THE INFLUENCE OF CORPORATE GOVERNANCE PRACTICES ON FIRM PERFORMANCE AND EFFICIENCY: EVIDENCE FROM JORDAN

A Thesis Submitted By

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Dedicated to

My father, mother and brother, who have long wished me to pursue a doctorate, my wife, and my only beloved daughter (Lujain).

Abstract

This study investigates whether corporate governance mechanisms influence firm performance and efficiency in developing countries, with a specific focus on Jordan. From 880 firm-year observations of non-financial firms listed on the Amman Stock Exchange, for the period of 2006-2016 and by using two measures of performance (i.e., return on assets and Tobin's Q) and two measures of agency costs (i.e., asset utilization and expense ratio), the empirical results suggest that Jordanian companies with a high percentage of outside independent directors are outperforming companies with a low percentage of outside independent directors.

A significant positive relationship among the board independence in the form of the representation of outside independent directors, return on assets and the asset utilization ratio, has been found. The empirical findings of the relationship among board gender diversity, firm performance and firm efficiency, indicate that board gender diversity in the form of the proportion of women on the board of directors, cannot explain firm performance nor firm efficiency in Jordan. In addition, the findings of relationships among CEO duality, firm performance and firm efficiency, suggest that CEO duality as a proxy for the board leadership structure, can influence the firm performance positively and firm efficiency negatively.

The differences to the findings from the previous studies, refer to the fact that corporate governance and its problems in Jordan may not be similar to other countries. Jordan's specific characteristics in terms of the data when compared with prior studies, means that 'one size does not fit all', and one group of governance mechanisms may not be fitted for each country. Drawing on the empirical investigations and theoretical discussions, it is revealed that the practices of corporate governance in Jordan need to be improved. Hence, a further aim of this thesis is to help regulatory bodies in improving or framing the best practices of corporate governance for Jordanian companies. Remarkably, the majority of the earlier studies on Jordan, have looked at corporate governance issues and performance by using traditional financial measures. To revisit the corporate governance practices in a unique setting of agency relationship in the context of Jordan, this study use two measures of agency costs, namely the expense ratio and asset utilization ratio.

Therefore, this study provides a new avenue of knowledge to academics and practitioners, by providing new evidence on corporate governance practices in a little

known institutional context. This study has also been conducted by using two theories, and thus contributes to agency and resource dependence theory literature, showing the suitability of these theories during a period of improvement in the Jordanian corporate governance code for shareholding companies. This study is one of the rare studies which examines firm performance and agency costs by using different measures.

Certification of Thesis

This Thesis is the work of Jebreel Mohammad Suliman Al-Msiedeen, except where otherwise acknowledged, with the majority of the authorship of the papers presented as a Thesis by Publication undertaken by the student. The work is original and has not previously been submitted for any other award, except where acknowledged.

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Statement of Contribution

The following details the share of the co-authors in the submitted paper, for publishing in this thesis:

Article 1: Al-Msiedeen, J, Rashid, A, & Shams, S, 'Board independence, Firm Performance and Firm Efficiency: Evidence from Jordan'. (Paper drafted and ready to submit). (The results of this study were presented at the Sydney International Business Research Conference, 25-26 March, 2018, Sydney, Australia).

The overall contribution of the student and the supervisory team in the study is that Al-Msiedeen, J. was 60%, Rashid A. was 25%, and Shams S. was 15% respectively. Al-Msiedeen, J. formulated the objectives of the study work and the hypothesis, collected data, established methodology and theoretical framework, reviewed literature, created tables and figures, compiled manuscript and revised the final submission. Rashid, A. contributed to manuscript preparation and layout, hypothesis formulation and technical discussion. Finally, Shams, S. reviewed the statistical analysis of the manuscript.

Article 2: Al-Msiedeen, J, Rashid, A, & Shams, S, 'Board Gender Diversity, Firm Performance and Efficiency in Jordanian Boardrooms: A Revisit of Resource Dependence Theory'. (Paper drafted and ready to submit).
(The results of this study were presented at the *Melbourne International Business and Social Science Research Conference*, 27-28 October, 2018, Melbourne, Australia).

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Article 3: Al-Msiedeen, J, Rashid, A, & Shams, S, ' CEO Duality, Agency Cost and Firm Performance: Evidence from Jordan'. (Paper drafted and ready to submit).

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List of Abbreviations

AFM : Amman Financial Market

ASE : Amman Stock Exchange

ASEs : Arab Stock Exchanges

AUR : Asset Utilization Ratio

CBJ : Central Bank of Jordan

CCD : Companies Control Department

CEO : Chief Executive Officer

CG : Corporate Governance

ER : Expense Ratio

FATs : Free Trade Agreements

FCF : Free Cash Flow

GAAP : Generally Accepted Accounting Principles

GDP : Gross Domestic Product

GICS : Global Industry Classification Standard

IASs : International Accounting Standards

IC : Insurance Commission

IFAC : International Federation of Accountants

IFC : International Finance Corporation

IFRSs : International Financial Reporting Standards

IMF : International Monterey Fund

IVs : Instrumental Variables

JACPA: Jordanian Association of Certified Public Accountants

JCGC : Jordanian Corporate Governance Code

JD : Jordanian Dinar

JIC : Jordan Investment Commission

JIoD : Jordanian Institute of Directors

JSC : Jordan Securities Commission

MENA: Middle Eastern and North African

OECD : Organisation for Economic Cooperation and Development

OLS : Ordinary Least Square

R&D : Research and Development Expenditure

ROA : Return on Asset

ROE : Return on Equity

ROI : Return on Investment

ROS : Return on Sales

SDC : Securities Depositary Centre

UK : United Kingdom

US : United States

VIFs : Variance Inflation Factors

Chapter One: Introduction

1.1 Introduction

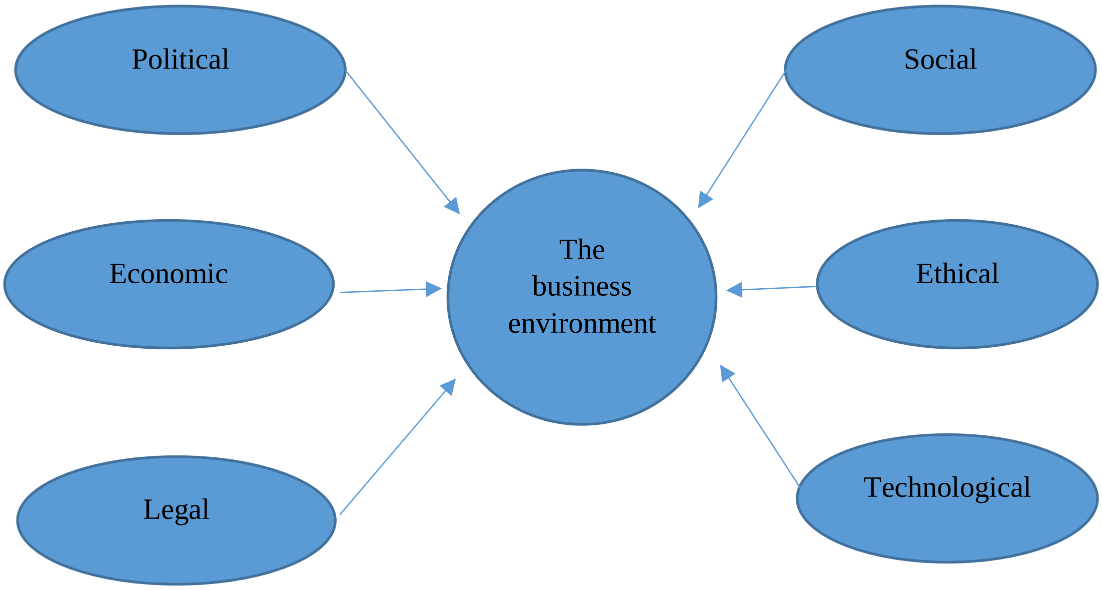
The concept of organisation can be traced to ancient civilisations, where the different grouping of individuals (e.g., civic administration and armies) came to be shaped as social structures that would promote collaborative activities to accomplish the collectively desired aims. The industrial revolution in the 19th century triggered rapid economic and manufacturing growth, with emerging business models radically altering the pattern of working life from what had been individually or family run cottage industries (Campbell & Craig 2005). In the 19th century, the industrial revolution led to speedy economic and manufacturing growth. New styles of managing the business environment were needed. Notwithstanding the fact that all organisations can present similar features, individual business is restricted by factors such as its ownership structure, limited diversity and size, the nature of the business and the influences of the external environment. Figure 1 displays a subset of the business environment. In summation, it is fair to say that "organisations are social arrangements for controlled performance of collective goals" (Campbell & Craig 2005, p. 4).

After the birth of the industrial revolution, the notion of the company initially developed as a form of business ownership for higher capital, or because of the ideology of the capitalist form of economic organisation whose prime aim is to make a profit. In the late decades of the 19th century, the United States of America (the U.S.) was the main source of many of the largest firms in the world. Table 1 provides the asset value of the 25 top firms, with the level of domestic income in the United State (US), Japan, United Kingdom (UK) and Australia.

Due to removal of barriers between different countries, what is known as globalisation led to expanded international trade. Thus, the business world witnessed the tremendous development of corporations around the world. Furthermore, globalisation led to increased supranational activities through bodies such as the World Bank, International Finance Corporation (IFC), International Monetary Fund (IMF) and the Organisation for Economic Cooperation and Development (OECD). Hence, the concept of a borderless world became more prevalent among countries, and firms attracted funds from beyond regional boundaries.

However, due to the voluminous extent of business operations in large modern companies, the perilous issue of the separation of ownership and management emerged, and this has led to the corporate operations becoming even more complex. Further, cases arose where the boards of directors were found to be either unaware or wilfully indisposed to addressing the complexity of such business procedures. In addition, it became apparent that corporation laws were not sufficient for directing companies. As a matter of course, the financial crisis of 2008 and many company collapses have occurred, for example, Enron, HIH Insurance, and WorldCom. Less than a decade earlier the world witnessed a similar collapse in the East Asian financial crisis of 1997. Naturally, the financial failure of companies struck the

Figure 1: The subset of the business environment



Source: Harrison (2010, p. 5)

global economy by harming shareholders and the global society as a whole. Consequently, shareholders' concerns have increased. Hence, the corporate sector attracted the attention of individual investors, large shareholders, investment practitioners, communities, international and local bodies, and governments, and many reforms to improve governance were proposed.

In the developed world, different bodies addressed this issue (e.g., Sarbanes-Oxley Act 2002 in the U.S. and Cadbury Committee Report 1992 in the U.K.). Governance reforms issues have been debated, reframed and renewed over and over again by relevant parties in the developed economies. However, the vast majority of governance reforms have been conducted in developed countries. Attempts have then been made to impose such reforms in developing countries and emerging markets, which are typified, by slow economic growth, a weak institutional environment, and the prevalence of private and public corruption (Boubakri et al. 2005b; Adegbite et al. 2012). Therefore, many significant questions may arise about the practice of corporate governance in developing countries, like Jordan, which is of interest in this thesis. Two such questions follow. Are there similarities between developing countries and developed countries concerning corporate governance problems? Do developing countries have the capability to address the problems of governance efficiently? These questions prompted further investigation and initiated the process of forming some formal researches' questions, which are presented in Section 1.9.

Table 1: The assets value of the 25 top-firms with the level of domestic income (US$M).

Countries	**1910-1918**	**GDP (%)**	**1930-1937**	**GDP (%)**	**1948-1954**	**GDP (%)**
American,	7938	10	17714	19	28840	11
Japan,	616	10	1227	17	2397	15
United Kingdom	1399	11	7662	28	7480	18
Australia	290	19	702	21	1269	16

Source: Boyce and Ville (2002, p. 9)

Jordan is a developing country contiguous to the continent of Asia, in a region known somewhat Euro centrically as the Middle East. The concept of corporate governance is relatively new in Jordan, as in other Arab countries, so it is timely to shed light on this issue. This thesis attempts to promote the practice of corporate governance in Jordan, and assesses whether and to what extent the implementation of common corporate governance practices may improve firm performance and mitigate firm agency cost in that context.

