Jordan (see Almarayeh et al., 2022), and Saudi Arabia (see Alghamdi, 2012).

3.6.1.4 The Financial and Legal Expertise of the Audit Committee

There has been a growth in the need for financial expertise in audit committees in corporate governance regulations internationally. Some countries' corporate governance codes mandate the presence of a member with financial expertise (SOX, 2002; UK Corporate Governance Code 2010-2016). Enny Susilowati and Yahn-Shir (2020), Pike and Mangena (2005), Abbadi et al. (2016), Badolato, Donelson and Ege (2014), Salleh and Haat (2013), Sharma and Kuang (2014) Soliman and Ragab (2014), and Lin and Hwang (2010) investigate whether audit committee members with financial expertise have a positive effect on the quality of financial reporting. For example, Pike and Mangena (2005) found that the financial expertise of an audit committee raises FRQ and disclosure in UK listed companies, also finding an important positive relationship between an increased financial expertise factor and increasing financial disclosure. Based on data collected from Jordanian companies, Abbadi et al. (2016) found that the number of audit committee members with accounting knowledge and experience had a negative association with the level of earnings management on the Amman Stock Exchange for the period 2009 to 2013. Lisic, Myers, Seidel and Zhou (2019) found that there was a significant and positive relationship between the proportion of accounting experts on an audit committee and audit quality. The findings assert that audit committee members with accounting expertise have the power to assess or give adverse opinions to the internal audit system in a company, which leads to an enhanced audit quality and financial reporting process. In another study, Alzeban (2019) examined the effect of audit committee characteristics on FRQ. When earnings management was measured by the modified Jones (1995) model as a proxy for FRQ, the percentage of audit committee members with expertise in accounting had a statistically significant positive effect on mitigating earnings management.

Based on the US context, Badolato et al. (2014) investigated the role of audit committee characteristics in constraining earnings management, also measured by the modified Jones (1995) model. Badolato et al. (2014) found that audit committees with both financial expertise and high relative status had a negative association with the level of earnings management and a positive effect on the quality of financial reports for the period between 2001 and 2008. Based on the Malaysian context, Salleh and Haat (2013) found that the association between the proportion of audit committee members with accounting knowledge and earnings management

was more effective at mitigating earnings management after the implementation of the Malaysian code of corporate governance on Malaysian listed companies between 2005 and 2009. Sharma and Kuang (2014) noticed that financial expertise had a negative effect on earnings management only when the expertise was held by independent members. Based on the Egyptian context, Soliman and Ragab (2014) found that audit committee members' financial expertise had a negative association on earnings management on the Egyptian stock market for the period between 2007 and 2010. Based on the Indonesian context, Enny Susilowati and Yahn-Shir (2020) found audit committee members with accounting and financial expertise play an important role in mitigating earning management. Similar findings were also reported by Phuong and Hong (2021).

Most prior studies support the notion that audit committee members with financial expertise enhance FRQ. Exceptions to this are Al-Lehaidan (2006) and J. Sun et al. (2014), who observed an insignificant relationship between the proportion of audit committee members with accounting financial expertise and earnings management. As Al-Lehaidan (2006) notes, 'the company which has an audit committee with at least one expert were not more likely to hire a specialist auditor compared to those that have an audit committee without an expert' (p. 191).

A review of prior studies indicates a lack of research into the role of legal expertise and its effect on the quality of financial reports on Saudi stock market companies. Saudi corporate governance regulations do not require the appointment of members with legal expertise to an audit committee. The regulations only require Saudi companies to appoint at least one member with accounting and financial expertise. However, Jayanthi et al. (2011) found that audit committee members with previous legal backgrounds improved the quality of financial reporting. Jayanthi et al. (2011) emphasise that legal expertise is an important factor to improve the quality of financial reports. They conclude that their findings assert a positive relationship between legal expertise and the quality of financial reporting, in keeping with the positive effect of accounting expertise. They claim that an audit committee chairperson with legal expertise is more eligible and pays attention to legal risks, which helps to prevent unusual activities or manipulation. Another study conducted by Omer and Al-Qadasi (2019) investigated the relationship between the board of directors' characteristics and earnings management in the Malaysian context. Although about half of the Malaysian listed companies had appointed at least one director with legal expertise on their board of directors, Omer and

Al-Qadasi (2019) found that there was no clear relationship between directors with legal expertise and earnings management.

3.6.1.5 Audit Committee Chairperson Independence

Although many studies, such as Leung et al. (2014), Mujeeb Saif Mohsen et al. (2019), Turley and Zaman (2007) and J. Xiong (2016) have devoted great attention to audit committee characteristics, a limited number of studies also highlight the significance of the audit committee chairperson role, as this may affect audit and FRQ. Schmidt and Wilkins (2013) conclude that studies examining the influence of the audit committee's chairperson role on audit quality and earnings management are limited. Brennan and Kirwan (2015) call for research into further investigations on the role of audit committee chairperson and his or her influence on audit committee effectiveness. Abdullah and Ku Ismail (1999) emphasise that if a chairperson does not undertake the responsibilities effectively, this ultimately reflects on other members and the audit committee as a whole. The audit committee chairperson has the organisational and administrative authority to regulate the committee's work, such as appointing an external auditor and governing board meetings. Therefore, they are likely to affect the quality of financial reports (Habbash, 2010). The chairperson may have a significant effect on audit committee effectiveness and company governance (Turley & Zaman, 2007). Turley and Zaman (2007) assert that external auditors prefer to discuss any issue raised about financial reports with a chairperson, rather than other members of an audit committee.

A very limited number of studies, such as Fariha, Hossain and Ghosh (2021), Leung et al. (2014), Mujeeb Saif Mohsen et al. (2019) and J. Xiong (2016), have investigated the audit committee chairperson's effect on audit quality. Leung et al. (2014) investigated the relationship between the independence of an audit committee chairperson and company performance. This study found a positive association between the independence of an audit committee chairperson and company performance in companies on the Hong Kong stock exchange. Fariha et al.'s (2021) findings are consistent with Leung et al. (2014): the independence of an audit committee chairperson has a positive and significant effect on company performance.

Although there are no reported findings on the relationship between the independence of an audit committee chairperson and FRQ, this study considers this relationship because the NCR requires Saudi companies to appoint an independent director as audit committee chairperson.

3.6.2 External Audit Firm Characteristics

A review of prior studies reveals that the factors that characterise external audit firms, such as audit fees, audit firm size and auditor reports play a substantial role in determining audit quality and FRQ. Thus, this subsection will review the role of external audit firm characteristics in the quality of financial reporting.

3.6.2.1 Audit Fees

Some studies (Eshleman & Guo, 2013; Gandía & Huguet, 2021; Habbash, 2010; Islam, 2016) emphasise that audit fees may play a significant role in influencing audit quality and measuring the quality of financial reporting. Based on the UK context, Islam (2016) examined the role of audit quality on constraining earnings management practices on 242 listed companies from the FTSE350 for the period between 2003 and 2012. Islam (2016) found that the association between total audit fees and earnings management was negative after the introduction of new regulations by the Auditing Practices Board. Eshleman and Guo (2013) investigated whether high audit fees had an influence on audit quality during the period from 2001 and 2011 (based on a US context). The findings indicate that the association between audit fees and earnings management is negative, and audit fees are positively associated with audit quality.

Eshleman and Guo (2013) note that these findings accord with the notion that abnormal audit fees are a signal that an external auditor exerts greater effort on an audit. In another example, Habbash (2010) found that the sum of audit fees is negatively associated with earnings management practices at significant level. Gandía and Huguet (2021) investigated the relationship between audit fees and the level of earnings management in the Spanish context. Gandía and Huguet (2021) found that higher audit fees were more effective in constraining earnings management practices.

However, Martinez and Moraes (2017) found that the amount paid to auditors had an inverse influence on audit quality. These authors report that higher audit fees are linked to higher discretionary accruals. Another study by Kamolsakulchai (2015) found that the quality of financial reporting was positively affected by audit quality; however, the results found that no association between fees paid to an auditor, or the size of the audit firm, with FRQ. Almarayeh et al. (2020) examined whether audit fees influenced earnings management in Jordan. This study determined that total audit fees had no effect on the level of earnings management for a sample from the Amman Stock Exchange between 2012 and 2016.

3.6.2.2 Audit Firm Size

A number of studies (DeAngelo, 1981b; Dye, 1993; Francis, 2004; Hoitash, Markelevich, & Barragato, 2007) emphasise that audit firm size is an important factor for measuring audit quality. Audit firm size is measured by a company's popularity in the audit firm market and the spread of its branches around the world. The four internationally renowned audit firms (Big Four) are PricewaterhouseCoopers, Deloitte, Ernst & Young and KPMG; these are used as an indicator of audit firm size.

Several studies (see Asthana, Raman, & Hongkang, 2015; Francis, 2004; Jordan, Clark, & Hames, 2010; Lin & Hwang, 2010; Mohammed et al., 2019) have found that audit firm size has a positive effect on audit quality and can constrain earnings management practices. For example, Asthana et al. (2015) examined why foreign companies listed on the US stock exchange chose from the Big Four audit firms, rather than local US firms for the period 2000 - 2012. The authors found that Big Four audit firms were positively correlated with audit quality and audit fees; in addition, they had a negative association with earnings management. Another study by Francis (2004) found that the size of audit firms affected the level of disclosure in companies positively. This raised the level of audit quality, which then led to improved FRQ. Moreover, Lin and Hwang (2010) used audit firm size (of the Big Four) as a proxy for audit quality. They found a negative relationship between various external audit firm characteristics and earnings management. One of these characteristics was audit firm size, which had a positive effect on audit quality and a negative effect on earnings management practices. Another study by Jordan et al. (2010) found that earnings management practices were constrained by audit firm size. Jordan et al. (2010) conclude that the manipulation of earnings management in US companies is increasing generally, with the use of non-Big Four auditors that have a negative effect on audit quality. Another study by Mohammed et al. (2019) investigated the relationship between corporate governance characteristics and earnings management in the Nigerian context. Mohammed et al.'s (2019) results affirm that the association between audit firm size and earnings management is significantly negative.

Based on data collected from Australian listed companies, Kent et al. (2010) found that the size of audit firms was positively associated with accruals quality. Kent et al. (2010) used the Big Four audit firms as a proxy for the size of audit firms. Based on data collected from Egyptian companies, a study conducted by Soliman and Ragab (2014) found that Big Four audit firms were negatively associated with earnings management for the period 2007 to 2010. Another

study by Shan (2015) found a negative relationship between the Big 4 audit firms and earnings management practices on Chinese listed companies for the period 2001 and 2005. Based in Tunisia, a study undertaken by Zgarni et al. (2016) examined the relationship between the effectiveness of the audit committee and earnings management as a proxy of FQR on Tunisian non-financial listed companies for the period 2001 to 2009. The study, which was measured by the modified Jones (1995) model, found that the relationship between the Big Four audit firms and FRQ was positive and constrained the level of earnings management practices. Another study conducted by Alzeban (2019) found that the size of audit firms positively affected the quality of financial reports based on data collected from 386 listed companies in four European countries for the period 2015 to 2017.

A few studies, such as Seok Woo and Rho (2004), found no significant effect from the size of audit firms on audit quality. Based on the Saudi context, Al Shetwi (2020) found that the Big Four audit firms had no effect on earnings management as a proxy for FRQ on Saudi non-financial listed companies. Similar findings were also observed by studies based in New Zealand (see Sharma & Kuang, 2014) Oman (see Elghuweel et al., 2017), and Ghana (see Kukah et al., 2016).

3.6.2.3 Auditor Report

The auditor report is a written opinion of an external auditor. This means that a company's financial reports comply with generally accepted accounting principles (GAAP), and that the financial statements are presented fairly and describe the company's true economic situation. An audit report is considered the final phase of the audit examination, and it declares the current financial and economic position of a company (Porter, Simon, & Hatherly, 2003). According to Saudi auditing standards, an unqualified opinion is reported when the auditor considers the audited financial statements are presented fairly and describe the company's true economic situation. However, a modified audit opinion is issued when the auditor determines that the financial statements are misrepresented and do not represent the company's true economic situation. A modified audit opinion can be either a qualified opinion, an adverse opinion or a disclaimer of opinion, depending on the circumstances and the effect of materiality.

Some studies identify a positive relationship between earnings management and a modified audit opinion (Alghamdi, 2012; Bartov, Gul, & Tsui, 2000; Bradshaw, Richardson, & Sloan, 2001; S. Chen, Chen, & Su, 2001; Habbash & Alghamdi, 2017). S. Chen et al. (2001)

investigated whether earnings management has an influence on the modified audit opinion. The findings, based on data collected from Chinese listed companies for 1995 to 1997, indicate an affirmative association between earnings management and a modified audit opinion. Other studies (Bartov et al., 2000; Bradshaw et al., 2001) investigated the effect of modified and unmodified audit opinions on audit quality. These papers found that a modified audit opinion has a negative effect on the quality of an audit and is positively associated with earnings management.

Habbash and Alghamdi (2017) examined the association between audit quality and earnings management on Saudi stock exchange-listed companies between 2006 and 2009. The paper examined five elements to measure audit quality: auditor firm size, industry specialist auditors, auditor report, auditor change and audit timeliness. The study found that the modified audit opinion was the only element that played a significant role in measuring audit quality; the other elements had no effect on audit quality. In contrast, a study undertaken by Butler, Leone and Willenborg (2004) argued that a modified audit opinion has no effect on audit quality. Butler et al. (2004) explains that a modified audit report may occur due to other factors, such as materiality or scope limitation rather than earnings manipulation.

3.6.3 Board of Director Characteristics

One of the board of directors' responsibilities is monitoring managerial actions in a company. This includes FRQ, financial disclosure, and sub-committee tasks (Alghamdi, 2012; Vafeas, 1999). Board of director characteristics is one of the most important variables that should be considered because there is a relationship between this variable and the level of discretionary accruals, based on the earnings management literature (Alghamdi, 2012; Boahen, 2018; Ghafran & O'Sullivan, 2017; Kamolsakulchai, 2015). Agency theory predicts that a board of directors will improve the quality of financial reporting by monitoring management. Further, Fama and Jensen (1983) note that board formation plays a substantial role in preserving the interests of shareholders and reducing agency costs.

3.6.3.1 Board Independence

Board of director independence can be defined as the proportion of independent directors to total board members. Zahra and Pearce (1989) indicated that the independence of a board of directors may positively influence their decisions, which may result in enhancing company performance. Fama and Jensen (1983) emphasised that independent or non-executive directors

enhance the quality of financial reports against irregularities. Several studies (Benkel, Mather, & Ramsay, 2006; Ezat & El-Masry, 2008; Habbash, 2010, 2019; Jaggi, Leung, & Gul, 2009; Klein, 2002; Mohsen, Ku, Sitraselvi, & A, 2020; Oba, 2014) have investigated the relationship between the proportion of independent directors and earnings management. For example, based on data collected from the Hong Kong stock market, Jaggi et al. (2009) found that independent boards are effective in constraining earnings management practices. Another study by Amah and Ekwe (2021) examined the effect of board characteristics on FRQ by employing Dechow and Dichev's (2002) model. Amah and Ekwe (2021) found a positive relationship between board independence and FRQ.

Habbash (2019) investigated the role of board characteristics in constraining earnings management practices on Saudi stock exchange-listed companies for the period 2006 to 2009. Habbash (2019) found a negative relationship between the proportion of independent directors and earnings management practices. Ezat and El-Masry (2008) identified a positive relationship between the number of independent directors and the quality of financial reporting where a high ratio of independent directors positively affects the quality of financial reporting.

Based on data collected from Portuguese companies, Alves (2014) investigated the role of board independence in constraining earnings management practices. Alves employed the modified Jones model for the period 2003 to 2010. Alves (2014) found that companies with a high percentage of independent directors had a significant negative relationship with earnings management. The findings of this study are consistent with agency theory, which suggests that the independence of a board of directors plays a significant role in monitoring the financial reporting process. Similar findings are also observed by studies based in the US (see Klein, 2002), Jordan (see Abbadi et al., 2016; Idris et al., 2018), the UK (see Habbash, 2010), Greece (see Benkel et al., 2006), Turkey (see Türegün, 2018), Taiwan (see Chi, Hung, Cheng, & Lieu, 2015), Ghana (see Kukah et al., 2016), and Malaysia (see Mohsen et al., 2020).

The majority of prior studies support the notion that board independence constrains earnings management and enhances FRQ. An exception to this is a study conducted by Y. Li et al. (2008), who found that the proportion of independent directors had no effect on constraining earnings management in the Shanghai and Shenzhen stock exchanges between 2002 and 2004. Similar observations were also reported in the work of Seiyaibo and Okoye (2020), who based their study in Nigeria.

3.6.3.2 Board Size

Some studies (Alghamdi, 2012; Ezat & El-Masry, 2008; Habbash, 2010, 2019; Kamolsakulchai, 2015; Mohsen, Ku, Sitraselvi, & A, 2020; Oba, 2014; Seiyaibo & Okoye 2020; Xie et al., 2003; Yu, 2008) have found that the number of board members has a positive effect on earnings management. Based on data collected from the US stock market, Xie et al. (2003) found that larger boards reduced earnings management. Ezat and El-Masry (2008) emphasised that board size has a direct effect on company performance efficiency. Habbash (2010) found that a larger board size in UK companies for the period between 2003 and 2006 revealed a greater likelihood of limiting earnings management. Yu (2008), consistent with Habbash (2010), found that a small board size was less likely to constrain earnings management. Yu (2008) interprets this finding as indicating that smaller boards may be controlled by management and can also be dominated by blockholders. Seiyaibo and Okoye's (2020) findings confirmed that a larger board has a positive and significant effect on the quality of financial reports, based on data collected from the Nigerian security exchange. Seiyaibo and Okoye (2020) concluded that a larger board size helped companies to assess decisions and monitor management closely.

Based on the Saudi context, Habbash (2019) and Alghamdi (2012) emphasise that the number of board members has a negative relationship with earnings management; this leads to improved FRQ in Saudi stock companies. The large size of boards is effective for constraining earnings management practices. Based on the Chinese context, Shan (2015) demonstrated that corporate governance practices play a remarkable role in monitoring and constraining earnings management practices in Chinese listed companies for the period between 2001 and 2005. Shan (2015) found a negative relationship between the size of a board of directors and earnings management practices. Based on the Malaysian context, Mohsen et al. (2020) identified a negative relationship between board size and earnings management in Malaysian listed companies for the period between 2013 and 2015.

Although most existing studies support the idea that a larger board constrains earnings management, there are exceptions. Abdul Rahman and Haneem Mohamed Ali (2006), Kao and Chen (2004) and Zahra and Pearce (1989) found that a larger board did not constrain earnings management. Zahra and Pearce (1989) argued that a smaller board may not have an impact in constraining earnings management practices. On the contrary, studies by Abdul Rahman and Haneem Mohamed Ali (2006) and Kao and Chen (2004) conclude that larger boards may result

in a lack of coordination and communication between directors, which may result in a higher level of earnings management.

Another study by Y. Li et al. (2008) found that the size of a board had no effect on constraining earnings management. Based on data collected from the Ghana stock market, this study examined the relationship between the effectiveness of corporate governance mechanisms and earnings management as a proxy of accounting information quality for the period between 2003 and 2013. The study found no relationship between the number of board members and earnings management. Additionally, J. Sun et al. (2014) found an insignificant relationship between the size of a board and earnings management practices in US companies for the period between 2007 and 2010. Based on Omani listed companies, Elghuweel et al. (2017) examined the effect of corporate governance mechanisms on constraining earnings management for the period between 2001 and 2011. The study employed the modified Jones model as a proxy for earnings management and found that the relationship between the board of director size and earnings management was insignificant.

3.6.3.3 Board Meeting Frequency

The number of meetings of a board is used to indicate the extent of its commitment to work and the board's diligence. Some studies, such as Alghamdi (2012) and Hashim and Abdul Rahman (2010) indicate that directors on boards that meet regularly are more able to perform their duties in accordance with shareholder interests. A higher number of board meetings indicates that members have more ability to discuss company problems and ultimately improve a company's performance (Evans & Weir, 1995; Raed, 2021). Other studies go further and indicate that a higher number of board meetings can lead companies to release their annual reports earlier or on time, and this is proof of the effectiveness of corporate governance mechanisms (Tauringana, Kyeyune, & Opio, 2008).

According to Hashim and Abdul Rahman (2010) and Raed, (2021), a board of directors who meets regularly has a positive effect on improving company performance, and directors have the ability to identify problems rapidly. Another study by Alghamdi (2012) found that the number of meetings has a significant effect on earnings management as a proxy for FRQ on Saudi stock exchange-listed companies. Xie et al. (2003) observed that a board who meets regularly can devote more time to remedy any company issues, such as constraining earnings management. This study found that there is a significantly negative relationship between the

number of board meetings and earnings management, based on data collected from the US stock market. Mujeeb Saif Mohsen, Ku Nor Izah Ku, & Sitraselvi (2018) found that a higher number of board meetings has a positive effect in mitigating earnings management, based on data collected from the Malaysian stock market.

However, some studies, such as Habbash (2010) and Mujeeb Saif Mohsen et al. (2019) argue that the number of board meetings is not a good indicator of the diligence and effectiveness of the board, and that there is no relationship between the number of meetings and FRQ. For example, Mujeeb Saif Mohsen et al. (2019) investigated the association between the frequency of board meetings and earnings management, finding no significant association between the number of board meetings and earnings management.

Another study by Habbash (2010) investigated the effect of the number of board meetings on constraining earnings management practice, based on data collected from the UK. Habbash (2010) found that the number of meetings had no effect on constraining earnings management practices. A study conducted by Ebrahim (2007), based on a sample of US manufacturing companies, confirmed that the number of board meetings may not limit earnings management practices. Ebrahim (2007) found that the relationship between board meetings and earnings management was insignificant. Ebrahim (2007) attributes this finding to the number of board meetings only be an indicator of the board's reaction to urgent business rather than indicating the board's diligence.

3.7 International Financial Reporting Standards and Financial Reporting Quality

Many studies, such as Daske, Hail, Leuz and Verdi (2008) and Ding and Su (2008), explain that improvements in the quality of financial reports is because the IFRS are more comprehensive than the US GAAP protocols, and IFRS are more investor oriented. Other studies attribute the improvement of FRQ to increased disclosure requirements in IFRS compared with the GAAP (Barth et al., 2008). It can also be attributed to having global accounting standards that help potential investors to increase their ability to compare the financial statements of different global companies (Choi & Levich, 1991).

There are mixed findings regarding the effects of IFRS adoption on FRQ. A number of studies (Daske & Gebhardt, 2006; Giuseppe & Paolo, 2007; Lopes, Cerqueira, & Brandão, 2010;

McAnally, McGuire, & Weaver, 2010) emphasise that IFRS adoption will affect FRQ positively. Specifically, some studies assert that adopting IFRS can improve FRQ by increasing the transparency, reliability, and relevance, and minimising information asymmetry (S. Alkhtani, 2010; Almansour, 2019; Alsamkari, Zerban, & Ataf, 2021; Daske & Gebhardt, 2006; Nurunnabi, Jermakowicz, & Donker, 2020).

For example, Daske and Gebhardt (2006) found that the quality of financial accounting information increased after the implementation of IFRS. Daske and Gebhardt (2006) assert that the adoption of IFRS has a positive influence on the transparency of financial reports. Also, investors are more confident in the financial reports prepared in accordance with the IFRS. This leads to improving financial market efficiency and liquidity (Daske et al., 2008). This is consistent with Tyrrall, Woodward and Rakhimbekova (2007) who state that adopting IFRS improves the efficiency of financial markets by globalising accounting standards. The confidence in IFRS and the comparability of IFRS are considered the major factors that attract foreign direct investments (Herath & Alsulmi, 2017). McAnally et al. (2010) predicted that the quality of financial reporting would improve after a potential conversion from the US GAAP to IFRS. They found that financial reports prepared with IFRS are more relevant and have better predictions about future cash flows and earnings, McAnally et al. (2010) concluded that IFRS improved the relevance of reported numbers and thus, FRQ. Additionally, Giuseppe and Paolo (2007) studied the effect of the IFRS on FRQ in relation to intangible assets. They found that the IFRS improved the quality of financial reporting. Lopes et al. (2010) found that the accounting information quality of European companies, which are not EU members, increased after IFRS adoption.

In contrast, some studies found that the quality of financial reporting did not improve after IFRS adoption. For example, Ahmed, Neel and Wang (2013) analysed sample companies from 20 countries that have adopted IFRS since 2005 and found no improvement in accounting quality as a result of IFRS adoption. Consistent findings are also reported in Jeanjean and Stolowy (2008) which analysed the effect of earnings management after IFRS adoption in Australia, France and the UK. An exception was French companies that were negatively affected by IFRS adoption. Additionally, Kabir, Laswad, and Islam's (2010) study, based in New Zealand, also found no effect of IFRS on earnings management. Kabir et al. (2010) attributed these findings to the fact that the current GAAP used in New Zealand was not substantially different from the IFRS that was adopted. Another study conducted by Goodwin,

Ahmed and Heaney (2008) examined the effect of IFRS implementation on the value relevance of book value and earnings in the Australian context. Goodwin et al. (2008) found that adopting IFRS had no effect on the value relevance of book value and earnings. In the Saudi context, Alomair, Farley and Yang (2021) investigated the effect of IFRS adoption on the value relevance of accounting information. Alomair et al. (2021) found no significant change in the value relevance of accounting information, in general, after IFRS adoption in Saudi Arabia. Although the joint value relevance did not improve significantly after the adoption of IFRS in Saudi Arabia, only the relative value relevance of book values of equity increased significantly after its adoption. This finding was attributed to the fact that the Saudi market lacks qualified accountants and research because the IFRS has only been recently implemented in Saudi companies.

In its quest to keep pace with developed countries, in 2012, the SOCPA announced a project for a transition from Saudi accounting standards (Saudi GAAP) to the IFRS. This project has four stages, and it was scheduled for completion within five years to allow stakeholders to be prepared professionally and technically for a smoother transition, which would make it easier to achieve top results and consequently achieve higher quality financial reports (SOCPA, 2021). SOCPA's project, which commenced in 2012 and was completed in 2016, took five years as planned. SOCPA announced that it would adopt all IFRS standards with no modifications, except for adding some standards to align with Islamic religious law and Saudi domestic legislation (IFRS Foundation, 2017).

Later, SOCPA, which operates under the MCI, required all listed companies on the Saudi stock market (Tadawul) to adopt IFRS beginning 1 January 2017. The IFRS adoption led to some major differences in the accounting standards of Saudi companies, such as the presentation of financial statements, property plant and equipment, accounting policies, changes in accounting estimates and errors, impairment of assets, and related party disclosures (Nurunnabi, 2017a).

Many studies, such as Alsamkari et al. (2021); Herath and Alsulmi (2017); Nurunnabi et al. (2020); Siriopoulos, Tsagkanos, Svingou and Daskalopoulos (2021), anticipate that the implementation of IFRS in Saudi Arabia will have many positive aspects, such as improving the quality of financial reports, attracting foreign capital and investment, increasing the level of investor confidence in the Saudi financial market, and increasing economic efficiency. Chapter 5 will include more discussion about the overlaps between the introduction of NCR

(as the main purpose of this thesis) and IFRS, which was introduced in the same year 2017, as a joint event and its possible effect on FRQ.

3.8 Summary

This chapter reviewed different measures to capture the quality of financial reporting as a dependent variable by classifying FRQ in two main classifications: market-based and accounting-based. The review of the literature suggests that ‘earnings management’ is used widely as an indicator to measure the quality of financial reporting. Thus, this thesis will use earnings management as a dependent variable to detect the direct and indirect effects of the NCR on FRQ.

This chapter reviewed three groups of factors that influence audit quality as independent variables: audit committee characteristics, external audit firm characteristics and board of director characteristics. Each category explores the variables that influence audit quality and their relationship with FRQ. Audit committee characteristics are represented through audit committee independence, audit committee size, the frequency of audit committee meetings, the financial and legal expertise of the audit committee, and audit committee chair independence. External audit firm characteristics include audit fees, audit firm size (Big Four) and auditor report. The board of director characteristics include board independence, board size and board meeting frequency.

This chapter also reviewed studies on the implementation of IFRS and its effect on FRQ in the Saudi context. Chapter 4 will discuss the theoretical framework for this thesis.

Chapter 4: Theoretical Framework and Hypothesis Development

4.1 Introduction

This chapter will review the theories commonly applied to corporate governance research (Section 4.2). This is followed by a justification for the theoretical framework to be used in this thesis (Section 4.3). Section 4.4 analyses the context of Saudi corporate governance, especially the NCR issued by MCI of the Kingdom of Saudi Arabia. The NCR is then compared with the previous regulations reviewed in Chapter 3. Section 4.5 presents the hypotheses development. Section 4.6 provides a summary of this chapter.

4.2 Theories of Corporate Governance

The term ‘corporate governance’ refers to the internal mechanisms that are used to reduce agency costs, as well as monitor management performance (McKnight & Weir, 2009). The current literature on corporate governance highlights various mechanisms that can be employed to reduce agency costs. These mechanisms can be either internal or external (Alghamdi, 2012). Internal mechanisms include bonding costs, compensation and rewards, and monitoring activities; external mechanisms include monitoring activities such as those of external regulators and external audits, as well as CMA (Shapiro, 2005). In general, corporate governance mechanisms aim to align the objectives of the principals with those of the agents.

Key theories used in corporate governance in the prior literature include agency theory (Abdullah Mohammed, 2015; Bratten, Causholli, & Sulcaj, 2020; Eisenhardt, 1989; Habbash, 2019; Habbash & Alghamdi, 2017; Kamolsakulchai, 2015; Mujeeb Saif Mohsen et al., 2019), institutional theory (Al-Matari et al., 2012; Ntim & Soobaroyen, 2013; Young & Thyil, 2014), stewardship theory (Davis, Frankforter, Vollrath, & Hill, 2007; Donaldson & Davis, 1991; Madison, Holt, Kellermanns, & Ranft, 2016; Muth & Donaldson, 1998; Subramanian, 2018), and stakeholder theory (Ayuso, Rodríguez, García-Castro, & Ariño, 2014; Letza, Sun, & Kirkbride, 2004).

A review of the current literature reveals the lack of consensus on the theories underlying corporate governance studies. However, many studies have relied extensively on agency theory to explore the relationships between corporate governance mechanisms, external audits and earnings management. The dominance of agency theory can be explained by the fact that

corporate mechanisms, external audits and earnings management are agency costs represented in various forms (Davidson, Goodwin-Stewart, & Kent, 2005; Jiraporn et al., 2008).

4.2.1 Agency Theory

Agency theory is commonly used by researchers in corporate governance research (Aguilera & Jackson, 2003; DeZoort et al., 2002; Eisenhardt, 1989). Agency theory focuses on the agency relationship, and according to (Jensen & Meckling, 1976), this is defined as:

a contract under which one or more persons (the principal(s)) engage another person (the agent) to perform some service on their behalf which involves delegating some decision-making authority to the agent (p. 308)

Agency theory seeks to solve problems linked to conflicts of interest between principals and agents that may affect the attainment of company aims (Deegan, 2012; Jensen & Meckling, 1976). This theory postulates that boards of directors and sub-committees, such as the audit committee, will enhance FRQ by monitoring managerial actions (Peasnell et al., 2005). Additionally, the creation of audit committees supports the argument of agency cost reduction (K. Pincus, Rusbarsky, & Wong, 1989). The principal can act effectively in evaluating a company's performance only when furnished with the required information. A lack of information can lead to information asymmetry, which in turn leads to agency problems such as adverse selection, and moral hazards (Hoque, 2018). Managers usually make this problem worse by acting in their own interests, such as maximising their own personal wealth. Generally, this scenario engenders managers' competing interests with those of the owners or shareholders (Alghamdi, 2012). According to Jensen (1993), moral hazards are usually caused by various factors, such as the size and complexity of the company, which in essence causes monitoring challenges, as well as increased agency costs. In addition, agents may be influenced by many factors such as labour market opportunities and financial rewards, as well as their relationship (which may not align with the interest of owners) with other people, parties or entities (Shapiro, 2005).

Agency theory helps to analyse the problems associated with agency conflicts through a number of procedures, including proper monitoring of conduct, as well as providing agents with incentives so they can align their actions with the owners' interests (Jensen & Meckling, 1976). It must be noted, however, that principals have a number of mechanisms that they can employ to protect their interests. These include establishing appropriate incentives to motivate

agents, and establishing monitoring mechanisms, including incurring monitoring costs, to prevent agents from conducting irregular activities. Corporate governance mechanisms are established to reduce agency problems by aligning all parties' interests (D. K. Denis & McConnell, 2003; Gillan, 2006). Corporate governance regulations force managers to maximise shareholder wealth (D. K. Denis, 2001). The formations of a board of directors and other sub-committees, such as the audit committee, assists in limiting unwanted managerial behaviour (Weston, Chung, & Siu, 2004). The existence of a corporate governance structure and external audits is necessary to monitor management conduct; however, they inevitably result in agency costs. According to Jensen and Meckling (1976), there are three categories of agency costs, as summarised below:

1. Monitoring costs (also see D. J. Denis, Denis, & Sarin, 1997) are defined as costs that result from monitoring the behaviour of agents to ensure that they act in the interests of the principal. It encompasses costs such as external audit costs and corporate governance costs, as well as costs engendered by any action targeting opportunistic behaviour.
2. Bonding costs are engendered by actions that aim to make the interest of agents align with those of the principals, including a reward structure or compensation schemes that target opportunistic behaviour. Specifically, managers bond with owners through meeting their interests and expectations.
3. Residual costs are caused by any conflict arising between the principals' and the agents' interests, in addition to the costs for monitoring and bonding. These costs appear when bonding and monitoring mechanisms cannot solve all agency costs.

Agency theory is essential in studying the characteristics of audit committees, external audits and boards of directors in relation to the FRQ. Agency theory assumes self-interested driven behaviour and wealth maximisation. It argues that if an audit committee is made up of fully qualified members and is independent of managers, then the ability of management in regard to earnings manipulation will be limited (Abbott & Parker, 2000).

In the Saudi context, the agency costs in listed Saudi companies can be caused by conflicts between owners and managers. Yasin and Shehab (2004) assert that the high ownership concentration in Middle Eastern and North African (MENA) countries restricts the principles of good corporate governance. The presence of a high ownership concentration, which is common in Saudi listed companies, can cause conflicts of interest between the majority and

minority of shareholders (Al-Abbas, 2009; Al-Nodel & Hussainey, 2010). This may have an adverse effect on the minority shareholder rights (Baydoun, Maguire, Ryan, & Willett, 2013; Haniffa & Hudaib, 2007). Baydoun et al. (2013) found that the presence of a high ownership concentration in MENA countries gives power to large shareholders to appoint their friends and relatives. This may prioritise the interests of major shareholders over minority shareholders, and compromise FRQ.