1.2 The history of the corporate governance revolution

The practice of corporate governance is an old issue (Tricker 2000). It can be dated back to the nineteenth century (Vinten 1998) and came into existence with the appearance of limited liability companies. Scholars (e.g, Smith 1776; Berle & Means 1932; Coase 1937; Jensen & Meckling 1976), have all had concerns about controlling and managing large firms for centuries. Smith (1776) in his seminal work (*An Inquiry* *into the Nature and Causes of the Wealth of Nations*), stated that directors are involved in controlling other people's money rather than their own. The issue of the separation of ownership has been recognised by Berle and Mean's 1932 work (*The Modern Corporation and Private Property).* In the words of Means (1931, p. 82), "in time of crisis, however, or where a conflict of interest between the control and the management arises, the issue may be drawn and a proxy fight to determine control may demonstrate how far dependent upon its appointed management the controlling group has become". In the 1980's, studies in the corporate governance area expanded following Jensen and Mackling's work in 1976 (Denis 2001). As noted by Tricker (2000), the 20th century may be the corporate governance century. Governance in that period attracted a great deal of attention from researchers, regulatory agencies, managers, investors as well as shareholders.

However, as stated by Denis and McConnell (2003), from the 1970's to the 1980's, most of the governance studies have addressed U.S. companies. By the beginning of the 1990's, research on corporate governance in other countries started to appear, with a new stage beginning in the mid-1990's (Walker & Fox 2002) where it moved from the academic arena into the phase of institutional debate from which different measures were adopted by various governments (Alves & Mendes 2004). In the next section, the concept of corporate governance is traced from its inception, and its emergence as an area of international focus is outlined, with a brief contrast of the contexts of developed and developing countries.

1.3 Corporate governance definition

Recently, the concept of the corporate governance has become more commonly discussed from different viewpoints, such as those of academics, professional bodies and regulators. Due to increasing concerns about company fraud and misleading financial reports, the issue became more prevalent in both developed and less developed markets. There is a heated debate about the definition of corporate governance in the literature, but all definitions can be generally classified into two groups: narrow and broad definitions.

Narrow definitions pay attention to satisfying the shareholders' interests. Broad definitions are based on meeting the interests of the other stakeholders as well (i.e., customers, employees and suppliers) (Gillan 2006). For example, the corporate governance notion can be viewed from the shareholders' viewpoint, which means the shareholders' motivation to maximise their wealth, or from the organisational viewpoint, focusing on controlling mechanisms to manage business operations. Therefore, the latter kind of definitions of corporate governance expand the narrow perspective of management for shareholder profit, and include regulations for the systemic control of corporations (Gillan & Starks 1998).

Corporate governance embraces the association between different relevant parties in firms, such as the board of directors, the firm's management, owners and other stakeholders (OECD 1999). The notion of corporate governance has its origins in a Greek word *'kyberman'* which means to govern, steer or guide. This terminology passed from Greek to Latin as the word *'gubernare'*, and to the early French word *'governer'* (Abdullah & Valentine 2009; Abu-Tapanjeh 2009). The term, corporate governance, was used for the first time in 1962 by Richard Eells in his work '*The Government of Corporations*' (Farrar 2005). According to Mees (2015, p. 195), "Eells was a manager of public policy research at General Electric and was particularly interested in the social role that corporations have as institutions in society – philanthropic, statesmanlike and what he called the 'well-tempered corporation' ".

Since 1962, the definitions and framing of corporate governance have mushroomed. One (narrow) definition of corporate governance, describes it as the way in which suppliers of finance to firms ensure that they will receive their investment return (Shleifer & Vishny 1997). Another very pointedly definition, defines corporate governance as "a set of mechanisms through which outside investors protect themselves against expropriation by the insiders" (La Porta et al. 2000, p. 4). A further more generically phrased one, defines corporate governance as a result of the agency problems that originate from the separation of ownership and management in a corporation (Boubakri et al. 2005a).

Broader definitions of corporate governance, refer to the construction of practices, rules, and incentives, to effectively align the interests of the agents (e.g., shareholders and managers) (Picou & Rubach 2006). Another view is framed in terms of the benefits and objective of corporate governance - that it increases the corporation's economic efficiency and supports its growth, in addition to improving the confidence of investors, and providing a framework for setting goals that will serve the interests of shareholders (García-Sánchez & García-Meca 2018). Allen et al. (2018) interpreted corporate governance as the system whereby the managers are evaluated. As well, there is a working definition: “the system by which companies are directed and controlled” (Cadbury 1992, p. 15).

In a later work published in 1999, Sir Adrian Cadbury wrote to the World Bank, expressing the view that corporate governance seeks to create a balance between social and economic aims as well as between individual and collective objectives. Further, the governance structure, he claimed, exists to boost the efficient employ of resources and that the main goal of corporate governance is to align the interests of society, corporations and individuals. Hence, he reasoned, by adopting international governance rules, these rules will assist to achieve a corporation’s aims (World Bank 1999).

Likewise, corporate governance has been defined by Cadbury (1992) as the system by which companies are directed and controlled. Furthermore, the structure of corporate governance practices provides the distribution of rights and responsibilities among different related parties in corporations (e.g., the board of directors, shareholders, management and other stakeholders). Corporate governance also involves setting out the rules, laws, regulations and procedures, for decision-making and controlling decisions on firms’ affairs.

From these earlier definitions, the following points can be noted. Firstly, the general definition of corporate governance is based on its organisational context. Put another way, this definition does not produce theoretical backgrounds that can build testable relationships or hypotheses. Secondly, the separation of ownership and management in modern corporations generates the need for a balance between social and economic aims as well as between individual and collective objectives. Thirdly, a broadly used theoretical framework to examine the association between corporate governance and firm performance is agency theory. This theory addresses the interests of the shareholders concerning a potential conflict between the management’s own interests and those of the shareholders (leading to an agency cost); the main aim of corporate governance according to this theory is value maximisation by mitigating a firm’s agency cost. Fourthly, this narrow definition of corporate governance highlights the interests of the shareholders. Thus, consistent with the aim of this thesis to examine the influence of corporate governance on firm efficiency and firm performance, both the agency theory and the narrow definition are more appropriate, since both present a direct linkage among corporate governance, firm’s agency cost and financial performance. Finally, it can be noted that corporate governance consists of the whole set of mechanisms that help to encourage fair dealing amongst all the interested parties in a corporation, and encourage transparency, fairness and accountability. Therefore, the key goal of corporate governance is to control companies in order to ensure their higher performance, by aligning the interests of shareholders and different interested parties in the company.

1.4 Why implement "good" practices of corporate governance?

As mentioned earlier, there were many well-publicised corporation collapses in the late 1980's and early1990's. As a result, the improvement of corporate governance practices has appeared as an international issue. The OECD (1999) suggested that good corporate governance comprises the following; (i) a good structure of corporate governance aids to ensure that corporations employ their assets efficaciously, (ii) such a structure assists to ensure that boards are accountable to both corporations and their shareholders, (iii) it supports firms to act for the benefit of the whole society, (iv) it increases the trust of the domestic and foreign investors. Newell and Wilson (2002) suggested also that good governance includes transparent ownership, ownership neutrality, independent directors and independent audits and oversight. Cornelius (2005, p. 19) stated that good practices of corporate governance "are most valuable to investors where the disclosure and legal framework protecting shareholders is weakest". Chen et al. (2009) reported institutional investors have tended to pay a premium of more than 20 per cent for shares, in corporations around the world with good governance practices, and this premium is higher in countries with poor legal protection for shareholders.

Furthermore, as argued by Dayton (1984), good governance and the company management are indeed the two sides of the same coin. Good governance plays a vital role in enhancing a firm's performance by loyally managing the corporation, and this eventually increases the firm's value (Bosch 2002). Likewise, it is considered to be a main player in alleviating the potential for company fraud (Burton et al. 2004). As noted by Bourrel et al. (2018), good governance is a means to encourage sustainable development. Therefore, it can be said that good practice of corporate governance, may dynamically guarantee the shareholders' interests by providing suitable mechanisms for the firm's management.

1.5 The issues of corporate governance in developed markets

Due to the fact that some senior directors abused their authority and power to increase their wealth, and conducted illicit accounting activities, the world witnessed many a corporation collapse in the late 1980's and early 1990's. As well, the late twentieth century saw more scandals appear with the collapse of corporations like Ansett Airlines in Australia, Cinar in Canada, Berliner Bank in Germany, Maxwell in the U.K., Penn Central Railroad, Enron and WorldCom in the U.S., Ferruzzi and Parmalat in Italy and Gazprom in Russia. These companies lost billions of dollars for owners and thousands of jobs around the world. Consequently, a heated debate grew on the topic of the corporate governance in developed countries, through which codes of governance as well as international models of corporate governance, developed, which is explained in Sections 2.8.3.1, 2.8.3.2 and 2.8.3.4 respectively.

1.6 The issues of corporate governance in developing markets

Generally speaking, the practice of corporate governance in developing economies is very weak (Nahuelhual et al. 2018; Borochin & Cu 2018; Nakpodia & Adegbite 2018; Nakpodia et al. 2018; Ciftci et al. 2019). The aforementioned studies summarise the salient features of the nature of corporate governance in developing markets, including unequal law enforcement, pyramidal business groups, high ownership concentration, dual class shares and a generally very weak institutional setting. Unfortunately, these factors provoked a further financial crisis, that of the East Asian financial market, on 2 July 1997 (Radelet et al. 1998).

IMF noted that there were questionable practices in East Asian economies. The primary reason was that East Asian markets had laid themselves open to financial disruption because their financial arrangements were influenced by insider dealing, rampant corruption and weak corporate governance practices, which, in turn, led to the instability of the banking sector (Radelet et al. 1998). Stock and currencies markets stumbled, which in turn, prompted the central banks to defend their currencies by raising interest rates or buying forward, or both (Jackson 1999). The most important outcome of this crisis, was the shaken confidence of the foreign and domestic investors. Table 2 presents the influence of exchange rates for U.S. dollars with the relevant currencies during this period.

The crisis occurred when the Thai government declared a "managed float" of the Baht, and called on the IMF for "technical assistance". That day, the Baht fell around

20 per cent against the $US (Richardson 1998, p.1). During the first week of the crisis, the Malaysian and Philippines governments massively intervened to support their currencies. After a month, a currency meltdown occurred (Richardson 1998). Thailand, Indonesia and Korea, were the countries hardest hit. As well, this crisis affected other Asian economies, such as Singapore and Taiwan.

Table 2: The influence of the crisis on exchange rates

Country	**Currency**	**June 1997**	**July 1998**
Thailand	baht	24.5	41
Indonesia	rupiah	2,380	14,150
Philippines	peso	26.3	42
Malaysia	ringgit	2.5	4.1
Korea	won	850	1,290

Source: Jackson (1999, p.2)

In fact, concern for corporate governance implementation was triggered in developing countries after the scandal of the East Asian financial markets in 1997, involving the promotion of measures for transparency and accountability of the financial systems, and adopting some specific mechanisms, especially those pertaining to the Anglo-American model (Lemmon & Lins 2003; Machold & Vasudevan 2004; Uddin & Choudhury 2008; Shen et al. 2018; Yoshikawa 2018; Yu & Wang 2018).

Bai et al. (2004) pointed out that the weakness of corporate governance led to further crises, such as minority shareholders' expropriation of funds in Chinese corporations and the Satyam scandal (one of the most significant fraud cases in India). These financial collapses cost shareholders billions of dollars, governments' large amounts of tax revenues, and employees their jobs. Hence, as argued by Oehmichen (2018), there is the necessity for effective control mechanisms, most especially in Asian emerging economies. Throughout the East Asian financial crisis, companies in some countries (e.g., the Philippines, Korea, Indonesia, Malaysia and Thailand) which presented a more favourable ownership structure and greater transparency, have produced higher protection for their minority shareholders (Mitton 2002), further arguing that weak corporate governance was one of the main causes of the crisis. Johnson et al. (2000) indicated that due to poor corporate governance in affected countries, worse economic forecasts resulted in more expropriation by managers, which, in turn, led to a substantial fall in asset prices. Oehmichen (2018) recognised that a number of corporate governance issues caused the financial crises in Asian emerging markets: weak formal institutions, ownership concentration and board characteristics (i.e. CEO duality and limited board independence). Claessens et al. (2000) claimed that the performance of East Asian firms began to tumble before the Asian financial crisis, the main reason being firms' high debt to equity ratios, and consequent dependence on external financing.

1.7 Motivation for this study

As mentioned earlier, governance research expanded during the 1970's and 1980's. Governance scholars have made outstanding contributions to this research body and have especially confirmed how governance plays a vital role in institutionalising notions of the creation of shareholder value, however, the vast majority of this research has mainly focused on the governance practices of the Anglo-American model across developed economies (Modell & Yang 2018). This model is generally found in the U.S., the U.K., Australia, Canada and New Zealand and is also termed by Denis and McConnell (2003) "international corporate governance". The salient features of the Anglo-American model are the separation of ownership and control, dispersed ownership, protection of minority shareholders, an equity market having a central role (Oxelheim 2018), greater control rights offered to firms' shareholders (Feils et al. 2018), and a regulatory and legal environment (Prowse 1990).

This thesis's overarching question is: to what extent is the international practice of corporate governance that primarily developed in developed markets relevant to developing markets, such as Jordan? The motivation for this thesis stems from the fact that the general features of the corporate sector in developing economies are different from those in developed economies. For example, in Jordan, there exists a unique setting of the agency relationship, one that features concentrated ownership and institutional differences in corporate governance practices in Jordan. The country's economy is characterised by CEO duality, and high insider representation in boardrooms and family-controlled companies. Furthermore, the Jordanian market is still developing, so its financial market is trying to increase efficiency by activating the principles of equality and transparency (Abed et al. 2012). Jordan needs economic and financial reforms and a series of legislative actions (Abed et al. 2012).

Jordan suffers from a lack of empirical evidence regarding corporate governance issues. To this end, further research is required to develop the Jordanian corporate sector by establishing the concept of good corporate governance, evaluating the corporate governance practices in place, and ultimately, help to develop the Jordanian economy as a whole. In addition, this thesis attempts to investigate whether the practices of the corporate governance which are internationally acknowledged as good, are significant in enhancing Jordanian companies' efficiency and profitability. Hence, the current thesis seeks to bridge an existing gap in the governance literature by exploring the factors affecting improved firm performance and reduced firm agency cost. All of these points are considered the main motivations for conducting this thesis.

1.8 Statement of the problem

Before the corporate governance concept became prevalent in Jordan, there was a serious financial scandal, the Petra Bank bankruptcy. Following this scandal, in 1989, the exchange rate of the Jordanian dinar fell from USD 3.35 to USD 1.41 (Shbeilat & Abdel-Qader 2018). Further, Jordan witnessed financial collapses in the corporate sector (e.g., the Magnesia Company and the Phosphate Company) after the loss of millions of Jordanian dinars. In addition, malpractices conducted by the banking sector were revealed, such as providing financial facilities (millions of Jordanian dinars) to individuals without the necessary approvals. Consequently, in the 1990's, the establishment of various corporate governance reforms have been an increasingly significant agenda item in Jordan's pursuit of sustainable and strengthened economic growth. For example, the establishment of three new institutions, the Jordan Securities Commission (JSC), the Amman Stock Exchange (ASE) and the Securities Depositary Centre (SDC), have contributed to the development of the regulatory environment (Jaafar & El-Shawa 2009).

Yet overall, the corporate governance issue and means to implement it, are both relatively new in Jordan. In 2005, the JSC issued the first Jordanian corporate governance code for firms listed on the ASE. However, the adoption of the code is not mandatory. Further, Jordan announced a new corporate governance code based on a "comply or explain" approach. In order to improve corporate governance practices in the Jordan environment, the JSC issued circular No. 12/1/4659 concerning a corporate governance code for listed firms on the ASE, which came into effect on 1 January 2009. However, the Companies Control Department (CCD) in Jordan has pointed out that during the period from 2000 to 2011 there were 44 bankruptcy cases in Jordanian firms, including 26 cases in the industrial sector. Therefore, the governance practices in Jordan are neither adequate nor comprehensive. The weakness of the institutional and regulatory environment plays a role in motivating firm managers to involve themselves in malpractice. It can be concluded that the operation of good corporate governance practices is an important factor to the financial health of Jordanian companies.

Another dilemma in the Jordanian corporate sector is corruption, which is a key obstacle for companies operating or planning to invest in Jordan. Corruption is considered to refer to “any situation in which a public position is being misused for private gain” (OECD 2016, p. 12). For example, a middleman system (*wasta*) is very popular everywhere in the country, and indeed the region, and is considered a necessary component of doing business. In 2018, Jordan witnessed its largest corruption case, which involved the illegal production and smuggling of fake brand cigarettes worth millions of Jordanian dinars.

1.9 The research questions

Besides providing ultramodern insights into Jordanian corporate governance, this thesis empirically investigates whether the different corporate governance mechanisms (board independence, board gender diversity, CEO duality and other mechanisms) influence firm performance and firm’s agency cost, the latter of which can also be considered firm efficiency. The activity of the board of directors is one of the most important of corporate governance mechanisms (Fama & Jensen 1983b; Baysinger & Butler 1985; Yermack 1996; Dalton et al. 1998; Hillman & Dalziel 2003; Arzubiaga et al. 2018). Zahra and Pearce (1989) suggest three roles for the board: control, service and strategy. Board members are delegates of the shareholders, and their responsibility is to ensure that managers are acting in the best interests of the shareholders (Kuo & Hung 2012). Therefore, a company board is responsible for controlling the firm’s top management to mitigate the conflict of interests between managers and shareholders. If these interests are completely aligned, this will alleviate the company’s agency costs and lead to better firm performance. As well, a board of directors may act as a link between the firm and its environment (Pfeffer & Salancik 1978).

Due to recent reforms and developments in the Jordanian market, the number of listed firms on the ASE has increased. The official bodies in Jordan, such as the Amman Stock Exchange (ASE) and Jordanian Securities Commission (JSC), seek to promote the effectiveness of Jordanian company's boardrooms. Drawing on the Jordanian institutional setting (described in Chapter 2) and the relevant theoretical background (described in Section 1.12), the following key researches' questions are formulated in this thesis:

(1a) Does board independence in the form of the representation of 'outside independent directors', influence firm performance?

(1b) Does board independence in the form of the representation of 'outside independent directors', influence firm agency cost/ firm efficiency?

(2a) Does board gender diversity in the form of the representation of women on the board of directors, influence firm performance?

(2b) Does board gender diversity in the form of the representation of women on the board of directors, influence firm agency cost/ firm efficiency?

(3a) Does the presence of CEO duality impact firm performance?

(3b) Does the presence of CEO duality impact firm agency cost efficiency?

1.10 The thesis's objectives

The purpose of this thesis is to investigate if the existing mechanisms of corporate governance impact firm performance and firm efficiency/firm agency cost in Jordan. Likewise, this thesis seeks to inform policy guidelines for reforms in order to boost the Jordanian governance environment. The specific aims of this thesis are:

1. To provide an ultramodern understanding of corporate governance in Jordan. To this end, this thesis describes the corporate governance in Jordan, shedding light on the different internal factors (e.g., legal institutions, historical background, cultural aspects and economic environment) that may play an important role in shaping Jordanian corporate governance.
2. To reveal knowledge of some weaknesses in the relevant institutions and identify the main challenges and issues of corporate governance at the company level.
3. To identify an appropriate model to explain the issues of corporate governance in Jordan.
4. To provide complementary evidence about whether the mechanisms of corporate governance (such as board independence, board gender diversity and CEO duality) and other variables, influence firm financial performance and firm agency cost in Jordan.

5. To help the regulatory institutions in improving and/or framing the Jordanian corporate governance practices.

1.11 Thesis significance

Some relevant studies have been conducted in the context of Jordan (e.g., Bolbol et al. 2003; Al-Shiab & Abu-Tapanjeh 2005; Boubakri et al. 2005b; Abu-Tapanjeh 2006; Al-Khouri 2006; Zeitun & Tian 2007; Abu-Tapanjeh 2009; Jaafar & El-Shawa 2009; Zeitun 2009; Abu-Serdaneh et al. 2010; Al-Najjar 2010; Tomar & Bino 2012; Al-Smadi et al. 2013; Hamdan et al. 2013; Taani 2013; Al-Amarneh & Yaseen 2014; Al-Beshtawi et al. 2014; Al-Najjar 2014; Al-Ramahi et al. 2014; Al Sawalqa 2014; Alhazaimeh et al. 2014; Makhlouf et al. 2014; Zedan & Abu Nassar 2014; Zeitun & Tian 2014; Abbadi et al. 2016; Al-Daoud et al. 2016; Alabdullah 2016; Alsoboa 2016; Alzoubi 2016; Ibrahim & Hanefah 2016; Al-Rahahleh 2017; Alkurdi et al. 2017; Almustafa 2017; Haddad et al. 2017; Makhlouf et al. 2017; Nawaz 2017; Abu Zraiq & Fadzil 2018; Alabdullah 2018; Alqatamin 2018; Bataineh et al. 2018; Ghosh 2018; Jarbou et al. 2018; Mohammad et al. 2018). These studies have addressed various aspects of corporate governance (e.g., the board practices, ownership structure, capital structure, audit committee and compensation of board and executive members), and its effect on firm performance, earnings management, firm dividend policy, disclosure and corporate social responsibility. It is noted that all of these studies have used accounting and marketing measures: the return on assets, return on equity, return on sales, return on capital, Tobin’s Q, earnings per share, return on investment, dividend to asset ratio, dividend per share to earnings per share, stock price return, market value of equity to the book value of equity, dividends yield and profit margin.

However, it is argued that accounting and market measures are relatively noisy (Dalton & Dalton 2011; Pham et al. 2011). It is confirmed that profits determined by accounting can be manipulated. Accounting profit is prepared within the management team’s guidelines, and therefore managers are more likely to employ specific accounting methods to promote performance (Barth et al. 2005). Market measures, in contrast, should reflect the real value of the corporation (Lindenberg & Ross 1981). However, as noted by Bacidore et al. (1997, p. 11), market-based measures “may not be an efficient contracting parameter because they are driven by many factors beyond the control of the firm’s executives”. As well, in markets with poor protection of minority shareholders, such as Jordan’s, these measures are more likely to be inconsistent depending on the concentration of the firm's ownership. According to Claessens and Djankov, such market-based indicators "lead to a downward bias in the relationship between concentrated ownership and firms' valuation" (1999, p. 502). Thus, such measures may not be effective in developing economies.

The current studies constructs two measures (i.e., asset utilisation ratio and expense ratio) as reliable proxies for firm efficiency/firm's agency cost, in addition to one accounting and one market measure, namely ROA and Tobin's Q, respectively, as proxies for firm performance. Therefore, the present studies have some significant differences from prior studies of corporate governance practices in the context of Jordan.

This thesis provides more comprehensive insight, and empirically investigates if corporate governance mechanisms affect firm efficiency and firm performance in the unique setting of the agency relationship prevalent in Jordan. The thesis's proposed policy guidelines may assist in instigating structural changes in the Jordanian firms sector. Thus, this approach may guarantee efficiency and enhance transparency and accountability as well as preventing the problems that have been suffered in other countries. Likewise, these studies contribute to the ongoing governance literature in developing countries, and also contribute to alleviating the scarcity of studies on corporate governance in developing economies like Jordan.

1.11.1 Corporate governance practices in developing countries

Financial crises such as the East Asian one, induced widespread concern over the issues of corporate governance in developing markets. To date, studies addressing this topic are relatively few (e.g., Shleifer & Vishny 1997; Gibson 2003; Tsamenyi et al. 2007), compared to those focusing on developed countries, (e.g., the U.S, Germany, Japan and the U.K.), although some concerning Jordan have been listed above in the section preceding this one. Developing countries have unique features, such as low investor protection, underdeveloped equity markets and weak bankruptcy regulations (Sarkar & Sarkar 2000). In these contexts, more attention to corporate governance research, such as this study, is warranted as the findings from developed countries (while mixed) do not pertain to a context with the same features as those in emerging economies.

1.11.2 Diversity of results in the previous studies

As indicated, most of the prior studies on the relationship among corporate governance practices, firm efficiency/agency cost and firm performance, are mixed and non-conclusive. Several studies provide evidence for the view that mechanisms of corporate governance lead to enhanced firm performance and ameliorate firm agency cost, while others suggest that there is no such association. The main reasons behind the diversity of outcomes can be explained by differences in the theoretical views used, methodologies of research, and performance measures (Korac-Kakabadse et al. 2001).

Further, as argued by Denis (2001) and Vafaei et al. (2015), the issue of endogeneity can cause this diversity, however, few works on corporate governance have addressed the endogeneity issue (Hermalin & Weisbach 2003). It is confirmed that the expected association between endogenous variables and error terms may lead to inconsistent and biased estimates (Elsayed 2007). Hence, prior research could not provide decisive findings on the associations among corporate governance, firm efficiency and firm performance. Hence, the current studies attempt to provide new empirical evidence for explaining the issues of corporate governance at the company level. Furthermore, these studies may reconcile some of the diverse outcomes of previous studies conducted in similar contexts.