It is important to note that auditing is a very crucial mechanism that safeguards the interests of shareholders as well as the public, through strengthening accountability and enhancing reliance on financial reports (Alghamdi, 2012; ICAEW, 2005). Agency theory postulates that the monitoring process should be free from bias (or conflict of interest) for it to benefit both owners and management (Culpan & Trussel, 2005). Watts and Zimmerman (1983) observed that effective auditing will mitigate opportunistic behaviour costs incurred by management. Agency theory suggests that auditing is the most important mechanism for monitoring and controlling conflicts of interest, as well as reducing other forms of agency costs. This assumption is consistent with Piot (2001), who argues that reducing agency costs is the role of external auditing, and in particular cutting information asymmetry in financial reporting.

According to Davidson et al. (2005) earnings management is a term used that refers to leveraging the flexibility of accounting principles in order to manage earnings. Based on agency theory, the separation between ownership and management might lead managers to manage a company in a way that is not in the owners' interest. This was evidenced by the Enron and WorldCom scandals, where discretionary powers were abused by agents running the company in their own way at the cost of shareholders (Davidson et al., 2005). Jiraporn et al. (2008) argue that managers often manipulate earnings when agency costs are low; however, high agency costs tend to curb the incentives for earnings management.

Saudi corporate governance regulations attempt to reduce earnings management by setting procedures to facilitate decision-making and give transparency and credibility that will protect the rights of shareholders and other stakeholders (Albassam, 2014; CMA, 2017). Some studies based (Al-Lehaidan, 2006; Albassam, 2014; Alghamdi, 2012) in the Saudi context support the use of agency theory as a useful theoretical framework to explain the relationship between the characteristics of board of directors or factors that influence audit quality and FRQ. For example, Habbash (2019) found agency theory suitable to explain the relationship between corporate governance regulations (e.g. independent and large boards) and earnings

management practice in Saudi listed companies. However, Al-Matari et al. (2012) do not support agency theory. These authors found no relationship between audit committees and boards of directors and a reduction in agency problems. Instead, Al-Matari et al. (2012) suggest that their findings support institutional theory, which views these mechanisms as a result of coercion from a legislator who imposes practices or regulations to enhance organisational effectiveness. This is consistent with the view of Habbash and Alghamdi (2017), who believe that using agency theory alone does not adequately explain agency problems, and hence there is a need to adopt a multi-theoretical perspective in corporate governance research in the context of different countries. A discussion of institutional theory follows.

4.2.2 Institutional Theory

Institutional theory is widely used in management and accounting research. It is considered more comprehensive than other political and economic theories; for example, stakeholder theory (Clarke, 2004; Scott & Christensen, 1995). Institutional theory proposes that companies strategically respond to the coercive, normative and mimetic institutional pressures so that they can build, maintain and repair organisational legitimacy (DiMaggio & Powell, 1983; Scott, 2008). This theory highlights the variation between what can be accomplished by a company and what the external environment proposes it should fulfil (Fogarty & Rogers, 2005). Scott (2008) defines institutional theory as the processes by which regulative, normative and cultural cognitive structures are established as ‘authoritative guidelines’ for social behaviour. This theory examines social, political and cultural (including history and religion) institutions and their impact on an organisation (Meyer & Rowan, 1977).

DiMaggio and Powell (1983) postulate three institutional isomorphisms—coercive, normative and mimetic—to explain the motive of an organisation to embrace practices and rules. These institutional isomorphisms will lead organisations towards homogeneity in their practices.

4.2.2.1 Coercive Isomorphism

According to DiMaggio and Powell (1983), coercive isomorphism arises from informal and formal pressures wielded on institutions by the powerful stakeholders they rely on, and hence they must comply with the expectations of those powerful stakeholders. The legal regulatory system in which companies function is one example of this. Cohen, Krishnamoorthy and Wright (2008) assert that coercive isomorphism arises from exterior regulatory coercions for organisational convergence. Coercive isomorphism happens when organisations modify their

practices mainly because of coercion arising from powerful stakeholders; for example, investors (Meyer & Rowan, 1977). An illustration of coercive isomorphism is the obligation by SOX, for sovereign audit committee members, that necessitates all public corporations to have audit committees with these characteristics regardless of the environment where the company functions.

According to Scott (1995), coercive institutional pressure derives from establishing a set of rules, monitoring behaviours in the context of those rules, recompensing compliance and punishing non-compliance. Within the domain of corporate governance, regulative structures represent a form of coercive pressure, and the associated actions include reporting regulations and the associated enforcement and the threat of reporting regulation.

Larrinaga-Gonzalez (2007) highlights how coercive mechanisms motivate an organisation to comply with the dominant rules as a means of establishing legitimacy and ensuring survival. These mechanisms can take the form of market discipline, regulation enforcement or the exercise of power. Coercive institutional pressure is aligned with the resource dependence perspective (Oliver, 1991). In terms of the acquisition or maintenance of organisational resources, the fundamental rationale is centred on an organisation's interests, or those of the individuals responsible for taking action within the organisation. This notion is aligned with theoretical perspectives that draw from conventional economic theory, which assert that the mitigation of agency costs underpins the motivations for regulation or policy.

4.2.2.2 Normative Isomorphism

DiMaggio and Powell (1983) acknowledge the push to mandatory compliance ultimatums and state that normative isomorphism emanates from professionalisation. According to Clarke (2004), normative isomorphism is associated with the coercion that emanates from group standards to adopt notable institutional practices. Cohen et al. (2008) state that normative isomorphism proposes convergence via socialisation.

The group tendency to prescribe to a given set of institutional behaviours and practices can give rise to normative institutions. Unlike coercive pressure, which results from imposition or coercion, normative pressure arises from a legitimate authority of norms and values (Scott, 1987). According to Scott (2002), normative institutions, which can also be described as social institutions, are dependent on the evolution of a reciprocally administered set of expectations, commitments and prescriptions. Hoffman (1999) notes how these complexes typically manifest

in ‘common professional practice, standards in operating procedures and occupation, and educational curricula’ (p. 352). Organisations subsequently conform to such expectations due to their underlying ethical obligation to prescribe to the norms that have emerged within professional bodies and associations. For instance, in the context of tax compliance, there is a professional expectation that accounts will fully adhere to established accounting standards. This expectation represents a type of normative isomorphism for the organisation that is influenced by overarching accounting standards.

4.2.2.3 Mimetic Isomorphism

Mimetic isomorphism, or the cultural cognitive element, according to Scott (1995) is a result of environmental uncertainty that forces companies to follow a leader irrespective of whether the practices of that leader are effective (Cohen et al., 2008; DiMaggio & Powell, 1983). This coercion transpires in uncertain situations where corporations may embrace the referenced actions of other countries, industries or organisations, modelling themselves on such deeds. It involves companies striving to enhance or imitate the practices of other organisations to build, maintain or repair legitimacy (DiMaggio & Powell, 1983). Patten (1991) expounds on DiMaggio and Powell’s (1983) perspective of the assurance plea by asserting that organisations can become alike in their reporting assurance via mimetic isomorphism, alleviating the coercions arising from the most influential investors.

Although these three institutional aspects overlap, each one arises from different conditions. Coercive institutions derive from pressures exerted on a company by regulations, licensing, market competition and the accreditation that regulators enforce (Frumkin & Galaskiewicz, 2004). Unlike coercive institutions, mimetic institutions can be explained as the tendency of a company to adopt new procedures and policies similar to other leading companies in the same sector, to enhance their own legitimacy; the failure to adopt these new procedures and policies will put the company at the risk of losing legitimacy (Broadbent, Jacobs, & Laughlin, 2001; Scott, 1995). Normative institutions do not emanate from coercive pressure but are a result of a legitimate authority of norms and values (Scott, 1987). Normative institutions depend on a mutually enforced complex of prescriptions, obligations and expectations (Scott, 2002). This kind of pressure takes ‘professional practice’ as a form of normative isomorphism for the organisation.

From institutional perspectives, the main purpose of corporate governance is to emphasise that a company interacts with its external environment by aligning business objectives with societal expectations (Judge & Zeithaml, 1992). This theory views corporate governance regulations as a form of coercive institution that exerts pressure on organisations to conform, thereby maintaining organisational legitimacy (Oliver, 1991). Institutional theory argues that corporate governance structure is an outcome of the interactions between the perceived external pressures and the internal organisational characteristics (Al-Lehaidan, 2006; Fogarty, 1996; Kalbers & Fogarty, 1998b). Cohen et al. (2008) notes that ‘institutional theory emphasizes how governance mechanisms fulfil ritualistic roles that help legitimize the interactions among the various actors within the corporate governance mosaic’ (p. 187). Institutional pressures exerted by regulators or stock exchanges on companies will lead companies to comply with corporate governance regulations (Cohen et al., 2007). Further, organisational structures or practices resulting from institutional pressures are deemed legitimate and socially acceptable despite their actual effectiveness (Saudagaran & Diga, 1997).

Further, institutional theory provides a clear perspective for understanding and testing earnings management practices (Kury, 2007). Kalbers and Fogarty (1993) found that institutional perspectives support the effectiveness of a company’s committees due to the power gained from the political and economic institutional environment. The members of those committees are then able to perform their responsibilities because of the institutionalised pressures. Yazdifar (2003) states that institutional theory predicts corporate governance will succeed to the extent that there is similarity between the rules of corporate governance in a company and the existing internal policies of any company.

Kalbers and Fogarty (1998a) examined audit committee effectiveness informed by agency theory and institutional theory. They reported that their findings could not support that factors informed by agency theory influenced the effectiveness of audit committees. Instead, those factors are explained by institutional theory. From the institutional theory perspective, the appointment of members of an audit committee based on qualifications signals the legitimacy of the audit committee rather than their ability to monitor managers’ practices effectively (Cohen et al., 2008).

The differing political, economic and cultural environment in developing countries explains the findings that differ from those conducted in developed countries (Waweru & Riro, 2013). Leuz et al. (2003) assert that developing countries in general show a high ownership

concentration, low investor rights, inactive regulations and a high level of earnings management. Like other developing countries, the effectiveness of corporate governance in Saudi Arabia may be low because of insufficient independence of directors and the duality of chief executive officers and a high ownership concentration (Alghamdi, 2012). Therefore, Pornupatham (2006) suggests that institutional theory can investigate corporate governance in developing countries. Additionally, institutional theory may be beneficial for researchers who make a comparison between best practice for corporate governance attributes and the actual performance of companies (Fogarty & Rogers, 2005).

Alghamdi's (2012), study based in Saudi Arabia concluded that both agency and institutional theories were useful in investigating the relationship between the characteristics of internal audit committees and external auditors, and earnings management in the Saudi stock exchange. Alghamdi (2012) justified the use of this combined approach because agency theory has a significant role in supporting FRQ through corporate governance mechanisms, and institutional theory is useful to explain the institutional pressures exerted by legislators to force management to improve organisational effectiveness through specific practices.

4.2.3 Stakeholder Theory

Stakeholder theory postulates that society anticipates the beneficial behaviour of corporations to create economic and social value (Adams et al., 2006). According to Freeman (1984), stakeholder theory is defined as 'any group or individual who is affected by or can affect the achievement of an organization's objectives' (p. 52). Carroll (1993) clarifies that stakeholder theory includes any person who has a direct and indirect interest in the company. Clarkson (1995) divides stakeholders into two main categories: the first category contains shareholders, employees, creditors, suppliers and government. This is classified as the primary group because it has a substantial role in an organisation. The second category contains media, environmentalists and consumers. This category is grouped as secondary stakeholders because it does not play a crucial role in an organisation.

Further, Donaldson and Preston (1995) describe stakeholders as 'persons or groups with legitimate interests in procedural and/or substantive aspects of corporate activity' (p. 85). Kiel and Nicholson (2003) assert that stakeholder theory supports the perspective that companies should consider their responsibilities to society alongside their responsibilities to shareholders because society should be involved in a company's vision. Mitchell, Agle and Wood (1997)

propose that stakeholders are identified through three characteristics. First, the ability of an individual or group to influence the organisation. Second, the type of relationship between an individual or group and the organisation: if it is legitimate or not. Third, the frequent insistence of their demands on the organisation.

Stakeholder theory predicts that corporations with poor stakeholder performance might find difficulty in obtaining sufficient support for their business (Adams et al., 2006). Further, Blair (1995) argues that stakeholder theory does not have the same power of agency theory in understanding corporate governance mechanisms. Alpaslan et al. (2009) argue that stakeholder theory is more beneficial to the corporate governance model particularly in crisis situations because crises can be controlled when the relationship between the company and its stakeholders are strong. Thus, stakeholders may play an important role in influencing monitoring mechanisms by being external directors (Mallin, 2010). However, Etzioni (1998) and Sternberg (1997) critique stakeholder theory's approach, noting that it does not provide better corporate governance performance, and it conflicts with property rights and accountability.

In relation to the Saudi context, several barriers can hinder using stakeholder theory as a theoretical framework within Saudi companies. Stakeholder theory assumes a pluralist society where the power distance is assumed to be low. In contrast, Saudi Arabia is an absolute monarchy governance system characterised by high power distance (see Section 2.2.1 in Chapter 2). The assumption taken by stakeholder theory does not fit the Saudi context. The presence of a high ownership concentration (in the Saudi listed companies) is common in governmental and family shares, which leads to other stakeholders being ignored (Al-Nodel & Hussainey, 2010). Further, Saudi Arabia is an emerging economy and corporate governance is a relatively new concept; thus, the awareness of corporate stakeholders is still low, which ultimately negatively affects the application of stakeholder theory in the Saudi context (Albassam, 2014).

4.2.4 Stewardship Theory

Compared with agency theory, stewardship theory represents an opposite perspective on the corporate governance framework (Muth & Donaldson, 1998). Stewardship theory, which is focused on psychological and sociological behaviour, assumes that managers are trustworthy and that management is motivated to make the best decisions that are aligned with the interests

of owners (Albrecht, Albrecht & Albrecht, 2004; Clarke, 2004; Letza et al., 2004). Non-financial motivations play an important role in stewardship theory because it assumes that managers try to achieve personal success through the companies they work for, and also that they place the work ethics among their priorities (Davis et al., 1997). This theory supports the perspective that differences in the performance of managers is due to different operating environments between companies, and that managers can work with high transparency if they find an appropriate work environment (Davis et al., 1997; Donaldson & Davis, 1991).

According to stewardship theory, managers aim to invest company assets optimally to achieve shareholder goals; ultimately, this is consistent with corporate governance objectives (Davis et al., 1997; Nicholson & Kiel, 2007). Stewardship theory predicts that insider directors have a better understanding and sufficient knowledge of a business, which leads to maximising shareholder wealth. Thus, monitoring a company's operations is unnecessary (Donaldson & Davis, 1991). Stewardship theory conceives that agency costs should be reduced because managers perform their work fairly in the best interests of owners.

Additionally, this theory supports the perspective that mutual trust between managers and owners dissolves agency problems that may occur (Davis et al., 1997; Nicholson & Kiel, 2007). Stewardship theory argues that company boards exist to assist managers to maximise shareholder wealth, rather than monitor management conduct. This results in agency costs (Albrecht et al., 2004). Donaldson and Davis (1994) note that:

organizational role-holders are conceived as being motivated by the need to achieve and exercise responsibility and authority, to gain satisfaction through effectively performing essentially challenging work, and to gain recognition from peers and bosses (p. 51).

Another argument perceives that the proportion of executive directors has a positive effect on a company's performance because executive directors can make better decisions than independent directors according to the stewardship theory perspective (Donaldson, 1990).

Some studies (Miller & Le Breton-Miller, 2006; Subramanian, 2018) note that appointing family members into executive management (in family companies) can increase stewardship attitudes and decrease agency costs. Miller and Le Breton-Miller (2006) found that a high percentage of governmental and/or family ownership in a company resulted in better financial performance by reducing agency costs and eliciting attitudes of stewardship. The high percentages of governmental and family ownership prevalent in Saudi companies may affect

appointing managers, who are more likely to be dependable and may support a stewardship perspective (Siebels & zu Knyphausen-Aufseß, 2012). However, the Saudi corporate governance code aims to enhance supervision and improve management accountability in companies (Albassam, 2014; Alshehri & Solomon, 2012). This objective contradicts the assumptions of stewardship theory, which perceives managers as trustworthy and not needing supervision (Albassam, 2014).

4.2.5 Codification Theory

A number of studies (Cooke & Wallace, 1990; Gray, 1988; Xiao et al., 1996) view that many of the corporate reporting content in a country represents the regulation environment in place at a particular time. Thus, any regulations are subject to change by external factors. Taylor and Turley (1986) assert that regulators may codify existing practice in a particular context to enact a new regulation. Von et al. (2012) discusses codification theory as a theoretical framework for corporate regulations, one of very few studies to take this approach.

Codification theory suggests that current practices are a substantial factor in forming mandatory disclosure requirements (Von et al., 2012). Codification theory proposes that voluntary disclosure leads to a compulsory requirement by codifying current practices (FASB, 2004). Al-Htaybat (2014), who adopted codification theory, found that the mandatory disclosure requirements result from codifying current existing Jordanian company voluntary practices. No statistically significant effect of the mandatory disclosure requirements on Jordanian listed companies was apparent. Wardrop (2012) found that many regulations in the Australian corporate governance issued in 2004 codified the existing practices of large companies.

4.3 Theoretical Frameworks Adopted in this Thesis

This thesis aims to examine the direct and indirect effects of the NCR on FRQ in the Saudi context. It adopts a multi-theoretical perspective—a combination of agency theory, institutional theory and codification theory—to investigate the issue.

Agency theory is used to explain the relationship between the factors that influence audit quality, the board of director characteristics and FRQ. From an agency theory perspective, corporate structure, earnings management and audit quality are forms of agency costs. According to Mallin (2010), agency theory provides a better explication for the roles of

corporate governance, such as considering ownership and the complications of the legal system. Further, Daily, Dalton and Cannella (2003) note that all theories of corporate governance are complementary, and not alternative, to agency theory. In the Saudi context, prior studies based in Saudi Arabia (Abdullah Mohammed, 2015; Al-Lehaidan, 2006; Al-Matari et al., 2012; Alghamdi, 2012) have predominantly used agency theory to investigate the relationship between factors that influence audit quality and FRQ.

However, the Kingdom of Saudi Arabia is a developing country with a different political, economic and cultural environment from those well-established capital markets of developed countries (Pornupatham, 2006). Further, Saudi Arabia is an Islamic country, and it derives some practices from the holy Quran and Sunna (see Chapter 2). One of these practices is Zakat, the compulsory giving of a fixed portion of an individual's or organisation's wealth to charity. The General Authority of Zakat and Tax (GAZT) is in charge of collecting Zakat from Saudi companies. According to GAZT statistics, the Zakat collection in 2015 reached around 30 billion Saudi Riyal from all sectors of the Saudi stock exchange. Thus, agency theory alone could not capture the contextual factor of Saudi companies. This study will draw on institutional theory to complement agency theory. Specifically, institutional theory will be used to measure the effect of NCR on FRQ. The NCR can be regarded as a kind of coercive institutional pressure exerted by regulators on companies. According to Kury (2007), a combination of institutional theory and agency theory can lead to a more integral understanding of the behaviour of earnings management.

In addition to agency theory and institutional theory, this study will consider codification theory for corporate regulation. NCR can be regarded as codifying the existing voluntary practices of Saudi companies. Thus, this study will consider codification theory, as well as institutional theory, as a theoretical context in interpreting the effect of the NCR on FRQ. Figures 4.1 and 4.2 illustrate the theoretical framework adopted in this thesis.

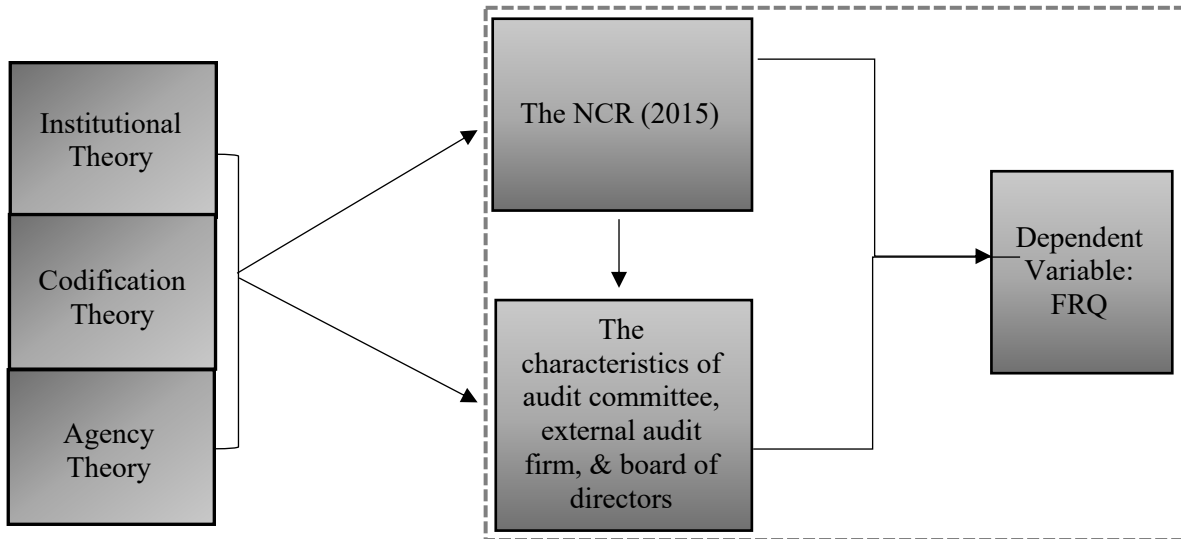


Figure 4.1 Theoretical Framework

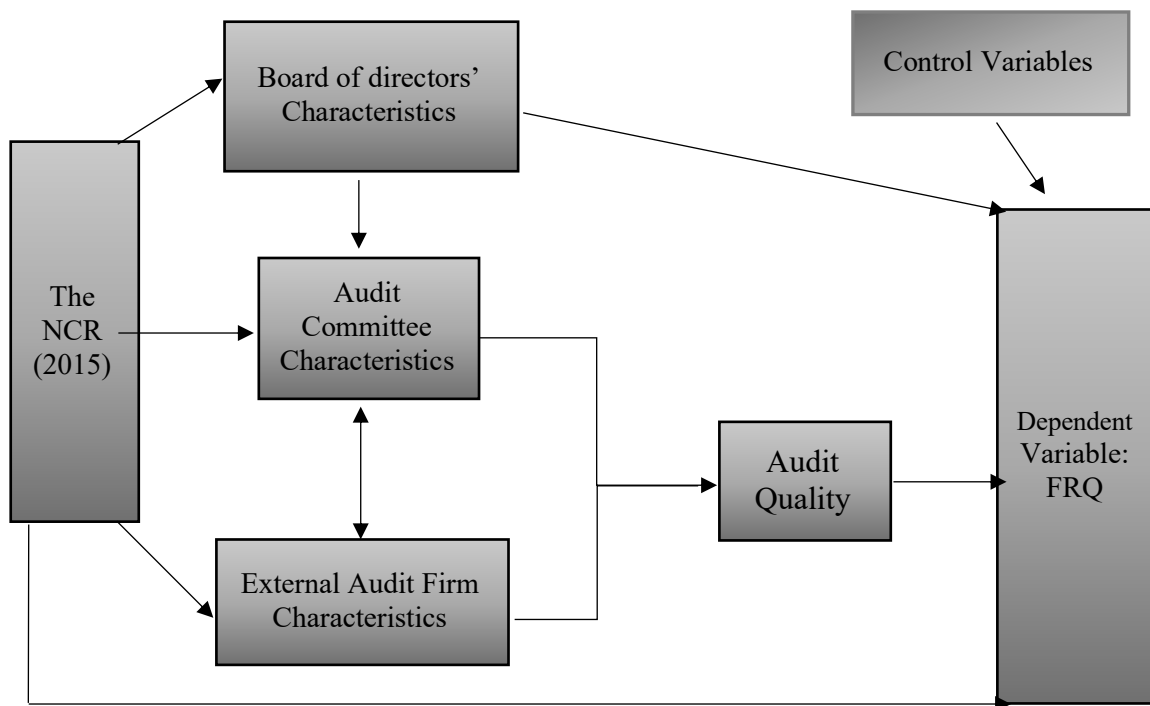


Figure 4.2 Expansion of the Dashed Box in Figure 4.1

4.4 New Saudi Company Regulations

This chapter will consider theoretically the effect of applying the NCR on FRQ. The NCR can be regarded as a kind of institutional pressure exerted by regulators on companies. It also can be regarded as possibly codifying existing voluntary practices of Saudi companies. Taylor and Turley (1986) observed that the existing practice of companies could affect regulators, and

regulators may be more likely to copy or codify best practice rather than create new regulations. Von et al. (2012) proposes codification theory as an analytic framework for corporate regulations. Von et al. (2012) argues that the development of corporate governance regulations relies on a company's current practices at a point in time and place. Von et al. (2012) argues that regulators observe a company's voluntary disclosure practices and then they codify these practices as mandatory requirements.

The NCR (2015) issued by MCI came with a series of laws and new regulations issued by Saudi Arabia, and applicable to all fields of industry, trade, and investment, in line with Vision 2030. This includes mechanisms to regulate various relationships between boards of directors, executives, shareholders and other stakeholders. The main objective of the NCR was to improve the investment environment of the Saudi market, retain local capital and attract foreign capital. Prior studies (DeFond & Jiambalvo, 1994; Jones, 1991) assert that earnings management, as a proxy of FRQ, reduces the reliability and relevance of financial reports, which ultimately affects the capital market's efficiency. Therefore, improving FRQ is essential to improve the investment environment in any market (Al Shetwi, 2020).

This subsection will analyse the recent changes in the NCR (2015) against the key characteristics identified in prior studies as being relevant to FRQ in Chapter 3. The subsection will also assess if the Saudi regulators made the changes in the right direction to improve FRQ of Saudi companies; see Table 4.1.

Table 4.1 Evaluating the Recent Changes in the New Corporate Regulations and New Corporate Governmental Corporations against Prior Studies

Audit quality characteristics	The NCR and the NCGR*	The OCR **	Expected effect on FRQ based on prior literature
Audit committee independence	At least one independent director	Not specified	Positive
Audit committee size	No less than 3 and no more than 5	A minimum of three	Positive
Audit committee meetings	At least 4 meeting per year	Not specified	Positive
Audit committee financial expertise	No change	At least one director is specialised in finance and accounting	Positive

Audit quality characteristics	The NCR and the NCGR*	The OCR **	Expected effect on FRQ based on prior literature
Audit committee legal expertise	No change	Not specified	Positive
Audit committee chairperson independence	Independent director	Non-executive director	Positive
Audit firm size	Promoting local Saudi firms	Not specified	Positive
Auditor report	Not applicable	Not applicable	Positive
Board of directors' characteristics			
Board Independence	At least two independent directors or one-third of directors are independent (which one is greater)	One-third of directors are independent	Positive
Board size	No less than 3 and no more than 11	No less than 3	Positive
Board meeting Frequency	At least 2 meeting per year	Not specified	Positive
Dependent variable			
Financial reporting quality	The introduction of NCR was justified by improving the investment environment of the Saudi market and attract local and foreign capital as part of Saudi Vision 2030, which aims to improve FRQ	Not specified	N/A

*NCR: refers to the New Saudi companies' regulations (2015); NCGR: refers to the new Saudi Corporate Governance Regulations (2017) which are a subset of the NCR

**OCR: refers to the old Saudi companies' regulations which was issued (1965)

4.4.1 Financial Reporting Quality

As part of Vision 2030, the MCI in Saudi Arabia issued the NCR (2015), which aim to improve the investment environment in the Saudi market through a number of new regulations that will raise the quality of financial reports to encourage investors, especially foreign capital, to invest. The OCR did not show include regulations to improve the investment environment for non-Saudi investors and attract foreign capital.

4.4.2 Audit Committee Independence

The NCR requires that an audit committee shall contain at least one independent director and should not have any executive directors (Art. 54 of the NCGR). In contrast, the OCR stated

that all audit committee members should be non-executive directors, without requiring any independent director. Based on the literature review (Chapter 3), the majority of prior studies (Ghafran, 2013; Lin & Hwang, 2010; Zgarni et al., 2016) emphasised that the independence of an audit committee enhances the quality of financial reporting. The NCR is consistent with the outcomes of prior studies that support the notion that an increase in the independence of audit committees will improve FRQ.

4.4.3 Audit Committee Size

The NCR determines the lower and the upper limit of audit committee size; this must be not fewer than three members and not more than five members (Art. 101 of the NCR). In contrast, the OCR only specified the minimum size of an audit committee (i.e. no fewer than three members) without specifying the maximum size. Prior literature reveals that the majority of studies (Kamolsakulchai, 2015; Kanukuntla & Seyed Masoud Sajjadian, 2017; Lin & Hwang, 2010) found a significant positive correlation between the size of audit committees and the quality of financial reporting. However, these results are not consistent with the new regulation in the NCR because the new regulation put an upper limit on the audit committee size (up to five members).

4.4.4 The Frequency of Audit Committee Meetings

The NCR mandates audit committee directors to hold a minimum of four meetings per year, while the OCR did not specify any minimum number of meetings per year (Art. 57 of the NCR). Most studies (Garven, 2015; Salleh and Haat, 2013; Zgarni et al., 2016) found that there was a positive relationship between the number of audit committee meetings and FRQ. According to the previous discussion, these findings accord with the new regulation in the NCR because it encourages Saudi companies to hold at least four meetings per year.

4.4.5 The Financial and Legal Expertise of the Audit Committee

Prior studies (Abadi et al., 2016; Badolato et al., 2014; Jayanthi et al., 2011; Salleh and Haat, 2013) found that audit committee members with financial and legal expertise enhance FRQ. The NCR have not changed the requirement of financial and legal expertise in the audit committee. Both new and OCR require appointing at least one member who is an expert in accounting and finance. In regard to the legal expertise of the audit committee, the NCR do not

include any regulation that requires Saudi companies to appoint an audit committee member with legal expertise.

4.4.6 Audit Committee Chair Independence

The NCR require that the chair of an audit committee shall be an independent director (Art. 54 of the NCGR). In contrast, the OCR stated that the audit committee chair should be a non-executive director. Some studies (Khurram & Zhang, 2019; Leung et al., 2014) have concluded that the independence of an audit committee chair can positively affect company performance and disclosure quality. Although there are no reported findings on the relationship between the independence of audit committee chairs and FRQ, the NCR requires Saudi companies to appoint an independent director as audit committee chair.

4.4.7 Audit Fees

Audit fees is deemed an index of non-negligence regarding an external auditor. Higher audit fees are proxy for the extent of effort that an external auditor made on an audit. Prior studies (Eshleman & Guo, 2013; Habbash, 2010; Islam, 2016) have determined that audit fees have a remarkable effect on audit quality and FRQ. However, the NCR does not stipulate the audit fees paid by Saudi companies to audit firms.

4.4.8 Audit Firm Size

Several studies (Asthana et al., 2015; Francis, 2004; Jordan et al., 2010) found a positive relationship between audit firm size and FRQ. The NCR require that Saudi companies may contract with an auditing firm for a period not exceeding five consecutive years and that those who have finished this period may be reappointed after two years (Art. 133 of the NCR). In the OCR, there were no restrictions to contracts between Saudi companies and audit firms. However, the NCR (Article 133) may significantly affect the contractual relationship between Saudi companies and audit firms. Besides the new regulation, there are the institutional pressures exerted by Vision 2030 to support local audit firms in Saudi Arabia (see Section 2.2.5). Vision 2030 aims to increase the localisation of the private sector as well as the contribution of SMEs to GDP. The NCR will enable a greater likelihood that Vision 2030 will have an earlier impact in its push for more local Saudi auditors by forcing companies to consider changing auditors earlier than they might have otherwise done. In addition to the NCR, the Saudi government added another pressure to support Vision 2030 through SOCPA.

In 2015, the Council of Consultation (Majlis al-Shura) approved SOCPA's proposal to add a new article to the SOCPA regulations. The new regulation issued by SOCPA stated that the number of listed companies audited by an external audit firm during each year may not exceed five listed companies for each audit firm (Article 14 of SCOPA). These new regulations, issued by the NCR and SOCPA, enable diversification in line with Vision 2030's objective to support local audit firms.

4.4.9 Auditor Report

Prior studies (Bradshaw et al. 2001; S. Chen, C. J. P. Chen, & Su, 2001; Habbash & Alghamdi, 2017) have emphasised that a modified audit opinion is an important indicator for measuring audit quality. Most studies (Alghamdi, 2012; Bartov, Gul, & Tsui, 2000;) found a negative relationship between a modified audit opinion and FRQ measured by earnings management. As with audit fees, the NCR did not regulate the modified audit opinion on Saudi companies.

4.4.10 Board Independence

Regarding the boards of directors in Saudi companies, the NCGR requires that the number of independent directors in a board shall not be fewer than two members, or one-third of the board members, whichever is greater (Art. 16 of the NCGR). The OCR imposed only one condition: that one-third of the board members should be independent. Prior studies (Benkel et al., 2006; Habbash, 2010; Jaggi et al., 2009; Oba, 2014) have found that the independence of a board of directors enhances FRQ. Regulation of the independence of a board of directors may show notable changes between the NCR and the OCR; therefore, an improvement of FRQ in terms of the board of directors' independence is expected.

4.4.11 Board Size

The NCR determines the lower and upper limits of a board of directors size. A board must not have fewer than three and not more than 11 members (Art. 68 of the NCR). In contrast, the OCR only specified a minimum size of a board of directors (i.e. not fewer than three members) without specifying a maximum size. Most of the literature (Alghamdi, 2012; Habbash, 2019; Kamolsakulchai, 2015) affirms that a higher number of board members has a positive effect on FRQ. However, these outcomes are not consistent with the new regulation in the NCR because the new regulation places an upper limit on the board of directors size (up to 11 members), without changing the minimum.

4.4.12 Board Meeting Frequency

The NCR mandates that directors hold a minimum of two meetings per year (Art. 83.1 of the NCR). In contrast, the OCR did not specify any minimum number of meetings per year. Prior studies (Alghamdi, 2012; Habbash, 2010; Hashim & Abdul Rahman, 2010) have found that the number of board meetings has a positive effect on FRQ. The previous results are consistent with the new regulation in the NCR, and this encourages Saudi companies to hold at least two meetings per year.

4.5 Hypothesis Development

The main objective of this study is to examine the direct and indirect effects of the NCR on FRQ. This study will use agency, institutional and codification theories as a theoretical framework. This will help to gain a deeper understanding of the effect of NCR on FRQ by variables that influence audit quality characteristics and the board of directors characteristics. This study has developed particular hypotheses for the characteristics of the board of directors or those that influence audit quality that may have been affected by the NCR (see Table 4.1). The other factors that influence audit quality variables will be regarded as control variables.

The following subsections review the literature on the relationship of the characteristics of a board of directors or factors that influence audit quality and FRQ in the context of Saudi NCR. A hypothesis is formed relating to each variable.

4.5.1 Financial Reporting Quality

Prior studies suggest that institutional theory is complementary when explaining the coercive institutional pressures exerted by legislators to force management to use specific practices. From an institutional theory perspective, corporate governance mechanisms are a result of coercion from legislators who force specific practices to achieve greater organisational effectiveness. For example, Al-Matari et al. (2012) used a combination of agency and institutional theory to examine the association between audit quality characteristics and company performance on the Saudi stock exchange. Some findings of this study do not accord with agency theory. However, they do accord with institutional theory, which views that companies adopted corporate governance regulations and practices as a result of legislator pressure that forced some regulations to improve organisational effectiveness. Young, Stedham, and Beekun (2000) found that using a combination of agency and institutional theory

was necessary as a theoretical framework to interpret the effectiveness of corporate governance, especially to gain a deeper understanding of corporate governance mechanisms and board functions.

In Saudi Arabia, the measures taken by the Saudi government to improve the quality of financial reports aimed to improve the Saudi inbound foreign investment environment. Issuing the NCR (2015), which was a part of Vision 2030, is one of the multiple measures to address deficiencies and a lack of clarity in the OCR. Improving FRQ in Saudi companies may not be restricted to the key characteristics of board of directors or factors that influence audit quality discussed in this study. This is because there is an institutional trend aimed at raising the quality of Saudi company financial reports in general. Therefore, this study considers the year-effect in measuring the impact of NCR (before and after its implementation) on FRQ between 2015 and 2017. Using institutional theory is essential to understand institutional pressures on the dependent variable of this study (FRQ). McGowan (2014) used the concept of coercive isomorphism to examine the effect of SOX on audit work and engagement practices, both pre-SOX (between 2001 and 2004) and post-SOX (between 2008 and 2011). McGowan (2014) claims that using institutional theory is important for measuring the influence of regulative institutional pressures to achieve a greater understanding of how regulatory and legal pressures affect compliance with accounting and auditing practices.

However, from a codification theory perspective, corporate governance mechanisms can be a result of the regulation environment (Cooke & Wallace, 1990; Gray, 1988; Xiao et al., 1996). Some studies, such as Al-Htaybat (2014), Von et al. (2012) and Wardrop (2012) consider codification theory as part of a theoretical framework to understand how current practices can be codified as mandatory. Khaldoun (2018) found that these results were not significant because mandatory practices are a result of codifying current practices. Therefore, this study considers codification theory as complementary with agency and institutional theory. This study may not find any change of the FRQ in the context of applying the NCR because the regulators may codify existing practice in a particular environment to enact a new regulation (Taylor & Turley, 1986).

Accordingly, this study will consider codification theory along with institutional theory to interpret the effect of the NCR on FRQ. This discussion leads to the following research sub-question from RQ₁:

Q_{1.1}: Is there an increase in the FRQ resulting directly from the NCR?

This research sub-question leads to the following hypothesis:

H₁: There is an increase in the FRQ resulting directly from the NCR.

This hypothesis will be accepted if any of the following sub-hypotheses are accepted:

H_{1a}: There is an increase in the FRQ in the voluntary year (2016) above and beyond the impact of the changes in all other variables in the model compared with 2015.

H_{1b}: There is an increase in the FRQ in the compulsory year (2017) above and beyond the impact of the changes in all other variables in the model compared with 2015.

H_{1c}: There is an increase in the FRQ in the compulsory year (2017) above and beyond the impact of the changes in all other variables in the model compared with 2016.

4.5.2 Audit Committee Characteristics

From an agency theory perspective, the monitoring process performed by boards and committees will improve the integrity of FRQ. Prior studies (Fama & Jensen, 1983; Jensen & Meckling, 1976; Klein, 2002) have found that the mechanisms of corporate governance, such as the audit committee, reduce agency problems and constrain earnings management. Based on several studies (Abdullah Mohammed, 2015; Al-Matari et al., 2012; Alghamdi, 2012; Kamolsakulchai, 2015), applying an agency framework is essential to explain the relationship between FRQ and the characteristics that influence audit quality.

4.5.2.1 Audit Committee Independence

The audit committee should be independent of management so that it can monitor financial reporting effectively and avoid influence on its work. This helps to improve FRQ (Vicknair, Hickman, & Carnes, 1993). Prior studies (Ghafran, 2013; Lin & Hwang, 2010; Zgarni et al., 2016) emphasise that the independence of an audit committee enhances the quality of financial reporting. These findings support an agency theory perspective that predicts the improvement of FRQ. Further, the NCR requires Saudi companies to have at least one independent member on the audit committee (see Table 4.1). Therefore, this may improve the FRQ of Saudi listed companies. This discussion leads to the following research sub-question of RQ₁:

Q_{1.2}: Has FRQ been affected by a change in audit committee independence as a result of the introduction of NCR?

This research sub-question leads to the following hypothesis:

H₂: FRQ has been affected by a change in audit committee independence as a result of the introduction of NCR.

To accept this hypothesis requires the acceptance of the following two sub-hypotheses:

H_{2a}: Audit committee independence has been affected by the NCR.

H_{2b}: FRQ is affected positively by audit committee independence in Saudi Arabia.

H_{2a} is non-directional because the NCR is multi-faceted; hence, the direction of its overall effect on any one factor is difficult to predict. H_{2b} is directional based upon prior literature. This approach to setting hypotheses as directional or non-directional is followed for the remaining research sub-questions.

4.5.2.2 Audit Committee Size

The decisions made by an audit committee are affected by the number of its members (Jensen, 1993; Lipton & Lorsch, 1992). Bédard, Chtourou and Courteau (2004) found that larger audit committees were more likely to have more effective FRQ due to efficient monitoring and a diversity of its members' views. Prior studies (Alghamdi, 2012; Kamolsakulchai, 2015; Kanukuntla & Seyed Masoud Sajjadian, 2017; Lin & Hwang, 2010; Vlaminck & Sarens, 2015) have postulated a positive relationship between audit committee size and FRQ. However, the NCR do not support Saudi companies to have an audit committee of more than five members (see Table 4.1). Therefore, the following research sub-question of RQ₁ is proposed:

Q_{1.3}: Has FRQ been affected by a change in audit committee size as a result of the introduction of NCR?

This research sub-question leads to the following hypothesis:

H₃: FRQ has been affected by a change in audit committee size as a result of the introduction of NCR.

To accept this hypothesis requires the acceptance of the following two sub-hypotheses:

H_{3a}: Audit committee size has been affected by the NCR.

H_{3b}: FRQ is affected positively by audit committee size in Saudi Arabia.

4.5.2.3 The Frequency of Audit Committee Meetings

The level of diligence exercised by audit committee members is measured by the number of meetings conducted per year. This argument assumes that the frequency of audit committee meetings increases the level of oversight of FRQ. This leads to improved FRQ (Habbash, 2010). Prior studies (DeZoort et al., 2002; Ghafran, 2013; Kanukuntla & Seyed Masoud Sajjadian, 2017) found a positive relationship between the frequency of audit committee meetings and FRQ. Further, the NCR forces Saudi companies to meet at least four times per year (see Table 4.1). Therefore, it is predicted that this regulation will have a positive effect on FRQ. This discussion leads to the following research sub-question of RQ₁ and hypotheses:

Q_{1.4}: Has FRQ been affected by a change in audit committee meetings as a result of the introduction of NCR?

This research sub-question leads to the following hypothesis:

H₄: FRQ has been affected by a change in audit committee meetings as a result of the introduction of NCR.

To accept this hypothesis requires the acceptance of the following two sub-hypotheses:

H_{4a}: Audit committee meeting frequency has been affected by the NCR.

H_{4b}: FRQ is affected positively by audit committee meeting frequency in Saudi Arabia.

4.5.2.4 Audit Committee Chair Independence

The audit committee chair plays an important role in its effectiveness. The chair carries the responsibility of ensuring that financial and non-financial information received by the committee are valid. The chair is the main person responsible for managing committee meetings and ensure that a proper flow of information between the audit committee and other parties, such as management, internal auditors and external auditors (Bédard & Gendron, 2010; Tanyi & Smith, 2015). Thus, the audit committee chair is the main person in charge of any

potential financial reporting failure, more so than other committee members (Schmidt & Wilkins, 2013).

Very few studies (see Khurram & Zhang, 2019; Leung et al., 2014) have investigated the independence of an audit committee chair's effect on audit quality. Leung et al. (2014) found that appointing an independent director as audit committee chair had a positive effect on company performance. Another study (Khurram & Zhang, 2019) found a positive relationship between the independence of an audit committee chair and disclosure quality. However, the relationship between independence of the audit committee chair and FRQ has not been fully investigated by previous studies, especially in the Saudi context.

Further, the NCR forces Saudi companies to appoint an independent director as an audit committee chair (see Table 4.1); this may have a positive effect on FRQ. This discussion leads to the following research sub-question of RQ₁:

Q_{1.5}: Has FRQ been affected by a change in audit committee chair independence as a result of the introduction of NCR?

This research sub-question leads to the following hypothesis:

H₅: FRQ has been affected by a change in audit committee chair independence as a result of the introduction of NCR.

To accept this hypothesis requires the acceptance of the following two sub-hypotheses:

H_{5a}: Audit committee chair independence has been affected by the NCR.

H_{5b}: FRQ is affected positively by the audit committee chair independence in Saudi Arabia.

4.5.3 External Audit Firm Characteristics

External audit firms are considered a significant tool for stakeholders and shareholders to provide the necessary oversight of financial reports and give assurances that the financial statements of a company are not misleading. Thus, good external auditors have a positive impact on the efficacy of a company's monitoring function and on limiting earnings management. One model of agency theory is that of the contractual relationship between managers and external auditors. Hiring external auditors will reduce agency costs by cutting information asymmetry in a company's financial reports (Watts & Zimmerman, 1983).

Audit firm size is an important factor for measuring audit quality (DeAngelo, 1981b; Dye, 1993; Francis, 2004; Hoitash et al., 2007). Prior studies (DeAngelo, 1981b; Dye, 1993; Francis, 2004; Hoitash et al., 2007) have found a positive relationship between the Big Four as an indicator of audit firm size, and the quality of FRQ. The NCR could have a negative effect on contracting with the Big Four (see Table 4.1). As discussed earlier, contracting with Big 4 international accounting firms as an auditor is positive in terms of FRQ. Therefore, contracting with local Saudi audit firms (not Big 4) may decrease the quality of financial reports due to the smaller size of local accounting firms.

Thus, this discussion leads to the following research sub-question of RQ₁:

Q_{1.6}: Has FRQ been affected by a change in audit firm size as a result of the introduction of NCR?

This research sub-question leads to the following hypothesis:

H₆: FRQ has been affected by a change in audit firm size as a result of the introduction of NCR.

To accept this hypothesis requires the acceptance of the following two sub-hypotheses:

H_{6a}: Audit firm size has been affected by the NCR.

H_{6b}: FRQ is affected positively by audit firm size in Saudi Arabia.

4.5.4 Board of Director Characteristics

The board of directors is an important factor in preserving the interests of shareholders and reducing agency costs (Fama & Jensen, 1983). Agency theory predicts that a board of directors who perform the monitoring function effectively will constrain management from engaging in earnings management practices, and hence improve the quality of financial reporting (Xie et al., 2003).

4.5.4.1 Board Independence

Previous studies (Benkel et al., 2006; Habbash, 2010; Jaggi et al., 2009; Oba, 2014) argue that the independence of a board of directors enhances the FRQ, which aligns with agency theory predictions. According to the NCR, the new regulation has not made a significant change to the independence of boards of directors; therefore, this regulation should not have a positive

effect on FRQ (see Table 4.1). The previous discussion leads us to the following research sub-question of RQ₁:

Q_{1.7}: Has FRQ been affected by a change in board independence as a result of the introduction of NCR?

This research sub-question leads to the following hypothesis:

H₇: FRQ has been affected by a change in board independence as a result of the introduction of NCR.

To accept this hypothesis requires the acceptance of the following two sub-hypotheses:

H_{7a}: Board independence has been affected by the NCR.

H_{7b}: FRQ is affected positively by board independence in Saudi Arabia.

4.5.4.2 Board Size

From an agency perspective, a larger sized board has more chance of obtaining a greater number of experienced members to observe management activities (Pearce & Zahra, 1992). Most of the literature (Alghamdi, 2012; Habbash, 2019; Kamolsakulchai, 2015) affirms that a greater number of board members has a positive effect on earnings management as a proxy for FRQ. Regarding the NCR, the new regulation does not support a higher number of board members compared with the old regulation; thus, this regulation should not have a positive effect on FRQ (see Table 4.1). This leads us to the following research sub-question of RQ₁:

Q_{1.8}: Has FRQ been affected by a change in the board size as a result of the introduction of NCR?

This research sub-question leads to the following hypothesis:

H₈: FRQ has been affected by a change in board size as a result of the introduction of NCR.

To accept this hypothesis requires the acceptance of the following two sub-hypotheses:

H_{8a}: Board size has been affected by the NCR.

H_{8b}: FRQ is affected positively by board size in Saudi Arabia.

4.5.4.3 Board Meeting Frequency

A number of empirical studies (Alghamdi, 2012; Habbash, 2010; Hashim & Abdul Rahman, 2010) prove that the number of board of director meetings has a positive effect on FRQ. This is because a board that meets regularly can devote time to remedy company issues, such as constraining earnings management and performing their duties in accordance with shareholders' interests, which is consistent with agency theory. According to the NCR, the new regulation requires the board of directors in Saudi companies to meet at least two times per year. Thus, this regulation should have a positive effect on FRQ (see Table 4.1). Based the prior discussions, the following research sub-question of RQ₁ is presented:

Q_{1.9}: Has FRQ affected a change in board meeting frequency as a result of the introduction of NCR?

This research sub-question leads to the following hypothesis:

H₉: FRQ has been affected by a change in board meeting frequency as a result of the introduction of NCR.

To accept this hypothesis requires the acceptance of the following two sub-hypotheses:

H_{9a}: Board meeting frequency has been affected by the NCR.

H_{9b}: FRQ is affected positively by board meeting frequency in Saudi Arabia.

4.6 Summary

This chapter has discussed the relevance of various theories (to the Saudi context) that are used in corporate governance research. The discussion has revealed a lack of consensus on the theories underlying corporate governance research. To gain a comprehensive understanding of Saudi context corporate governance, this chapter has proposed the use of multiple theories (agency theory, institutional theory and codification theory) to explain and predict the direct and indirect effects of the NCR on the FRQ. This chapter concludes that employing a combination of agency theory, institutional theory and codification theory will lead to a more integral understanding of the effect of the NCR on FRQ in Saudi Arabia. Agency theory is used to explain the relationship between the factors that influence audit quality, the board of director characteristics, and FRQ. Institutional theory is used to interpret the effect of NCR on FRQ. Codification theory is used to understand nature of the NCR and its intended outcomes, because

the content of the NCR may result from codifying existing voluntary practices of the Saudi companies.

Further, this chapter reviewed recent changes in the NCR, issued on 9 November 2015, by the Saudi government, against the outcomes of the prior studies reviewed in Chapter 3. The review was used to assess whether changes in the NCR to improve FRQ by Saudi regulators align with the findings reported in prior studies. Based on the NCR evaluation, the review of prior literature, and informed by multiple theoretical frameworks to address the research questions, nine hypotheses have been developed to address nine research sub-questions of RQ₁, along with nine hypotheses:

Q_{1.1}: Is there an increase in the FRQ resulting directly from the NCR?

H₁: There is an increase in the FRQ resulting directly from the NCR.

Q_{1.2}: Has FRQ been affected by a change in audit committee independence as a result of the introduction of NCR?

H₂: FRQ has been affected by a change in audit committee independence as a result of the introduction of NCR.

Q_{1.3}: Has FRQ been affected by a change in audit committee size as a result of the introduction of NCR?

H₃: FRQ has been affected by a change in audit committee size as a result of the introduction of NCR.

Q_{1.4}: Has FRQ been affected by a change in audit committee meeting as a result of the introduction of NCR?

H₄: FRQ has been affected by a change in audit committee meetings as a result of the introduction of NCR.

Q_{1.5}: Has FRQ been affected by a change in audit committee chair independence as a result of the introduction of NCR?

H₅: FRQ has been affected by a change in audit committee chair independence as a result of the introduction of NCR.

Q_{1.6}: Has FRQ been affected by a change in audit firm size as a result of the introduction of NCR?

H₆: FRQ has been affected by a change in audit firm size as a result of the introduction of NCR.

Q_{1.7}: Has FRQ been affected by a change in board independence as a result of the introduction of NCR?

H₇: FRQ has been affected by a change in board independence as a result of the introduction of NCR.

Q_{1.8}: Has FRQ been affected by a change in board size as a result of the introduction of NCR?

H₈: FRQ has been affected by a change in board size as a result of the introduction of NCR.

Q_{1.9}: Has FRQ been affected by a change in board meeting frequency as a result of the introduction of NCR?

H₉: FRQ has been affected by a change in board meeting frequency as a result of the introduction of NCR.

This chapter drew on a combination of agency theory, institutional theory and codification theory to interpret the direct and indirect effects of NCR on FRQ in Saudi Arabia through nine sets of hypotheses. The next chapter will present the methodology adopted in this study, the description of the sample selection process, the measurement of all variables used in the model specifications, and the data sources.

Chapter 5: Research Methodology

5.1 Introduction

The objective of this chapter is to address the methodology adopted in the research. This research examines the direct and indirect effects of the NCR on FRQ in the Saudi stock market. To achieve the purpose of this study, a statistical comparison must be made prior to and after the introduction of the NCR. The best way to accomplish this is to employ a quantitative method that depends on publicly available secondary data. This approach enables the researcher to test the adopted theory against unique and large sample observations that make findings more generalised to the study population as a whole.

This thesis identifies the most common variables relevant to FRQ based on a review of the literature (Chapters 2 and 3). The analysis of the NCR's effect will be divided into two paths. First, the direct effect represents the direct pressure on FRQ brought by the Saudi government through the introduction of the NCR. It is represented through the year variables as illustrated in the main models of this study. Second, the indirect effect represents where the introduction of NCR has indirectly influenced FRQ through initiating changes in company characteristics that affect FRQ. This is done in two steps. The first step is to test if the independent variables, which are represented through the characteristics of board of directors or factors that influence audit quality, altered significantly when the NCR was introduced. The second step is to examine if those characteristics actually affected the FRQ in Saudi Arabia during the relevant period.

Prior studies (Abdullah Mohammed, 2015; Al-Lehaidan, 2006; Al-Matari et al., 2012; Inaam & Khamoussi, 2016; Jayanthi et al., 2011; Kamolsakulchai, 2015; Owens-Jackson et al., 2009; Pomeroy & Thornton, 2008) have used earnings management as an indicator for detecting the poor quality of financial reporting (Carcello et al., 2011). Walker's (2013) study indicates that using the level of discretionary accruals is the most common method to detect earnings management where the relationship between the absolute level of discretionary accruals and the quality of financial reporting is inverse.

Among the different models for calculating the level of discretionary accruals, this study employs the modified Jones model developed by Dechow et al. (1995) as a proxy for measuring

FRQ. For the test of robustness, the performance-matched model Kothari et al. (2005) is used as a second model for validating the results.

The chapter is structured as follows. Section 5.2 presents a justification for selecting the final sample of this study and which database will be used for data collection. Section 5.3 presents the model specification and the variables used in this thesis when considering the effect of the major event of this study (the NCR). This is followed by the measurement used for each variable, with support from prior studies (Section 5.4). Section 5.5 presents the stages and steps to apply and undertake data analysis for the main models of this study. Finally, Section 5.6 presents a brief summary of the chapter.

5.2 Sample Selection

The main purpose of this study is to measure the direct and indirect effects of NCR on FRQ on the Saudi stock market. This study covers the period between 2015 and 2017. There were 179 companies listed on the Saudi stock market for this period. However, a sample of this research includes all companies listed on the Saudi stock market, except financial companies. This is consistent with prior research (K. Y. Chen, Lin, & Zhou, 2005; Habbash, 2010; Van Tendeloo & Vanstraelen, 2008), which suggests that all financial companies should be eliminated because they have special and different corporate governance practices. This will reduce the sample of this study to 134 companies. This study will also eliminate companies that apply the Islamic calendar (Hijri). The Hijri calendar is a lunar calendar consisting of 354 or 355 days distributed over 12 months. The Hijri calendar is completely different to the Gregorian calendar, and it is impracticable to compare these companies with other companies that apply the Gregorian calendar for the fiscal year. This will reduce the sample to 133 companies, as only one company applies the Hijri calendar. Additionally, four companies that use a financial year starting on 1 April and ending on 31 March, instead of 1 January through 31 December, are also eliminated. This decreases the sample to 129 companies.

The dependent variable of this study is the modified Jones (1995) model. This model requires the use of at least 10 years of historical data for each company before computing discretionary accruals in the main period (as mentioned previously, the period for this study is between 2015 and 2017). According to Dechow et al. (1995), it is necessary to have at least 10 observations for each company to efficiently estimate the parameters of the model for non-discretionary accruals, which is a major step before calculating discretionary accruals in the main period.

Many studies use an average from 15 to 20 observations for each company to estimate the parameters of the model for non-discretionary accruals. For example, Jiang and Chen (2019) used 17 observations for the period between 2000 to 2016 to estimate the parameters and calculate non-discretionary accruals model for each company. Another study by Dou et al. (2018) used 20 observations to estimate the parameters of the non-discretionary accruals model. However, this study will consider the sample size of the Saudi stock market as an emerging market.

As mentioned in Chapter 2, the Saudi stock market started officially in 1984. Table 2.1 in Chapter 2 shows that collecting data prior to 2004 will strongly affect the sample size. The number of listed companies jumped from 57 companies in 2003 to 73 companies in 2004. This study selected a period between 2005 and 2014 (which is equal to 10 observations for each company) to estimate the parameters of the non-discretionary accrual model. However, because there is one lagged variable this requires data back to 2004. Otherwise, collecting data prior to 2004 would significantly reduce the number of companies able to be included in the sample.

Using only 10 observations to estimate the parameters is common in developing country contexts because their stock markets are growing and emerging rapidly, compared with developed countries. Considering larger observations would significantly minimise the number of companies able to be included in the sample size due to this (see Elghuweel et al., 2017; Ho, Liao, & Taylor, 2015). Thus, data collecting period for this study was between 2004 and 2014, and also between 2015 and 2017. This gives the final sample for this study 61 companies (183 observations), as shown in Table 5.1.

Table 5.1 Sample Selection

Number of Saudi exchange-listed companies between 2015 and 2017	179
Minus	
Number of financial companies listed on the Saudi exchange	(45)
Number of companies listed on the Saudi exchange that use the Hijri calendar for fiscal year	(1)
Number of companies listed on the Saudi exchange using 1 April through 31 March for fiscal year	(4)
Number of companies that were not listed on the Saudi exchange in 2004	(68)
Final sample	61

All measures of independent variables will be collected from the annual reports of companies listed on the Saudi Stock Exchange Index (Tadawul) for the study period. All data are publicly available as a PDF file on the ‘Tadawul’ website. The information will be extracted and processed manually. The data will be checked by one colleague to ensure that the variables collected are precise and reliable. For all other variables such as dependent variable and control variables, the data will be collected directly from the ‘EIKON with Datastream database’, which is accessible for all PhD students at the library of Victoria University.

5.3 Model Specification

The thesis will examine the direct and indirect effects of the NCR on FRQ on the Saudi stock market. Each year of the main data collection period represents a significant event. As Figure 5.1 indicates, the annual reports of 2015 represent the pre-period before applying the NCR, the annual reports of 2016 represent the voluntary year for applying the NCR, and the annual reports of 2017 represent the compulsory year for applying the NCR.

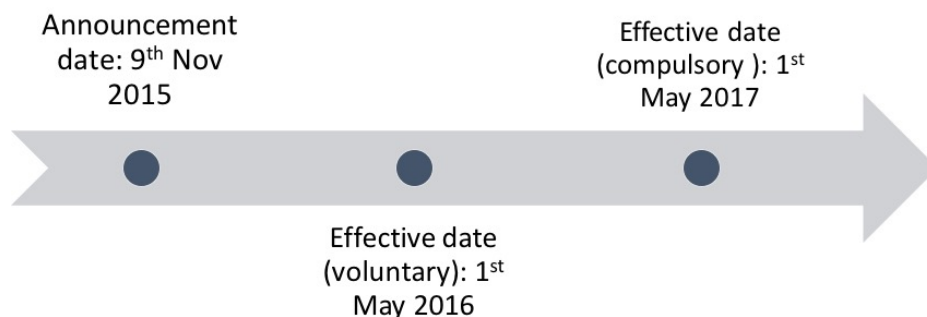


Figure 5.1 Events Timeline

The first pathway is the direct effect (see Figure 4.2 in Chapter 4) that explains the pressure brought by the Saudi government in introducing the NCR. The second pathway is the indirect effect (see Figure 4.2 in Chapter 4) that explains the relationship between the change of factors that influence audit quality, board of directors' characteristics and FRQ as a result of the introduction of NCR.

5.3.1 The Direct Effect of the New Company Regulations

This study will use panel regression to measure the direct effect of NCR on FRQ on the Saudi stock market for the period between 2015 and 2017. According to the timeline described in Figure 5.1, this study considers two major events to achieve its purpose. The first event is the year 2016, which represents the voluntary year for applying the NCR. The second event is the year 2017, which represents the compulsory year for applying the NCR. Therefore, two different analyses will be conducted to measure the direct effect of the NCR by using two model specifications to test not only the changes between the base year and the voluntary, and the base year and the compulsory year, but also the changes between the voluntary year and the compulsory year. The two model specifications are:

$$\begin{aligned}
 ABS(DA)_{it} = & \beta_0 + \beta_1 ACIND_{it} + \beta_2 ACSIZE_{it} + \beta_3 ACMEETING_{it} + \beta_4 ACEXP_{it} + \beta_5 ACLEGEXP_{it} + \beta_6 \\
 & AC_Chair_{it} + \beta_7 AUDITFEE_{it} + \beta_8 Big_4_{it} + \beta_9 AUDITREPORT_{it} + \beta_{10} BODIND_{it} + \beta_{11} BODSIZE_{it} + \\
 & \beta_{12} BODMEET_{it} + \beta_{13} OWNERSHIP_{it} + \beta_{14} LEVERAGE_{it} + \beta_{15} ROA_{it} + \beta_{16} LOSS_{it} + \beta_{17} SIZE_{it} + \\
 & \beta_{18} INDUSTRY_{it} + \beta_{19} T2015vs2016 + \beta_{20} T2015vs2017 + \varepsilon_{it} *
 \end{aligned}
 \tag{5.1}$$

$$\begin{aligned}
 ABS(DA)_{it} = & \beta_0 + \beta_1 ACIND_{it} + \beta_2 ACSIZE_{it} + \beta_3 ACMEETING_{it} + \beta_4 ACEXP_{it} + \beta_5 ACLEGEXP_{it} + \\
 & \beta_6 AC_Chair_{it} + \beta_7 AUDITFEE_{it} + \beta_8 Big_4_{it} + \beta_9 AUDITREPORT_{it} + \beta_{10} BODIND_{it} + \beta_{11} BODSIZE_{it} \\
 & + \beta_{12} BODMEET_{it} + \beta_{13} OWNERSHIP_{it} + \beta_{14} LEVERAGE_{it} + \beta_{15} ROA_{it} + \beta_{16} LOSS_{it} + \beta_{17} SIZE_{it} + \\
 & \beta_{18} INDUSTRY_{it} + \beta_{19} T2016vs2015 + \beta_{20} T2016vs2017 + \varepsilon_{it} *
 \end{aligned}
 \tag{5.2}$$

* It is recognised that the parameters of Equations 5.1 and 5.2 are estimated over a relatively short period, and therefore, the stability of these parameters in future years is uncertain.

Tables 5.2 gives the definitions and measurements for all explanatory variables.

Table 5.2 Measurements of Explanatory Variables

	Name of the Variable	Acronym	Measurement	References
Dependent variable	Financial reporting quality	ABS(DA)	Financial reporting quality (FRQ) measured through the absolute value of discretionary accrual relative to asset size ($ DA_{it} / A_{it-1} $) of each individual year company as estimated by three different models	Al-Thuneibat, Al-Angari and Al-Saad (2016); Carrera et al. (2017); Kamolsakulchai (2015); Y. Li et al. (2008); Vlaminck and Sarens (2015).
Independent variables	Audit committee independence	<i>ACIND</i>	Ratio of independent directors to total audit committee size	Ghafran (2013); Inaam and Khamoussi (2016); Lin and Hwang (2010); Owens-Jackson et al. (2009); Pomeroy and Thornton (2008); Vlaminck and Sarens (2015)
Independent variables	Audit committee size	<i>ACSIZE</i>	The total number of audit committee members	Alghamdi (2012); Kamolsakulchai (2015); Kanukuntla and Seyed Masoud Sajjadian (2017); Lin and Hwang (2010); Vlaminck and Sarens (2015)
Independent variables	Frequency of audit committee meetings	<i>ACMEETING</i>	The total number of audit committee meetings	Alghamdi (2012); DeZoort et al. (2002); Ghafran (2013); Inaam and Khamoussi (2016); Kanukuntla and Seyed Masoud Sajjadian (2017); Lin and Hwang (2010); Owens-Jackson et al. (2009); Baxter and

Name of the Variable	Acronym	Measurement	References
Audit committee financial expertise	<i>ACEXP</i>	Ratio of auditors with expertise in accounting or finance to total audit committee size**	Cotter (2009); Vlamincck and Sarens (2015)
Audit committee legal expertise	<i>ACLEGEXP</i>	Ratio of auditors with legal expertise to total audit committee size**	Pike and Mangena (2005); Abbadi et al. (2016); Badolato et al. (2014); Salleh and Haat (2013); Sharma and Kuang (2014); Soliman and Ragab (2014); Lin and Hwang (2010)
Audit committee chairperson	<i>AC_Chair</i>	The independence of the audit committee chair. (1 = independent and 0 = others)	Jayanthi et al. (2011); Omer and Al-Qadasi (2019)
Audit fees	<i>AUDITFEE</i>	The natural log of the total amount paid for audit and professional fees*	Fariha et al. (2021); Leung et al. (2014); Mujeeb Saif Mohsen et al. (2019); J. Xiong (2016)
			Eshleman and Guo (2013); Gandía and Huguet (2021); Habbash (2010); Islam (2016)

Name of the Variable	Acronym	Measurement	References
Audit firm size	<i>Big_4</i>	The audit firm profile in the Big Four or not. (1 = Big Four and 0 = others)	Asthana et al. (2015); Francis (2004); Jordan et al. (2010); Lin and Hwang (2010); Mohammed et al. (2019)
Audit report	<i>AUDITREPORT</i>	The audit report opinion. (1 = unqualified and 0 = others)	Alghamdi (2012); Bartov et al. (2000); Bradshaw et al. (2001); S. Chen et al. (2001); Habbash and Alghamdi (2017)
Year for Model 1	<i>T2016vs2015, T2016vs2017</i>	Institutional effect of NCR using the base year 2016	-
Year for Model 2	<i>T2015vs2016, T2015vs2017</i>	Institutional impact of NCR using the base year 2015	-
Board of director independence	<i>BODIND</i>	Ratio of independent directors to total board members	Benkel et al. (2006); Ezat and El-Masry (2008); Habbash (2010, 2019); Jaggi et al. (2009); Klein (2002); Oba (2014)
Board of director size	<i>BODSIZE</i>	Total number of board members	Alghamdi (2012); Ezat and El-Masry (2008); Habbash (2010, 2019); Kamolsakulchai (2015); Oba (2014); Xie et al. (2003); Yu (2008)

Name of the Variable	Acronym	Measurement	References
Board meeting frequency	<i>BODMEET</i>	Total number of board members meetings	Alghamdi (2012); Hashim and Abdul Rahman (2010) Habbash (2010); Mujeeb Saif Mohsen et al. (2019)
Financial leverage ratio	<i>LEVERAGE</i>	Percentage of total debt to total equity ratio	Alzeban (2019); Becker et al. (1998); Dimitropoulos and Asteriou (2010); Habbash (2019)
Return on Assets	<i>ROA</i>	The percentage of company's profit to its overall resources (total assets)	Al Shetwi (2020); Alghamdi (2012); Habbash (2019); Mujeeb Saif Mohsen et al. (2019)
Company size	<i>SIZE</i>	Company size measured from the natural log of total assets*	Al Mulhim (2014); Chi et al. (2015); Habbash (2010); Mujeeb Saif Mohsen et al. (2019)
Control Variables			
Government ownership	<i>OWNERSHIP</i>	Proportion of shares owned by the government to a total of ordinary shares	-
Loss	<i>LOSS</i>	Dummy variable that takes value 1 if net income is negative, 0 otherwise	Bruynseels and Cardinaels (2014); Carrera et al. (2017); Ghafran (2013)
Industry	<i>INDUSTRY</i>	Dummy variables for each industry versus the base industry	-

* The log is used due to the non-linear relationship commonly used in the literature

** These variables will be excluded if the data are not available.

The NCR contain several new regulations to regulate listed and non-listed companies in Saudi Arabia (see Section 2.4.2, in Chapter 2). It is acknowledged that this study only includes the most common variables that are related to FRQ according to the prior literature (see Section 3.6, in Chapter 3). However, there are many other factors that may have an effect on FRQ.

Further, it is acknowledged that the change between the years in the two model specifications measures everything that changed during the study period beyond the changes in the independent variables (not only the NCR). There is a broad level of institutional pressure by the MCI of the Kingdom of Saudi Arabia to improve FRQ in Saudi listed and non-listed companies to achieve one of the main objectives of Vision 2030 (improving the investment environment of the Saudi market to attract foreign capital and retain local capital). However, the NCR is the main tool to this objective of Vision 2030 and hence is the focus when interpreting the effect of this institutional pressure.

As mentioned in Chapter 3, there is an overlap between the introduction of NCR and the mandatory adoption of IFRS, which was introduced in the same year (2017). According to Chapter 3, some studies (Alsamkari et al., 2021; Nurunnabi et al., 2020) found that the IFRS adoption may have had a positive effect on FRQ, but also on increasing the transparency, reliability, relevance, and minimising the information asymmetry of financial reports (not in constraining earnings management). However, some studies, such as Kabir et al. (2010), found no improvement in earnings management (which is the main proxy to measure FRQ in this thesis) as a result of IFRS adoption. Other studies, such as Ahmed et al. (2013) and Jeanjean and Stolowy (2008), found that IFRS adoption affects earnings management negatively. According to the prior studies, corporate governance regulations remain the most important determinant of earnings management. Earnings management depends on using managerial discretion over accounting choices, which can be monitored through the corporate governance regulations rather than changing the accounting standards.

As a result, the direct effect is not restricted to the effects through variables related to factors that influence audit quality and board of director characteristics. Rather, it is above and beyond the effect of the changes in all other variables of the model of this thesis (such as Vision 2030 and IFRS). The NCR was the major change relevant to earnings management as a proxy to measure FRQ.