1.12 Theoretical framework

A theory has been defined as "the coherent set of hypothetical, conceptual, and pragmatic principles forming the general frame of reference for a field of inquiry" (Hendriksen 1982, p. 1). Researchers such as Coase (1937), Pfeffer and Salancik (1978), Jensen and Meckling (1976), Fama (1980), Fama and Jensen (1983a, 1983b), Eisenhardt (1989), Donaldson (1990), Donaldson and Davis (1991) and Davis et al. (1997), developed what have become the prevailing theories on corporate governance that illustrate the problems arising due to the separation of ownership and management. These are the agency theory, resource dependence theory, stewardship theory, stakeholder theory and transaction cost theory. These theories are explained below.

1.12.1 Agency theory

As stated by Davis et al. (1997, p. 22) “at the heart of agency theory are assumptions of man that can be traced to 200 years of economic research”. The fundamental postulate of agency theory is that managerial behaviour (human) is opportunist and prompts self-interested actions. Davis et al. (1997, p. 27) claimed that in agency theory, the main focus is on extrinsic rewards: tangible, exchangeable commodities that have a measurable ‘market’ value.

In modern corporations, there is a separation of ownership and control. Jensen and Meckling (1976) pointed out that this situation leads to an association between owners (the principals) and managers (the agents), which is also termed the ‘agency relationship’. Such relationships lead to conflicts of interest between shareholders and managers, in that the shareholders act in their own interest while the managers act in theirs. It is confirmed that the sacrifices to control such a conflict of interest will create agency costs, which is also known as ‘agency problems’. Jensen and Meckling (1976) pointed out that agency costs include monitoring costs, bonding costs and the residual losses incurred. Monitoring costs are the costs incurred by owners for controlling the manager’s actions (e.g., for a financial audit). Bonding costs are the costs of setting up systems to make sure that managers act in the best interests of the shareholders. Residual losses, also known as indirect agency costs, occur because of the failure of bonding and/or monitoring costs.

Due to the corporate governance problems differing among companies (Bebchuk & Weisbach 2010), agency problems can be categorised into two groups as noted by Lei et al. (2013). These are agency conflicts between shareholders and managers, and agency conflicts between large shareholders and minority shareholders. Therefore, agency theory is recognised as one of the most important theories elucidating the issues of corporate governance.

1.12.2 Resource dependence theory

The primary premise of resource dependence theory is the need for corporations’ access to external resources like capital and expertise. According to this theory, corporate governance structures (e.g., the board of directors) influence company access to essential resources for firm performance (Pfeffer 1973). Similarly, Carpenter and Westphal (2001) stated that boards act as strategic consultants to management, rather than exercising the role of independent control. Resource dependence theory usually focuses on boards with a higher proportion of outside directors, due to the broader knowledge and expertise they can offer, as well as their improved networking with the external environment and the enhancement of the firm's reputation, which they provide. These are all seen to add to firm performance (Kiel & Nicholson 2003; Haniffa & Hudaib 2006). According to Pfeffer (1972), Pfeffer (1973) and Pfeffer and Salancik (1978), the board's diversity and the knowledge and expertise of its outside directors are essential elements in managing firms, satisfying their need for any capital in the future and controlling environment contingencies. Pearce and Zahra (1992) confirmed that the diversity of boards assists the corporation's survival by varying the firm's resources and its environment.

Emerging markets are underdeveloped, volatility exists in their economic position, and capital costs are high, due to the low availability of capital (Hitt et al. 2000). To overcome these problems, developing economies should have links with the external environment. Thus, resource dependence theory considers that the operational environment of corporations is reflected in their board composition. Therefore, the appointing of directors on corporate boards should be according to directors' ability to access the required resources, both capital and knowledge-based.

1.12.3 Stewardship theory

Stewardship theory is based on assumptions about psychological and sociological styles of supervision. Stewardship theory is designed around the premise that managers as stewards are motivated to act in the best interest of the shareholders (Donaldson & Davis 1991; Davis et al. 1997). According to Davis et al. (1997, p. 21), that "stewardship theory defines situations in which managers are not motivated by individual goals, but rather are stewards whose motives are aligned with the objectives of their principal". Tricker (1994) recognised that the theory of stewardship is the theoretical framework for firms' legislation and regulation. Stewardship theory holds that an insider-dominated company board is more effective and efficient. Such boards have more knowledge of the corporation's operations, such as technical expertise and data (Muth & Donaldson 1998).

Accordingly, CEO duality makes the leadership structure, particularly regarding decision making and strategy, more consistent and therefore may contribute to higher effectiveness (Donaldson & Davis 1991). Under stewardship, the separation of ownership and control is not viewed as problematic. Hence, there are no agency conflicts between shareholders and managers. An optimistic perspective about managers is consistent with stewardship theory.

1.12.4 Transaction cost theory

The theory of transaction cost clarifies the same issues of managerial behaviour as agency theory but using different wording (Solomon 2007, 2010). Transaction cost theory is “an interdisciplinary alliance of law, economics and organization” (Williamson 1996, p. 25). This theory is derived from a philosophical position assuming as fact that “firms have become so large that they, in effect, substitute for the market in determining the allocation of resources” (Solomon 2010, p. 13). Further, transaction cost theory supports the idea that the managers (the agents) are opportunistic by nature (Williamson 1979; Solomon 2007, 2010). Opportunistic behaviour is described as self-interest seeking (Williamson 1979) with guile (Solomon 2010). Therefore, both transaction cost theory and agency theory are similar, in terms of showing a rationale for managers to be controlled by owners.

1.13 Studies’ methodology

The current studies investigate whether the mechanisms of corporate governance (i.e., board practices such as board independence, board gender diversity and CEO duality) influence firm performance and firm efficiency in industrial and services firms listed on the ASE over the period 2006 to 2016. As it examines whether the independence of the board in the form of the representation of outside independent directors improves performance and alleviates agency cost, it relies on agency theory. Likewise, because this study examines whether board gender diversity in the form of representation of women on the board of directors influences firm performance and firm efficiency, it relies on resource dependence theory. As well, due to this study investigating the influence of CEO duality as a proxy for the effect of board leadership structure on firm performance and firm efficiency, also known as firm’s agency cost, it relies on agency theory. (These three aspects of the researches design are further described in Chapters 3, 4 and 5 respectively).

This thesis investigates the influence of corporate governance on the firm performance and firm agency cost of Jordanian industrial and services firms. In particular, it takes a governance viewpoint to examine the effect of the board of directors (i.e., board independence, board gender diversity and CEO duality) on firm performance and firm agency cost. The following section outlines the researchers' philosophy and methodology adopted to test the thesis's framed scope of investigation.

1.13.1 Studies' philosophy

As argued by Burrell and Morgan (1979), the researchers should choose the appropriate paradigm for their studies. The key issue of any study in social sciences is its philosophical assumptions. Burrell and Morgan (1979) discussed four sociological paradigms. These are: interpretive, functionalist, radical structuralist and radical humanist (Figure 2 shows four paradigms). These scholars pointed out that these paradigms are founded upon mutually exclusive perspectives of the social world, and these are based on various assumptions about the nature of social science, applying a subjective-objective axis nature of the society of regulation-radical change, which yields a 2*2 matrix.

The scientific view for the radical humanist paradigm is subjectivistic, while the social view for this paradigm focuses on radical change, conditions of domination and conflict (Alvesson 1987). A radical humanist believes that reality is socially generated and sustained (Ardalan 2000). In contrast, the paradigm of the radical structuralist believes that reality is objective (Ardalan 2000). The interpretive paradigm assumes that there are no global rules, e.g., of financial management and finance (Ardalan 2000). A functionalist paradigm holds that society has a solid structure and follows a specific order.

It classifies phenomena based on an 'objective view' that may provide a real explanatory power and a predictive knowledge of reality (Gioia & Pitre 1990; Dillard 1991). Further, this paradigm articulates knowledge by using a group of philosophical assumptions, the associations between practice and theory and the empirical world. It investigates the regularities that bring out generalisations and global principles (Chua 1986). Via functionalism, theories can be evaluated objectively through reference to empirical evidence and the deductive approach is employed in theory construction, working with a review of the previous literature and operating out of earlier theories about the structure of organisations. A hypothesis is determined by selecting a group of variables as likely explanations of some effect. As well, data is gathered with instruments and modes designated in keeping with the formulation of the hypothesis. The analysis procedure is quantitative. Thus, the hypotheses of a thesis are tested through statistical analysis (Gioia & Pitre 1990). Chua (1986) and Dillard (1991) discussed the philosophical assumptions (presented in Table 3) underlying the functionalist paradigm, and the radical humanist paradigm regarding epistemology, ontology, methodology and human nature.

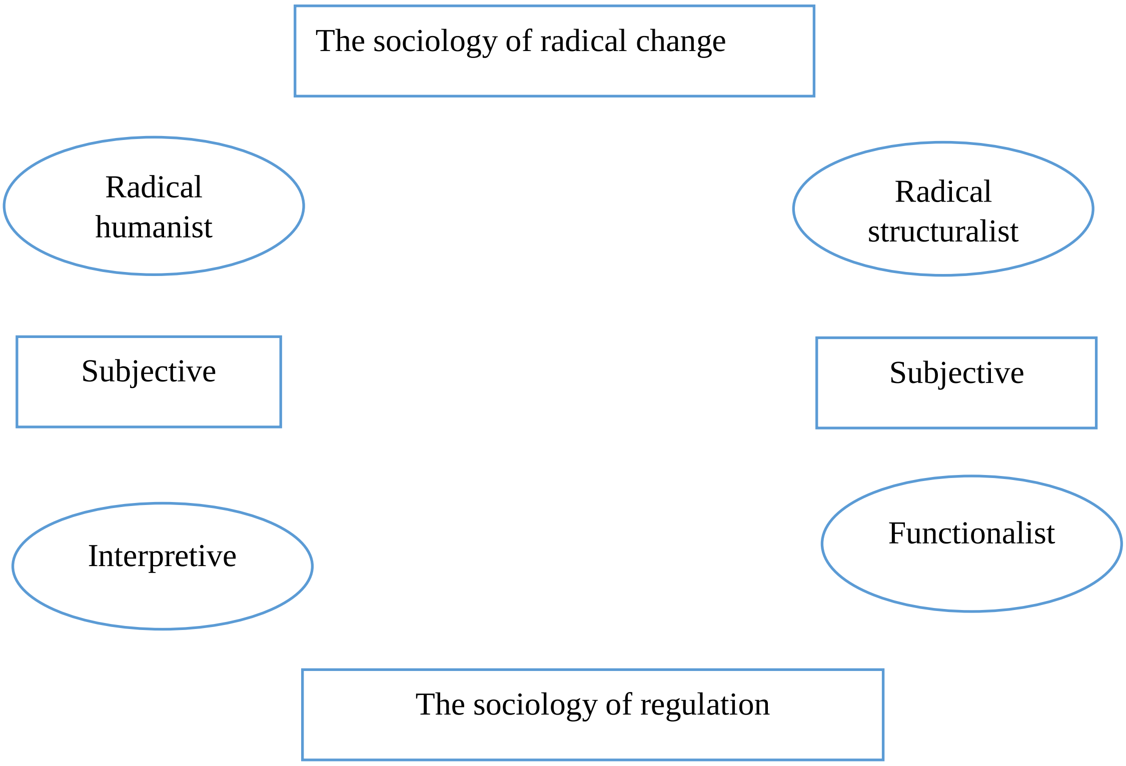
It is essential to establish a proper research approach concerning the research issues (see e.g., Punch 1998). There are two types of approaches (i.e., the quantitative and qualitative methods) used around the world by researchers. Quantitative research is an approach for testing objective theories by investigating the associations among variables. These variables can be measured, commonly via instruments, so that numbered data can be analysed using a statistical analysis (Creswell 2014). Hence quantitative research contains three main components: design, measurement and statistics (O'Dwyer & Bernauer 2013). Further, the quantitative tradition is characterised by precision, objectivity, logical reasoning, empiricism, replication and verification, parsimonious explanation, generalisability, and conditional conclusions in the interpretation of results (O'Dwyer & Bernauer 2013). With a qualitative approach, researchers have assumptions about testing theories deductively, working against bias, controlling for alternative interpretations and being able to generalise and replicate the research's results (Creswell 2014). Qualitative research is an approach for understanding and examining the meaning individuals or groups ascribe to a human or social problem. This thesis includes procedures and questions emerging during (not simply before) the investigation, data is usually gathered in the participant's setting, the analysis inductively starts from particular to general themes and the researcher makes explanations of the meaning of the research data (Creswell 2014).