5.3.2 The Indirect Effect of the New Company Regulations

The study will use a mixture of univariate, non-parametric and multivariate results to measure the indirect effect of the NCR on FRQ. These are represented through factors that influence audit quality and board of director characteristics. The analysis of the indirect effect will be analysed in two steps. The first step will conduct different analyses using two model specifications to test each variable identified in this study as being relevant to FRQ (i.e. characteristics of board of directors or factors that influence audit quality) individually to examine whether those characteristics altered significantly when the NCR was introduced. The two model specifications are:

$$Y_{it} = \beta_0 + \beta_1 T_{2015vs2016} + \beta_2 T_{2015vs2017} + \varepsilon_{it} \quad (5.3)$$

Where:

Y_{it} = characteristics of board of directors or factors that influence audit quality for firm i in year t

$$Y_{it} = \beta_0 + \beta_1 T_{2016vs2015} + \beta_2 T_{2016vs2017} + \varepsilon_{it} \quad (5.4)$$

Where:

Y_{it} = characteristics of board of directors or factors that influence audit quality for firm i in year t

The second step is to examine if those variables related to FRQ actually affected FRQ in Saudi Arabia over the relevant period, and this step will depend on multivariate results used to assess the direct effect of the NCR on FRQ (Equations 5.1 and 5.2). Regarding the IFRS effect, most of the variables related to FRQ (other than the control variables) are non-financial, such as the characteristics of audit committee and board of directors. Therefore, the possibility of the mandatory adoption of IFRS and its effect on the relationship between those variables and FRQ over the relevant period is low.

Further details will be provided on how to apply and undertake data analysis for the main models of this study in Section 5.5.

5.4 Measurement of Variables

The section provides the measurements for each variable used in this study. This includes dependent, independent, and control variables.

5.4.1 Accruals Model Adopted in this Thesis

The modified Jones model (Dechow et al., 1995) is considered the most developed and is designed to calculate discretionary accruals, which give greater explanatory power. The model is still widely used in recent studies although it (Dechow et al., 1995) has been criticised in prior studies (Al-Thuneibat et al., 2016; Carrera et al., 2017; Kamolsakulchai, 2015; Y. Li et al., 2008; Vlaminc & Sarens, 2015). Peasnell et al. (2005) emphasises that the Jones (1991) and the modified Jones (1995) model are the methods most frequently used to calculate accruals. Dechow et al. (1995) found that the modified Jones (1995) model is more powerful in detecting sales-based earnings management than the Jones (1991) model. In addition to Peasnell et al. (2005), Alghamdi (2012) notes that the modified Jones model is widely used in studies of earnings management because it is considered the most powerful test to measure earnings management in terms of robustness. For the purpose of this study, the modified Jones model (Dechow et al., 1995) will be employed as the primary proxy for measuring FRQ.

In addition to applying the modified Jones (1995) model of estimating earnings management, this study also adopts a robustness test as an alternative proxy for earnings management, using a performance-controlled model (Kothari et al., 2005). The Kothari et al. (2005) performance-matched model has become the focus of accounting researchers and is characterised by controlling for prior performance of a company (Habbash, 2019; Idris et al., 2018; Jiang & Chen, 2019). The performance-matched model presented by Kothari et al. (2005) matches companies by choosing two companies from the same industry that have similar ROA and calculates the difference between those two companies.

In this study, the performance-matched model in Kothari et al. (2005) is not appropriate due to the limitation of the size of the Saudi stock market, which means there are some industries that have only two companies, such as healthcare and the utilities industry, which would give no scope for ROA matching. However, Kothari et al. (2005) presented an alternative approach to provide a comparison of the effectiveness of performance matching by including a performance measure in the accruals regression. This will be referred to as ‘the performance-controlled

approach'. They used a model that is similar to the modified Jones (1995) model, except that it is augmented to include ROA in the accruals regression. In this case, this study employs the Kothari model (the performance-controlled approach) that is an extension of the modified Jones (1995) model by inclusion of ROA as presented in the Kothari et al. (2005, p. 174).

According to Kothari et al. (2005), their model develops the modified Jones model by adding a firm's ROA into the modified Jones equation. However, the performance-controlled approach model (Kothari et al., 2005) uses the intercept (the constant) in its model although the modified Jones model does not use the intercept in its equation. In addition to the original Kothari et al. (2005) model, this study will re-test the performance-controlled approach model (Kothari et al., 2005) to be consistent with the modified Jones model approach by leaving out the constant, and it will be called the modified Kothari model.

5.4.2 Dependent Variable: Financial Reporting Quality—the Modified Jones Model

One of the models adopted in this study as a proxy to measure FRQ, using the absolute value of discretionary accruals divided by lagged assets, is the modified Jones model (Dechow et al., 1995; Jones, 1991). The definition and measurement for the dependent variable *FRQ* is summarised in Table 5.2.

As described in Section 5.2, estimation of the modified Jones model (Dechow et al., 1995; Jones, 1991) requires at least 10 observations (for the period between 2005 and 2014, which also includes 2004 data for the lagged assets variable) for each company to estimate the parameters of the non-discretionary accrual model and to compute the absolute value of discretionary accruals.

This study uses the following steps to compute the dependent variable FRQ:

Step (1): consistent with Jones' (1991) study, total accruals is computed through the following equation:

$$TA_{it} = [\text{Change Current Assets} - \text{Change Cash}] - [\text{Change Current Liabilities}] - \text{Depreciation and Amortisation Expense}$$

(5.5)

where:

TA_{it} = total accruals for company i in year t

Step (2): non-discretionary accruals can be calculated by the following equation (after estimating the firm-specific parameters α_{1i} , α_{2i} , and α_{3i} as described below):

$$NDA_{it} / A_{it-1} = \alpha_{1i} (1/A_{it-1}) + \alpha_{2i} [(\Delta REV_{it} - \Delta REC_{it}) / A_{it-1}] + \alpha_{3i} (PPE_{it} / A_{it-1}) \quad (5.6)$$

However, multiplying the previous equation by (A_{it-1}) makes it easier to use:

$$NDA_{it} = \alpha_{1i} + \alpha_{2i} (\Delta REV_{it} - \Delta REC_{it}) + \alpha_{3i} (PPE_{it}) \quad (5.7)$$

where:

NDA_{it} = non-discretionary accruals for firm i in year t

A_{it-1} = total assets for firm i in year $t-1$

ΔREV_{it} = difference between revenues for firm i in year t and revenues in year $t-1$

ΔREC_{it} = difference between net receivables for firm i in year t and net receivables in year $t-1$

PPE_{it} = total plant, property and equipment for firm i at the end of year t

Total accruals are used to estimate the firm-specific parameters α_{1i} , α_{2i} , and α_{3i} using the following equation with data from an independent estimation period prior to the main analysis period:

$$TA_{it} / A_{it-1} = \alpha_{1i} (1/A_{it-1}) + \alpha_{2i} [(\Delta REV_{it} - \Delta REC_{it}) / A_{it-1}] + \alpha_{3i} (PPE_{it} / A_{it-1}) + \varepsilon_{it} \quad (5.8)$$

where:

TA_{it} = total accruals for firm i in year t

A_{it-1} = total assets for firm i in year $t-1$

ΔREV_{it} = difference between revenues for firm i in year t and revenues in year $t-1$

ΔREC_{it} = difference between net receivables for firm i in year t and net receivables in year $t-1$

PPE_{it} = total plant, property and equipment for firm i at the end of year t

α_{1i} , α_{2i} , and α_{3i} = firm-specific parameters, and will be estimated using 10 years of historical financial data for each variable of the sample companies (but covering 11 financial years because one variable is lagged).

ε_{it} = residuals of the model for firm i at the end of year t

Step (3): after defining total accruals in Step (1) and non-discretionary accruals in Step (2), discretionary accruals can be computed through this equation:

$$DA_{it} = TA_{it} - NDA_{it} \tag{5.9}$$

where:

DA_{it} = discretionary accruals for firm i in year t

TA_{it} = total accruals for firm i in year t

NDA_{it} = non-discretionary accruals for firm i in year t

5.4.3 Dependent Variable: Financial Reporting Quality—The Performance-controlled Approach Model

This study employs the performance-controlled approach of Kothari et al. (2005) as an alternative robustness test to measure FRQ. Like the modified Jones (1995) model, the Kothari performance-controlled approach model requires using time series regression for each company to estimate the firm-specific parameters. Thus, this study uses 10 observations for the period between 2005 and 2014, which includes 2004 data for the lagged variable, to compute the dependent variable FRQ on the Saudi stock market. This study uses the following steps to compute the dependent variable FRQ:

Step (1): this step is the same to the modified Jones model: Step (1) and Equation (5.5) in Section 5.4.2.

Step (2): non-discretionary accruals can be calculated by the following equation after estimating the firm-specific parameters α_{0i} , α_{1i} , α_{2i} , α_{3i} , and α_{4i} as described below:

$$\begin{aligned} \text{NDA}_{it} / A_{it-1} = & \alpha_{0i} + \alpha_{1i} (1/A_{it-1}) + \alpha_{2i} [(\Delta\text{REV}_{it} - \Delta\text{REC}_{it}) / A_{it-1}] + \alpha_{3i} (\text{PPE}_{it} / A_{it-1}) + \\ & \alpha_{4i} \text{ROA}_{it}. \end{aligned} \tag{5.10}$$

where:

NDA_{it} = non-discretionary accruals for firm i in year t

A_{it-1} = total assets for firm i in year $t-1$

ΔREV_{it} = difference between revenues for firm i in year t and revenues in year $t-1$

ΔREC_{it} = difference between net receivables for firm i in year t and net receivables in year $t-1$

PPE_{it} = total plant, property and equipment for firm i at the end of year t

ROA_{it} = return on assets for firm i at the end of year t

Total accruals are used to estimate the firm-specific parameters α_{1i} , α_{2i} , α_{3i} , and α_{4i} by using the following equation with data from an independent estimation period prior to the main analysis period:

$$\begin{aligned} \text{TA}_{it} / A_{it-1} = & \alpha_{0i} + \alpha_{1i} (1/A_{it-1}) + \alpha_{2i} [(\Delta\text{REV}_{it} - \Delta\text{REC}_{it}) / A_{it-1}] + \alpha_{3i} (\text{PPE}_{it} / A_{it-1}) + \alpha_{4i} \text{ROA}_{it} \\ & + \varepsilon_{it}. \end{aligned} \tag{5.11}$$

where:

TA_{it} = total accruals for firm i in year t

A_{it-1} = total assets for firm i in year $t-1$

ΔREV_{it} = difference between revenues for firm i in year t and revenues in year $t - 1$

ΔREC_{it} = difference between net receivables for firm i in year t and net receivables in year $t - 1$

PPE_{it} = total plant, property and equipment for firm i at the end of year t

ROA_{it} = return on assets for firm i at the end of year t

α_{0i} , α_{1i} , α_{2i} , α_{3i} and α_{4i} = firm-specific parameters, and will be estimated using 10 years of historical financial data for each variable of the sample companies

ε_{it} = residuals of the model for firm i at the end of year t

Step (3): this step is the same as the modified Jones model: Step (3) and Equation (5.9) in Section 5.4.2.

5.4.4 Dependent Variable: Financial Reporting Quality—The Modified Kothari Model

As described and mentioned earlier, this study will re-test the performance-controlled approach model (Kothari et al., 2005) to be theoretically consistent with the modified Jones model approach by omitting the constant (the intercept).

The modified Kothari model has the same steps as the performance-controlled approach model (see Section 5.4.2) except it omits the constant in Step 2 from Equations 5.10 and 5.11; thus, the new linear regression will be as follows:

$$NDA_{it} / A_{it-1} = \alpha_{1i} (1/A_{it-1}) + \alpha_{2i} [(\Delta REV_{it} - \Delta REC_{it}) / A_{it-1}] + \alpha_{3i} (PPE_{it} / A_{it-1}) + \alpha_{4i} ROA_{it} \quad (5.12)$$

$$TA_{it} / A_{it-1} = \alpha_{1i} (1/A_{it-1}) + \alpha_{2i} [(\Delta REV_{it} - \Delta REC_{it}) / A_{it-1}] + \alpha_{3i} (PPE_{it} / A_{it-1}) + \alpha_{4i} ROA_{it} + \varepsilon_{it} \quad (5.13)$$

5.4.5 Independent Variables

Although definition and measurement are provided in Table 5.2, it is worthwhile to explain how each variable is measured. This study includes the independent variables that have an effect on earnings management as a proxy for FRQ. The independent variables are audit committee independence (*ACIND*), audit committee size (*ACSIZE*), the frequency of audit

committee meetings (*ACMEETING*), audit committee financial expertise (*ACEXP*), the legal expertise of the audit committee (*ACLEGEXP*), audit committee chair independence (*AC_Chair*), audit fees (*AUDITFEE*), audit firm size (*BIG_4*), auditor report (*AUDITREPORT*), board independence (*BODIND*), board size (*BODSIZE*), and board meeting frequency (*BODMEET*). This paper drew independent variables from the prior studies based on the review of literature.

5.4.5.1 Audit Committee Independence

Independent variable *ACIND* is calculated as the number of independent directors on the audit committee compared with the total number of committee members. This study will use a percentage variable. This will provide the ability to compare between the various size of audit committees among the companies. All the information was collected manually from the annual reports of each company for the main period of this study.

5.4.5.2 Audit Committee Size

Independent variable *ACSIZE* is a continuous variable and is calculated simply as the total number of members on the audit committee. By the end of the year, company corporate governance reports disclose the number of members on the audit committee. Thus, the information for *ACSIZE* was collected manually using the annual reports.

5.4.5.3 The Frequency of Audit Committee Meetings

Independent variable *ACMEETING* is a continuous variable and is measured as the number of meetings held each year by the audit committee. Company corporate governance reports disclose the number of meetings held each year by the audit committee. This study reviewed and recorded the number of the meetings from the published annual reports for each company.

5.4.5.4 Audit Committee Financial Expertise

Independent variable *ACEXP* is measured as the number of directors who are specialised in finance or accounting compared with the total number of committee members. The information about the qualification and experience of each member of audit committee is normally disclosed in annual reports.

5.4.5.5 Audit Committee Legal Expertise

Independent variable *ACLEGEXP* is measured as the number of directors who are specialised in law compared with the total number of committee members. Like *ACEXP*, the information about the qualification and experience of each member of audit committee is normally reported in the company's annual reports.

5.4.5.6 Audit Committee Chair Independence

Independent variable *AC_Chair* is measured as a dummy variable that takes the value of one if the chair of the audit committee is independent and zero otherwise. The information of audit committee chair was collected manually from the annual reports for each company.

5.4.5.7 Audit Firm Size

Independent variable *BIG_4* is measured as a dummy variable that takes the value of one if a company is audited by a Big Four company and zero otherwise. The Big Four are: PricewaterhouseCoopers, Deloitte, Ernst & Young and KPMG, which are used as an indicator of audit firm size. Either the annual reports or the financial statements indicate the audit firm who audited the financial statements.

5.4.5.8 Auditor Report

Independent variable *AUDITREPORT* is measured as a dummy variable that takes the value of one if auditor issued unqualified report and zero otherwise. Like the *Big_4* variable, either the annual reports or the financial statements report the opinion of the auditor in the financial reports.

5.4.5.9 Board Independence

Independent variable *BODIND* is calculated as the number of independent directors on the board of directors compared with the total number of the board (a percentage variable). This will provide more accurate and comparable measurement among other companies regardless of the company size. The information of the number of individual directors and the total number of board of directors will be collected manually from the annual reports.

5.4.5.10 Board Size

Independent variable *BODSIZE* is a continuous variable and is measured as the total number of members on the board of directors. The reports of company corporate governance disclose the number of members on a board. All the information will be extracted manually from the annual reports from each company.

5.4.5.11 Board Meeting Frequency

Independent variable *BODMEET* is a continuous variable and is measured as the number of meetings held each year by the audit committee. The reports of company corporate governance disclose the number of meetings held each year by the board of directors. The information will be collected manually from the annual reports.

The definitions and measurements for each independent variable are summarised in Table 5.2.

5.4.6 Control Variables

Prior research has found that financial indicators are an important element in determining earnings management and the quality of financial reports (Al Mulhim, 2014; Bruynseels & Cardinaels, 2014; Carrera et al., 2017; Habbash, 2019; Vlamincck & Sarens, 2015). Accordingly, this study includes the following financial indicators as control variables: financial leverage ratio (*LEVERAGE*), return on assets (*ROA*), company size (*SIZE*), companies experiencing loss (*LOSS*), and industry (*INDUSTRY*). Additionally, this study will consider government ownership (*OWNERSHIP*), which can have a significant effect on company performance (Q. Sun, Tong, & Tong, 2002). Table 5.2 presents all definitions of control variables and their measurements for the main models.

5.4.6.1 Financial Leverage Ratio

Control variable *LEVERAGE* is calculated as the percentage of total debt to total equity ratio. The financial leverage ratio has an important effect on the occurrence of earnings management. A higher leverage is highly correlated with the violation of debt covenants (Press & Weintrop, 1990), and debt covenant violation is positively associated with the absolute value of discretionary accruals (DeFond & Jiambalvo, 1994). Several studies, such as Alzeban (2019), Becker et al. (1998), Dimitropoulos and Asteriou (2010) and Habbash (2019) used *LEVERAGE* as a control variable while measuring the relationship between earnings management and

corporate governance research. Many studies (Alzeban, 2019; Efendi, Srivastava, & Swanson, 2007) found that *LEVERAGE* was positively associated with earnings management. Another study by Becker et al. (1998) found that *LEVERAGE* had a negative correlation with the absolute value of discretionary accruals. This study considers that controlling the *LEVERAGE* variable is necessary to the extent of the effect on the occurrence of earnings management.

5.4.6.2 Return on Assets

Control variable *ROA* is calculated as the percentage of a company's profit to its overall resources (total assets). Similar to *LEVERAGE*, many studies, such as Al Shetwi (2020), Alghamdi (2012), Habbash (2019) and Mujeeb Saif Mohsen et al. (2019) used *ROA* for the relationship between earnings management and corporate governance. *ROA* is used as index of management's ability to efficiently utilise its resources and assets, and how profitable a company is (Al Mulhim, 2014). Carter, Simkins and Simpson (2003), stated that not including *ROA* as a control variable in the main model of earnings management and corporate governance research may lead to an invalidated model. Consistent with the majority of previous studies (Al Mulhim, 2014; Al Shetwi, 2020; Carter et al., 2003; Constantatos, 2018), the *ROA* has a negative association on the level of earnings management. This study considers that controlling the *ROA* variable is necessary to the extent of the effect on the occurrence of earnings management.

5.4.6.3 Company Size

As has been the case in many prior studies, the size of a company is determined by calculating its natural logarithm of total assets at the end of the year (Al Mulhim, 2014; Chi et al., 2015; Habbash, 2010; Mujeeb Saif Mohsen et al., 2019). Companies can choose the governance approach that is right for them, and a substitute for internal governance structures can be found to suit the specific needs of each business (Peasnell et al., 2005). Small and large businesses are not necessarily the same when it comes to corporate governance requirements, which implies that larger and smaller companies may require different corporate governance structures. The size of the board of directors increases as companies become larger and increasingly differentiated (Boone, Field, Karpoff, & Raheja, 2007). Thus, the size of the company is used as an indicator of its complexity. Small companies are more affected by board size than large companies, according to Dalton, Daily, Ellstrand and Johnson (1998). Patro, Lehn and Zhao (2003) established a positive correlation between board size and company size

but a negative relationship between board size and growth opportunities. As a consequence, the institutional dimensions and complexity of a large organisation can obscure which board characteristics are associated with earnings management. Increasing company size will increase the agency costs and enable more significant managerial discretion (Jensen & Meckling, 1976).

Additionally, large companies may be able to manage earnings better (Bartov, 1993). Based on Watts and Zimmerman (1990), larger companies have a stronger incentive to manage earnings to reduce any potential political risk. According to M. Pincus and Rajgopal (2002), managers within large organisations are more likely to face pressure from their leaders to report more steady earnings. Lobo and Zhou (2006) state that large companies may have a greater possibility of managers manipulating earnings due to the complexity of their operations and the difficulty with which observers can understand any complex activity.

Hence, corporate governance and earnings quality might be influenced by the size of the company. For this reason, control variable *SIZE* of a company is considered in this study to better understand the relationships between corporate governance characteristics, audit quality and earnings management.

5.4.6.4 Government Ownership

Investments by governments in companies can produce benefits that extend beyond profitability. According to Q. Sun et al. (2002), state-sponsored investments play three major roles:

- The signalling effect: investors can receive positive signals from government investment. A small government stake in a company, for instance, can signal the government's commitment to that organisation.
- The monitoring role. Through active monitoring, governments can assist companies to perform better. There is, however, a problem with the practicality of ongoing monitoring.
- The policy role. Governments can provide companies with important business connections.

As a result, government-owned companies benefit from increased management oversight, minority shareholder protection and financial support for infrastructure and the capital markets (Wiwattanakantang, 2001).

This variable will be measured in term of the ratio between the proportion of shares owned by the government and the total ordinary shares issued. Some of the listed companies on the Saudi Arabian capital market are owned by the Saudi government in considerable proportion. An active monitoring process can improve the performance of a company owned by the government (Al Mulhim, 2014; Q. Sun et al., 2002). Government ownership has the power to protect minority shareholders through the role of monitoring management, especially in developing markets (Wiwattanakantang, 2001). Therefore, the control variable *OWNERSHIP* will be included in this study.

5.4.6.5 Companies Experiencing Loss

Several studies assert that there is a positive association between net income and discretionary accruals (Carrera et al., 2017). Additionally, the findings of Ghafran (2013) showed a significant negative relationship between companies experiencing loss and discretionary accruals. Thus, using a dummy variable to distinguish between profitable and loss companies is necessary. Prior studies such as Bruynseels and Cardinaels (2014), Carrera et al. (2017) and Ghafran (2013) used a dummy variable *LOSS* in the control variables to examine the relationship between audit quality and earnings management as a proxy for FRQ. According to prior studies, the measurement of *LOSS* is that takes the value 1 if the company's net income in a given year is negative; otherwise, 0.

5.4.6.6 Industry

This study includes industry group dummies as control variables. According to the Saudi stock market's industry classification standard, this study classifies the industries into nine sectors. The sector dummies include Sector 1 (Energy), Sector 2 (Materials), Sector 3 (Industrials), Sector 4 (Consumer Discretionary), Sector 5 (Consumer Staples), Sector 6 (Health Care), Sector 7 (Communication Services), Sector 8 (Utilities), and Sector 9 (Real Estate). In the analysis, one sector dummy will be left out and it will be the one that makes all other dummy coefficients positive to test the maximum effect of sector dummies.

The classification standard applied in the sample of this study is described in Table 5.3.

Table 5.3 Summary of the Saudi Stock Exchange Industries & Sectors

Sector name	Sector code	Industry group	Industry group code	Total number of companies for each sector
Energy	1	Energy	1	3
Materials	2	Materials	1	23
Industrials	3	Capital Goods	1	8
		Commercial & Professional Services	2	
		Transportation	3	
Consumer Discretionary	4	Retailing	1	6
		Consumer Durables & Apparel	2	
		Consumer Services	3	
Consumer Staples	5	Food & Beverages	1	12
		Food & Staples Retailing	2	
Health Care	6	Health Care Equipment & Services	1	2
		Pharma, Biotech & Life Science	2	
Communication Services	7	Media and Entertainment	1	3
		Telecommunication Services	2	
Utilities	8	Utilities	1	2
Real Estate	9	Real Estate Management & Development	1	2

5.5 Empirical Testing

This study uses IBM SPSS Statistics to undertake data analysis. The thesis will undertake a 2-stage empirical analysis to achieve its objective.

This first stage is to calculate the dependant variable: the absolute value of discretionary accruals as a proxy for measuring FRQ. Both the modified Jones (1995) model and the performance-controlled approach model of Kothari et al. (2005) use a time series regression of

10 years of historical data for the period between 2004 and 2014 for each company to estimate firm-specific parameters. Linear regression, Equation (5.8) for the modified Jones (1995) model, Equation (5.11) for the performance-controlled approach model or Equation (5.13) for the modified Kothari model, will be used to calculate the parameters by applying the appropriate equation for each company according to the model used. The parameters are detected through B coefficients for each component in the equation. Those parameters will be used to compute non-discretionary accruals, in Equation (5.6) for the modified Jones (1995) model or Equation (5.10) for the performance-controlled approach or Equation (5.12) for the modified Kothari model, for the main period of this study (between 2015 and 2017). Then, the dependant variable: the absolute value of discretionary accruals as a proxy for measuring FRQ can be computed, Equation (5.9) for all models—the modified Jones (1995) model, the performance-controlled approach, or the modified Kothari model) via Microsoft Excel.

After computing the dependent variable of this study in the first stage, the second stage will measure the direct and indirect effects of the NCR on FRQ. The analysis of this stage is conducted along two paths. The first path is the direct effect, which represents the direct pressure brought by the Saudi government by introducing the NCR. It is analysed through the year variables as illustrated in the main models (i.e. Equations 5.1 and 5.2) of this study. Generalised estimating equations (GEE), which is an extension of generalised linear models (GLM), will be used to measure the effect of the NCR prior to and after the voluntary and compulsory year with considering all other variables that may affect the dependant variable (FRQ). The year variable is the key element to measure the direct effect of the NCR in the two models' specifications of Equations 5.1 and 5.2. The first model (Equation 5.1) uses the year 2015 as the base to examine the effect of the NCR prior to and after the voluntary year (2016) and the compulsory year (2017). The second model (Equation 5.2) uses the voluntary year (2016) as the base to test the effect of the NCR in moving from the voluntary year (2016) to the compulsory year (2017) which the first model does not measure. A multivariate test will be used to measure the direct effect for both models (Equations 5.1 and 5.2).

The second path is the indirect effect, which will be analysed in two steps. The first step is to test if the independent variables, which represent characteristics of board of directors or factors that influence audit quality, altered significantly when the NCR was introduced, and it is tested through the year variables (T2015 vs T2016); (T2015 vs T2017); and (T2016 vs T2017), as illustrated in the models (i.e. Equations 5.3 and 5.4) of this study. A mix of univariate and non-

parametric tests will be used to measure the indirect effect of the first step. The second step is to examine if those characteristics actually affected FRQ in Saudi Arabia over the relevant period by using the same analysis of the direct effect as illustrated in the main models (i.e. Equations 5.1 and 5.2) of this study.

5.6 Summary

This chapter has presented the research methodology of this thesis. The chapter justifies a quantitative methodology used to examine the direct and indirect effects of the NCR on FRQ for the period between 2015 and 2017 by using four model specifications (Equations 5.1, 5.2, 5.3, and 5.4). The first pathway is the direct effect that explains the pressure brought by the Saudi government by introducing the NCR, which is represented through the year variables as illustrated in Equations 5.1 and 5.2. The second pathway is the indirect effect that explains the relationship between the change of factors that influence audit quality, board of director characteristics and FRQ as a result of the introduction of NCR, as illustrated in Equations 5.1, 5.2, 5.3, and 5.4.

This study primarily employs the modified Jones (1995) model (as the primary proxy for measuring the dependent variable: financial reporting quality) to examine the effect of the NCR on FRQ including through factors that influence audit quality on the Saudi stock market for the period between 2015 and 2017. The final sample of this study is 61 companies, which is equal to 183 observations.

Additionally, this study employed the performance-controlled Kothari model, which is used as a robustness test to measure FRQ. As mentioned previously, the performance-controlled Kothari model used in this study is an extension of the modified Jones (1995) model, by including ROA as presented in Kothari et al. (2005, p. 174).

Further, this study re-tests the performance-controlled Kothari model to be consistent with (Dechow et al., 1995; Jones, 1991) theory by omitting the intercept (constant) and this study named it 'the modified Kothari model'.

In terms of estimating the dependent variable, all accruals models (the modified Jones [1995] model, the performance-controlled Kothari model, and the Kothari model) require the use of at least 10 years of historical data for each company before computing discretionary accruals in the main period. Therefore, this study selected the period between 2004 and 2014 to estimate

the parameters of the non-discretionary accrual. As mentioned in Section 4.1, considering historical data prior to 2004 will reduce the sample size significantly. Both the modified Jones (1995) model and the performance-controlled Kothari model use time series regression for each company to calculate the discretionary accruals.

The next chapter will present the descriptive statistics and univariate analysis of the variables used in this study.

Chapter 6: Descriptive Data Analysis

6.1 Introduction

This chapter presents the descriptive statistics of the variables used in this study to examine the direct and indirect effects of NCR (2015) on FRQ. The sample examined in this thesis comprises 60 non-financial firms on the Saudi stock market. There are two sets of data collected for this thesis. The first set used for the primary models are 60 companies for the between 2015 and 2017. The second set of data collected include the historical data that covers the period between 2004 and 2014 for the same 60 companies, to compute the dependent variable of this study FRQ. The total number of observations used for the primary models of this study is 180.

This study employed two different models to detect earnings management (the dependent variable) as an indication of FRQ. The first and main model of this study (to compute the dependent variable) is the modified Jones model (Dechow et al., 1995), which to date is the most comprehensive model for this purpose and is designed to detect earnings management through calculating discretionary accruals. Applying a modified Jones model, this study used 11 years of historical data (but only 10 data points due to a lagged variable) through time series regression for each firm to estimate the firm-specific parameters. The second model is the Kothari et al.'s (2005) performance-controlled approach model, which is used as a test of robustness for the purpose of this study. Similar to the modified Jones model, the performance-matched model used 11 years of historical data (but only 10 data points due to a lagged variable) through time series regression for each firm to estimate the firm-specific parameters.

As mentioned in Chapter 5, this study will re-test Kothari et al.'s (2005) performance-controlled approach model to be theoretically consistent with the modified Jones model approach and this study will call it 'the modified Kothari model', in addition to Kothari et al.'s (2005) performance-controlled approach model.

The chapter is structured as follows. Section 6.2 shows the summary of statistics for the firm-specific parameters and predicted absolute value of discretionary accruals for all accruals models employed in this study. Section 6.3 reports the descriptive statistics for all observations containing mean, median, minimum and maximum for all independent variables in this study for the period between 2015 and 2017. Section 6.4 reports the same data discussed in Section

6.3 but as year-by-year descriptive statistics for all variables to clearly distinguish the pre- and post-NCR situation. Section 6.5 restates the data from Section 6.4 as yearly changes to better understand the effect of the introduction of NCR. Section 6.6 concludes with a summary of the chapter.

6.2 Accruals Models Used in this Study

This section presents all accruals models employed in this study by providing some key statistics for each model and the differences between each of them.

6.2.1 The Modified Jones Model

As explained in the literature review, this study adopted the modified Jones model to calculate discretionary accruals as an indication of FRQ. The modified Jones model necessitates the use of time series regression for each firm to estimate the firm-specific parameters. Table 6.1 shows the summary of statistics for the all variables of accruals equations used in this study (i.e. the modified Jones model, the performance-controlled approach model Kothari et al. (2005), or the modified Kothari model) for the period between 2004 and 2014, of all companies on the Saudi stock market, except for three firms that were established in 2005 and therefore had only 10 years of historical data. Consistent with Dechow et al. (1995) and Jones' (1991) studies, total accruals are used to estimate the firm-specific parameters α_{1i} , α_{2i} , and α_{3i} by using the following equation with data from the estimation period:

$$TA_{it} / A_{it} - 1 = \alpha_{1i} (1/A_{it-1}) + \alpha_{2i} [(\Delta REV_{it} - \Delta REC_{it}) / A_{it-1}] + \alpha_{3i} (PPE_{it} / A_{it-1}) + \varepsilon_{it} \quad (6.1)$$

Where:

TA_{it} = total accruals for firm i in year t

A_{it-1} = total assets for firm i in year $t-1$

ΔREV_{it} = difference between revenues for firm i in year t and revenues in year $t-1$

ΔREC_{it} = difference between net receivables for firm i in year t and net receivables in year $t-1$

PPE_{it} = total plant, property and equipment for firm i at the end of year t

α_{1i} , α_{2i} , and α_{3i} = firm-specific parameters and will be estimated using eleven-year (only 10 data points due to a lagged variable) historical financial data of the sample companies.

ε_{it} = errors of the model for firm i at the end of year t

Table 6.1 Summary of Descriptive Statistics for All Variables of the Accruals Equations

	Range	Minimum	Maximum	Mean	Std. deviation
TA	69780598.97	-57496665.79	12283933.18	-9223.37	9223.37
A	316.05	0.049	316.10	9.69	37.31
Δ REV	102442246.50	-58331252.77	44110993.75	9223.37	9223.37
Δ REC	26515242.21	-14678758.46	11836483.75	9223.37	9223.37
PPE	165950729.00	5.21	165950734.20	9223.37	18921813.84
ROA	115.22	-67.68	47.54	9.23	10.32

6.2.2 The Performance-controlled Approach Model

This study employs the performance-controlled approach model of Kothari et al. (2005). It is used as a robustness test for this study to measure earnings management as a proxy for FRQ. Similar to the modified Jones model, the performance-matched model requires using time series regression for each firm to estimate the firm-specific parameters. According to the performance-controlled approach model (Kothari et al., 2005), total accruals are used to estimate the firm-specific parameters:

α_{0i} , α_{1i} , α_{2i} , α_{3i} , and α_{4i} by using the following equation with data from an estimation period:

$$TA_{it} / A_{it-1} = \alpha_{0i} + \alpha_{1i} (1/A_{it-1}) + \alpha_{2i} [(\Delta REV_{it} - \Delta REC_{it}) / A_{it-1}] + \alpha_{3i} (PPE_{it} / A_{it-1}) + \alpha_{4i} ROA_{it} + \varepsilon_{it} \quad (6.2)$$

Where:

TA_{it} = total accruals for firm i in year t

A_{it-1} = total assets for firm i in year $t-1$

ΔREV_{it} = difference between revenues for firm i in year t and revenues in year $t-1$

ΔREC_{it} = difference between net receivables for firm i in year t and net receivables in year $t - 1$

PPE_{it} = total plant, property and equipment for firm i at the end of year t

ROA_{it} = return on assets for firm i at the end of year t

α_{0i} , α_{1i} , α_{2i} , α_{3i} , and α_{4i} = firm-specific parameters and will be estimated using eleven-year historical financial data of the sample companies.

ε_{it} = errors of the model for firm i at the end of year t

Table 6.1 shows the summary of statistics for the all variables of the performance-controlled approach model equation.

6.2.3 The Modified Kothari Model

As described in Chapter 5, this study will re-test the performance-controlled approach model (Kothari et al., 2005) to be theoretically consistent with the modified Jones model approach by omitting the constant. After adjusting the performance-matched approach (Kothari et al., 2005) and to be consistent with Dechow et al. (1995) and Jones (1991), the following new equation will be used to estimate the firm-specific parameters α_{1i} , α_{2i} , α_{3i} and α_{4i} :

$$TA_{it} / A_{it-1} = \alpha_{1i} (1/A_{it-1}) + \alpha_{2i} [(\Delta REV_{it} - \Delta REC_{it}) / A_{it-1}] + \alpha_{3i} (PPE_{it} / A_{it-1}) + \alpha_{4i} ROA_{it} + \varepsilon_{it}. \quad (6.3)$$

Where:

TA_{it} = total accruals for firm i in year t

A_{it-1} = total assets for firm i in year $t-1$

ΔREV_{it} = difference between revenues for firm i in year t and revenues in year $t - 1$

ΔREC_{it} = difference between net receivables for firm i in year t and net receivables in year $t - 1$

PPE_{it} = total plant, property and equipment for firm i at the end of year t

ROA_{it} = return on assets for firm i at the end of year t

α_{1i} , α_{2i} , α_{3i} , and α_{4i} = firm-specific parameters and will be estimated using eleven-year historical financial data of the sample companies.

ε_{it} = errors of the model for firm i at the end of year t

Table 6.1 shows the summary of statistics for all variables of the modified Kothari model equation.

6.2.4 The Absolute Value of Discretionary Accruals for all Accruals Models

According to Chapter 5, the absolute value of discretionary accruals is used as a proxy to measure FRQ. This study employs three different models to detect the dependant variable: FRQ. Table 6.2 shows the descriptive statistics of predicted absolute value of discretionary accruals for all accruals models employed in this study.

Table 6.2 Descriptive Statistics of Discretionary Accruals

ABS(DA)	N	Mean	Median	Std. deviation	Min	Max	Skewness	Kurtosis
ABS(DA)—The M. Jones model	180	0.89	0.13	2.76	0.00	21.03	5.51	34.01
ABS(DA)—The performance-controlled approach	180	1.20	0.19	3.78	0.00	28.89	5.22	28.95
ABS(DA)—The M. Kothari model	180	1.28	0.16	4.15	0.00	28.63	4.96	25.47

6.2.4.1 Absolute Value of Discretionary Accrual—ABS(DA)—Based on the Modified Jones Model

The statistics reveal that the mean of the absolute value of discretionary accrual is 0.89 with a median of 0.13. The maximum value of absolute discretionary accrual in the study sample is 21.03 while the minimum value of absolute discretionary accrual is 0.001.

6.2.4.2 Absolute Value of Discretionary Accrual—ABS(DA)—Based Upon the Performance-Controlled Approach Model

The statistics reveal that the mean of the absolute value of discretionary accrual is 1.20 with a median of 0.19. The maximum value of absolute discretionary accrual in the study sample is 28.089 while the minimum value of absolute discretionary accrual is 0.00.

6.2.4.3 Absolute Value of Discretionary Accrual—ABS(DA)—Based Upon the Modified Kothari Model

The statistics reveal that the mean of the absolute value of discretionary accrual is 1.28 with a median of 0.16. The maximum value of absolute discretionary accrual in the study sample is 28.63 while the minimum value of absolute discretionary accrual is 0.00.

6.3 Descriptive Statistics of Independent Variables of the Primary Model

Table 6.3 shows the descriptive statistics for all observations containing mean, median, minimum and maximum, including all independent variables of the primary model in this study for the period between 2015 and 2017.

Table 6.3 Descriptive Statistics Based Upon all Accruals Models

	N	Mean	Median	Std. deviation	Min	Max	Skewness	Kurtosis
AC_Chair	180	0.72	1.00	0.45	0.00	1.00	-0.97	-1.07
ACIND	180	75.55	75.00	22.96	0.00	100.00	-0.52	-0.42
ACSIZE	180	3.48	3.00	0.69	2.00	5.00	1.01	-0.07
ACMEETING	180	6.05	6.00	2.20	2.00	17.00	1.57	3.97
BIG_4	180	0.41	0.00	0.49	0.00	1.00	0.36	-1.89
AUDITREPORT	180	0.95	1.00	0.22	0.00	1.00	-4.16	15.51
BODIND	180	53.40	52.27	15.89	28.57	100.00	0.58	-0.38
BODSIZE	180	8.35	9.00	1.64	5.00	11.00	-0.08	-0.75
BODMEET	180	5.51	5.00	1.94	2.00	15.00	1.99	6.29
OWNERSHIP	180	0.05	0.00	0.22	0.00	1.00	4.16	15.51
LEVERAGE	180	50.27	25.35	65.41	0.00	371.07	2.20	6.49

	N	Mean	Median	Std. deviation	Min	Max	Skewness	Kurtosis
ROA	180	3.89	4.26	15.38	-164.08	34.80	-7.32	80.04
SIZE	180	6.24	6.20	0.76	4.21	8.450	0.47	0.26
LOSS	180	0.22	0.00	0.41	0.00	1.00	1.39	-0.08

6.3.1 Audit Committee Characteristics

6.3.1.1 Audit Committee Chair

The results show that 72% of the study sample appointed a chair of the audit committee with independent membership.

6.3.1.2 Audit Committee Independence

The study sample statistics reveal that the mean of audit committee independence percentage for non-independent members is 75.55% with a median of 75%. The maximum percentage of audit committee independence is 100% while the minimum percentage of audit committee independence is an unexpected 0%.

6.3.1.3 Audit Committee Size

In regard to the size of the audit committee, the average size is 3.48 members with a median of three members. The results show the maximum number of the audit committee members in the study sample is five members while the minimum number is two members.

6.3.1.4 The Frequency of Audit Committee Meetings

The results also reveal that the average number of audit committee meetings is 6.05 meetings per year with a median of six meetings. The maximum number of audit committee meetings in the study sample is 17 meetings per year, while the minimum number is two meetings per year.

6.3.2 External Audit Firm Characteristics

6.3.2.1 Audit Firm Size

The results also show that 41% of the sample companies have Big Four international accounting firms as auditors. This indicates the important position that the Big Four hold in the Saudi audit market.

6.3.3 Board of Director Characteristics

6.3.3.1 Board Independence

In regard to the characteristics of the board of directors, the mean of the ratio of independent directors to the total of the board of directors' size is 53.40 %, with a median of 52.27%. The maximum percentage for independence is 100% while the minimum percentage for independence is 28.57%.

6.3.3.2 Board Size

The average size of the board of directors is 8.35 members with a median of nine members, the maximum number of board of directors' members in the study sample is 11 members while the minimum number is five members.

6.3.3.3 Board Meetings Frequency

The statistics reveal that the average number of board meetings is 5.51 meetings per year with a median of five meetings per year. The maximum number of board meetings in the study sample is 15 meetings per year, while the minimum number is two meetings per year.

6.3.4 Control Variables

6.3.4.1 Auditor Report

The statistics show that 95% of the total sample received an unqualified opinion, while only 5% received modified audit opinions, which were either qualified or adverse opinions, or a disclaimer of opinion.

6.3.4.2 Government Ownership

The statistics show that 5% of the Saudi companies (total sample) is controlled by the Saudi government, which owns more than 50% of total shares of those companies.

6.3.4.3 Financial Indicators

With regard to financial indicators, the average of the leverage of Saudi listed firms is 50.27% with a median of 25.35%. On average, *ROA* is 3.89% with a median of 4.26% of the total Saudi listed firms. On average, *SIZE* is 6.24 with a median of 6.20.

6.3.4.4 Companies that Experience Loss

The result shows that 22% of the study sample recorded a negative net income.

6.4 Descriptive Statistics by Year

The objective of this study is to examine the direct and indirect effects of NCR (2015) on the quality of financial reporting over the period 2015 to 2017. Each year of the sample period has a significant event. The annual reports for 2015 are for the pre-NCR period, the annual reports of 2016 are for the voluntary and non-mandatory year for applying the NCR, and the annual reports for 2017 reflect the compulsory application of the NCR. To achieve the purpose of this study, this section provides the year-by-year descriptive statistics for all variables (see Table 6.4). These statistics help to judge whether or not the new regulations have had an effect on the variables identified in this study as being relevant to FRQ of the Saudi listed companies.

Table 6.4 shows the year-by-year descriptive statistics for all variables

Table 6.4 Annual Descriptive Statistics

	2015				2016				2017			
	Mean	Median	Max	Min	Mean	Median	Max	Min	Mean	Median	Max	Min
ABS(DA)—The M. Jones model	1.08	0.13	20.77	0.00	0.68	0.12	14.63	0.00	0.89	0.13	21.03	0.00
ABS(DA)—The performance-controlled approach	1.33	0.12	28.89	0.00	1.04	0.21	17.32	0.00	1.24	0.19	23.07	0.00
ABS(DA)—The M. Kothari model	1.42	0.14	28.63	0.00	1.07	0.17	17.39	0.00	1.34	0.17	26.86	0.00
AC_Chair	0.72	1.00	1.00	0.00	0.73	1.00	1.00	0.00	0.70	1.00	1.00	0.00
ACIND	76.83	75.00	100.00	25.00	75.61	75.00	100.00	0.00	74.19	66.67	100.00	33.33
ACSIZE	3.43	3.00	5.00	3.00	3.47	3.00	5.00	2.00	3.53	3.00	5.00	3.00
ACMEETING	5.63	5.00	13.00	3.00	6.03	6.00	12.00	2.00	6.48	6.00	17.00	4.00
BIG_4	0.50	0.50	1.00	0.00	0.40	0.00	1.00	0.00	0.33	0.00	1.00	0.00
AUDITREPORT	0.93	1.00	1.00	0.00	0.95	1.00	1.00	0.00	0.97	1.00	1.00	0.00
BODIND	55.04	55.56	100.00	28.57	54.04	55.56	88.89	33.33	51.13	45.45	90.00	33.33
BODSIZE	8.37	9.00	11.00	5.00	8.37	9.00	11.00	5.00	8.32	9.00	11.00	5.00
BODMEET	5.55	5.00	14.00	2.00	5.47	5.00	15.00	2.00	5.52	5.00	13.00	2.00
OWNERSHIP	0.05	0.00	1.00	0.00	0.05	0.00	1.00	0.00	0.05	0.00	1.00	0.00
LEVERAGE	50.74	30.45	330.47	0.00	51.92	27.79	371.07	0.00	48.14	23.01	338.06	0.00
ROA	7.34	5.35	34.8	-13.03	4.17	4.45	29.24	-39.78	0.18	2.9	31.52	-164.07
SIZE	6.26	6.25	8.45	4.90	6.25	6.17	8.42	4.84	6.22	6.16	8.43	4.21
LOSS	0.15	0.00	1.00	0.00	0.23	0.00	1.00	0.00	0.27	0.00	1.00	0.00

6.4.1 Audit Committee Characteristics

6.4.1.1 Audit Committee Independence

Table 6.4 shows the annual descriptive statistics for the proportion of independent audit committee members. The results show the mean of audit committee independence in 2015 was 76.83%. However, with the introduction of the NCR, the mean of audit committee independence decreased to 75.61% and 74.19% in 2016 and 2017 respectively. Also, the statistics reveal that the median numbers of the sample size for the year 2015 and 2016 remained the same (75%) while the median decreased to 66.67% for the NCR-compulsory year (2017). The descriptive statistics show the maximum percentage of audit committee independence for the years 2015, 2016 and 2017 was 100%. In terms of the minimum value, the minimum percentage of audit committee independence for the pre-period before applying the NCR is 25%. In 2016, when the application of the NCR was voluntary, the minimum percentage of audit committee independence dropped to 0%. After the introduction of the NCR in 2017, the percentage of audit committee independence increased to 33.33%.

6.4.1.2 Audit Committee Size

Generally, the descriptive statistics reveal that there are no significant changes to the mean and median in regard to audit committee size for the years 2015, 2016 and 2017. The results show that the mean of the audit committees' size for these three years are 3.43, 3.47, and 3.53 respectively, while the median of the audit committee size remains the same, three members, for all three years. Similarly, the descriptive statistics show the maximum number of audit committee members for the years 2015, 2016 and 2017 is five; however, the minimum size of audit committee members for the years 2015 and 2017 is three, decreasing to two members in 2016.

6.4.1.3 The Frequency of Audit Committee Meetings

The descriptive statistics show that the mean of the frequency of audit committee meetings increases yearly over the period of interest. In 2015, the mean of the audit committee meetings was 5.63 while the mean of the audit committee meetings in 2016 increased to 6.03, and the mean of the audit committee meetings after the introduction of the NCR in 2017 again increased, reaching 6.48. The median of the frequency of audit committee meetings was five

meetings for the pre-period before applying the NCR (2015) while it increased to six meetings after the voluntary year and the mandatory year for applying the NCR (2016 and 2017). The descriptive statistics show the maximum number of meetings for the audit committee before the introduction of the NCR in 2015 was 13 meetings while the maximum number of meetings decreased to 12 meetings for the year 2016. However, it increased to 17 meetings after the introduction of the NCR in 2017. In regard to the minimum number of meetings for the audit committee for the period under study, the minimum number of meetings before applying the NCR in 2015 was three meetings. This decreased to two meetings in 2016 but increased to four meetings in 2017.

6.4.1.4 Audit Committee Chair

Generally, the descriptive statistics reveal that there are no significant changes in regard to the independence of the audit committee chair for the years 2015, 2016 and 2017. In 2015, the average of chairs of audit committees who hold this position with independent membership on the Saudi stock market was 72% for the pre-period before applying the NCR (2015). In 2016, this percentage increased to 73% after the voluntary application of the NCR. However, this percentage decreased to 70% after the introduction of the NCR in 2017.

6.4.2 External Audit Firm Characteristics

6.4.2.1 Audit Firm Size

The statistics reveal that before the implementation of the NCR in 2015, 50% of the Saudi listed companies were audited by Big Four audit firms (PricewaterhouseCoopers, Deloitte, Ernst & Young and KPMG). In 2016, this percentage decreased to 40% of the total sample of Saudi listed companies. In 2017, 33% of the sample size was contracted with Big Four audit firms after the introduction of the NCR; this finding is considered the lowest percentage among the past findings of Big Four audit firms as an indicator of audit firm size.

6.4.2.2 Auditor Report

Generally, the statistics show that the variable of auditor report opinion is quite stable over the three years, prior to and after applying the NCR. In 2015, the firms that received an unqualified opinion represented 93% of the total sample and only 7% received the modified audit opinion which can be either a qualified, an adverse or a disclaimer of opinion. In 2016, the percentage

of firms that received an unqualified opinion increased to 95%. In 2017, the firms that received an unqualified opinion reached 97% of the total sample and only 3% received a modified audit report.

6.4.3 Board of Director Characteristics

6.4.3.1 Board Independence

The descriptive statistics show that the mean of board of director independence slightly decreased yearly over the sample period. In 2015, the mean of the board of director independence was 55.04%, while the mean of the board of director independence in 2016 decreased to 54.04%, and the mean of the board of director independence after the introduction of the NCR in 2017 was 51.13%, showing a further decrease when compared with the percentages for 2015 and 2016. The median of the board of director independence was 55.56% for the pre-period before the application of the NCR (2015) and after the voluntary NCR-application year in 2016 while it decreased to 45.45% after the compulsory year for applying the NCR in 2017. The descriptive statistics show the maximum percentage of the board of director independence for 2015 was 100%; for 2016 it was 88.89%; and for 2017 it was 90%. The minimum percentage of the board of director independence for 2015 was 28.57%; it was 33.33% for the years 2016 and 2017.

6.4.3.2 Board Size

Generally, the descriptive statistics reveal that there are no significant changes in regard to the mean of the size of a board of directors for the years 2015, 2016 and 2017. For these three years, the means are: 8.37, 8.37, and 8.32 respectively, while the median of the board of director size remained the same at nine members, for the years 2015, 2016 and 2017. The maximum size of the board of directors for the years 2015, 2016 and 2017 was 11 members, while the minimum size for these three years was five members.

6.4.3.3 Board Meetings Frequency

The descriptive statistics show that there are no considerable changes in regard to the mean of the frequency of annual board meetings over the sample period. In 2015, the mean of the frequency of the board meetings, before applying the NCR, was 5.55 while the mean of the board meetings in 2016 was 5.47, and the mean of the board meetings after the introduction of

the NCR in 2017 was 5.52. The statistics show that the median of the frequency of the board meetings was five meetings for the years 2015, 2016 and 2017. The results show the maximum number of meetings for the board meetings before the introduction of the NCR in 2015 was 14 meetings while the maximum number of meetings increased to 15 meetings for 2016. However, it decreased to 13 meetings after the introduction of the NCR in 2017. The minimum number of meetings for 2015, 2016 and 2017 was two meetings.

6.4.4 Financial Reporting Quality

6.4.4.1 Absolute Value of Discretionary Accrual—ABS(DA)

Table 6.4 shows the annual descriptive statistics for FRQ variable, which is measured by the absolute value of discretionary accrual on the Saudi stock market. These results are obtained by means of the modified Jones model. The statistics show the mean of the absolute value of discretionary accrual for the pre-period before applying the NCR (2015) was 1.08. In 2016, the mean of the absolute value of discretionary accrual decreased to 0.68 after the voluntary application of the NCR. Despite the introduction of the NCR, the mean of the absolute value of discretionary accrual increased sharply to 0.89 in 2017, the year when it was compulsory to apply the NCR.

In regard to the median, the results show that there are no significant changes in the absolute value of discretionary accrual for the years 2015, 2016 and 2017 where the median results are: 0.13, 0.12, and 0.13 respectively. In 2015, the maximum value of the absolute value of discretionary accrual was 20.77 for the period (2015) prior to the application of the NCR. In 2016, when the application of the NCR was voluntary, the maximum value of the absolute value of discretionary accrual increased to 14.63. In 2017, the maximum value of the absolute value of discretionary accrual increased sharply to 21.03 after the introduction of the NCR, while the minimum of the absolute value of discretionary accrual remained the same, zero, for the years 2015, 2016 and 2017.

Table 6.4 shows the annual descriptive statistics for the absolute value of discretionary accrual, which is measured using the performance-controlled approach. The statistics show the mean of the absolute value of discretionary accrual for the pre-period before applying the NCR (2015) was 1.33. In 2016, the mean of the absolute value of discretionary accrual decreased to 1.04 after the voluntary application of the NCR. Despite the introduction of the NCR, the mean of the absolute value of discretionary accrual increased sharply to 1.24 in 2017, the year when

it was compulsory to apply the NCR. Table 6.4 shows the annual descriptive statistics for the absolute value of discretionary accrual, which is measured using the modified Kothari model for the years 2015, 2016 and 2017. For these three years, the means are 1.42, 1.07, and 1.34 respectively.

The comparison among all accruals models used in this study will be discussed in the conclusion chapter.

6.4.5 Control Variables

6.4.5.1 Government Ownership

The descriptive statistics reveal that there are no significant changes in regard to government ownership for the years 2015, 2016 and 2017. In 2015, 5% of the Saudi companies are controlled by the Saudi government which owns more than 50% of total shares of those companies. In 2016, this percentage remained the same (5%) after the voluntary application of the NCR. Like 2016, the percentage remained the same (5%) after the introduction of the NCR in 2017.

6.4.5.2 Financial Indicators

The statistics show that the average of the leverage of Saudi listed firms is quite stable over the three years, prior to and after applying the NCR. For the 2015, 2016 and 2017, the means are 50.74%, 51.92%, and 48.14% respectively. In terms of the return of assets for these three years, the means are 7.34%, 4.17%, and 0.18% respectively. In term of the firm size, the means are 6.26, 6.25, and 6.22.

6.4.5.3 Companies Experiencing Loss

The statistics reveal that before the implementation of the NCR in 2015, 15% of Saudi listed companies made net losses. In 2016, this percentage increased to 23% of the total sample of Saudi listed companies that recorded net losses. In 2017, 27% of the Saudi listed companies made net losses after the introduction of the NCR.

6.5 Percentage Changes in Descriptive Statistics Between Years

The purpose of this section is to measure the effect of the NCR (2015) issued by MCI of the Kingdom of Saudi Arabia. This section will highlight the key differences between the periods

prior to and after the NCR in all variables that may have been affected by the NCR, according to Table 4.1 in Chapter 4.

Table 6.5 shows the percentage changes in descriptive statistics of all variables between the years.

Table 6.5 Summary of Changes in All Variables before and after the NCR

	2015 vs 2016	2015 vs 2017	2016 vs 2017
ABS(DA)—The M. Jones model	−37.09%	−18.18%	30.88%
AC_Chair	1.39%	−2.78%	−4.10%
ACIND	−1.59%	−3.43%	−1.88%
ACSIZE	1.17%	2.92%	1.73%
ACMEETING	7.10%	15.10%	7.46%
BIG_4	−20.00%	−34.00%	−17.50%
AUDITREPORT	2.15%	4.30%	2.11%
BODIND	−1.81%	−7.09%	−5.38%
BODSIZE	0.00%	−0.60%	−0.60%
BODMEET	−1.44%	−0.54%	0.91%
OWNERSHIP	0.00%	−0.88%	−0.88%
LEVERAGE	2.34%	−5.13%	−7.29%
ROA	−43.16%	−97.57%	−95.72%
SIZE	−0.25%	−0.68%	−0.44%
LOSS	53.33%	80.00%	17.39%

6.5.1 Absolute Value of Discretionary Accrual—ABS(DA)

Table 6.5 shows that there is a significant change to the absolute value of discretionary accrual after the implantation of the NCR. The mean of the absolute value of discretionary accrual on

the Saudi stock market decreased by 37.09% after the voluntary application of the NCR, compared with 2015. In addition, the mean of the absolute value of discretionary accrual also decreased by 18.18% after the compulsory application of the NCR, compared with 2015.

6.5.2 Audit Committee Chair

Table 6.5 does not show a significant change in the average of chairs of audit committees who held this position with independent membership on the Saudi stock market after the implantation of the NCR. The mean of the average of chairs of audit committees increased by only 1.39% after the voluntary application of the NCR, compared with 2015. However, the mean of the average of chairs of audit committees decreased by 2.78% after the compulsory application of the NCR, compared with 2015.

6.5.3 Audit Committee Independence

Similar to audit committee chair, Table 6.5 does not show a significant change, in terms of the mean, on the percentage of the audit committee independence on the Saudi stock market after the implementation of the NCR. The mean of the percentage of the audit committee independence decreased by 1.59% after the voluntary application of the NCR, compared with 2015. The mean of the percentage of the audit committee independence decreased by 3.43% after the compulsory application of the NCR, compared with 2015. However, the minimum percentage of the audit committee independence among all Saudi listed companies has been increased from 0% in 2016 to 33.33% in 2017.

6.5.4 Audit Committee Size

Table 6.5 shows that the mean of the audit committee size increased by 1.17% in 2016 and by 2.92% in 2017, compared with 2015. Also, the descriptive statistics show that the minimum number of the audit committee size in all Saudi listed companies increased from two members in 2016 (after the voluntary of the NCR) to three members in 2017 (after the compulsory of the NCR).

6.5.5 Frequency of Audit Committee Meetings

Table 6.5 shows that there is a significant change in the frequency of audit committee meetings after the implementation of the NCR. The mean of the audit committee meetings on the Saudi stock market increased by 7.10% after the voluntary application of the NCR, compared with

2015. Also, the mean of the audit committee meetings increased by 15.10% after the compulsory application of the NCR, compared with 2015. In addition to the mean, the descriptive statistics show that the minimum number of the audit committee meetings increased from three meetings in 2015 to four meetings in 2017.

6.5.6 Audit Firm Size

Similar to the frequency of audit committee meetings, Table 6.5 shows that there is a significant change, in terms of the mean, on audit firm size, which is measured by the Big Four audit firms (PricewaterhouseCoopers, Deloitte, Ernst & Young and KPMG) prior to and after the introduction of the NCR. The mean of companies audited by the Big Four audit firms decreased by 20% after the voluntary application of the NCR, compared with 2015. In 2017, the mean of companies contracted with Big Four audit firms sharply decreased by 34% after the compulsory application of the NCR, compared with 2015.

6.5.7 Board Independence

Table 6.5 shows that the mean of the board of director independence has been negatively affected by the implementation of the NCR. The mean of the board of director independence among all Saudi listed companies decreased by 1.81% in 2016. Additionally, the mean of the board of director independence dropped by 7.09% after the introduction of the NCR (in 2017). However, the minimum percentage of the board of director independence among all Saudi listed companies increased from 28.57% in 2015 to 33.33% in 2017.

6.5.8 Board Size

Table 6.5 does not show a significant change in regard to the mean of the board of director size after the implementation of the NCR. The mean of the board size is stable and does not change after the voluntary application of the NCR, compared with 2015. The mean of the board size decreased by 0.60% after the compulsory application of the NCR, compared with 2015. In terms of the minimum number of the board size, the minimum number of the board size remained the same (5 members) in 2015 and 2017.

6.5.9 Board Meeting Frequency

Similar to the board size, the frequency of annual board meetings does not indicate a considerable change in regard to the mean (see Table 6.5). The mean of the frequency of board

meetings decreased by 1.44% voluntary application of the NCR in 2016, compared with 2015. Also, the mean of the frequency of board meetings decreased by 0.54% after applying the NCR in 2017, compared with 2015. In term of the minimum number of annual board meetings, the minimum number of board meetings remained the same (2 meetings) in 2015 and 2017.

6.6 Summary

This chapter provided descriptive information on the variables that will be used to test the impact of the introduction of NCR on financial reporting. The descriptive findings showed a significant difference between FRQ pre and post NCR. The average of the absolute value of discretionary accrual on the Saudi stock market decreased by 37.09% in 2016 and 18.18% in 2017, compared with 2015.

In regard to audit committee characteristics, the descriptive findings show that there was an important change in the frequency of audit committee meetings after the NCR. The average of the audit committee meetings on the Saudi stock market increased by 7.10% in 2016 and 15.10% in 2017, compared with 2015. In term of external audit firm characteristics, the results indicated that there was a significant change on the audit firm size after the introduction of the NCR. The mean of companies was contracted with Big Four audit firms sharply decreased by 20% in 2016 and 34% in 2017, compared with 2015.

In regard to board of director characteristics, the descriptive findings show that there was a considerable change in the board of director independence after the implementation of the NCR. The mean of the board of director independence decreased by 1.81% in 2016 and 7.09% in 2017, compared with 2015. Despite the fact that other characteristics that influence audit quality have not had significant changes in terms of the mean, some characteristics have improved in terms of the minimum value. For example, the minimum percentage of audit committee independence among all Saudi listed companies increased from 25% in 2015 to 33.33% in 2017. Also, the minimum number of the audit committee meetings increased from three meetings in 2015 to four meetings in 2017. Finally, the minimum percentage of the board of director independence increased from 28.57% in 2015 to 33.33% in 2017.

Chapter 7: Statistical Analysis

7.1 Introduction

This chapter presents a statistical analysis of the variables used in this study to examine the direct and indirect effects of NCR (2015) on FRQ. This chapter tests the nine hypotheses outlined in Chapter 4 using the empirical research models adopted for this research. The sample examined in this thesis comprises 60 non-financial companies on the Saudi stock market. There are two sets of data collected for this thesis. The first set, which will be used for the primary models, consists of 60 companies for the period between 2015 and 2017, with a total of 180 observations. The second set of data collected is for estimating the predicted value the dependent variable of this study, FRQ, to be used in the primary models. This set is historical and covers the period between 2004 and 2014 for the same 60 companies. The availability of data for a company back to 2004 has limited the analysis to only 60 companies.

This study employed two different models to detect (the dependent variable) earnings management, as an indication of FRQ. The first and main model of this study is the modified Jones model (Dechow et al., 1995). Applying a modified Jones model, this study used 11 years of historical data through a time series regression for each company to estimate the firm-specific parameters. The second model is the performance-controlled approach of Kothari et al. (2005), which is used as a test of robustness for the purpose of this study. As with the modified Jones model, the performance-controlled approach used 11 years of historical data through time series regression for each company to estimate the firm-specific parameters. As mentioned in Chapters 5 and 6, this study also examined a modified version of the Kothari performance-controlled model (Kothari et al., 2005) that is more consistent with the modified Jones model.

This study reports three levels of statistical significance ($p \leq 0.10$; $p \leq 0.05$; and $p \leq 0.01$), however, a 5% level of significance ($p \leq 0.05$) is used to determine which moderating factors are reported as statistically significant. As noted in Chapter 4, this thesis has developed a mix of hypotheses, with some that are 2-tailed hypotheses and others that are 1-tailed. The expected direction of unstandardised coefficients (B) values is based on the review of prior literature and the theoretical frameworks of this thesis (see Table 4.1). Further, this thesis uses the variance inflation factor (VIF) to test for problems of multi-collinearity (Myers, 1990; Stevens, 2012).

The VIF for an independent variable identifies if there is a strong linear relationship between that variable and other independent variables, and no VIF values greater than 10 in the tests indicates that there are no significant issues with multi-collinearity. In this thesis, the results show that there are no significant multi-collinearity problems and the VIF values for all variables are less than 10 (see Tables 7.5, 7.6, and 7.7).

To measure the capability of the present data, R-squared is used to measure the explanatory power of the regression models. This study uses the method of the GLM to analyse the panel data collected; however, this does not automatically compute a conventional R-squared like ordinary linear regression (OLS). Therefore, this study will predict the R-squared for each model manually. According to Long and Freese (2006), there are several approaches to compute the R-squared in such circumstances. One of these ways is the square of the correlation between the predicted value and the actual value of the dependent variable. This study will use the square of the correlation approach to calculate the value of R-squared.

According to Myers (1990), there is consensus about the acceptable value of R-squared: it depends on the type of data and in which scientific field it is. However, in social sciences, such as accounting, the prediction of human behaviour is more difficult and R-squared may reach as high as 0.70 (Myers, 1990). Therefore, the study considers the value of R-squared equal or greater than 0.50 as a strong explanatory power of the models tested, and the value of R-squared which ranges from 0.20 to 0.50 is considered moderate. In this thesis, the main model of this research (modified Jones model) presents a high R-squared result, greater than 50% (i.e. 0.559), indicating a strong explanatory power of the tested model (see Table 7.5). This indicates a moderate explanatory power of the tested model for the first and second robustness test models (the performance-controlled approach model and the modified Kothari model; i.e. 0.474 and 0.489, respectively).

The chapter is structured as follows. Section 7.2 presents the choice between nominal and real variables in the accruals models and a summary of descriptive statistics for the estimated firm-specific parameters in each accruals models used in this study. Section 7.3 presents the statistical results needed to test the direct and indirect effects of the NCR on FRQ, including multivariate, univariate and non-parametric results. Section 7.4 tests all hypotheses outlined in this study. Section 7.5 presents a summary of this chapter.

7.2 Accruals Models Used in This Study

This study employed three different models to detect (the dependent variable) earnings management as an indication of FRQ. The main model of this study is the modified Jones model, which to date is the most comprehensive model and is designed to detect earnings management through calculating discretionary accruals. The second model is the performance-controlled approach (Kothari et al., 2005), which is used as a test of robustness for the purpose of this study. The third model is the modified Kothari model, which is used as a second robustness test in this study.

7.2.1 Nominal vs Real in the Accruals Models

As mentioned earlier, this study adopts the modified Jones model approach (Dechow et al., 1995; Jones, 1991) as a main model for this study to measure FRQ. The modified Jones model requires the use of time series regression for each company to estimate the firm-specific parameters. However, the modified Jones model does not consider the inflation rate in time series regression for each company. This can be misleading, especially, because most, but not all, of the calculation components in the modified Jones model are measured in Saudi Riyal. When mixing currency-based and non-currency-based variables, inflation becomes a relevant issue for maintaining the assumption of a fixed effect of the non-currency-based variables over time. For this reason, this study re-tested the modified Jones model, beside the original approach of the modified Jones model, after adjusting these components in real terms. The consumer price index (CPI) in Saudi Arabia is used to measure the impact of inflation. The nominal terms are for the original approach of the modified Jones model before the adjustment and the real terms are for the modified Jones model after CPI adjustment.

Table 7.1 Model Summary of the Modified Jones Model in Nominal and Real Terms

R-squared 'nominal'	0.536	R-squared 'real'	0.559
QICC 'nominal'	797.326	QICC 'real'	648.676

Table 7.1 presents a comparison between the two ways of applying the modified Jones model (1995). The first way (nominal) is as stated in the modified Jones model (1995) and the second way (real) is the same as the first model but taking into account the variables that are measured in Saudi currency to remove the effect of inflation. Both ways are statistically significant, but

the ‘real’ adjusted modified Jones model shows a stronger explanatory power with ($R^2 = 0.559$) than the ‘nominal’ modified Jones model with ($R^2 = 0.536$). As a consequence of this finding, this study will use the CPI as an index to remove the effect of inflation in all intended analyses.

7.2.2 The Modified Jones Model

The modified Jones model necessitates the use of time series regression for each firm to estimate the firm-specific parameters. Table 7.2 shows the summary of descriptive statistics for the estimated firm-specific parameters (α_{1i} , α_{2i} , and α_{3i}), between 2004 and 2014, of companies on the Saudi stock market, except for three firms that were established in 2005 and therefore had only 10 years of historical data. Total accruals are used to estimate the firm-specific parameters α_{1i} , α_{2i} , and α_{3i} by using Equation 5.8 with data from the estimation period.

Table 7.2 Summary of Descriptive Statistics for the Estimated Firm-specific Parameters-Based on the Modified Jones Model

α	Range	Minimum	Maximum	Mean	Std. deviation
α_{1i}	27457510.00	-2719939.00	24737571.00	766682.53.00	3541195.25
α_{2i}	8.00	-3.00	6.00	0.22	1.14
α_{3i}	77.00	-68.00	9.00	-1.12	8.84

7.2.3 The Performance-controlled Approach Model of Kothari et al.

This study employs the performance-controlled approach model of Kothari et al. (2005), which is used as a robustness test for this study to measure earnings management as a proxy for FRQ. Similar to the modified Jones model, the performance-matched model of Kothari requires using time series regression for each firm to estimate the firm-specific parameters. Total accruals are used to estimate the firm-specific parameters (α_{0i} , α_{1i} , α_{2i} , α_{3i} , and α_{4i}), using Equation 5.11 with data from an estimation period.

Table 7.3 shows the summary of descriptive statistics for the estimated firm-specific parameters (α_{0i} , α_{1i} , α_{2i} , α_{3i} , and α_{4i}).

Table 7.3 Summary of Descriptive Statistics for the Estimated Firm-specific Parameters-Based Upon the Performance-Controlled Approach Model

α	Range	Minimum	Maximum	Mean	Std. deviation
α_{0i}	2795721.30	-1496717.10	1299004.20	18428.38	504968.74
α_{1i}	31405944.00	-9223.37	26153029.00	9223.37	9223.37
α_{2i}	8.25	-4.14	4.11	0.06	1.29
α_{3i}	62.36	-2.49	59.87	1.07	8.10
α_{4i}	80856.26	-41892.70	38963.57	3334.24	16112.47

7.2.4 The Modified Kothari Model

As described in Chapter 5, this study will re-test the performance-controlled approach model (Kothari et al., 2005) to be theoretically consistent with the modified Jones model approach by leaving out the constant. After adjusting the performance-matched approach (Kothari et al., 2005) and to be consistent with (Dechow et al., 1995; Jones, 1991) theory, Equation 5.13 will be used to estimate the firm-specific parameters α_{1i} , α_{2i} , α_{3i} and α_{4i} . Table 7.4 shows the summary of descriptive statistics for the estimated firm-specific parameters (α_{1i} , α_{2i} , α_{3i} , and α_{4i}).