Table 3: Philosophical assumptions

Radical Humanist	**Philosophical assumptions**	**Functionalist**
Nominalism	Ontology	Realism
Anti-positivism	Epistemology	Positivism
Voluntarism	Human Nature	Determinism
Ideographic	Methodology	Nomothetic
Radical change	Societal	Status quo

Source: Dillard (1991, p. 11)

Figure 2: The paradigms in research as adopted by Burrell and Morgan (1979)



Source: Burrell and Morgan (1979, p. 29)

Because of the nature of the data available for selection and the numerically derived variables of interest, the current researches use a quantitative approach. It investigates whether the mechanisms of corporate governance impact firm performance and firm efficiency/agency cost. It explores the actions of people as they affect firm performance and firm efficiency. Because of the commonalities in the theories, the functionalist paradigm is the basis of these studies' theory. The studies' hypotheses are formulated in Chapters 3, 4 and 5, and the analysis processes are conducted on a quantitative approach.

The studies' data are available from the sources discussed in Section 1.13.7. In present studies, the methodology is drawn from prior research in the arena of accounting, especially corporate governance practices.

1.13.2 Methodology and method of researches

The term of methodology clearly has its origin from the Greek word 'logos' which means 'the logic of' (Gough 2002). The concept of methodology indicates the underlying logic of the research method (Jackson 1992) and refers to a set of methods and their basis as instruments and techniques for gaining knowledge (Dillard 1991). Likewise, it involves theory concept selection. Further, it explains the research approach choice (quantitative and/or qualitative).

1.13.3 Studies' hypotheses

This thesis investigates if the tools of corporate governance influence the firm efficiency and the firm performance in the unique institutional setting of Jordan, which shares some characteristics typical to emerging economies. It particularly examines if specific features of the board of directors (i.e., board independence, board gender diversity and CEO duality) affect firm efficiency and firm performance (further details are present in Chapters 3, 4 and 5). Appendix 2 shows a summary of the studies' hypotheses. The researcher's questions posed in this chapter are devised to test the studies' hypotheses in conformity with the theory developed in Chapters 3, 4 and 5, correlating the mechanisms of corporate governance practices, firm performance and firm efficiency/ firm's agency cost.

1.13.4 Studies' period

The current studies consider a sample of firms listed on the ASE, Jordan, over the period 2006-2016. Therefore, eleven (11) years of data from 2006-2016 are considered in the current studies. It is argued that a single year does not provide the whole picture from which to make judgements (Fosberg 1989).

1.13.5 The sample construction

The major types of data that are usually available for empirical analysis are time series, cross-section and panel data. In time series data, the values for one or more variables can be observed during a period of time. For cross-section data, the values of one or more variables are gathered for several units and entities at the same points in time. With respect to panel data, one or more variables' values are gathered for several units and entities at several points in time (Gujarati 2003). In other words, panel data combines the characteristics of time series data and cross-section data (Greene 1997), and can be seen as a more streamlined way for gaining time series data. Most earlier studies have used panel data (Greene 1997) as do these studies. Hence, the data for the current research is collected from companies in different industries for various years, by using a sample of 80 listed firms at the ASE. As of 31st December 2016, there were 224 listed firms on the ASE (details are further discussed in Chapters 3, 4 and 5).

1.13.6 The sample description

As mentioned earlier, the sample of these studies covered 80 companies from different industries. The studies' sample represents 35.71 per cent of the total of listed companies on the ASE at the end of the data collection period. Thus, the sample of studies can be considered as sufficient and representative of the studies' population (More detalis are offered in chapters 3,4 and 5 respectively).

1.13.7 The data source

The data wrere collected from the following sources:

1. Bloomberg database provided details for firms' accounting information (such as assets, liabilities and operating expenses). Bloomberg database "is fairly comprehensive" (Sergi et al. 2018, p. 61). It is a financial services system that provides accurate financial information (current and historical information) that covers all markets in the world. Following prior studies (e.g., Pessarossi & Weill 2013; Jizi & Nehme 2017; Nehme & Jizi 2018), Bloomberg database is used to gather financial information in this thesis.
2. Firm annual reports were the basis for obtaining the corporate governance information which was manually collected (such as directors' ownership, institutional ownership, block holding ownership, board size, board independence, board gender diversity and CEO duality).

1.13.8 Variables definitions

This thesis examines the influence of corporate governance practices on firm performance and firm efficiency by considering Jordan as a case study. For empirical examination, a number of hypotheses have been developed. As well, a number of variables (i.e., board independence, board gender diversity, CEO duality, ownership structure (directors' ownership, institutional ownership and block holders ownership), board size, firm age, leverage, firm growth, free cash flow, research development and expenditures and firm size, are discussed throughout the chapters 3, 4 and 5 respectively. Appendix 1 provides a summary of the definitions of variables, and the means used for their measurement.

1.13.9 The analysis

The analysis of these researches is conducted by using Ordinary Least Square regression (OLS) and Instrumerntal Vrables (IVs) and Hausman Test. (Further details are presented in chapter 3, 4 and firve respectively). Table 4 displays a summary of the hypotheses and their related analysis methods.

1.14 Contribution of the thesis to the governance literature

Due to corporate scandals around the world, there has been extensive research and public policy about the issues of corporate governance. However, most studies have been conducted within the context of developed countries. In contrast, there is a paucity of research on corporate governance in developing markets, in particular Jordan. As mentioned in Section 1.11, all studies conducted in the context of Jordan, have used accounting and/or market measures, and none covered insights into the practice of corporate governance in Jordan.

Table 4: Summary about hypotheses and related analysis

Hypothese	Independent Variables	Dependent Variables	Analysis	Further Analysis
H $\boldsymbol{1_a}$**:** There is a positive relationship between board independence and firm performance.	Board Independence	ROA and Tobin's Q	OLS	*Endogenity * Hausman Test
H 1b: A company board's independence will mitigate corporate agency costs.	Board Independence	AUR and ER	OLS	*Endogenity * Hausman Test

H 2a: There is a positive relationship between board gender diversity and firm performance.	Board Gender Diversity	ROA and Tobin's Q	OLS	*Endogenity * Hausman Test
H 2b: A company board's gender diversity will reduce corporate agency costs.	Board Gender Diversity	AUR and ER	OLS	*Endogenity * Hausman Test
H 3a: CEO duality is negatively related with firm performance.	CEO Duality	ROA and Tobin's Q	OLS	*Endogenity * Hausman Test
H 3b: CEO duality is positively associated with firm agency cost.	CEO Duality	AUR and ER	OLS	*Endogenity * Hausman Test

This thesis has sought to introduce an understanding of Jordanian corporate governance by using company level data. It empirically examined whether the various tools of governance affect firm efficiency/agency cost and firm performance. This work was conducted at a time when there has been growing attention among relevant parties, such as practitioners, the academic community and regulatory agencies, about the concept and practices of the corporate governance in developing countries.

This thesis makes a number of contributions to the governance literature in different ways. Firstly, it contributes to alleviating the deficiency of governance literature in Jordan. Secondly, it also provides an insight into common governance practices in Jordan which is of benefit to researchers, local and international investors and managers considering the roles of corporate governance systems. Thirdly, it may provide new empirical evidence whether governance features used in developed countries influences firm efficiency and firm performance in emerging economies such as Jordan. Finally, the results of this thesis may benefit many other developing markets with similar cultural, economic and environmental conditions.

1.15 Thesis outline

This thesis is composed of six chapters. Chapter 1 provides the background to this thesis, outlines the importance of corporate governance, its recent history and issues pertaining to governance in developed and developing markets. It shows the contributions to the academic debate and governance literature. It explains the motivation for this work, the studies questions, and the importance and objectives of this thesis. As well, it also outlines the thesis structure.

Chapter 2 presents an overall insight into corporate governance practice in Jordan. It starts by providing an overview of Jordan and moves to the evolution of Jordanian corporate governance. In particular, this chapter covers the institutional settings influencing the practice of corporate governance in Jordan, including company law and the regulatory regime. It provides an overview of the capital market in Jordan. Likewise, this chapter reviews the recent reforms of corporate governance in Jordan, and challenges to governance in that country (e.g., board practices, ownership structure, management, and CEO and family ownership).

This thesis consists of three interconnected papers that examine the overarching purpose of this thesis: the influence of corporate governance practice on firm performance and firm efficiency/firm agency cost. Figure 3 shows the thesis structure, about which there are two important features. Firstly, all the empirical papers are interconnected, meaning that the whole thesis shows one story where each paper addresses a distinctive objective. Secondly, the contents of all papers are composed of an introduction, literature review, theoretical background, research hypotheses, definition of variables, model estimation, empirical results, further analysis, conclusion, implications and limitations. Chapter 3 (paper 1), the first paper of this thesis, examines the influence of board independence on firm performance and firm efficiency in Jordan. This paper provides an overview about board independence in Jordanian company sector. Chapter 4 (paper 2) addresses board gender diversity in Jordan and its effect on firm performance and firm efficiency. The final paper (chapter 5) investigates the effect of CEO duality on firm performance and firm efficiency in Jordan.

Figure 3: The structure of the thesis

Thesis aim:

The influence of corporate governance practice on firm performance and firm efficiency: Evidence from Jordan.

↓

Chapter one: Introduction

↓

Chapter two: Institutional settings in Jordan

↓

Chapter three (paper 1):

Board Independence and Alternative Measures of Firm Performance: Evidence from Jordan

↓

Chapter four (paper 2):

Board Gender Diversity, Firm Performance and Efficiency in Jordanian Boardrooms: A Revisiting of Resource Dependence Theory Predictions

↓

Chapter five (paper 3):

Does the Presence of CEO Duality impact firm's agency cost and firm performance? Evidence from Jordan

In chapter 6, the results are summarised. As well, the implications and suggested policy recommendations of all papers are presented. In addition, the limitations of all papers are acknowledged and the area of future studies is proposed.

1.16 Summary and conclusion of the chapter

This is the introductory chapter to this thesis. It started with a discussion of general corporate governance concepts, with relevant corporate governance terms defined. As well, the importance of good corporate governance practices around the world was demonstrated. Likewise, this chapter illustrated the history of the corporate governance revolution, and how and why the international governance debate has appeared, including in developing countries. This chapter also showed the motivation for this work and outlined the thesis structure.

Chapter Two: The Institutional Settings in Jordan

2.1 Introduction

This thesis provides a comprehensive view of corporate governance in Jordan. It empirically investigates whether various mechanisms of corporate governance influence the firm's performance and firm agency's cost/or firm efficiency in Jordan. Chapter 2 describes governance development in Jordan, highlighting many of the different internal factors, in particular, those associated with the institutional settings affecting the corporate governance in this country. Numerous institutional weaknesses are exposed and the key challenges and issues evident at the company level are highlighted.

This chapter is organised as follows. Section 2.2 gives an overview of Jordan. Secondly, an outline of the Jordanian economy and its privatisation program are offered in Sections 2.3 and 2.4, respectively. Thirdly, the investment environment in Jordan is discussed with a general picture of its industries and service sectors in Sections 2.5 and 2.6, respectively. Fourthly, Jordan's accounting profession is described in Section 2.7. Fifthly, various steps taken to develop Jordanian corporate governance are presented in Section 2.8, which explains its corporate governance codes, shows the features of its corporate governance model and some details concerning the assessment of Jordanian corporate governance. Finally, in Section 2.9, a summary of institutional factors affecting the corporate governance practice in Jordan is given.

2.2 An overview of Jordan

Jordan is a developing country whose inhabitants consider themselves to be located in western Asia although Europeans tend to think of it as situated in the Middle East. Jordan is located between 29° and 34° north in latitude, and 35° and 39° east in longitude. Its total area comprises 89,342 sq. km. Agriculture takes up about 11 percent of the total land area. Generally, Jordan consists of a desert plateau. It is bordered by Saudi Arabia to the south, Iraq to the east, Syria to the north and Palestine to the west (Albezuirat et al. 2018).

According to the Jordanian Department of Statistics, at the end of 2017, its population stood at around 10,053,000, ranking Jordan 92nd in the world in terms of population (Department of Statistics 2018). Nearly 4,226,700 of these people live in the capital, Amman, and surrounding cities. Arabic is the official language of the Arab world, including Jordan, however, English is its second language and is used widely in the media, education, and health sectors, the business environment and in trade (Salameen et al. 2015). The religion of Jordan is Islam, with 97 % being Muslim, and the remaining 3% Christian and other religions. All tertiary education is delivered in English, for which its secondary school system has prepared the foundation, and this is an indication of Jordan's commitment to an international outlook.