Table 7.4 Summary of Descriptive Statistics for the Estimated Firm-specific Parameters-Based Upon the Modified Kothari Model

α	Range	Minimum	Maximum	Mean	Std. deviation
α_{1i}	58200528.00	-18071118.00	40129411.00	9223.37	9223.37
α_{2i}	7.91	-4.04	3.87	0.02	1.22
α_{3i}	80.63	-68.19	12.44	-1.06	8.92
α_{4i}	157117.40	-41115.30	116002.20	6273.39	20432.77

7.3 Statistical Results Needed to Test the Direct and Indirect Effects of New Company Regulations on Financial Reporting Quality

This study uses panel regression to measure the direct effect of the NCR on FRQ on the Saudi stock market for the period between 2015 and 2017. For the purpose of this study, two different analyses are conducted to measure the direct effect of the NCR using two model specifications to test not only the changes between the base year and the voluntary, and the base year and the compulsory year, they also test the changes between the voluntary year and the compulsory year (see Equations 5.1 and 5.2 in Chapter 5). The estimates of these two models differ only in the estimates of the year comparison variables. In terms of measuring the indirect effect of the NCR on FRQ, this study applies other tests for each variable individually, informed by the literature review in Chapter 3 (univariate and non-parametric tests), in addition to the multivariate results used to assess the direct effect of the NCR on FRQ.

7.3.1 The Main Accruals Models Results

This section presents the multivariate results of Equations 5.1 and 5.2 using the main accruals model used in this study, that is, the modified Jones model (1995).

Table 7.5 Parameter Estimates of Models 1 and 2 with Discretionary Accruals Based on the Modified Jones Model

Parameter	Expected direction	B	Std. error	Hypothesis test		Collinearity statistics
				Wald chi-square	Sig.	VIF
(Intercept)	?	-12.802	2.729	21.999	0.000***	
2016 vs 2015	-ve	-0.621	0.341	3.313	0.034**	1.4
2017 vs 2015	-ve	-0.604	0.362	2.781	0.048**	1.576
2017 vs 2016	-ve	0.017	0.341	0.002	0.518	1.4
AC_Chair	-ve	-0.107	0.420	0.065	0.399	2.026
BIG_4	-ve	-0.292	0.350	0.695	0.202	1.598
AUDITREPORT	?	0.303	0.689	0.193	0.660	1.261
Sector_1 vs Sector_9	-ve	-0.484	1.064	0.207	0.325	2.913
Sector_2 vs Sector_9	-ve	-0.768	0.851	0.813	0.184	9.449
Sector_3 vs Sector_9	-ve	-0.589	0.945	0.388	0.267	5.662
Sector_4 vs Sector_9	-ve	-0.383	0.949	0.163	0.343	4.392
Sector_5 vs Sector_9	-ve	-0.660	0.891	0.548	0.230	7.01
Sector_6 vs Sector_9	-ve	-1.233	1.122	1.209	0.136	2.194
Sector_7 vs Sector_9	-ve	-2.031	1.100	3.408	0.032**	3.169
Sector_8 vs Sector_9	-ve	-0.234	1.522	0.024	0.439	2.041
ACIND	-ve	-0.008	0.009	0.796	0.186	2.522
ACSIZE	-ve	0.529	0.252	4.406	0.981	1.611
ACMEETING	-ve	0.097	0.074	1.722	0.904	1.403
BODIND	-ve	0.017	0.013	1.809	0.910	2.278
BODSIZE	-ve	-0.336	0.121	7.693	0.003***	2.077
BODMEET	-ve	-0.206	0.101	4.181	0.020**	2.113
OWNERSHIP	?	4.407	0.812	29.438	0.000***	2.279
LEVERAGE	?	-0.006	0.003	3.871	0.049**	1.972
ROA	?	-0.035	0.012	9.136	0.003***	1.727
LOSS	?	0.651	0.429	2.301	0.129	1.692
SIZE	?	2.564	0.372	47.549	0.000***	4.572
R-Square	0.559					
QICC	648.676					

a. dependent variable: ABS(DA)

b. * Significance level $p \leq 0.10$ ** Significance level $p \leq 0.05$ ***Significance level $p \leq 0.01$

The model where the modified Jones model is used to estimate discretionary accruals is statistically significant with a strong explanatory power ($R^2 = 0.559$). Table 7.5 shows that *BODSIZE*, *OWNERSHIP*, *ROA*, and *SIZE* are statistically significant at the 1% significance level, while, 2016 VS 2015, 2017 VS 2015, *BODMEET*, Sector_7 VS Sector_9, and *LEVERAGE* are statistically significant at the 5% significance level. The variables 2016 VS

2015, 2017 VS 2015, *BODSIZE*, *BODMEET*, Sector_7 VS Sector_9, *LEVERAGE*, *ROA* have negative effects on discretionary accruals and therefore a positive effect on FRQ. This is unlike the variables *OWNERSHIP* and *SIZE*, which have a positive effect on discretionary accruals and a therefore a negative effect on FRQ.

Table 7.5 shows that the absolute value of discretionary accruals, after controlling for the impact of changes in explanatory variables, decreased significantly over the relevant period and hence represents a positive effect on the quality of financial reports in Saudi Arabia over the relevant period. Specifically, FRQ in the year 2017 and the year 2016 are statistically significantly different at the 5% significance level to that in the year 2015 beyond changes caused by variations in other variables over the same period. In regard to the VIF values, all variables are less than 10 and the results show no significant multi-collinearity problems.

7.3.2 Additional Analyses and Robustness Tests of Accruals Models

This section presents the multivariate results of the robustness tests of the accruals model. The tests show that the models are statistically significant with a moderate explanatory power ($R^2 = 0.474$) for the first robustness test model ‘the performance-controlled approach model of Kothari et al. (2005)’ and ($R^2 = 0.489$) for the second robustness test model ‘the modified Kothari model’.

Among the two robustness tests, the modified Kothari model shows a slightly stronger R-squared than the performance-controlled approach model of Kothari et al. (2005). Regarding the independent variables of this study, the modified Kothari model is more consistent with the results of the main model (the modified Jones model), and it found the variables 2016 VS 2015, 2017 VS 2015, *BODSIZE* are statistically significant at the 5% significance level. The exception is that the variable *BODMEET* is not statistically significant.

7.3.2.1 The Performance-controlled Approach Model of Kothari

This study employs the performance-controlled approach model (Kothari et al., 2005) which is used as a robustness test for this study to measure FRQ.

Table 7.6 Parameter Estimates of Models 1 and 2 with Discretionary Accruals Based on the Performance-controlled Approach Model

Parameter	Expected direction	B	Std. error	Hypothesis test		Collinearity statistics
				Wald chi-square	Sig.	VIF
(Intercept)	?	-15.326	7.323	4.379	0.036**	
2016 VS 2015	-ve	-0.572	0.351	2.657	0.052*	1.4
2017 VS 2015	-ve	-0.628	0.345	3.304	0.035**	1.576
2017 VS 2016	-ve	-0.055	0.183	0.091	0.381	1.4
AC_Chair	-ve	0.374	0.574	0.425	0.742	2.026
BIG_4	-ve	-0.017	0.388	0.002	0.483	1.598
AUDITREPORT	?	0.429	0.625	0.471	0.493	1.261
Sector_1 VS Sector_7	-ve	-3.624	5.162	0.493	0.241	2.913
Sector_2 VS Sector_7	-ve	-3.291	4.744	0.481	0.244	9.449
Sector_3 VS Sector_7	-ve	-3.424	4.999	0.469	0.247	5.662
Sector_4 VS Sector_7	-ve	-3.010	4.974	0.366	0.273	4.392
Sector_5 VS Sector_7	-ve	-3.344	4.932	0.460	0.249	7.01
Sector_6 VS Sector_7	-ve	-4.303	5.008	0.738	0.195	2.194
Sector_8 VS Sector_7	-ve	-4.652	6.246	0.555	0.228	3.169
Sector_9 VS Sector_7	-ve	-3.557	4.935	0.519	0.236	2.041
ACIND	-ve	-0.016	0.013	1.435	0.115	2.522
ACSIZE	-ve	1.198	0.707	2.871	0.954	1.611
ACMEETING	-ve	0.164	0.114	2.071	0.924	1.403
BODIND	-ve	0.012	0.019	0.360	0.725	2.278
BODSIZE	-ve	-0.412	0.251	2.704	0.050**	2.077
BODMEET	-ve	-0.054	0.203	0.070	0.396	2.113
OWNERSHIP	?	-0.305	4.311	0.005	0.944	2.279
LEVERAGE	?	-0.009	0.005	3.643	0.056	1.972
ROA	?	-0.027	0.018	2.231	0.135	1.727
LOSS	?	1.452	0.768	3.578	0.059	1.692
SIZE	?	3.025	1.017	8.847	0.003***	4.572
R-square	0.474					
QICC	1392.392					

a. Dependent Variable: ABS(DA)

b. * Significance level $p \leq 0.10$ ** Significance level $p \leq 0.05$ ***Significance level $p \leq 0.01$

The model where Kothari's performance-controlled approach is used to estimate discretionary accruals is statistically significant and has a moderate explanatory power ($R^2 = 0.474$). Table 7.6 shows that *SIZE* is statistically significant at the 1% significance level, while 2017 VS 2015

and *BODSIZE* are statistically significant at the 5% significance level. The variables 2017 VS 2015 and *BODSIZE* have negative effects on discretionary accruals, which leads to an increase in FRQ. The variable *SIZE* has a positive effect on discretionary accruals and therefore negatively affects FRQ.

Table 7.6 shows that the absolute value of discretionary accruals, after controlling for the impact of changes in explanatory variables, decreased significantly over the relevant period and hence represents a positive effect on FRQ in Saudi Arabia over the relevant period.

The FRQ in the year 2017 is statistically significantly different at the 5% significance level to that in the year 2015 beyond changes caused by variations in other variables over the same period. FRQ in the year 2016 is statistically significantly different at the 10% significance level to that in the year 2015 beyond changes caused by variations in other variables over the same period. In terms of the VIF values, the results indicate no significant multi-collinearity problems as all variables have VIF values less than 10.

7.3.2.2 The Modified Kothari Model

As mentioned in Chapter 5, this thesis employs the modified Kothari model as a second robustness test for this study to measure FRQ.

Table 7.7 Parameter Estimates of Models 1 and 2 with Discretionary Accruals Based on the Modified Kothari Model

Parameter	Expected direction	B	Std. error	Hypothesis test		Collinearity statistics
				Wald chi-square	Sig.	VIF
(Intercept)	?	-18.132	8.454	4.600	0.032**	
2016 VS 2015	-ve	-0.675	0.363	3.454	0.032**	1.4
2017 VS 2015	-ve	-0.698	0.369	3.574	0.029**	1.576
2017 VS 2016	-ve	-0.023	0.220	0.011	0.459	1.4
AC_Chair	-ve	0.347	0.610	0.323	0.714	2.026
BIG_4	-ve	-0.003	0.434	0.000	0.497	1.598
AUDITREPORT	?	0.377	0.730	0.267	0.605	1.261
Sector_1 VS Sector_7	-ve	-2.887	5.134	0.316	0.287	2.913
Sector_2 VS Sector_7	-ve	-2.408	4.715	0.261	0.305	9.449
Sector_3 VS Sector_7	-ve	-2.479	4.997	0.246	0.310	5.662
Sector_4 VS Sector_7	-ve	-2.186	4.944	0.196	0.329	4.392
Sector_5 VS Sector_7	-ve	-2.451	4.898	0.250	0.308	7.01
Sector_6 VS Sector_7	-ve	-3.153	5.009	0.396	0.265	2.194
Sector_8 VS Sector_7	-ve	-3.369	6.416	0.276	0.300	3.169
Sector_9 VS Sector_7	-ve	-2.710	4.792	0.320	0.286	2.041
ACIND	-ve	-0.019	0.013	1.932	0.082*	2.522
ACSIZE	-ve	1.329	0.734	3.276	0.064	1.611
ACMEETING	-ve	0.178	0.121	2.145	0.927	1.403
BODIND	-ve	0.017	0.021	0.661	0.791	2.278
BODSIZE	-ve	-0.513	0.271	3.575	0.029**	2.077
BODMEET	-ve	-0.133	0.234	0.321	0.286	2.113
OWNERSHIP	?	1.461	4.777	0.094	0.760	2.279
LEVERAGE	?	-0.010	0.005	3.327	0.068	1.972
ROA	?	-0.035	0.021	2.763	0.096	1.727
LOSS	?	1.597	0.813	3.854	0.050**	1.692
SIZE	?	3.464	1.186	8.533	0.003***	4.572
R-square	0.489					
QICC	1618.624					

a. Dependent Variable: ABS(DA)

b. * Significance level $p \leq 0.10$ ** Significance level $p \leq 0.05$ ***Significance level $p \leq 0.01$

The model where the modified Kothari model is used to estimate discretionary accruals is statistically significant and has a moderate explanatory power ($R^2 = 0.489$). The variable *SIZE* is statistically significant at the 1% significance level. The following variables are statistically significant at the 5% significance level: 2016 VS 2015, 2017 VS 2015, *BODSIZE*, and *LOSS* (see Table 7.7). The variables 2016 VS 2015, 2017 VS 2015 and *BODSIZE* have a negative

effect on discretionary accruals and therefore a positive effect on FRQ. The variables *LOSS* and *SIZE* have a positive effect on discretionary accruals which negatively affects FRQ.

Table 7.7 shows that the absolute value of discretionary accruals, after controlling for the impact of changes in explanatory variables, decreased significantly over the relevant period and hence represents a positive effect on FRQ in Saudi Arabia over the relevant period.

The FRQ in the year 2017 is statistically significantly different at the 5% significance level to that in the year 2015 beyond changes caused by variations in other variables over the same period. Also, the FRQ in the year 2016 is statistically significantly different at the 5% significance level to that in the year 2015. Regarding the VIF values, the results show no significant multi-collinearity problems.

7.3.3 Testing the Effect of New Company Regulations on Selected Company Characteristics

The main purpose of this thesis is to analyse the new regulations (2015) issued by MCI of the Kingdom of Saudi Arabia. Therefore, this section will use univariate and non-parametric (that used the Wilcoxon signed rank test) tests to examine the changes of all variables that may have been affected by the NCR, according to the NCR analysis in Section 4.3 in Chapter 4 (i.e. audit committee independence, audit committee size, the frequency of audit committee meetings, audit committee chair independence, audit firm size, board independence, board size and board meeting frequency).

7.3.3.1 Audit Committee Independence

Table 7.8 shows insignificant change in *ACIND* over the relevant period.

Table 7.8 Parameter Estimates of the Model with *ACIND*

Parameter	B	Std. error	Hypothesis test	
			Wald chi-square	Sig.
2016 vs 2015	-1.222	2.045	0.357	0.550
2017 vs 2015	-2.639	2.216	1.418	0.234
2017 vs 2016	-1.417	2.416	0.344	0.558

Dependent variable: ACIND

* Significance level $p \leq 0.10$ ** Significance level $p \leq 0.05$ ***Significance level $p \leq 0.01$

In addition to the parametric test statistics in Table 7.8, the non-parametric test (see Table 7.9) shows that the results are aligned with the parametric test. The non-parametric test indicates insignificant change in *ACIND* over the relevant period.

Table 7.9 Non-parametric Test of the Model with *ACIND*

	Std. error	Standardised test statistic	Sig.
2016 vs 2015	9.740	-0.051	0.959
2017 vs 2015	28.695	-1.167	0.243
2017 vs 2016	24.789	-0.706	0.480

Dependent Variable: ACIND

* Significance level $p \leq 0.10$ ** Significance level $p \leq 0.05$ ***Significance level $p \leq 0.01$

7.3.3.2 Audit Committee Size

The audit committee size (*ACSIZE*) shows insignificant change over the relevant period (see Table 7.10).

Table 7.10 Parameter Estimates of the Model with *ACSIZE*

Parameter	B	Std. error	Hypothesis test	
			Wald chi-square	Sig.
2016 vs 2015	0.033	0.040	0.674	0.412
2017 vs 2015	0.100	0.065	2.338	0.126
2017 vs 2016	0.067	0.062	1.165	0.280

Dependent variable: *ACSIZE*

* Significance level $p \leq 0.10$ ** Significance level $p \leq 0.05$ ***Significance level $p \leq 0.01$

Table 7.11 shows that the non-parametric test is consistent with the parametric test statistics in Table 7.10. The non-parametric test indicates insignificant change of the audit committee size (*ACSIZE*) over the relevant period.

Table 7.11 Non-parametric Test of the Model with *ACSIZE*

	Std. error	Standardised test statistic	Sig.
2016 vs 2015	4.287	-0.816	0.414
2017 vs 2015	13.000	1.500	0.134
2017 vs 2016	10.290	-1.069	0.285

Dependent Variable: *ACSIZE*

* Significance level $p \leq 0.10$ ** Significance level $p \leq 0.05$ ***Significance level $p \leq 0.01$

7.3.3.3 *The Frequency of Audit Committee Meetings*

The frequency of audit committee meetings (*ACMEETING*) shows a significant change across the relevant period (see Table 7.12). The change from 2015 to 2017 is statistically significantly different at the 5% significance level. Also, the changes from 2015 to 2017 and 2016 to 2017 are statistically significantly different at the 10% significance level.

Table 7.12 Parameter Estimates of the Model with *ACMEETING*

Parameter	B	Std. error	Hypothesis test	
			Wald chi-square	Sig.
2016 vs 2015	0.400	0.234	2.933	0.087*
2017 vs 2015	0.850	0.348	5.970	0.015**
2017 vs 2016	0.450	0.263	2.929	0.087*

Dependent Variable: *ACMEETING*

* Significance level $p \leq 0.10$ ** Significance level $p \leq 0.05$ ***Significance level $p \leq 0.01$

Table 7.13 Non-parametric Test of the Model with *ACMEETING*

	Std. error	Standardised test statistic	Sig.
2016 vs 2015	73.053	1.909	0.056*
2017 vs 2015	68.513	2.343	0.019**
2017 vs 2016	62.704	1.276	0.202

Dependent Variable: *ACMEETING*

* Significance level $p \leq 0.10$ ** Significance level $p \leq 0.05$ ***Significance level $p \leq 0.01$

The non-parametric test indicates a significant change in the frequency of audit committee meetings (*ACMEETING*) over the relevant period (see Table 7.13). The non-parametric test is consistent with the parametric test statistics, which found the change from 2015 to 2017 was statistically significantly different at the 5% significance level.

7.3.3.4 Audit Committee Chair Independence

Table 7.14 shows insignificant change of the audit committee chair independence (*AC_Chair*) over the relevant period.

Table 7.14 Parameter Estimates of the Model with *AC_Chair*

Parameter	B	Std. error	Hypothesis test	
			Wald chi-square	Sig.
2016 vs 2015	0.017	0.029	0.335	0.563
2017 vs 2015	-0.017	0.050	0.111	0.739
2017 vs 2016	-0.033	0.047	0.504	0.478

Dependent Variable: *AC_Chair*

* Significance level $p \leq 0.10$ ** Significance level $p \leq 0.05$ ***Significance level $p \leq 0.01$

Table 7.15 Non-parametric Test of the Model with *AC_Chair*

	Std. error	Standardised test statistic	Sig.
2016 vs 2015	1.732	-0.577	0.564
2017 vs 2015	7.500	-0.333	0.739
2017 vs 2016	6.364	0.707	0.480

Dependent variable: *AC_Chair*

* Significance level $p \leq 0.10$ ** Significance level $p \leq 0.05$ ***Significance level $p \leq 0.01$

The non-parametric test shows an insignificant change of the audit committee chair independence (*AC_Chair*) across the relevant period (see Table 7.15). The non-parametric test is consistent with the parametric test statistics (see Table 7.14).

7.3.3.5 Audit Firm Size

According to Table 7.16, the variable audit firm size (*BIG_4*) shows a significant change across the relevant period. The changes from 2015 to 2016 and 2015 to 2017 are statistically significantly different at the 1% significance level. Also, the change from 2016 to 2017 is statistically significantly different at the 5% significance level.

Table 7.16 Parameter Estimates of the Model with *BIG_4*

Parameter	B	Std. error	Hypothesis test	
			Wald chi-square	Sig.
2016 vs 2015	-0.100	0.039	6.667	0.009***
2017 vs 2015	-0.167	0.048	12.000	0.001***
2017 vs 2016	-0.067	0.032	4.286	0.038**

Dependent variable: *BIG_4*

* Significance level $p \leq 0.10$ ** Significance level $p \leq 0.05$ ***Significance level $p \leq 0.01$

Table 7.17 Non-parametric Test of the Model with *BIG_4*

	Std. error	Standardised test statistic	Sig.
2016 vs 2015	4.287	2.449	0.014**
2017 vs 2015	8.696	-3.162	0.001***
2017 vs 2016	2.500	2.000	0.045**

Dependent variable: *BIG_4*

* Significance level $p \leq 0.10$ ** Significance level $p \leq 0.05$ ***Significance level $p \leq 0.01$

The non-parametric test shows a significant change of audit firm size (*BIG_4*) across the relevant period (see Table 7.17). The findings of the non-parametric test are in accord with the parametric test statistics (see Table 7.16) in terms of significance; an exception is that the change from 2015 to 2016 is statistically significantly different at the 5% significance level instead of 1% significance level in the parametric test statistics.

7.3.3.6 Board Independence

Table 7.18 shows that the variable the board independence (*BODIND*) had a significant change across the relevant period, except the change from 2015 to 2017. The change from 2015 to 2017 and 2016 to 2017 are statistically significantly different at the 5% significance level.

Table 7.18 Parameter Estimates of the Model with *BODIND*

Parameter	B	Std. error	Hypothesis test	
			Wald chi-square	Sig.
2016 vs 2015	-0.995	1.553	0.411	0.522
2017 vs 2015	-3.904	1.709	5.218	0.022**
2017 vs 2016	-2.908	1.269	5.254	0.022**

Dependent Variable: *BODIND*

* Significance level $p \leq 0.10$ ** Significance level $p \leq 0.05$ ***Significance level $p \leq 0.01$

Table 7.19 Non-parametric Test of the Model with *BODIND*

	Std. error	Standardised test statistic	Sig.
2016 vs 2015	26.772	-0.112	0.911
2017 vs 2015	51.010	-2.147	0.032**
2017 vs 2016	39.353	-2.084	0.037**

Dependent Variable: *BODIND*

* Significance level $p \leq 0.10$ ** Significance level $p \leq 0.05$ ***Significance level $p \leq 0.01$

The non-parametric test shows a significant change in board independence (*BODIND*) across the relevant period, except the change from 2015 to 2017 (see Table 7.19). The findings of the non-parametric test are consisted with the parametric test statistics (see Table 7.18) in terms of significance. The change from 2015 to 2017 is statistically significantly different at the 5% significance level. Also, the change from 2016 to 2017 is statistically significantly different at the 5% significance level.

7.3.3.7 Board Size

Table 7.20 shows insignificant change of the variable board size (*BODSIZE*) over the relevant period.

Table 7.20 Parameter Estimates of the Model with *BODSIZE*

Parameter	B	Std. error	Hypothesis test	
			Wald chi-square	Sig.
2016 vs 2015				1.00
2017 vs 2015	-0.050	0.121	0.170	0.680
2017 vs 2016	-0.050	0.080	0.394	0.530

Dependent Variable: *BODSIZE*

* Significance level $p \leq 0.10$ ** Significance level $p \leq 0.05$ ***Significance level $p \leq 0.01$

Table 7.21 Non-Parametric Test of the Model with *BODSIZE*

	Std. error	Standardised test statistic	Sig.
2016 vs 2015	9.520	-0.158	0.875
2017 vs 2015	20.230	-0.025	0.980
2017 vs 2016	11.911	-0.504	0.614

Dependent Variable: *BODSIZE*

* Significance level $p \leq 0.10$ ** Significance level $p \leq 0.05$ ***Significance level $p \leq 0.01$

The non-parametric test shows an insignificant change of the variable board size (*BODSIZE*) over the relevant period (see Table 7.21). The findings of the non-parametric test are aligned with the parametric test statistics (see Table 7.20) in terms of significance.

7.3.3.8 Board Meeting Frequency

Table 7.22 shows insignificant change of the board meetings frequency (*BODMEET*) over the relevant period.

Table 7.22 Parameter Estimates of the Model with *BODMEET*

Parameter	B	Std. error	Hypothesis test	
			Wald chi-square	Sig.
2016 vs 2015	-0.083	0.218	0.147	0.702
2017 vs 2015	-0.033	0.275	0.015	0.903
2017 vs 2016	0.050	0.247	0.041	0.839

Dependent Variable: *BODMEET*

* Significance level $p \leq 0.10$ ** Significance level $p \leq 0.05$ ***Significance level $p \leq 0.01$

Table 7.23 Non-parametric Test of the Model with *BODMEET*

	Std. error	Standardised test statistic	Sig.
2016 vs 2015	67.395	0.015	0.988
2017 vs 2015	67.038	-0.552	0.581
2017 vs 2016	4.803	0.147	0.883

Dependent Variable: *BODMEET*

* Significance level $p \leq 0.10$ ** Significance level $p \leq 0.05$ ***Significance level $p \leq 0.01$

The non-parametric test shows an insignificant change in board meeting frequency (*BODMEET*) over the relevant period (see Table 7.23). The findings of the non-parametric test are aligned with the parametric test statistics (see Table 7.22) in terms of significance.

7.4 Testing Hypotheses

This section follows the steps mentioned in Chapter 5 to analyse the effect of the NCR, and the analysis is conducted along two paths. The first path is the direct path, which represents the direct pressure brought by the Saudi government by introducing the NCR and it is analysed through the year variables as illustrated in the main models of this study. Second, the indirect path is analysed in two steps. The first step is to test if the independent variables that represent characteristics of board of directors or factors that influence audit quality altered significantly when the NCR was introduced. The second step is to examine if those independent variables actually affected FRQ in Saudi Arabia over the relevant period. The direct path tests only one

hypothesis (H₁) and it has three sub-hypotheses (a, b and c) to have better understanding of FRQ in the Saudi context. The indirect path tests eight hypotheses (from H₂ to H₉).

There are two different steps (for indirect path) to judge whether the change in the factors that influence audit quality or board characteristics affected FRQ as a result of the introduction of NCR. Therefore, each hypothesis from two to nine has (a) and (b) statements corresponding to the two steps. The group of hypotheses (a) mentioned in Chapter 4 are for Step 1 to judge whether the implementation of NCR in 2017 had a significant effect on the changes in all variables identified in this study as being relevant to FRQ. The group of hypotheses (b) are for Step 2 to judge whether the variables that influenced audit quality or board of director characteristics affected FRQ in the Saudi context, judged by whether they are statistically significant in the model for FRQ. This section tests all nine hypotheses outlined in Chapter 4 (see Section 4.4).

7.4.1 The Direct Effect of the New Company Regulations on Financial Reporting Quality

Among all accruals models used in this thesis, the modified Jones model and the modified Kothari model (see Table 7.24) show that FRQ in the year 2016 is statistically significantly different at the 5% significance level to that in the year 2015, beyond changes caused by variations in other variables over the same period. The performance-controlled approach model shows that FRQ in the year 2016 is statistically significantly different at the 10% significance level to that in the year 2015. These findings support that the absolute value of discretionary accruals, after controlling for the effect of changes in explanatory variables, decreased significantly over the relevant period and hence there was a positive effect on the quality of financial reports in Saudi Arabia. This result leads to the acceptance of H_{1a}, which proposes that there is an increase in FRQ in the voluntary year (2016) above and beyond the effect of the changes in all other variables in the model compared with 2015.

Table 7.24 Parameter Estimates of Direct Effect

Parameter	Modified Jones model		Performance-controlled approach model		Modified Kothari model	
	B	Sig.	B	Sig.	B	Sig.
(Intercept)	-12.802	0.000***	-15.326	0.036**	-18.132	0.032**
2016 vs 2015	-0.621	0.034**	-0.572	0.052*	-0.675	0.032**
2017 vs 2015	-0.604	0.048**	-0.628	0.035**	-0.698	0.029**
2017 vs 2016	0.017	0.518	-0.055	0.381	-0.023	0.459

Dependent Variable: *ABS(DA)*

* Significance level $p \leq 0.10$ ** Significance level $p \leq 0.05$ ***Significance level $p \leq 0.01$

According to Table 7.24, all accruals models show that the absolute value of discretionary accruals as a proxy for FRQ of year 2017 is statistically significantly different at a 5% significance level to that in the year 2015, beyond changes caused by variations in other variables over the same period. This result means the full implementation of NCR in 2017 (as a mandatory year) had a positive effect in terms of FRQ after controlling for the effect of changes in explanatory variables, compared with 2015. This finding leads to the acceptance of H_{1b} , which proposes that there is an increase in FRQ in the compulsory year (2017) above and beyond the effect of the changes in all other variables in the model compared with 2015.

However, all accruals models show that FRQ in 2017 is not statistically significantly different at any level (see Table 7.24) to 2016, beyond changes caused by variations in other variables over the same period. This result leads to the rejection of H_{1c} , which proposes that there is an increase in FRQ in the compulsory year (2017) above and beyond the effect of the changes in all other variables in the model compared with the voluntary year (2016).

As a result, the acceptance of H_{1a} and H_{1b} leads to accepting H_1 which proposes that there is an increase in FRQ resulting directly from the NCR.

7.4.2 The Indirect Effect of the New Company Regulations on Financial Reporting Quality

As mentioned earlier, testing the indirect effect of the NCR on FRQ will be conducted in two steps. The first step, which is represented in hypothesis (a) for each variable, is to measure if there is a significant change in the variable after the implementation of the NCR. The second step, which is represented in hypothesis (b) for each variable, is to examine if this variable actually affected FRQ in Saudi Arabia over the relevant period.

7.4.2.1 Audit Committee Independence

Tables 7.8 and 7.9 show an insignificant change in the *ACIND* across the relevant period. This result rejects $H1_a$ which proposes the NCR will affect audit committee independence. Further, Table 7.5 shows that the variable *ACIND* is not statistically significant at any level in terms of influencing FRQ in Saudi Arabia during the relevant period. This implies rejection of $H1_b$, which proposes that FRQ would be affected positively by an increase in audit committee independence in Saudi Arabia.

The rejection of the two sub-hypotheses (H_{2a} and H_{2b}) leads to a rejection of H_2 , which proposes that FRQ would be affected by a change in audit committee independence as a result of the introduction of NCR

7.4.2.2 Audit Committee Size

The audit committee size (*ACSIZE*) is not statistically significantly different across the relevant period (see Tables 7.10 and 7.11). This result leads to rejection of H_{3a} , which proposes that the change in audit committee size has been affected by the NCR. Additionally, Table 7.5 shows that the *ACSIZE* variable is not statistically significant at any level in terms of influencing FRQ in Saudi Arabia across the relevant period. This implies a rejection of H_{3b} , which proposes that FRQ would be affected positively by an increase in audit committee size in Saudi Arabia.

The rejection of the two sub-hypotheses (H_{3a} and H_{3b}) leads to a rejection of H_3 , which proposes that FRQ would be affected by a change in audit committee size as a result of the introduction of NCR.

7.4.2.3 The Frequency of Audit Committee Meetings

The frequency of audit committee meetings (*ACMEETING*) shows a significant change across the relevant period (see Tables 7.12 and 7.13). The change from 2015 to 2017 is statistically significantly different at the 5% significance level. The changes from 2015 to 2017 and 2016 to 2017 are statistically significantly different at the 10% significance level. This result leads to the acceptance of H_{4a} which proposes that the change in audit committee meeting frequency has been affected by the NCR. In terms of influencing FRQ in Saudi Arabia the results (see Table 7.5) found that the frequency of audit committee meetings (*ACMEETING*) is not statistically significant at any level over the relevant period. This result leads to a rejection of H_{4b} , which proposes that FRQ would be affected positively by an increase in audit committee meetings in Saudi Arabia.

The acceptance of one sub-hypothesis (H_{4a}) and the rejection of another one (H_{4b}) leads to rejecting H_4 , which proposes that FRQ would be affected by a change in audit committee meetings as a result of the introduction of NCR.

7.4.2.4 Audit Committee Chair Independence

Tables 7.14 and 7.15 show an insignificant change of the audit committee chair independence (*AC_Chair*) during the relevant period. This implies a rejection of H_{5a} which proposes that the change in audit committee chair independence would be affected by the NCR. Table 7.5 shows that the variable *AC_Chair* is not statistically significant at any level in terms of influencing FRQ in Saudi Arabia across the relevant period. This result leads to a rejection of H_{5b} , which proposes that FRQ would be affected positively by the audit committee chair independence in Saudi Arabia.

The rejection of the two sub-hypotheses (H_{5a} and H_{5b}) leads to rejection of H_5 , which proposes that FRQ would be affected by a change in audit committee chair independence as a result of the introduction of NCR.

7.4.2.5 Audit Firm Size

Audit firm size (*BIG_4*) shows a significant change during the relevant period (see Tables 7.16 and 7.17). The changes from 2015 to 2016 and 2015 to 2017 are statistically significantly different at the 1% significance level (see Table 7.16). Also, the change from 2016 to 2017 is

statistically significantly different at the 5% significance level (see Table 7.16). This result leads to acceptance of H_{6a} , which proposes that the change in audit firm size (BIG_4) would be affected by the NCR. According to Table 7.5, the findings show that the variable BIG_4 is not statistically significant at any level in terms of influencing FRQ in Saudi Arabia across the relevant period. This finding leads to rejection of H_{6b} , which proposes that FRQ would be affected positively by audit firm size in Saudi Arabia.

The acceptance of one sub-hypothesis (H_{6a}) and the rejection of another one (H_{6b}) leads to rejecting H_6 , which proposes that FRQ would be affected by a change in audit firm size as a result of the introduction of NCR.

7.4.2.6 Board Independence

Board independence ($BODIND$) shows a significant change across the relevant period except for the change from 2015 to 2016 (see Tables 7.18 and 7.19). The changes from 2015 to 2017 and 2016 to 2017 are statistically significantly different at the 5% significance level. These results lead to acceptance of H_{7a} which proposes that the change in board independence would be affected by the NCR. In terms of influencing FRQ in Saudi Arabia, the results show that the $BODIND$ variable is not statistically significant at any level (see Table 7.5). This finding leads to rejection of H_{7b} , which proposes that FRQ would be affected positively by an increase in board independence in Saudi Arabia.

The acceptance of one sub-hypothesis (H_{7a}) and the rejection of another one (H_{7b}) leads to rejecting H_7 , which proposes that FRQ would be affected by a change in board independence as a result of the introduction of NCR.