The Ottoman Empire governed Jordan for more than six centuries until the end of the First World War. The Emirate of Transjordan was established in April 1921 under a British mandate, which lasted until 1946. Jordan appeared as an independent country on the 25th May 1946, after the end of the Second World War, after which its official name became the Hashemite Kingdom of Jordan. In 1952, its governing institutions were established through the Jordanian constitution.

Executive power is vested principally in the hands of the King, Prime Minister and the Council of Ministers. Jordan is split into 12 governorates, each with a royally appointed administrative governor and ruled by a royal parliamentary system. The Jordanian legal environment belongs to family of the civil law. The Jordanian legal system developed from law codes that were laid down by the Ottoman Empire (and operate similarly to French law). The Jordanian policy environment consists of a bicameral legislature consisting of the Senate and House of Representatives. The Jordanian Senate comprises 65 members, all royally appointed. Membership of the House of Representatives involves conducting elections for its 130 members (Ryan 2010).

2.3 Jordanian economy- a brief sketch

Jordan's economy is classified as the smallest in the Middle East, with inadequate supplies of oil, water and other natural resources, apart from phosphate and potash. Hence, the Jordanian government relies heavily on external assistance (Al-Qadi & Lozi 2017). In addition, the economy faces other challenges, such as high rates of poverty, a budget deficit, high rates of unemployment and a high rate of government debt. Overall, labour force participation decreased from 39.2% in Q3-2017, to 38.1% in Q4-2017. Likewise, the rate of unemployment was 18.4% in Q1-2018, compared to 18.2% in Q1-2017 (World Bank 2018). On the other hand, Jordan's debt increased to

US$38.5 billion at the end of 2017, which stood at a remarkable 95.9 per cent of its Gross Domestic Product (GDP) – an increase of 0.8 per cent of the GDP, compared with 2016.

A further significant challenge facing Jordan is to stimulate the local economic environment in the context of an unstable external environment. For example, the crisis in Iraq and Syria is the most important recent shock affecting the Jordanian economy. This led to a low rate of tourism and investment inflows, disrupted trade routes and increased the number of refugees. In addition, continued regional instability and reduced foreign assistance, will put Jordan under even more pressure (World Bank 2018). The growth of the Jordanian economy remains low, with its gross GDP expected to increase by 2.4% by the end of 2018, and 2.5% in 2019, compared with 2.1% in 2017 (World Bank 2018).

In 2011, Jordan was influenced by what is known as the "Arab Spring", with low level demonstrations requesting the government introduce economic and political reforms. The government's response was to undertake some gradual reforms, with the parliament's approval of some constitutional changes, in an attempt to promote the independence and integrity of the judiciary, and improve public accountability. In practical terms, Jordan works to reform accountability, transparency, private sector development and public finance management. As well, the Jordanian government emphasises public debt management and its budget, as well as efficiency in its public sector spending.

Over the past decade, Jordan has entered into structural reforms in various sectors (e.g., education, industries and health). The Jordanian government has inserted systems of social protection and has reformed its subsidies, such as through the liberalisation of trade, investment plans, the elimination of trade obstacles, the promotion of private sector investment, the privatisation of previously-held governmental projects across most economic sectors (such as telecommunications, transport, electricity, tourism and electricity), the application of stronger copyright and trademark laws and the reduction of import tariffs (Jordan Investment Commission 2018). In 2016, the IMF approved a three-year extended arrangement under the Extended Fund Facility, to support the Jordanian economy and its program of financial reform. This program's purpose is fiscal consolidation to reduce public debt, and structural reforms to promote the conditions for more inclusive growth (Al-Qadi &

Lozi 2017). These reforms create the appropriate conditions for both the public and private sector to act as partners for reforms in infrastructure and taxation.

In brief, the private sector has become an essential engine of growth during the past decade, however these economic reforms have not always been matched by corporate governance reforms (International labour Organisation 2013).

2.4 Privatisation in Jordan

After the First Gulf War, Jordan became unable to pay its obligations. The Jordanian government therefore reached an agreement with the IMF to follow up its program of economic reform, and signed a peace agreement with Israel in 1994 (Al-Akra & Ali 2012). In 1998, Jordan signed an agreement with the U.S. and Israel, to establish the Qualifying Industrial Zones. Jordan then joined the World Trade Organisation in 2000. This was followed by an improvement in relations between Jordan, the U.S. and other oil producing countries.

At that time the Jordanian government had discussions with the IMF to adopt many of the economic reforms that would lead to a more open (market-oriented) economy (Al-Htaybat 2018). Among these reforms were privatisation, one of the means used to activate the role of capital markets in allocating resources (Al-Akra et al. 2010a). It can be defined as “the deliberate sale by a government of state-owned enterprises (SOEs) or assets to private economic agents” (Megginson & Netter 2001, p. 321). To promote the investment environment and economic growth, more than 100 countries around the world have adopted a privatisation program (Al-Akra & Ali 2012).

In Jordan, the public sector companies were highly inefficient, and riddled with debt and corruption. In contrast, private sector companies were efficient, better performing and produced higher revenues, creating job opportunities (Al-Smadi et al. 2013). Privatisation began in 1996 and ran to 2004, with the help of some international bodies such as USAID and the World Bank (Al-Akra & Ali 2012), and was far reaching in its scope. Before this, the government’s stake in these public shareholding firms was 15%, and involved 50 major corporations such as the National Airlines, Jordan Telecommunication, Jordan Cement Factories and the Royal Jordanian, which eventually led to an overall government share of only 6% (Al-Akra et al. 2009; Al-Akra et al. 2010a). The proceeds of privatisation amounted to approximately US$1,271 million.

To guarantee a successful privatisation program, Megginson and Netter (2001) argue that it should include the process of ownership transfer to new owners. Hence, the legal protection of owners becomes vital to the program's success. To this end, Jordan improved its practices of corporate governance (e.g., improved and developed Jordanian code of corporate governance practices), and updated its firms' disclosure rules through the enactment of the Company Law of 1997, and the Securities Law of 2002. These laws laid down the public framework of Jordanian corporate governance and required all Jordanian companies to adopt the International Financial Reporting Standards (IFRSs) and the International Accounting Standards (IASs) - further details are presented in Table 10.

2.5 Development of the investment environment in Jordan

Since 2000, the Jordanian government has implemented many economic reforms in various sectors, all aimed at attracting external investment and integrating into regional and international markets. These efforts include the establishment of specialised government agencies to encourage investment and support export growth as well as the development of the economic zone. To this end, the Jordan Investment Commission (JIC) was established in 2014. The JIC is the successor of three previous former bodies (i.e., the Development and Free Zones Commission, the Export Promotion Department of the Jordan Enterprise and Development Corporation and the Jordan Investment Board).

According to Article 21 of the Investment Law (No. 30 of 2014), the JIC is the key agency for the implementation of government investment development policies and activities (Jordanian e-Government 2018). Its main vision is to stand out in encouraging investments, and contributing to the country's economic growth. Therefore, the JIC's key objectives are increasing the effectiveness of the Jordanian investment environment, promoting financial and solvency sustainability and enhancing institutional efficiency (Jordan Investment Commission 2018).

The Investment Law (No. 30 of 2014) empowered it to be the only official agency in Jordan that is responsible for attracting foreign investments, promoting exports and providing a stable investment environment. This law gives it the required privileges to obtain and accelerate the centralisation of all relevant investment procedures, including the establishment, development and organisation of special economic zones. Such free zones help the transit of goods, encourage economic activity and play a vital role in contributing to boosting Jordan's position as a centre for trade.

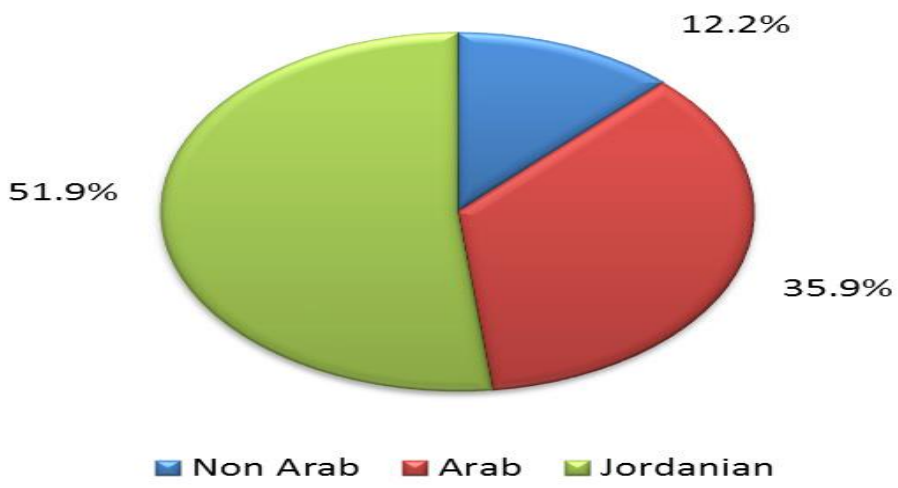
The law also provides a framework of benefits and incentives for investors as well as offering investment projects, both internal and external, to the existing special economic zones (also known as free zones). In addition, the law allows for an investment window that acts within the JIC, with authorised representatives who have the power to issue licences within a specified time. According to this law, other privileges are available as well, such as no constraints on foreign ownership except for some economic actions where a Jordanian partner is required, and no restrictions on capital transfers. Furthermore, for the aim of applying the provisions of this Law, both the non-Jordanian and Jordanian investor are offered the same treatment.

In practice, the law also provides perfect opportunities for investors. For example, foreign investment in the free zones has a number of concessions. Firstly, exemptions exist from income tax on the earnings made from certain economic activities. Secondly, land and building tax exemptions operate, as well as exemptions from service charges for improvements, planning and street paving. Thirdly, 0% sales tax is in place on goods and services consumed by the registered organisation in the zone, for goods purchased to achieve business goals. Fourthly, there is income tax exemption for remuneration of foreign workers. Finally, customs duties are exempt (Jordan Investment Commission 2018).

To access international markets, Jordan has signed numerous Free Trade Agreements (FTAs): 55 bilateral investment treaties, 27 agreements about double taxation and seven agreements on free trade allowing access to regional and international markets. As well as belonging to the World Trade Organisation, Jordan is a member of the Agadir Agreement, the Greater Arab Free Trade Area, the Barcelona Declaration, and a party to the EU Association Agreement. It has also joined FTAs with the U.S.A. and the European Free Trade Association States (Norway, Iceland, Switzerland, and Liechtenstein), Canada and Singapore. This has led to open markets in 17 Arab countries, the European Union and Norway, Iceland, Switzerland, and Liechtenstein. According to the ASE (2018), the rate of non-Jordanian investments in listed firms on the ASE, was 48.1% by the end of 2017 (Figure 4).

In a nutshell, the appropriate economic policies and the immediate implementation of fundamental reforms, will be necessary to overcome the country's sensitivity to internal and external upsets and help revitalise the economy. Ultimately, creating conditions for increased private investment by improving the investment environment and enhanced competitiveness will remain indispensable for Jordan, in order to foster new job opportunities.

Figure 4: Non-Jordanian investments in listed firms on the ASE



Source: ASE (2018)

2.6 Industrial and service sectors in Jordan

The Jordanian industrial sector comprises manufacturing, extractive industries, electricity and water sectors. Due to its multiple contributions to the achievement of economic development, this sector is considered to be one of the principal pillars of the Jordanian economy. The companies operating in the industrial sector have been divided into ten sub-sectors. These are therapeutic industries and medical supplies, construction, plastic and rubber, extraction industries, engineering, electrical and information technology industries, packaging, paper, cardboard, printing and office supplies, garments and leather, rations, food, agriculture and livestock, chemicals and cosmetics, wood and furniture and crafts.

There are roughly 18,000 organisations widely dispersed throughout the Kingdom's governorates. The industrial sector contributed about 24% of the GDP in 2017 (Jordan Chamber of Industry 2018). Due to its relations with many sectors, such as insurance, transport and others, it can be concluded that the industrial sector plays a vital role in which it directly or indirectly contributes about 40% of GDP (more details are offered in Table 5). Furthermore, it also maintains the stability of the Jordanian dinar exchange rate, through supporting Jordan's official reserves of foreign currency to the tune of more than US$8 billion a year. In addition, it supports the

Kingdom's financial stability by providing the treasury with more than 1 billion Jordanian dinars a year in direct or indirect taxes, where dinar invested in this sector provides the treasury with more than eight taxes pennies.

Table 5: The indicators of the industrial sector

Indicators	Ratio %
Direct contribution to GDP	24%
Indirect contribution to GDP	40%
Number of employees	240000
Contribution to the national workforce	15%
Number of industrial organisations	18000
Industrial exports (US$ billion)	3.6
Contribution to the national exports	91%

Source: Jordan Investment Commission (2018)

In developed economies, the service sector is the fastest growing worldwide, and is now ranked first in terms of the global GDP, contributing more than 50%. Especially service innovation which represents the principal way to create revenues (Al-Badarneh et al. 2018). The service sector contributes 66.5% to Jordan's GDP compared to the industrial and agricultural sectors, which provide only 24% and 3.7%, respectively (Al-Badarneh et al. 2018). Moreover, the service sector is the largest contributor to the labour market, employing about 80% of workers. In Jordan, the service sector consists of commercial, educational, health, media s, technology s, transportation, utilities and energy services. Tables 6 and 7 show some indicators of tourism and information, and communications technology sectors, respectively.

Table 6: Some indicators of the tourism sector

Indicators	Ratio %
Tourism contribution to GDP	12.2 %
Tourism income (JOD million)	2476.6
Number of employees	50060

Source: Jordan Investment Commission (2018)

Despite the various economic and social contributions provided by the industrial and service sectors, there are many challenges, internally and externally, which hinder their performance and diminish their competitiveness. These can be summarised as follows:

1. Once the Jordanian economy began to recover from the consequences of the financial crisis that hit the countries' economies around the world, the "Arab

Spring” significantly influenced industrial exports due to the loss of some major export markets.

2. Issues persist related to employment, particularly in light of poor education and vocational training centre outputs, and their limited relevance to the actual needs of the Jordanian labour market, especially in the industrial and service sectors.
3. Increasing costs of energy and production have led to the raising of electricity charges which constitute inputs for production, which in some industrial sectors, reach about 60% of total production costs. Furthermore, the energy bills have risen because of the suspension of the oil supplies from Iraq, and gas from Egypt.
4. There is a shortage of liquidity and difficulty in obtaining finance, especially for small and medium-sized enterprises which constitute more than 98% of business organisations.
5. The Jordanian industrial and service sectors face high tax rates either as sales or income tax.
6. Jordan experiences limited benefits from trade agreements, excessive government bureaucracy and high transport costs.

Table 7: Some indicators of the information and communications technology sector

Indicators	Ratio %
ICT contribution to GDP	12 %
ICT revenues (US$ billion)	2.12
ICT revenue growth	7.23%
ICT exports (US$ million)	207.4
Current investments (US$ million)	302
Number of employees	17412

Source: Jordan Investment Commission (2018)

2.7 Accounting and auditing professions in Jordan

Generally speaking, accounting is considered one of the most important professions that influence the economy as a whole, and has a foundation in the Jordanian legal system, which is a combination of Islamic legal principles and civil law, the latter having some historical associations with French civil law (Haddad et al. 2017) . The accounting profession has been in existence for centuries in Jordan, although not without its intricacies as Jordan and its surrounding countries have witnessed various accounting patterns as many countries over time have occupied the region (Al-Akra et al. 2009).

Furthermore, the emergence of these countries as Islamic states has played a pivotal role in the development of their respective accounting systems. It is argued that, before the adoption of Arabic numerals, accounting and recording procedures started in order to meet religious needs, particularly, for the practice of 'zakat', a compulsory religious tax imposed on Muslims (Zaid 2004). Furthermore, as noted by Güvemli and Güvemli (2007), during the 8th century, an accounting method existed called the Merdiban Method. This was then adopted by the Abbasid Empire, the Ottoman Empire and the Ilhans State. The Merdiban Method was applied by the Ottoman Empire until 1879, and then became modified to form double-entry bookkeeping, a method of worldwide importance even today (Güvemli & Güvemli 2007).

In Transjordan, commercial issues were managed by the Ottoman Commercial Code issued between 1849 and 1850, however, this code was replaced after independence. In 1964, Jordan enacted its first company law, which was applied to both the East and West Banks of Jordan. Following that, Jordan passed its first commercial law in 1966 (Sections 2.9.1.1, 2.9.1.2 and 2.9.1.3 show detailed accounts of these laws) (Al-Akra et al. 2009).

2.7.1 The accounting profession in Jordan

Since 1961 in Jordan, the accounting profession has been strictly controlled by the Accounting Professional Council when this was codified in law (Al-Akra et al. 2009). This law allowed accountants who have been practising for two years to be licensed. In 1985, this law was altered by establishing an Audit Bureau to manage entrance examinations and the practice of the accounting profession in Jordan (Solas 1994).

Accounting in Jordan is primarily affected by the educational level of its practising accountants who have studied in Jordanian universities, the U.S. and the UK (Nassar et al. 2013). As codified by Law No. 42 of 1987, Jordan established the Jordanian Association of Certified Public Accountants (JACPA) (Atmeh 2016), which became a member of the International Federation of Accountants (IFAC) in 1992. However, JACPA has had no authority to set accounting or auditing standards, its main role being JACPA. Up until 1997, there was no independent official or legal body paying attention to developing accounting and auditing standards in Jordan (Al-Akra et al. 2010a; Nassar et al. 2013), these professions having been regulated by the Ministry of Industry and Trade with a limited role for JACPA (Al-Akra et al. 2010a). Around the turn of the century, this situation was significantly changed by two innovations, with extensive consequences. In 1997 and 2002, Jordan issued the Company Law and the Securities Law, respectively, which require all Jordanian shareholdings to adopt the full versions of the international accounting regulations and standards known as the IASs and IFRSs (Table 8 offers the date of adoption of IASs and IFRSs in Jordan) (Al-Akra et al. 2010a; Al-Akra & Hutchinson 2013; Haddad et al. 2017). This was followed in 2003, by the enactment of a new law which aimed to promote the accounting and auditing professions, and ensure that IASs and IFRSs are implemented in the Jordanian environment.

2.7.2 The auditing profession in Jordan

In 2004, the Jordanian government established the High Council for Accounting and Auditing, which encouraged the role of JACPA, which by this stage had been attached to the Public Auditing Profession Board. In this way, JACPA obtained more powers and authorities (e.g., the responsibility to formulate by-laws) (Al-Akra et al. 2009; Haddad et al. 2017), and grew in its status as an independent organisation. However, the Accounting Profession Law of 2003 places minimal emphasis on the independence of the auditor, and any relevant code of ethics, notwithstanding the fact that auditing practices in Jordan are taken for granted as being in line with the international auditing standards and the code of ethics issued by the IFAC.

The shortcomings of this situation have severe ramifications in that there is an apparent absence of enforcement and monitoring mechanisms. Moreover, the majority of Jordanian firms are family-owned, which may influence which auditor is appointed for them - another factor which could help to lessen the independence of the auditor. Hence, it can be concluded that in general, there is insufficient independence in the status of auditors in Jordan.

Now that its compromised functioning has been explained, it is necessary to backtrack some half a century to trace Jordanian auditing in terms of its form. In 1944, the first audit firm was established. Foreign audit companies like Whinney Murray &

Table 8: The date of adoption IASs and IFRSs in Jordan

Standard No.	**Name**	**Date**
IAS 1	Disclosure of accounting policies	1997
IAS 2	Inventories	1997
IAS 4	Depreciation accounting	1997
IAS 5	Information to be disclosed in financial statements	1997
IAS 7	Cash flow statements	1997
IAS 8	Net profit or loss for the period, fundamental errors and changes in accounting policies	1997
IAS 9	Research and development costs	1997
IAS 10	Contingencies and events occurring after the balance sheet date	1997
IAS 11	Construction contracts	1997
IAS 12	Accounting for taxes on income	1997
IAS 13	Presentation of current assets and current liabilities	1997
IAS 14	Reporting financial information by segment	1997
IAS 15	Information reflecting the effects of changing prices	1997
IAS 16	Property, plant and equipment	1997
IAS 17	Accounting for leases	1997
IAS 18	Revenue	1997
IAS 19	Retirement benefit costs	1997
IAS 20	Accounting for government grants and disclosure of government assistance	1997
IAS 21	The effects of change in foreign exchange rates	1997
IAS 22	Business combinations	1997
IAS23	Borrowing costs	1997
IAS 24	Related party disclosures	1997
IAS25	Accounting for investments	1997
IAS 26	Accounting and reporting by retirement benefit plans	1997
IAS27	Consolidated financial statements and accounting for investments in subsidiaries	1997
IAS 28	Accounting for investments in associates	1997
IAS 30	Disclosures in the financial statements of banks and similar financial institutions	1997
IAS 31	Financial reporting of interests in joint ventures	1997
IAS 32	Financial instruments: disclosure and presentation	1997
IAS 33	Earnings per share	2002
IAS 34	Interim financial reporting	2002
IAS 35	Discontinuing operations	2002
IAS 36	Impairment of assets	2002
IAS 37	Provisions, contingent liabilities and contingent assets	2002
IAS 38	Intangible assets	2002
IAS 39	Financial instruments: recognition and measurement	2002

IAS 40	Investment property	2002
IFRS 2	Share-based payment	2004
IFRS 3	Business combinations	2004
IFRS 4	Insurance contracts	2004
IFRS 5	Non-current assets held for sale and discontinued operations	2004

Source: Al-Akra et al. (2009, p. 179)

Co., started work in auditing in 1950, by opening new branches in Jordan. In 1961, Jordan enacted the Auditing Profession Practice Law No. 10, which enabled the approval of accountants who have been auditing for two years or more to be authorised to practice auditing in Jordan without taking into account their academic qualifications. Significantly, this law did not require job seekers to undergo a professional exam to practice auditing.

There was no attention by official bodies to accounting and auditing standards or to the relevant professional ethics, and it is fair to say that the auditing profession was loosely governed by Law No. 10 of 1961 (Al-Akra et al. 2009; Haddad et al. 2017). In 1985, Jordan issued Auditing Profession Practice Law No. 32 which has been considered an essential step at improving the profession by supporting the later establishment of JACPA, which emerged, as earlier mentioned, through Law No. 42 of 1987. The Auditing Profession Practice Law No. 32 (1985), also helped to later set up the High Council for Accounting and Auditing by making membership of JACPA mandatory for auditors, thus the law was intended to, in some way, organise and monitor the auditing profession in Jordan, at the very least in terms of identifying who was operating within the profession.

2.7.3 Disclosure in Jordan

Disclosure requirements differ between developing and developed countries. There are various ways by which corporations' information is communicated to all related parties, such as letters to shareholders, interviews, newspapers and telephone conversations. However, the disclosure literature has suggested that annual reports are one of most important tools used by corporations to disclose information to the public (Uyar & Kılıç 2012; Hajek et al. 2014; Luo et al. 2018). It is consistently argued that these annual reports are more credible and timely sources, compared to other channels of information. For example, Abu-Nassar and Rutherford (1996) indicated that the vast majority of users rely on a company's annual reports for their decision-making. In Jordan, there are three types of disclosure process: mandatory disclosures, voluntary disclosures and disclosures of the companies' social responsibility. These are explained in detail below.

In 1976, the Amman Financial Market (AFM) law addressed the information disclosure requirements for Jordanian companies, in generalised terms. No statement of any specific disclosure requirements for annual reports exists for firms listed on the ASE. In addition, there is no specification in Jordan in terms of the period and the kind of presentation required for published financial statements (Al-Khouri 1997). This is because enforcement mechanisms are almost non-existent to guarantee compliance with these disclosure requirements.

Whilst, before the introduction of these standards in 2003, the quality of disclosure in Jordanian companies sector has been described as unsatisfactory (Abu-Nassar & Rutherford 1996; Naser 1998), by 2012 the situation is explained in terms of poor disclosure, with an incomplete set of accounting and auditing standards applied by such companies (Al-Akra & Ali 2012). Al-Akra and Ali (2012) further argued that the accounting standards in Jordan were enigmatic and lacking any guidelines for disclosure. Haddad et al. (2017) more recently claimed that the legal requirements for disclosure practices were very limited for shareholders in Jordan. Hence, it is clearly shown that the legislation environment has failed to precisely specify or enforce the details of disclosure for listed firms.