7.4.2.7 Board Size

The results show an insignificant change of the variable $BODSIZE$ over the relevant period (see Tables 7.20 and 7.21). This result leads to rejection of H_{8a} , which proposes that a change in the board of director size would be affected by the NCR. Additionally, the findings (see Table 7.5) show that $BODSIZE$ is statistically significant at a 1% level in terms of influencing FRQ in Saudi Arabia during the relevant period. This implies acceptance of H_{8b} , which proposes that FRQ would be affected positively by an increase in the board size in Saudi Arabia.

The rejection of one sub-hypothesis (H_{8a}) and the acceptance of another one (H_{8b}) leads to rejecting H_8 , which proposes that FRQ would be affected by a change in board size as a result of the introduction of NCR.

7.4.2.8 Board Meeting Frequency

Tables 7.22 and 7.23 show an insignificant change in board meeting frequency (*BODMEET*) across the relevant period. This implies rejection of H_{9a} which proposes that a change in the board meeting frequency would be affected by the NCR. Table 7.5 shows that the variable *BODMEET* is statistically significant at a 5% level in terms of influencing FRQ in Saudi Arabia during the relevant period. This result leads to acceptance of H_{9b} , which proposes that FRQ would be affected positively by an increase in board meeting frequency in Saudi Arabia.

The rejection of one sub-hypothesis (H_{9a}) and the acceptance of another one (H_{9b}) leads to rejecting H_9 , which proposes that FRQ would be affected by a change in board meeting frequency as a result of the introduction of NCR.

7.5 Summary

This chapter presented a combination of univariate, non-parametric and multivariate results to achieve the main purpose of this study. The multivariate results of the model developed in Chapter 5 were used to assess the direct effect of the NCR on FRQ after controlling for the effect of changes in explanatory variables. A mix of univariate, non-parametric and multivariate results were used to measure the indirect effect of the NCR on FRQ, which are represented through factors that influence audit quality and board of director characteristics.

Three different accruals models were used in this study to measure the direct and indirect effects of the NCR on FRQ. The regression analyses, where the modified Jones model (the main accruals model in this thesis) was used to estimate discretionary accruals, revealed that the variables of time factor (reporting year 2016 compared with 2015 and reporting year 2017 compared with 2015), *BODSIZE*, *BODMEET*, *OWNERSHIP*, *ROA*, *LEVERAGE* and *SIZE* are statistically significant (see Table 7.5). Only Sector 7 (Communication Services) was reported as statistically significantly different to Sector 9 (Real Estate) in terms of FRQ after controlling for the effect of changes in explanatory variables over the relevant period.

The second accruals model, which is used as a robustness test, is Kothari et al.'s (2005) performance-controlled approach model. The results show that the variables time factor (reporting year 2017 compared with 2015), *BODSIZE*, and *SIZE* are statistically significant (see Table 7.6). The third model, which is also used as a second robustness test, is the modified Kothari model. The results show that the variables time factor (reporting year 2016 compared with 2015 and reporting year 2017 compared with 2015), *BODSIZE*, *LOSS*, and *SIZE* are statistically significant (see Table 7.7).

According to the findings, only H_1 , which relates to the direct effect of NCR on FRQ, has been accepted, while the remaining hypotheses (H_2 to H_9), which relate to the indirect effect of NCR on FRQ, have been rejected (see Section 7.7).

The results presented in Chapters 6 and 7 will be further analysed in Chapter 8.

Chapter 8: Conclusion

8.1 Introduction

This research was motivated by a desire to assess the recent changes and decisions issued by the MCI in Saudi Arabia, and the extent of their impact and effectiveness on improving FRQ, including through the characteristics of boards of directors, or other factors that influence audit quality. This study has presented a theoretical debate and empirical analysis to investigate the direct and indirect effects of the NCR (issued by the MCI of the Kingdom of Saudi Arabia) on FRQ during the relevant period between 2015 and 2017. This thesis has addressed the following research questions:

RQ₁. Has FRQ been affected as a result of the introduction of NCR?

RQ₂. Are the findings consistent with agency theory, institutional theory and codification theory?

Specifically, the thesis has addressed the following set of sub-questions of RQ₁.

Q_{1.1}: Is there an increase in the financial reporting quality resulting directly from the introduction of NCR?

Q_{1.2}: Has FRQ been affected by a change in audit committee independence as a result of the introduction of NCR?

Q_{1.3}: Has FRQ been affected by a change in audit committee size as a result of the introduction of NCR?

Q_{1.4}: Has FRQ been affected by a change in audit committee meeting frequency as a result of the introduction of NCR?

Q_{1.5}: Has FRQ been affected by a change in audit committee chairperson independence as a result of the introduction of NCR?

Q_{1.6}: Has FRQ been affected by a change in the audit firm size as a result of the introduction of NCR?

Q_{1.7}: Has FRQ been affected by a change in the board independence as a result of the introduction of NCR?

Q_{1.8}: Has FRQ been affected by a change in the board size as a result of the introduction of NCR?

Q1.9: Has FRQ been affected by a change in the board meeting frequency as a result of the introduction of NCR?

To answer all of these research sub-questions, nine hypotheses outlined in Chapter 4 were tested using the empirical research models adopted for this research.

This research has drawn on multiple theories to interpret the direct and indirect effects of the NCR on FRQ. Agency theory is essential to explore the relationships between corporate governance mechanisms, external audits and earnings management. In addition to agency theory, this thesis has employed institutional theory to explain the coercive institutional pressures of corporate governance exerted by the Saudi government on Saudi listed companies. Finally, this study has applied codification theory to explain that the NCR has codified the existing practices (in effect prior to its introduction) of Saudi companies to issue the new regulations.

Empirically, this study determined that the NCR has a direct significant effect, after controlling for the impact of changes in explanatory variables, on FRQ in Saudi Arabia across the relevant period. Specifically, the findings show that FRQ in 2016 and 2017 are statistically significantly different at a 5% significance level compared with 2015; this is beyond changes caused by variations in other variables over the same period. In terms of the indirect NCR effect on the characteristics of board of directors or factors influencing audit quality, the findings reveal that FRQ was not affected by a change in any of these variables as a result of the NCR's introduction.

The chapter is structured as follows. Section 8.2 presents the comparison among all accruals models used in this study in terms of explanatory power (R^2). Section 8.3 discusses the empirical findings of the direct and indirect effects of the NCR on FRQ. Section 8.4 discusses the theoretical and empirical contributions of this study and the practical implications for the Saudi context. Section 8.5 presents the limitations, and directions for future research. Finally, Section 8.6 concludes the chapter.

8.2 Comparison Among All Accruals Models Used in This Thesis

As mentioned in Section 7.2 (in Chapter 7), the accruals models employed to examine FRQ in most of the prior literature do not take inflation rates into account in a time series regression for each company. This can be misleading, given that not all the calculation components are

measured in the Saudi Riyal. Table 7.1 showed that removing the effect of inflation in the modified Jones model (real) has a stronger explanatory power ($R^2 = 0.559$) than the modified Jones model (nominal) ($R^2 = 0.536$). This finding led this study to control the impact of inflation in all accruals models used in this thesis (i.e. the modified Jones model, the performance-controlled approach Kothari model, and the modified Kothari model) to provide more reliable and robust results.

This section evaluates the accruals models used in this thesis for capturing earnings management in terms of explanatory power. This study used three different accruals model to calculate discretionary accruals. The calculation of these models was based on data collected from the Saudi market between 2004 and 2014. The comparison is based on the R^2 of each model (see Table 8.1).

Table 8.1 Comparison Between All Models Used in This Study

Accrual model	Modified Jones model	Performance-controlled approach Kothari model	Modified Kothari model
R-squared	0.559	0.474	0.489

8.2.1 The Modified Jones Model versus the Performance-controlled Approach vs the Modified Kothari Model

According to Table 8.1, the results are consistent with prior studies (see Al-Thuneibat et al., 2016; Carrera et al., 2017; Dechow et al., 2010; Peasnell et al., 2005) that have found the modified Jones model is the most powerful one to calculate discretionary accruals. It indicates the highest R-squared among all models used in this study. The modified Jones model shows the strongest explanatory power ($R^2 = 0.559$), compared with the performance-controlled approach model (Kothari et al., 2005) and the modified Kothari model.

8.2.2 The Performance-controlled Approach versus the modified Kothari Model

As mentioned in Chapter 4, this study re-tested the performance-controlled approach of Kothari et al. (2005) and found it to be consistent with the modified Jones model approach. It achieved this result by omitting the constant as a modification of the original model provided by Kothari et al. (2005): this thesis termed it the modified Kothari model. Many studies (see Habbash, 2019; Habbash & Alghamdi, 2017; Idris et al., 2018; Sharma & Kuang, 2014) have employed

the performance-controlled approach Kothari model when computing accruals, but they continue to add the constant in the performance-controlled approach Kothari model when they calculate the level of discretionary accruals. This thesis views that it is necessary to test in both of these methods (one adding the constant into the accruals models to follow the original model provided by Kothari et al. (2005) and another leaving out the constant to follow the modified Jones model) and then the differences. Therefore, this subsection will evaluate the differences between the two models based on data collected from the Saudi market for the period between 2004 and 2014.

In terms of the performance-controlled approach model of Kothari et al. (2005), the results show that the modified Kothari model has a slightly stronger explanatory power than the original model provided by Kothari et al. (2005), with $R^2 = 0.489$ and 0.474 respectively. The results (see Table 8.1) indicate that adding the constant in the performance-matched model Kothari et al. (2005) when calculating discretionary accruals makes the model slightly weaker than leaving out the constant. This result supports the approach that following the original approach provided by the modified Jones model (1995), and leaving out the constant in the Kothari approach, which is theoretically justified, makes the model slightly stronger and more reliable, based on the sample of this study.

8.3 Direct and Indirect Effects of the New Company Regulations on Financial Reporting Quality

The main purpose of this study is to analyse the direct and indirect effects on FRQ of the new company regulations (2015) issued by MCI of the Kingdom of Saudi Arabia. Based on the theoretical framework used in this study (see Chapter 4), the descriptive data analysis (see Chapter 6), and the statistical analysis (see Chapter 7), this section will discuss the empirical findings (multivariate results) of all variables tested in this thesis, according to Equations 5.1 and 5.2 (see Chapter 5), and the univariate and non-parametric results of the characteristics of boards of directors, or other factors that influence audit quality, to create a comprehensive picture of the direct and indirect effects of the NCR on FRQ. Further, all hypotheses tested in Chapter 7 will be reviewed to answer the research questions.

As mentioned in the Chapter 4, two pathways are followed to examine the effect of the NCR on FRQ. The first pathway is the direct effect (see Figure 4.2 in Chapter 4) that explains the pressure brought by the Saudi government through introducing the NCR. This is represented

through the year variables, as illustrated in the main models of this study. The second pathway is the indirect effect (see Figure 4.2 in Chapter 4) that explains the relationship between the change of factors that influence audit quality, board of director characteristics and FRQ as a result of the NCR's introduction.

8.3.1 The Direct Path of the New Company Regulations Effect on Financial Reporting Quality

8.3.1.1 Financial Reporting Quality in Saudi Arabia

Even though this study (through the year variables) tested the effect of all changes that occurred beyond changes in the other explanatory variables during the study period, the focus was mainly on the NCR. This is because the NCR was the major relevant change to FRQ over the period analysed (see Section 5.2 in Chapter 5). The NCR was the major action that the Saudi government undertook to improve FRQ in Saudi stock markets during the study period (see Section 4.3 in Chapter 4). This study examined the notion that improving FRQ in Saudi companies may not be limited only to the effects of changing key characteristics of boards of directors, or other factors that influence audit quality discussed in this study. Therefore, sub-question Q_{1.1} was created to reflect the institutional pressure aimed at raising the quality of Saudi company financial reports in general:

Q_{1.1}: Is there an increase in FRQ resulting directly from the introduction of NCR?

This research sub-question led to the following hypothesis:

H₁: There is an increase in FRQ resulting directly from the introduction of NCR.

To accept this hypothesis, any of the following sub-hypotheses must be accepted:

H_{1a}: There is an increase in FRQ quality in the voluntary year (2016) above and beyond the effect of the changes in all other variables in the model compared with 2015.

H_{1b}: There is an increase in FRQ in the compulsory year (2017) above and beyond the effect of the changes in all other variables in the model compared with 2015.

H_{1c}: There is an increase in FRQ in the compulsory year (2017) above and beyond the effect of the changes in all other variables in the model compared with 2016.

According to descriptive data analysis (see Table 6.7), the average of the absolute value of discretionary accrual on the Saudi stock market was 1.08 in 2015, 0.68 in 2016, and 0.89 in 2017. The results show that the average of the absolute value of discretionary accruals changed significantly after the introduction of the NCR, but this does not control for the effect of changes in control variables. In terms of the multivariate analysis (see Table 7.2), both H_{1a} and H_{1b} are supported. The results show that discretionary accruals as a proxy for FRQ in the year 2017 is statistically significantly different at a 5% significance level to that in 2015; this is beyond changes caused by variations in other variables over the same period. In addition to 2017, the results show that FRQ in 2016 is statistically significantly different at a 5% significance level to that in 2015; this is beyond changes caused by variations in other variables over the same period.

The findings of FRQ in Saudi Arabia support the suitability of institutional theory as part of a multi-theoretical framework for understanding the regulatory and legal pressures from legislators, especially when examining the effect of new laws or regulations. Institutional theory views corporate governance regulations as pressure from legislators that sit beyond organisational boundaries to improve organisational legitimacy (Oliver, 1991). The NCR are a kind of coercive institutional pressure exerted by regulators on companies. Coercive institutional pressure is related to the environment in which a firm operates, and this kind of pressure is based on regulations and accreditation that regulators enforce on organisations (Frumkin & Galaskiewicz, 2004). The FRQ result is consistent with McGowan's (2014) study that justifies the use of institutional theory to measure the regulatory and legal institutional pressures of compliance on corporate accounting and auditing practices. Saudi Arabia is an emerging economy that has an authoritarian government with a strong central power; this is because it is largely based on a monarchy and its absolute power (see Section 2.2.3). The results show that the FRQ was affected significantly after the voluntary year 2016, compared with 2015; however, the FRQ was not affected significantly in the compulsory year 2017, compared with 2016. The significance of the voluntary year 2016 (compared with 2015) and the non-significance of the compulsory year 2017 (compared with 2016) means that Saudi companies see the Saudi government as an authoritative body. Although 2016 was a voluntary transition, Saudi companies responded to the Saudi government actively.

In relation to sub-question $Q_{1.1}$, the acceptance of two sub-hypotheses (H_{1a} and H_{1b}) led to acceptance of H_1 . This acceptance H_1 led to an answer of 'yes' to sub-question $Q_{1.1}$. $Q_{1.1}$ asks

whether there is an increase in FRQ resulting directly from the introduction of NCR. This finding reveals a broad level of institutional pressure exerted by MCI of the Kingdom of Saudi Arabia on Saudi companies to improve FRQ. This will contribute to achieving one of the main objectives of Vision 2030: the aim of improving the investment environment of the Saudi market, attracting foreign and retaining local capital (see Section 4.3). Further, this finding emphasises that improvements to the FRQ in Saudi Arabia are not restricted to the effects that come from the variables related to factors that influence audit quality and board of director characteristics. Rather, these improvements are above and beyond the effect of the changes in all other variables of the model used in this thesis.

8.3.2 The Indirect Path of the New Company Regulations' Effect on Financial Reporting Quality

8.3.2.1 Audit Committee Independence

The NCR state that an audit committee shall contain at least one independent director (Art. 54 of the NCR); in contrast, the OCR did not require companies to appoint an independent director to their audit committees. The descriptive data analysis (see Table 6.7) shows that the minimum percentage of *ACIND* in Saudi listed companies was 25% in 2015, 0% in 2016, and 33.33% in 2017. The sample of this study reveals that only one company in 2015 had *ACIND* lower than 33.33% (25%). In 2016, only two companies had *ACIND* lower than 33.33% (20% and 0%). In 2017, the *ACIND* of all Saudi listed companies was at least 33.33%. These results show that the NCR improved the minimum percentage of *ACIND* in Saudi listed companies from 25% in 2015 and 0% in 2016 to 33.33% in 2017. However, the average of *ACIND* percentages did not show a significant change after the implementation of the NCR (in 2017). The reason for this is that the improvement in the minimum percentage of *ACIND* was limited to only two companies, who by 2017 had raised audit committee independence to 33.33%. This improvement reflects the compliance of Saudi listed companies with the NCR in terms of audit committee formation, even though the average was not significantly affected.

Regarding the statistical analysis, H_{2a} proposed that the change in audit committee independence was affected by the NCR. The NCR states that an audit committee shall contain at least one independent director. However, the results of the univariate and non-parametric tests did not support H_{1a} , and this shows an insignificant change of *ACIND* over the relevant period (see Section 7.4.1).

In terms of H_{2b} , the variable *ACIND* is not statistically significant at any level in terms of influencing FRQ in Saudi Arabia during the study period; hence, H_{1b} is rejected even though several studies (Fama & Jensen, 1983; Jensen & Meckling, 1976; Klein, 2002) assert that *ACIND* helps to reduce agency problems and constrain earnings management as a proxy for FRQ. This result is consistent with prior findings (Habbash, 2019, Kent et al., 2010; Kukah et al., 2016) that found the relationship between the variable *ACIND* and FRQ was not statistically significant. However, this finding is inconsistent with prior studies in which *ACIND* affects FRQ positively. For example, Almarayeh et al. (2022) and Salleh and Haat (2013) conclude that *ACIND* plays an effective role in improving FRQ by reducing earnings management. Ghafran (2013) also concluded that the *ACIND* has a positive effect on FRQ.

In relation to sub-question $Q_{1.2}$, the rejection of two sub-hypotheses H_{2a} and H_{2b} led to the rejection of H_2 , which proposed that FRQ was affected by a change in audit committee independence as a result of the NCR's introduction. This rejection of H_2 led to an answer of 'no' to sub-question $Q_{1.2}$. $Q_{1.2}$ asks whether FRQ was affected by a change in audit committee independence as a result of the NCR's introduction.

Based on the descriptive data analysis and statistical analysis, FRQ was not affected by a change in audit committee independence as a result of the NCR's introduction (in the short-term) over the study period. This finding may suggest that the NCR was not strong enough to increase audit committee independence, although the OCR did not require companies to appoint an independent director to their audit committees. The sample of this study shows that all companies appointed at least one independent director to their audit committees across the study period (2015, 2016 and 2017), except for one company that did not appoint an independent director in its audit committee in 2016. This indicates that the NCR did not make a significant change because it was already a common practice among Saudi companies to appoint at least one independent director to their audit committees. The findings provide strong support for the arguments of codification theory.

8.3.2.2 Audit Committee Size

According to Article 101 of the NCR, audit committee size must be not fewer than three members and must not be more than five members. This new regulation is an update on the old regulation that only specified a minimum size of an audit committee members (i.e. not fewer than three members), without mentioning a maximum size. The descriptive data analysis (see

Table 6.7) shows that the minimum number of *ACSIZE* in the total sample in Saudi listed companies was three members in 2015, 2016 and 2017, except for one company that had two members in its audit committee in 2016. Also, Table 6.7 shows that the maximum number of *ACSIZE* in the total sample in Saudi listed companies was five members in 2015, 2016 and 2017. Additionally, the results show no significant changes in terms of the average of *ACSIZE* over the study period. Table 6.7 shows that the average of *ACSIZE* for these three years are 3.43, 3.47 and 3.53, respectively. This is strong evidence to support the codification theory that the new regulation can be a result of the regulation environment (Cooke & Wallace, 1990; Gray, 1988; Xiao et al., 1996). This interpretation is consistent with Taylor and Turley's (1986) view that regulators may codify existing practice in a particular environment to enact a new regulation. In accordance with the descriptive data analysis of this study, the Saudi regulator used the existing practices of Saudi companies in terms of the *ACSIZE*, and the new regulations (i.e. Art. 101 of the NCR) were based on these practices.

Regarding the statistical analysis, H_{3a} proposed that the change in *ACSIZE* was affected by the NCR. The results of this study do not support this hypothesis, and it does not show a significant change of *ACSIZE* over the relevant period (see Section 7.4.2). This result led to the rejection of H_{3a} . This finding supports (as mentioned earlier in descriptive data analysis) the notion that the characteristic of *ACSIZE* was codified in line with the Saudi stock market environment, and the new *ACSIZE* regulation was updated to match the current practices of Saudi companies.

In regard to H_{3b} , the variable *ACSIZE* was not statistically significant at any level in terms of influencing FRQ in Saudi Arabia during the study period; thus, H_{3b} is rejected. This result is consistent with Vlaminck and Sarens' (2015) findings that *ACSIZE* is not related to the quality of financial reports in companies listed on the Belgian stock market. In addition to Vlaminck and Sarens (2015), Almarayeh et al. (2022), Ghafran (2013), Soliman and Ragab (2014) and J. Sun et al. (2014) found that the number of audit committee members had no effect on constraining earnings management practices as a proxy for FRQ. However, this finding is inconsistent with prior studies such as (Enny Susilowati & Yahn-Shir, 2020; Kanukuntla & Seyed Masoud Sajjadian, 2017; Phuong & Hong, 2021) in which *ACSIZE* affects FRQ positively.

In relation to sub-question Q_{1.3}, the rejection of two sub-hypotheses H_{3a} and H_{3b} led to the rejection of H_3 , which proposed that FRQ was affected by a change in audit committee size as a result of the NCR's introduction. This rejection of H_3 led to an answer of 'no' to sub-question

(Q_{1.3}). Q_{1.3} asks whether FRQ was affected by a change in audit committee size as a result of the NCR's introduction.

8.3.2.3 *The Frequency of Audit Committee Meetings*

Because the OCR did not specify a minimum number of meetings per year, the NCR established that audit committees must hold a minimum of four meetings per year (Art. 57 of the NCR). The descriptive data analysis (see Table 6.7) shows that Saudi companies have complied with the NCR. The minimum number of audit committee meetings increased from three meetings in 2015 and two meetings in 2016 to four meetings after the implementation of the NCR in 2017. In 2015, the average of *ACMEETING* was 5.63, while the average of *ACMEETING* in 2016 increased to 6.03; the average of *ACMEETING* after the implementation of the NCR in 2017 increased to 6.48. The results show that the average of *ACMEETING* in the Saudi stock market increased by 7.10% after the voluntary application of the NCR in 2016, compared with 2015. It significantly increased by 15.10% after the compulsory application of the NCR in 2017, compared with 2015. In accordance with the descriptive data analysis, the results show that *ACMEETING* was affected after the introduction of the NCR.

Regarding the statistical analysis, H_{4a} (which proposed that the change in audit committee meetings was affected by the NCR) was accepted. *ACMEETING* shows a significant change across the relevant period. This finding is consistent with the descriptive data analysis and asserts that *ACMEETING* was affected significantly after the implementation of the NCR.

In terms of H_{4b}, *ACMEETING* is not statistically significant at any level in terms of influencing FRQ in Saudi Arabia during the study period. H_{4b}, which proposed that FRQ was affected positively by the increase in audit committee meetings in Saudi Arabia, was rejected, although it is proposed that *ACMEETING* is used as an index to measure the effectiveness of audit committees and the level of oversight (Habbash, 2010). This study found no significant relationship between *ACMEETING* and FRQ. This finding is in line with Alghamdi (2012), Almarayeh et al. (2022), Habbash (2010) and Baxter and Cotter (2009), who all report no significant association between *ACMEETING* and the quality of financial reports. However, this finding is inconsistent with prior studies, such as those of DeZoort et al. (2002), Inaam and Khamoussi (2016), Kanukuntla and Seyed Masoud Sajjadian (2017), and Mohsen et al. (2020), who identify a significant positive relationship between the number of audit committee meetings held through an entire year and FRQ. This result does not support the argument that

the frequency of audit committee meetings increases the level of oversight of the financial reporting process, or there is a link between the level of diligence exercised by audit committee members and the number of meetings conducted per year in Saudi stock companies (Habbash, 2010).

In relation to sub-question Q_{1.4}, the acceptance of H_{4a} and the rejection of H_{4b} led to the rejection of H₄. This proposed that FRQ was affected by a change in audit committee meetings as a result of the NCR's introduction. This rejection of H₄ led to an answer of 'no' to sub-question Q_{1.4}. Q_{1.4} asks whether FRQ was affected by a change in audit committee meetings as a result of the NCR's introduction.

8.3.2.4 Audit Committee Chair Independence

While the OCR stated that the audit committee chairperson should be a non-executive director, the NCR updated this regulation to state that the chairperson must be an independent director (Art. 54 of the NCR).

The descriptive data analysis (see Table 6.7) shows insignificant changes in the average of chairs of audit committees (*AC_Chair*) who hold this position with independent membership on the Saudi stock market after the introduction of the NCR. Table 6.7 indicates that the average of *AC_Chair* on the Saudi stock market was 72% in 2015, 73% in 2016, and 70% in 2017 of the total sample. This indicates that Saudi listed companies did not fully comply with the NCR in terms of *AC_Chair*, and 30% of Saudi listed companies did not appoint an independent director as a chairperson. In regard to the high number of companies non-compliant with Article 54, some Saudi companies stated in their annual reports that their audit committees contained more than one independent director, and there was thus no need to appoint an independent director as chairperson of those committees (such as Section 27 in the annual reports for the Saudi company SABIC). This suggests that some Saudi companies may not fully understand the power difference between being a 'chair' and a 'member'. The chair of the audit committee has far more power than any other member, and there is a reason why the NCR stated that the chair should be independent. Having an independent chair is important for the effectiveness of an audit committee, as they have a considerable amount of power and authority (Jensen, 1993). The chair of an audit committee has organisational and administrative authority to oversee the audit committee's operations, including the appointment of an external auditor, and managing board meetings (Tanyi & Smith, 2015). Kamarudin, Ismail and

Samsuddin (2012) found that non-independent chairs have a negative influence on the effectiveness of an audit committee, even though all members (except the chair) are independent directors. This finding also suggests that the MCI (the NCR's regulator) should monitor Saudi company practices more closely to ensure that all Saudi companies are properly complying with the NCR. This will help the Saudi regulator to achieve the main purpose of the NCR.

Regarding the statistical analysis, H_{5a} , which proposed that the change in audit committee chair independence was affected by the NCR, was rejected. Although the NCR created a new requirement that the chair of an audit committee should be an independent director, the results of this study do not support this hypothesis. Instead, it shows an insignificant change of *AC_Chair* over the study period. This finding is consistent with the descriptive data analysis that found the change in *AC_Chair* was not significantly affected by the NCR's implementation.

In terms of influencing FRQ in Saudi Arabia, *AC_Chair* was not statistically significant at any level during the study period. This result led to the rejection of H_{5b} , which proposed that FRQ was positively affected by audit committee chair independence in Saudi Arabia. The result of this study is inconsistent with several studies, such as those of Fariha et al. (2021) and Leung et al. (2014), who found that *AC_Chair* had a direct impact on the effectiveness of the audit committee, which ultimately positively affected FRQ.

In relation to sub-question $Q_{1.5}$, the rejection of two sub-hypotheses H_{5a} and H_{5b} led to the rejection of H_5 . This proposed that FRQ was affected by a change in audit committee chair independence as a result of the NCR's introduction. This rejection of H_5 led to an answer of 'no' to sub-question $Q_{1.5}$. $Q_{1.5}$ asks whether FRQ was affected by a change in audit committee chair independence as a result of the NCR's introduction.

8.3.2.5 Audit Firm Size

The OCR did not place any restrictions on the contractual relationship between Saudi companies and audit firms. However, the NCR introduced a new regulation (Article 133) that may significantly affect the contractual relationship between Saudi companies and audit firms. According to Article 133 of the NCR, all Saudi companies may contract with an auditing firm for a period not exceeding five consecutive years, and those who have finished this period may only be reappointed after two years. Institutional pressures are exerted by Vision 2030 to

support local audit firms in Saudi Arabia (see Section 2.2.5). Vision 2030 aims to increase the localisation of the private sector and its targets, to increase SME contributions to GDP. As mentioned in Chapter 4, the new regulation issued by the NCR enabled an earlier impact of Vision 2030 to push for more local Saudi auditors. It forced companies to think about a change of auditor earlier than they might have otherwise done. In addition to the NCR, the Saudi government added another pressure to support the objective of Vision 2030 through SOCPA. In 2015, the Council of Consultation (Majlis al-Shura) approved SOCPA's proposal to add a new article to the SOCPA regulations (see Section 4.3.7). The new regulation of SOCPA stated that the number of listed companies audited by an external audit firm during each year may not exceed five listed companies for each audit firm (Article 14 of SCOPA). Consequently, the new regulations issued by the NCR and SOCPA enabled diversification in line with Vision 2030's objective to support local audit firms.

The descriptive data analysis (see Table 6.7) shows that the average of Saudi companies that were contracted with Big 4 audit firms to total companies as follows: 50% in 2015, 40% in 2016, and 33% in 2017. These results indicate that the average of companies that were contracted with Big Four audit firms decreased sharply by 34% after implementation of the NCR, compared with 2015. In addition, 2017 represents the lowest average of companies that were contracted with the Big 4 to perform audit services, compared with 2015 and 2016.

Regarding the statistical analysis, H_{6a} , which proposed that the change in audit firm size was affected by the NCR, was accepted. The results show a significant change to *BIG_4* over the relevant period. This result is consistent with the descriptive data analysis that found the change in *BIG_4* was affected significantly by the NCR's implementation. This finding reflects the institutional pressure by Vision 2030 to support local firms in Saudi Arabia and increase SME contributions to GDP. Vision 2030, through the NCR and SOCPA, supports diversification to contract more local Saudi firms, and this is likely to reduce the average size of audit firms used. Therefore, the dominance of the Big 4 in the Saudi market has been significantly affected. This finding strongly supports the impact of Vision 2030's objective of 'Saudisation', which aims to increase the localisation of the private sector and its targets to increase the SME contribution to GDP from 20% to 35% (see Section 2.2.5). The NCR enhanced institutional pressure (from Vision 2030) on Saudi companies because there be no increase in local audit firms if Saudi companies do not change their auditors.

In terms of influencing FRQ in Saudi Arabia, this thesis found that the *BIG_4* variable was not statistically significant at any level in Saudi Arabia during the study period. This finding led to the rejection of H_{6b} , which proposed that FRQ was affected positively by audit firm size in Saudi Arabia. This result is consistent with studies such as those of Al Shetwi (2020), (Elghuweel et al., 2017), Seok Woo and Rho (2004), and Sharma and Kuang (2014), who found that the Big 4 audit firms had no effect on earnings management as a proxy for FRQ.

In relation to sub-question $Q_{1.6}$, the acceptance of H_{6a} and the rejection of H_{6b} led to the rejection of H_6 , which proposed that FRQ was affected by a change in audit firm size as a result of the NCR's introduction. This rejection of H_6 led to an answer of 'no' to sub-question $Q_{1.6}$. $Q_{1.6}$ asks whether FRQ was affected by a change in audit firm size as a result of the NCR's introduction.

8.3.2.6 Board Independence

The NCR states that the number of independent directors on a board should not be fewer than two members or one-third of the board members, whichever is greater (Art. 16 of the NCR). The OCR only mentioned that one-third of board members should be independent.

The descriptive data analysis (see Table 6.7) shows that the averages of board independence for 2015, 2016 and 2017 were 55.04%, 54.04% and 51.13%, respectively. The results indicate that the average of the board of directors independence ratio (*BODIND*) dropped by 7.09% after the introduction of the NCR in 2017, compared with 2015. Although the average of *BODIND* decreased after the introduction of the NCR, the descriptive statistics show the minimum percentage of *BODIND* increased from 28.57% to 33.33% after the NCR's introduction. This increase in the minimum percentage of the board of directors' independence ratio indicates that all Saudi companies are fully compliant with the NCR in terms of board independence regulation. However, this improvement did not make a significant change in the average percentage of *BODIND* among Saudi companies because it was represented by only one company, according to the sample of this study. Only one company was less than 33.33% of *BODIND* in 2015, while all Saudi companies had at least 33.33% of *BODIND* in 2016 and 2017.

In terms of the number of independent directors on a board, the NCR issued an additional condition regarding the board of directors formation. The NCR imposed a condition that company boards appoint at least two independent directors on their boards. However, the

sample of this study shows that all Saudi listed companies had at least two independent directors on their boards in 2015, 2016 and 2017. This result shows that the NCR used an already common practice of Saudi listed companies regarding the number of independent directors on a board. This finding is strong evidence to support codification theory.

Regarding the statistical analysis, H_{7a} , which proposed that the change in board independence was affected by the NCR, was accepted. The results show that the change of *BODIND* is statistically significantly different at a 5% significance level over the relevant period. This finding is consistent with the descriptive data analysis that found the change in *BODIND* was affected significantly by the implementation of the NCR. It found the average of *BODIND* dropped by 7.09% in 2017, compared with 2015. Unlike other NCR variables of this study, both the statistical analysis and the descriptive data analysis show that the average of *BODIND* was affected negatively after the introduction of the NCR.

In relation to H_{7b} , *BODIND* was not statistically significant at any level in terms of influencing FRQ in Saudi Arabia during the study period. This result led to the rejection of H_{7b} , which proposed that FRQ was affected positively by board independence in Saudi Arabia. This finding is consistent with Y. Li et al. (2008) and Seiyaibo and Okoye (2020), who found no significant relationship between *BODIND* and earnings management as a proxy for FRQ. This result supports institutional theory where it expects that the board of director independence is only an outcome of coercion and pressure from legislators to improve organisational effectiveness, or an outcome of imitation (Young & Thyl, 2014). However, this finding is inconsistent with most prior studies (Benkel et al., 2006; Ezat & El-Masry, 2008; Habbash, 2019; Jaggi et al., 2009; Oba, 2014) where *BODIND* constrains earnings management and enhances FRQ quality.

In relation to sub-question $Q_{1.7}$, the acceptance of H_{7a} and the rejection of H_{7b} led to the rejection of H_7 . This proposed that FRQ was affected by a change in board independence as a result of the NCR's introduction. This rejection of H_7 led to an answer of 'no' to sub-question $Q_{1.7}$. $Q_{1.7}$ asks whether FRQ was affected by a change in board independence as a result of the introduction of NCR.

8.3.2.7 Board Size

Prior to implementation of the NCR, the OCR only specified a minimum size for a board of directors (i.e. not less than three members) without specifying the maximum size. The NCR amended this to specify a maximum size of the board of directors of not more than 11 members.

The descriptive data analysis (see Table 6.7) reveals no significant changes to the average of board of director size for 2015, 2016 and 2017. The descriptive data also shows no change in the maximum number of board of directors (11 members) for the years 2015, 2016 and 2017, while the minimum number for these three years was five members. This indicates that the NCR's introduction did not make a major difference in terms of board of director size. The maximum size of boards of directors for 2015 and 2016 (11 members) remained the same after the implementation of the NCR in 2017. This is strong evidence to support codification theory. Hence, the Saudi regulator included the current practices of Saudi companies in terms of *BODSIZE* in the new regulation.

Regarding the statistical analysis, the results show that the change in *BODSIZE* was not statistically significant across the study period. This result led to the rejection of H_{8a} . This proposed that the change in board size was affected by the NCR. This finding is consistent with the descriptive data analysis, where the change in *BODSIZE* was not significantly affected by the implementation of the NCR.

In terms of the relation between FRQ and *BODSIZE* in the Saudi market, H_{8b} , which proposed that FRQ was affected positively by board size in Saudi Arabia, was accepted. This statement is supported by the multivariate analysis that shows the change of *BODSIZE* is statistically significant at a 1% level in terms of influencing FRQ in Saudi Arabia. This finding is consistent with previous studies (Alghamdi, 2012; Ezat & El-Masry, 2008; Habbash, 2019; Kamolsakulchai, 2015; Mohsen et al., 2020; Seiyaibo & Okoye, 2020; Yu, 2008) where *BODSIZE* had a positive effect on FRQ. Additionally, this finding aligns with an agency perspective, which expects that a larger number of board members will have a positive effect on management activities through including more experienced directors. This may improve supervision systems in relation to management. This view is supported by multiple studies, such as Bédard et al. (2004), Pearce and Zahra (1992), Peasnell et al. (2005) and Xie et al. (2003), who assert that a larger board size is positively related to constraining earnings management. However, this finding is inconsistent with previous studies, such as those of

Elghuweel et al. (2017), Y. Li et al. (2008) and J. Sun et al. (2014), who found *BODSIZE* was not related to FRQ.

In relation to sub-question Q_{1.8}, the rejection of H_{8a} and the acceptance of H_{8b} led to a rejection of H₈. This proposed that FRQ was affected by a change in board size as a result of the introduction of NCR. This rejection of H₈ led to an answer of ‘no’ to sub-question Q_{1.8}. Q_{1.8} asks whether FRQ was affected by a change in board size as a result of the introduction of NCR. However, the acceptance of H_{8b} explains that *BODSIZE* was an important characteristic in influencing FRQ in the Saudi context during the study period, and that the Saudi regulator should consider this characteristic, which has a direct link to FRQ, if there is improvement in the future.

8.3.2.8 Board Meeting Frequency

The number of board of director meetings was not regulated in the OCR. The OCR did not specify a minimum number of meetings per year. The NCR requires the directors of any Saudi company to hold a minimum of two meetings per year (Art. 83.1 of the NCR).

In accordance with the descriptive statistics of this study, Table 6.7 reveals no considerable changes in regard to the average annual board meetings number after the introduction of the NCR. In 2015, the average of board meetings frequency was 5.55, while the average of *BODMEET* in 2016 was 5.47; the average of *BODMEET* after the introduction of the NCR in 2017 was 5.52. The descriptive statistics show that the maximum number of *BODMEET* for the three years were 14 meetings in 2015, 15 meetings in 2016 and 13 meetings in 2017. However, the minimum number of *BODMEET* remained two meetings per year for 2015 and 2016, and this was the situation even after the implementation of the NCR in 2017. Similar to *BODSIZE*, the new regulation in regard to *BODMEET* aligns with codification theory. The current practices of Saudi companies in terms of *BODMEET* remained the same and the new regulation reflects the current practices of Saudi companies.

According to the statistical analysis, H_{9a}, which proposed that the change in board meeting frequency was affected by the NCR, was rejected. The variable *BODMEET* shows an insignificant change over the relevant period. This finding supports the descriptive statistics analysis that found no major changes in *BODMEET* after the introduction of the NCR. In addition to the descriptive statistics analysis, the statistical analysis finding is also strong evidence to support codification theory.

In terms of H_{9b}, *BODMEET* was statistically significant at a 5% significance level with FRQ in the Saudi context during the study period. This result led to the acceptance of H_{9b}, which proposed that FRQ was affected positively by the increase in board meeting frequency in Saudi Arabia. This finding aligns with previous studies (Alghamdi, 2012; Hashim & Abdul Rahman, 2010; Mujeeb Saif Mohsen et al., 2018; Xie et al., 2003) where *BODMEET* had a negative relationship with earnings management, and hence a positive effect on the quality of financial reports. This finding supports the idea that the number of board meetings is an important index to measure the board's activity, boosting shareholder confidence. This finding aligns with agency theory, which expects a board that meets regularly can devote more time to address a company's dilemmas and fulfil their responsibilities in line with shareholder interests.

In relation to sub-question Q_{1.9}, the rejection of H_{9a} and the acceptance of H_{9b} led to a rejection of H₉. This proposed that FRQ was affected by a change in board meeting frequency as a result of the introduction of NCR. This rejection of H₉ led to an answer of 'no' to sub-question Q_{1.9}. Q_{1.9} asks whether has FRQ was affected by a change in board meeting frequency as a result of the introduction of NCR. Similar to *BODSIZE*, the acceptance of H_{9b} suggests that *BODMEET* was an essential variable in influencing FRQ in the Saudi context during the study period. This finding indicates that Saudi regulators should consider the direct link between *BODMEET* and FRQ in the Saudi context for any future improvements in the NCR.

8.3.3 Control Variables

This section reports the findings of the control variables used in this study and compares these findings with the prior studies.

8.3.3.1 Auditor Report

The results (see Table 7.2) indicate no association between auditor reports and FRQ. This finding is inconsistent with a number of studies (Alghamdi, 2012; E. Bartov et al., 2000) that find *AUDITREPORT* positively affects the constraint of earnings management as a proxy for FRQ. According to the descriptive statistics (see Table 6.7), companies that received an unqualified opinion increased from 93% in 2015 (pre-NCR) to 97% in 2017 (post-NCR). Only 3% of the total companies received a modified audit report in 2017. This improvement of *AUDITREPORT* is attributed as a materiality or scope limitation, rather than earnings manipulation, and is consistent with the conclusions of Butler et al. (2004).

8.3.3.2 *Financial Leverage Ratio*

The findings (see Table 7.2) show that financial leverage ratios were negatively associated with earnings management, and hence had a positive effect on the quality of financial reports, which is consistent with prior studies (Becker et al., 1998; DeFond & Jiambalvo, 1994; Türegün, 2018). This finding supports the view that highly leveraged companies are less likely to be involved in earnings management practices; hence, it has a positive effect on FRQ (Türegün, 2018).

8.3.3.3 *Return on Assets*

The results (see Table 7.2) found a significantly positive association between *ROA* and FRQ at a 1% significance level. This finding is consistent with prior studies such as Al Mulhim (2014), Al Shetwi (2020), Carter et al. (2003) and Constantatos (2018). This finding supports the notion that including *ROA* as a control variable in the main model of this study is essential to assure main model validation.

8.3.3.4 *Company Size*

The results (see Table 7.2) show that company size had a positive effect on discretionary accruals and a negative effect on FRQ in Saudi Arabia. This result supports Jensen and Meckling's (1976) finding that confirmed a larger company size increased agency costs and enabled managers to exercise more discretion. In addition to Jensen and Meckling (1976), Dimitropoulos and Asteriou (2010) and Lobo and Zhou (2006) found that large companies have a greater possibility of managers manipulating earnings due to the complexity of their operations.

8.3.3.5 *Government Ownership*

The results (see Table 7.2) support the notion that government ownership is positively associated with earnings management; thus, it has a negative influence on FRQ. This finding is consistent with some Saudi studies such as Alghamdi (2012), who found that government ownership was positively associated with earnings management in Saudi Arabia for the period 2006 to 2009. This may be attributed to governmental pressures that were placed on management to announce more expected earnings. This view is supported by Yen, Chun, Abidin and Noordin (2007) who found that companies with high *OWNERSHIP* tended to

manage their earnings. In addition, Yen et al. (2007) and Wei (2007) assert that *OWNERSHIP* has a negative effect on company performance.

8.3.3.6 Companies Experiencing Loss

The results (see Table 7.2) show that the relationship between companies experiencing loss and earnings management as a proxy for FRQ is not statistically significant. This result aligns with Carrera et al. (2017) and Klein (2002) who found that the association between *LOSS* and earnings management was not statistically significant.

8.3.3.7 Industry

Among all Saudi sectors, only Sector 7 (Communication Services) is reported as being statistically significantly different to Sector 9 (Real Estate), which is one of the two sectors at an extreme, in terms of FRQ, after controlling for the effect of changes in explanatory variables over the relevant period (see Table 7.2).

8.3.4 Hypotheses and Findings Summary

This section reports the results of empirical findings on the direct and indirect effects of the NCR (2015) on FRQ, to answer the main research question, RQ₁. RQ₁ asks whether FRQ was affected as a result of the introduction of NCR.

As mentioned earlier, there are two different pathways (direct and indirect) that are considered to examine whether FRQ has been affected by the introduction of NCR. Table 8.2 show a summary of all hypotheses and findings for this study.

Table 8.2 Summary of All Hypotheses (H) and Findings of This Study

Explanatory variables	Research sub-Q of RQ1	H	Sub H	Sub H status	H status	Answer the research sub-Q	Answer RQ 1
<i>The Direct Path</i>							
Financial reporting quality	Q1.1	H ₁	H _{1a}	<u>Accepted</u>	<u>Accepted</u>	Yes	
			H _{1b}	<u>Accepted</u>			
			H _{1c}	Rejected			
<i>The Indirect Path</i>							
	Q1.2	H ₂	H _{2a}	Rejected	<u>Rejected</u>	No	

Explanatory variables	Research sub-Q of RQ1	H	Sub H	Sub H status	H status	Answer the research sub-Q	Answer RQ 1
Audit committee independence			H _{2b}	Rejected			Yes
Audit committee size	Q _{1.3}	H ₃	H _{3a} H _{3b}	Rejected Rejected	Rejected	No	
The frequency of audit committee meetings	Q _{1.4}	H ₄	H _{4a} H _{4b}	<u>Accepted</u> Rejected	Rejected	No	
Audit committee chairperson independence	Q _{1.5}	H ₅	H _{5a} H _{5b}	Rejected Rejected	Rejected	No	
Audit firm size	Q _{1.6}	H ₆	H _{6a} H _{6b}	<u>Accepted</u> Rejected	Rejected	No	
Board Independence	Q _{1.7}	H ₇	H _{7a} H _{7b}	<u>Accepted</u> Rejected	Rejected	No	
Board Size	Q _{1.8}	H ₈	H _{8a} H _{8b}	Rejected <u>Accepted</u>	Rejected	No	
Board meetings frequency	Q _{1.9}	H ₉	H _{9a} H _{9b}	Rejected <u>Accepted</u>	Rejected	No	

Among all the research sub-questions, sub-question Q_{1.1} was answered with ‘yes’. The results (see Table 8.2) show that the absolute value of discretionary accruals as a proxy for FRQ for 2017 and 2016 are statistically significantly different at a 5% significance level to that in 2015, after controlling for the effect of changes in explanatory variables over the relevant period. This finding, which represents the direct effect of the NCR, shows that efforts are being exerted to improve FRQ other than through changes in the characteristics of boards of directors or other factors that might influence audit quality during 2015 to 2017. The FRQ improvement reflects the Saudi government’s agenda to improve the investment environment of the Saudi market, attract foreign and retain local capital, as part of Vision 2030 (see Section 2.3.3). The answer to sub-question Q_{1.1} (‘yes’) led to an answer of ‘yes’ to the main RQ₁.

Some characteristics of a board of directors or factors that influence audit quality show a significant relationship between these characteristics (i.e. *BODSIZE* and *BODMEET*³) and FRQ in Saudi Arabia across 2015 to 2017 (represented by H_{2b} to H_{9b}). Despite this, the changes to these characteristics (*BODSIZE* and *BODMEET*) are not statistically significantly

³ With acknowledging that *BODMEET* shows a significant result in only one FRQ measure (the main accruals model used in this study).

different over the relevant period (represented by H_{1a} to H_{8a}). This outcome is attributed to one or more of the following reasons, outlined below.

Saudi companies need more time to comply with the NCR effectively. This is one possible reason to explain why the FRQ has not been affected by a change in the characteristics of boards of directors or factors that influence audit quality as a result of the NCR's introduction. For example, the average of *AC_Chair* on the Saudi stock market was 72% in 2015, 73% in 2016, and 70% in 2017. The reason that the average was not significantly positively affected was because Saudi companies were not fully complying with Article 54 of the NCR. This finding supports the view that Saudi companies may need more time to comply with this new regulation, especially the Saudi companies that did not comply with these regulations in only one year (2017). Another example of the NCR implementation requiring more time is related to the contractual relationship between Saudi companies and audit firms. The new regulation (Article 133) requires Saudi companies to contract with an auditing firm for a period not exceeding five consecutive years. This regulation will take more time to implement and cannot be fully reflected in only one or two years.

The findings of this thesis show that the NCR is not powerful enough to significantly affect some variables identified in this study as being relevant to FRQ. For example, there is a positive relationship between *BODMEET* and FRQ at a 5% significance level in the Saudi context during the study period. Further, the minimum number of *BODMEET* among Saudi companies was two meetings per year for 2015 and 2016. Prior studies such as Alghamdi (2012) found a positive relationship *BODMEET* and FRQ in the Saudi context. However, the NCR did not push Saudi companies to raise the minimum number of *BODMEET* in existing practices, and the NCR only imposed a minimum of two meetings per year (Art. 83.1 of the NCR). Accordingly, the new regulation did not make a significant difference in terms of the average of *BODMEET* among Saudi companies. There was no significant effect after the implementation of the NCR, according to the descriptive data analysis. In addition to *BODMEET*, *BODSIZE* had a similar finding. Further, the NCR alone was not enough to achieve some objectives. For example, the NCR relied on institutional pressures made by Vision 2030 to support local audit firms in Saudi Arabia. The new regulation (Article 133) issued by the NCR enabled a greater likelihood of advanced implementation of Vision 2030 to push for more Saudi auditors. The findings from the *BIG_4* variable shows that the change in

BIG_4 was affected significantly by the NCR; however, the *BIG_4* was not statistically significant at any level in terms of FRQ during the study period.

Another explanation for why the NCR is not powerful enough to significantly affect the characteristics of board of directors, or influence other factors that affect audit quality, is that the new regulations codified existing practice prior to their introduction. This is strongly supported by a number of characteristics of boards of directors or factors that influence audit quality. For example, the descriptive data analysis shows that the maximum and minimum number of *ACSIZE* was between three to five members, except for one company that had two members in 2016. These results are generally consistent with the new regulation that imposed the condition that *ACSIZE* must be not fewer than three members and not more than five members (Art. 101 of the NCR). Further, the results of *BODSIZE* are another example supporting the idea that the NCR codified existing practice prior to their introduction. The descriptive data analysis shows that the maximum and minimum number of *BODSIZE* was between three and 11 members in 2015 and 2016. In 2017, the maximum and minimum number of *BODSIZE* remained the same (three to 11 members) after the implementation of the NCR. These findings (*BODSIZE*) are in line with the new regulation, which determines the lower and the upper limit of a board of directors size: this must be not fewer than three members and not more than 11 members (Art. 68 of the NCR).

Another possible reason that FRQ has not been affected by a change in the characteristics of boards of directors, or factors that influence audit quality as a result of the introduction of NCR, is that Saudi companies did not fully comply with the NCR. This finding supports institutional theory's view on company strategic responses to institutional pressures (Oliver, 1991). The results of this study show that a considerable number of Saudi companies did not apply some NCR regulations. For instance, the descriptive data analysis reveals that 30% of Saudi companies did not appoint an independent director as a chair of their audit committees, although the NCR states that the chair of an audit committee must be an independent director (Art. 54 of the NCR).

The last possible reason is that some of the NCR regulations need further improvement in some aspects. For instance, although most prior studies support that the independence of an audit committee increases the quality of financial reports, the NCR expects Saudi companies to appoint at least one independent director to their audit committees (Art. 54 of the NCR). This new regulation is not at the expected level, compared with other countries' regulations, such

as the US Securities and Exchange Commission (corporate governance regulations), which requires that audit committees in US listed companies must consist of at least three independent directors.

In relation to RQ₂, the findings of this thesis are consistent with agency theory, institutional theory and codification theory, and this leads to an answer of ‘yes’ to RQ₂. The findings of this thesis show the strength of adopting a multi-theoretical perspective to examine the effect of NCR on FRQ in the Saudi context. The thesis found that agency theory alone cannot capture the contextual factor of Saudi companies, because the Kingdom of Saudi Arabia is a developing country with a different political, economic and cultural environment from the well-established capital markets of developed countries, as discussed in Section 4.2. Additionally, the findings support Alghamdi (2012) who states that the effectiveness of corporate governance in Saudi Arabia, as a developing country, may be low because of insufficient independence of directors, the duality of chief executive officers and a high ownership concentration. Only *BODSIZE* and *BODMEET* are consistent with agency theory where it predicts corporate governance mechanisms play a superior role in improving FRQ through monitoring management (Peasnell et al., 2005). The findings support that *BODSIZE* and *BODMEET* are the most important characteristics in the Saudi context that help to decrease agency problems by aligning the interests of shareholders with those of managers. While other findings of audit quality and board of director characteristics support an institutional theory perspective, which anticipates that companies may adopt practices or regulations because of coercion from legislators who force specific practices to enhance organisational effectiveness. Further, the results indicate that the improvement of FRQ after the introduction of the NCR in 2017 is explained by the institutional pressure from the NCR, which aimed to raise financial report quality in general in Saudi companies. In addition, the FRQ improvement is aligned with Saudi motivations to improve the investment environment of the Saudi market, attract foreign capital and retain local capital as part of Vision 2030 (see Section 2.3.3).

Regarding changes in the factors that influence audit quality and board of director characteristics as a result of the NCR’s introduction, the results indicate that most factors that influence audit quality and board of director characteristics were not affected after implementation of the NCR. These findings may be attributed to the Saudi regulator codifying some existing practices in Saudi companies (i.e. *ACSIZE*, *BODSIZE* and *BODMEET*) to issue new regulations. According to the descriptive statistics, the current practices of Saudi

companies in terms of *ACSIZE*, *BODSIZE* and *BODMEET* remained the same and the new regulations reflect the current practices of Saudi companies. Specifically, *ACSIZE*, *BODSIZE* and *BODMEET* practices in Saudi companies in the pre-NCR period (2015 and 2016) are identical to what the NCR required regarding the formation of an audit committee and the board of directors in any Saudi company. These findings support codification theory's idea that some new regulations can be a result of the regulation environment and some regulators might codify current practice in a specific environment to enact a new regulation (Cooke & Wallace, 1990; Gray, 1988; Xiao et al., 1996). The results of this study are consistent with Wardrop (2012) in the Australian context and Al-Htaybat (2014) in the Jordanian context, each of whom found that many compulsory regulations issued by regulators result from codifying existing practice.

According to the thesis findings, the results support the notion that employing a multi-theoretical perspective—a combination of agency theory, institutional theory and codification theory—helps to gain a deeper understanding of the direct and indirect effects of NCR on FRQ in the Saudi context.

8.4 Research Implications and Contributions

8.4.1 Theoretical Contributions

This study has reviewed the relevance of various theories used in corporate governance research to the Saudi context (Abdullah Mohammed, 2015; Al-Matari et al., 2012; Al-Thuneibat et al., 2016; Alshetwi, 2016; Habbash & Alghamdi, 2017). It is, to the best of the author's knowledge, the first research that considers the relationship between the variables that have been commonly used in the prior literature as influencing audit quality, and their relationship with FRQ, board of director characteristics, and their relationship with FRQ in light of the NCR.

Further, agency theory alone has been commonly used in many studies, such as Al-Matari et al. (2012), Habbash (2019), Jayanthi et al. (2011), Kamolsakulchai (2015) and Mujeeb Saif Mohsen et al. (2019) to understand the relationship between company characteristics and FRQ. However, this study is among the few that draws on the combined agency theory, institutional theory and codification theory as an analytical framework (see Figures 4.1 and 4.2 in Chapter 4). This better captures the Saudi context of corporate governance to explain and predict the direct and indirect effects of the NCR on FRQ.

Some studies, such as Al-Htaybat (2014), Von et al. (2012) and Wardrop (2012) use codification theory as a theoretical framework to understand the nature of corporate regulations. Taylor and Turley (1986) emphasise that regulators may codify current practice in a specific context to enact new regulation. This thesis is among the few that employ codification theory to understand the nature of the NCR and its intended outcomes. This is because the content of NCR result from codifying existing voluntary practices of Saudi companies. Further, this thesis extends the application of codification theory in corporate governance research to the Saudi context.

Regarding the NCR, this thesis is the first to review and evaluate the recent changes in the NCR against the outcomes of the prior studies reviewed in Chapter 3, in terms of the key characteristics that influence audit quality, and board of director characteristics. The thesis assesses if Saudi regulators made changes in the right direction to improve FRQ in Saudi companies through those characteristics. This thesis also provides theoretical justifications for the findings regarding the effect of applying the NCR on FRQ with multiple theories (agency theory, institutional theory and codification theory). Therefore, this comprehensive use of a multi-theoretical perspective on examining the effect of the NCR on FRQ in Saudi Arabia contributes to policymaker and interested researcher understandings of the Saudi context of corporate governance.

Kothari et al. (2005) argue that their model (a performance-controlled approach) advanced the modified Jones model by adding a firm's ROA into the equation. However, Kothari et al. (2005) use the intercept in its model (performance-controlled approach model), even though the modified Jones model did not use this in its equation (one based on its theoretical derivation). Thus, this thesis views that it is necessary to re-test the performance-controlled approach model (Kothari et al., 2005) in a theoretically correct way by omitting the constant. This study named this 'the modified Kothari model'.

This study is among the few to apply the performance-controlled approach model (Kothari et al., 2005) in the form of a modified Kothari model to be consistent with theory (Dechow et al., 1995; Jones, 1991). Further, this study is among the first to examine the performance-controlled approach model (Kothari et al., 2005) in two ways: one as presented in Kothari et al. (2005, p. 174), and the other (i.e. the modified Kothari model) as consistent with the theory (Dechow et al., 1995; Jones, 1991).

Additionally, this study provides a comparison of all accruals models, including the primary model used in this study (the modified Jones model) in terms of explanatory power. The comparison is based on data collected from the Saudi stock market for the period 2004 to 2014 (see Section 8.2). The results of this thesis emphasise that the modified Jones model has the best explanatory power among the three accruals models. This finding confirms its usefulness for future studies (at least the Saudi studies, because it was based on the Saudi stock market) that the modified Jones model is the appropriate model among different accruals models to measure FRQ precisely.

8.4.2 Empirical Contributions

This study provides a timely comparison of annual reports across 2015 to 2017 (see Figure 5.1) to examine improvements in the quality of financial reports in Saudi Arabia. In addition to evaluating and assessing the effect of the NCR, this thesis makes a significant contribution in exploring earnings management practices in Saudi Arabia and the role of monitoring mechanisms in constraining earnings management practices. It has done this by reviewing all characteristics of audit quality and boards of directors, and their effect on FRQ. Based on data collected from the Saudi stock market from 2015 to 2017, the characteristics of BODSIZE and BODMEET had a significant positive effect on FRQ in the Saudi context.

Regarding the analytical level, this study depends on the use of GLM regression to analyse the data collected. GLM provides more accurate results than normal regression when working with balanced panel data (Dobson & Barnett, 2018; Liang & Zeger, 1986). Applying GLM in this thesis represents the most appropriate statistical technique to analyse the data collected, to produce more reliable findings.

Further, of all accruals models used in this study, this thesis is among the few studies (especially in the Saudi context) that applies accruals models by following the original model approach (Dechow et al., 1995). Most prior Saudi studies (Al-Thuneibat et al., 2016; Alghamdi, 2012; Alshetwi, 2016; Habbash & Alghamdi, 2017) use the industry average approach in estimating firm-specific parameters instead of the original model approach of Dechow et al. (1995). Hence, this study is the first Saudi research that applies accruals models to compute discretionary accruals as a proxy for FRQ by following the original model approach of Dechow et al. (1995), and by using 10 years of historical data—which is necessary according to Dechow

et al. (1995)—for the period 2004 to 2014 for each company. It does this to estimate the firm-specific parameters to produce more reliable and robust results (see Section 4.3).

Most accruals models in the prior literature does not consider the effect of inflation in a time series regression for each company. This can be misleading when the model includes a mixture of financial and non-financial variables. Thus, this study considers the effect of inflation by using the CPI in Saudi Arabia to adjust financial components (in the Saudi currency) of all accruals' models in real terms. This study is among the few Saudi studies that control the effect of inflation when computing discretionary accruals (a dependent variable of this study). The belief here is that controlling the effect of inflation provides more reliable and robust results. Table 7.1 presents a comparison between the two ways of applying the modified Jones model (1995), before and after CPI adjustment. The results show that the CPI-adjusted modified Jones model has a stronger R^2 than the original modified Jones model. This result emphasises that controlling the effect of inflation is necessary to increase the reliability and robustness of this study.

8.4.3 Practical Implications

Since Vision 2030 was launched in 2016, improving the investment environment has played a vital role in the growth and development towards achieving an important segment of Vision 2030. Vision 2030 aims to increase foreign direct investment from 3.8% to the international level of 5.7% of GDP. Hence, the Saudi government issued the NCR, which aims to improve the investment environment of the Saudi market, attract foreign capital and retain local capital. Because improving FRQ is essential to improve the investment environment in any market (Al Shetwi, 2020), this study employs earnings management to measure the changes in FRQ pre-NCR and after its implementation in the Saudi market. The findings of this study contribute to the continual growth of the Saudi economy in general, and the improved financial reporting performance of Saudi companies. Specifically, the study's findings provide policymakers in Saudi Arabia comprehensive feedback on whether the NCR has achieved its intended purpose, based on the statistical results. Further, this study provides the rationale behind there not being an effect of FRQ through a change in the characteristics of boards of directors or factors that influence audit quality, as a result of the NCR's introduction (see Section 8.3.4). In Section 8.3.4, this thesis provides multiple reasons that could help Saudi regulators to assess the current situation after the implementation of the NCR.

In terms of the direct effects of the NCR on FRQ, the findings of this thesis suggest that the improvement of the FRQ in Saudi Arabia is not restricted to NCR's effects through the characteristics of boards of directors or other factors that influence audit quality. The findings indicate the Saudi government is on the right track to improve the investment environment of the Saudi market (through enhancing FRQ in Saudi companies), a key objective of Vision 2030. The findings suggest the Saudi government should continue its efforts to realise Vision 2030 strategic goals.

In terms of the indirect effects of NCR on FRQ, this thesis highlights which aspects of corporate regulations that Saudi regulators should concentrate on if they consider making future changes to the regulations. The findings show that there is a significant positive relationship between certain board of directors' characteristics (*BODSIZE* and *BODMEET*) and FRQ in Saudi Arabia for the period between 2015 to 2017. This suggests that regulators should focus on raising the board size and the number of board meetings to improve FRQ in Saudi companies by enhancing the current requirement of these two characteristics, that is no less than 3 and no more than 11 for *BODSIZE* and at least 2 meetings per year for *BODMEET*.

Although the findings of this thesis have confirmed that there is a broad level of institutional pressure by the Kingdom to improve FRQ in Saudi companies, the results show that there is a significant negative relationship between government ownership (*OWNERSHIP*) and FRQ. This finding supports the notion that higher government ownership is negatively associated with FRQ, which may be attributed to governmental pressures that were placed on management to announce more expected earnings. This finding suggests that regulators may consider reducing the government pressures to constrain earnings management practices in Saudi Arabia. In addition to *OWNERSHIP*, the company size (*SIZE*) has a significant negative effect on FRQ in Saudi Arabia. This finding suggests that Saudi regulators enhance the monitoring of larger companies' accounting practices to curb earnings management.

The findings of this thesis also have implications for corporate governance in Saudi companies. The findings about the positive effect of two board of directors' characteristics (i.e. *BODSIZE* and *BODMEET*) on FRQ suggest Saudi companies review board of directors' practice and take actions to improve the effectiveness of the board.

In terms of stakeholders of Saudi companies, this study contributes to the current findings about audit committees, board of director roles and their effect on FRQ. Additionally, the findings

help stakeholder groups such as shareholders, investors and financial analysts gain a better understanding of what influences FRQ in Saudi listed companies. The results of this study (see Section 8.3.2.1) suggest that FRQ in Saudi Arabia experienced continual improvement across 2015 and 2017.

8.5 Limitations and Directions for Future Research

This study used panel regression to measure the direct and indirect effects of NCR on FRQ in the Saudi stock market for the period 2015 to 2017. Some limitations in this study can be addressed in future research. Measuring the effect of the NCR only for the period ending two years after its introduction may be a limitation. Future studies may consider a comparison of 2015 (pre-NCR) to a later period, such as 2022, which gives time for any changes occurring from the NCR in the factors that influence audit quality and board of director characteristics to emerge.

Due to the relatively short history of the Saudi capital market, the data used in this study are limited to 10 years of historical data (but covering 11 financial years, because one variable is lagged) for each company before computing discretionary accruals in the main period (between 2015 and 2017).

This study highlights the key characteristics and factors that influence audit quality and board of director characteristics. The variables of *ACEXP* and legal expertise were not disclosed in the annual report in Saudi listed companies, especially in 2015 and 2016 reports. In 2017, most Saudi listed companies started disclosing the qualifications and expertise of all directors in either their board of directors or the sub-committees. Additionally, there was a blur in the variable of audit fees. Some Saudi companies disclose the cost of auditing in their annual reports, whereas others do not. Thus, this study considers the variables audit committee financial expertise, audit committee legal expertise and audit fees as missing data, excluding them from the analysis. Future studies may consider these variables in investigating the relationship between them and FRQ, especially as the disclosure of annual reports in 2017 and after has been significantly changed to enhance transparency, accountability and sustainability in the Saudi business environment (Alharbi, 2021). Those variables have not been examined in the Saudi context due to a lack of disclosure in the annual reports for the pre-NCR period. Therefore, it is worth considering some variables that were unavailable in the Saudi context, but not to measure the effect of the NCR.

The significant changes to the Saudi economy that resulted from Vision 2030 have made the Saudi context fertile ground for research contributions. In terms of this study, the NCR contain several new regulations that regulate listed and non-listed companies in Saudi Arabia. Future studies may consider other factors and variables that have been changed in the NCR (2015), such as capital formation, remuneration of directors, general assemblies and authorities of the board. This thesis contributes to a deeper understanding of the institutional context of corporate governance and FRQ in Saudi Arabia, as an emerging economy. Future research will continue to monitor the evolution of the Saudi corporate governance environment and FRQ.

8.6 Concluding Remarks

The main purpose of this thesis was to examine the direct and indirect effects of the NCR on FRQ. The NCR is a new version of company regulations, and it contains extensive amendments to the regulation of the Saudi corporate business environment. The aim of the NCR is to improve the investment environment of the Saudi market and attract foreign and retain local capital, to be consistent with a main objective of Vision 2030 (see Section 2.2.5). The NCR is one of a series of long-term national strategies to develop non-oil-dependent resources and improve the investment environment in various aspects of the Saudi market, in line with Vision 2030. Vision 2030 aims to increase foreign direct investment from 3.8% to 5.7% of GDP. Improving the FRQ through the NCR is one of the main tools to achieve this target.

This thesis has examined the effect of the NCR on FRQ through two pathways (see Figure 4.2 in Chapter 4). The first pathway is the direct effect that explains the pressure brought by the Saudi government to introduce the NCR, which is represented through the year variables, as illustrated in the main models of this study (see Equations 5.1 and 5.2). The second pathway is the indirect effect that explains the relationship between the change of factors that influence audit quality, board of director characteristics and FRQ as a result of the introduction of NCR.

The findings of this thesis have shown a direct significant effect, after controlling for the effect of changes in explanatory variables, on FRQ in Saudi Arabia after the introduction of the NCR. This result confirms that there is a broad level of institutional pressure by the MCI of the Kingdom of Saudi Arabia to improve FRQ in Saudi companies to achieve a main objective of Vision 2030 (improving the investment environment of the Saudi market). Additionally, the findings assert that the improvement of the FRQ in Saudi Arabia is not restricted to its effects through the characteristics of boards of directors or other factors that influence audit quality.

Rather, it is above and beyond the effect of the changes in all other variables of the model of this thesis. This direct significant effect (after controlling for the effect of changes in explanatory variables) on the FRQ in Saudi Arabia post-NCR led to an answer of ‘yes’ to RQ₁. This asks whether FRQ been affected as a result of the introduction of NCR.

In terms of the indirect pathway, this study concludes that FRQ has not been affected by the change in characteristics of boards of directors or other factors that influence audit quality as a result of the introduction of NCR. This is attributed to multiple possible reasons. The NCR was not powerful enough to significantly affect the characteristics of boards of directors or factors that influence audit quality. For example, the new regulations of *BODSIZE* and *BODMEET* did not make a significant difference in terms of the average of *BODMEET* among Saudi companies because of the powerless of the new regulations imposed, even though *BODSIZE* and *BODMEET* had a direct positive effect on FRQ in Saudi companies over the relevant period.

Another possible reason is that Saudi companies did not fully comply with the NCR. This is obvious with the descriptive data analysis of *AC_Chair*. The results show that 30% of the Saudi companies did not appoint an independent director as a chair of their audit committees, although the NCR required that the chair of an audit committee must be an independent director. Needing more time to comply with the NCR effectively is another possible reason to explain why the FRQ has not been affected by a change in the characteristics of boards of directors or factors that influence audit quality as a result of the introduction of NCR.

Some of the NCR need further improvements in some aspects, and this also relates to the indirect pathway not being significant. For example, appointing at least one independent director in the audit committee has not been undertaken at the expected level compared with other corporate governance regulations, such as the US regulations which impose appointing at least three independent directors to an audit committee. Finally, the NCR has codified existing practice prior to its introduction: this is another possible reason of the ineffectiveness of the indirect pathway. This reason is strongly supported by several characteristics of the boards of directors or factors that influence audit quality. For instance, the minimum and maximum numbers of *BODSIZE* (pre-NCR) are consistent with the new regulation that determines the lower and the upper limit of a board of directors’ size, according to the descriptive data analysis.

The findings of this thesis show consistency with agency theory, institutional theory and codification theory. The findings of *BODSIZE* and *BODMEET* are consistent with agency theory where it predicts that corporate governance mechanisms play a superior role in improving FRQ through monitoring management and decreasing agency problems by aligning the interests of shareholders with those of managers. Other findings of audit quality and board of director characteristics support an institutional theory perspective, which is only an outcome of coercion and pressure from legislators forcing specific practices to enhance organisational effectiveness. Additionally, the improvement of FRQ in Saudi Arabia has been supported by institutional theory. This improvement explains the coercive institutional pressures exerted by the Saudi government to force Saudi listed companies to adhere to specific practices. There are institutional pressures (the NCR and Vision 2030) aimed at raising the quality of Saudi company financial reports in general. The consistency of findings with agency theory, institutional theory and codification theory led to an answer of 'yes' to RQ₂, which asks whether the findings are consistent with agency theory, institutional theory and codification theory.

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