In an attempt to ensure that the companies comply with all disclosure requirements, Jordan enacted the Directives of Disclosure and Accounting and Auditing Standards by the Temporary Securities Law of 1997, with particular terms relating to the form and content of annual reports of companies. The intention of this move was to seek to improve investors' trust and encourage responsibility, transparency, fairness, and accountability in the capital market, in compliance with international accounting and auditing standards. As has been seen, without enforcement though codified sanctions, the law was ineffectual. Later, this was replaced by the Securities Law 2002, giving the ASE, JSC and SDC (more details are present in Section 2.9.2.3) further authority to enhance disclosure requirements and requiring all listed firms to provide the JSC with their annual reports, during a period not surpassing three months from the end of the fiscal year.

2.7.3.1 Mandatory disclosure

Mandatory disclosure includes all information which is needed to be published according to laws, regulations and instructions in Jordan. These comprise company law, bank law, securities law and their relevant directives for disclosure requirements. In the context of Jordan, many previous studies have identified a gradual improvement in compliance with mandatory disclosure. For example, Naser (1998) indicated that the level of compliance of disclosure requirements of Jordanian non-financial listed companies, was 63% in 1994, and Naser et al. (2002) documented this as at 63.51% in 1998. For 2007, Hassaan (2013) found the average of compliance with mandatory IFRSs disclosure requirements by firms listed on the ASE, was 76%. Mardini et al. (2013) reported that based on an analysis of 67 firms' annual reports for segmental items specified in 2009, the level of segmental disclosure provided was 60%.

Omar and Simon (2011) examined the disclosure behaviour of listed firms in Jordan after significant changes to accounting regulations for the year 2003, reporting that 83% of the mandatory and voluntary disclosures requirements were fulfilled. By using a sample of 80 non-financial, listed Jordanian firms for the years 1996 and 2004, Al-Akra et al. (2010b) investigated the impact of accounting disclosure regulation, ownership changes, governance reforms and resulting from privatisation on mandatory compliance of disclosure requirements with IFRSs. That study revealed that disclosure compliance with the IFRS was significantly lower in 1996 than that in 2004, at 54.7% and 78.98% respectively.

It is concluded that the improved mandatory disclosure can be attributed to the wave of reforms adopted by the Jordanian government, such as the new regulations that commenced in 1997, however despite this consistent improvement, not all firms completely comply with the regulations surrounding disclosure requirement. It is argued there are loopholes in the regulations. As well, the deficiency of qualified accountants or auditors, the lack of enforcement mechanisms and the weakness of regulatory bodies, account for this situation.

2.7.3.2 Voluntary disclosure

Voluntary disclosure is defined as "free choices on the part of company management to provide accounting and other information deemed relevant to the decision needs of users of their annual report" (Meek et al. 1995, p. 555). In other words, this constitutes any additional financial or non-financial information provided by a corporation in their annual report, regardless of what is required by any standards and guidelines (Eng & Mak 2003). To adopt a relatively recent definition in the context of Jordan, "voluntary disclosure items are defined as those items that are not regulated by Jordanian reporting forces" (Al Shattarat et al. 2010, p. 40). Such Jordanian reporting forces, as explained above, include the Securities Law of 2002, the Companies' Law of 1997 and IFRSs and IASs accounting regulations. Similarly to mandatory disclosure, overall, the average levels of voluntary disclosure in Jordan have improved with time. Al-Akra et al. (2010b) argued that this can be attributed to the success of Jordan's privatisation program.

Al Shattarat et al. (2010) evaluated the extent of voluntary disclosure in the annual reports of non-financial, Jordanian companies listed on the ASE for the year 2006, finding that the average extent of voluntary disclosure was 28.95%. Haddad et al. (2009) showed that the average voluntary disclosure for the year 2004, was 28%. Furthermore, as noted by Haddad et al. (2015), the average voluntary disclosure for the year 2004 was 26.1% for the items that covered the disclosure index (such as background and strategic disclosure, financial information disclosure and Non-financial disclosure) in the Jordanian companies sector. Al Sawalqa (2014) investigated the level of compliance of voluntary disclosure in the Jordanian banking sector, by employing a sample of 13 banks listed on the ASE for the year 2012. That study indicated that the level of compliance was 61.3%.

As mentioned earlier, the improvement in disclosure is attributable to the wave of reforms adopted by the Jordanian government since 1997, and to Jordan's recent economic development. However, it is clear that the improvement in mandatory disclosure significantly exceeds that of voluntary disclosure. Haddad et al. (2017) argued that the social and cultural environment play an important role for voluntary disclosure. Furthermore, societies in developing countries, such as Jordan, are expected to be "more secretive, conservative and based on statutory control, with little professional judgment compared to their counterparts of developed countries", (Haddad et al. 2009, p. 289), which, therefore leads to low levels of compliance in terms of voluntary disclosure.

2.7.3.3 Companies' social responsibility disclosure

The appearance of corporate social disclosure can be traced back to the 1960's and 1970's in industrialised countries (Rashid & Lodh 2008). Corporate social disclosure has become a well-known topic in the social accounting and governance literature. Numerous earlier studies have been carried out in the context of developed countries including the United States, the United Kingdom, Japan, Australia and New Zealand (Guthrie & Mathews 1985; Ness & Mirza 1991; Deegan & Gordon 1996; Deegan & Rankin 1996; Stanwick & Stanwick 2006). Corporate social disclosure provides a solution to promote accountability for societal matters, and has become a global issue (e.g., with reference to climate change and global warming) (Hall 2002). As Gray et al. (1987, p. ix) described, social responsibility is "the process of communicating the social and environmental effects of organisations' economic actions to particular interest groups within society, and to society at large".

Generally, corporate social disclosure includes information on human rights, community relations, labour rights and consumer protection. It is argued that the firms should embrace a more holistic view regarding their responsibilities, to a broader range of stakeholders (Deegan 2002). Therefore, corporations with a good reputation which are always seen to support the external environment, may create good relationships with their suppliers, creditors and customers, due in part to this perception.

In the context of Jordan, by using a sample of 173 firms listed on the AFM for 1997, Abu-Baker and Naser (2000) documented that the banks and financial corporations disclosed a weighted average number of 67% pages. In contrast, the averages of disclosure of manufacturing firms and service and insurance firms (combined), were 52% and 20% pages, respectively. Al-Khadash (2003) employed a sample of Jordanian industrial shareholding companies over the period 1998 to 2000, finding 74% disclosed social and environmental information.

Further, Suwaidan et al. (2004) evaluated social responsibility disclosure practices in the financial reports of Jordanian industrial firms in 2000, and reported that the firm disclosed about 13% of the items included in the index. By using a sample of the annual reports of 60 firms in the manufacturing and service sectors in Jordan for the year 2006, Ismail and Ibrahim (2008) investigated the extent of environmental and social disclosures, with 85% of the firms somehow disclosing such information, with an average of 22 sentences in each report. Abu Qa'dan and Suwaidan (2018) found that listed Jordanian manufacturing firms disclosed 30.8% of the 42 items of corporate social responsibility information included in the disclosure index, during the period 2013-2015.

In 2006, Jordan enacted the Environmental Protection Law, which made evaluation of a corporation's effect on the environment compulsory and to be reported in its annual report. However, Jordanian companies' commitment to environmental protection is still weak (Jahamani 2003). This is due to the insufficient items of information required by Jordanian laws, regulations and instructions on social and environmental disclosure. For example, the instructions of corporate governance for shareholding-listed companies for the year 2017, addressed the concept of corporate social responsibility. These instructions required each firm to develop its policy regarding social responsibility for the local community and the environment, yet they do not determine the specific form or content of disclosure information concerning corporate social responsibility activities.

2.8 The environment of corporate governance in Jordan

The mechanisms for corporate governance have become one of the most important issues that are discussed in both developed and developing markets. Due to the worldwide financial crises and failures of corporations, the Jordanian government can be justifiably worried about these corporate scandals, and has taken into consideration different actions to protect and promote the country's financial environment.

2.8.1 Corporate governance in Jordan: An overview

The development of corporate governance in Jordan is relatively new (Jaafar & El-Shawa 2009). The establishment of the AFM in 1978 was an important defining moment for the activity of firms in Jordan. In 1997, the passage of Securities Law No. 23 marked a turning point for the Jordanian capital market. Three institutions emerged out of what had been the AFM till 1997 – namely, JSC, ASE and the SDC (JSC 2012).

Due to increased interest in corporate governance practices in Jordan by international donor agencies such as the OECD, the IFC and the World Bank, in the 1990s, various corporate governance reforms have been an increasingly significant agenda item in Jordan's pursuit of sustainable and strengthened economic growth. The establishment of three new institutions, the JSC, the ASE and the SDC, has contributed to developing the regulatory environment (Jaafar & El-Shawa 2009). Accordingly, the

ASE witnessed increases in the number of listed companies from 1998 to 2011, however from 2012, the number companies began to decrease gradually. It is confirmed that the Jordanian companies sector witnessed a number of bankruptcy cases, including 26 cases in the industrial sector (Zureigat et al. 2014).

To improve corporate governance, Jordan has issued several corporate governance codes. These are instructions of corporate governance for shareholding listed companies, for private shareholding firms, for limited liability firms and non-listed public shareholding companies, for banks, corporations, and insurance companies. These are further elaborated on below.

2.8.2 Jordanian corporate governance codes

The OECD and its partners have played a central role in the strengthening of corporate governance codes in different countries around the world (Abu-Tapanjeh 2009; Koldertsova 2011). These aim to provide the principles of good practice of governance for regulators, policymakers, and all markets participant in supporting the institutional, legal and regulatory framework that underpins corporate governance, with a specific focus on publicly traded firms. Further, they also provide practical instructions for investors, corporations, stock exchanges and all related parties who have a central role in the developing of good corporate governance. Therefore, these principles assist in building an environment of accountability, trust and transparency, necessary for encouraging long-term investment, business integrity and financial stability, thereby supporting stronger economic growth and more inclusive societies.

The OECD principles for corporate governance were established in 1999 (OECD 2004). These principles have become the global benchmark for the practice of corporate governance, with 30 countries around the world directly adopting these OECD principles (Abu-Tapanjeh 2009). In 2003, the OECD commenced a comprehensive review of these 1999 principles (OECD 2004) after which updated principles of corporate governance practice were released and adopted in 2004 (Jesover & Kirkpatrick 2005). However, these principles are non-binding in nature, and it is up to related parties, such as governments, regulators and policymakers, to choose how they wish to include them in their own frameworks (Abu-Tapanjeh 2009).

This revision consists of six main principles: ensuring the basis for an effective corporate governance framework, the rights of shareholders and key ownership functions, the equitable treatment of shareholders, the role of stakeholders in corporate governance, disclosure and transparency, and the responsibilities of the board. Table 9 displays these principles and its explanation (OECD 2004).

For example, these OECD principles were, in part, an attempt to establish an effective system of balances and checks between the board of directors and top management. As argued by the OECD (2004), a company's professional managers (meaning the board) play a vital role in modern companies, including effective monitoring, but not of the day-to-day system. Furthermore, the board of directors is accountable to company owners. Therefore, these owners should be able to exercise their ownership rights, such as appointing or removing members of board. The effective use of these rights to monitor the company board, needs fundamental standards of transparency and disclosure (OECD 2004).

These OECD principles define the board's responsibilities: ensuring compliance with standards and laws, oversight of internal control mechanisms for financial reporting, formulation and disclosing remuneration policy and establishing a code of company's ethics (OECD 2004). Likewise, the principles focus on a general term, board independence. It is argued that "the board should review related party transactions using independent board members" (OECD 2004, p. 190).

Table 9: The OCED principle with its explanation

Principles	Explanation
Ensuring the basis for an effective corporate governance framework	The corporate governance framework should promote transparent and efficient markets, be consistent with the rule of law and clearly articulate the division of responsibilities among different supervisory, regulatory and enforcement authorities.
The rights of shareholders and key ownership functions	The corporate governance framework should protect and facilitate the exercise of shareholders' rights.
The equitable treatment of shareholders	The corporate governance framework should ensure the equitable treatment of all shareholders, including minority and foreign shareholders. All shareholders should have the opportunities to obtain effective redress for violation of their rights.
The role of stakeholders in corporate governance	The corporate governance framework should recognize the rights of stakeholders established by law or through mutual agreements, and encourage active co-operation between corporations and

	stakeholders in creating wealth, jobs, and the sustainability of financially sound enterprises.
Disclosure and transparency	The corporate governance framework should ensure that timely and accurate disclosure is made on all material matters regarding the corporation, including the financial situation, performance, ownership, and governance of the company.
The responsibilities of the board	The corporate governance framework should ensure the strategic guidance of the company, the effective monitoring of management by the board, and the board's accountability to the company and the shareholders.

Source: OECD (2004, p. 185)

To regulate a corporation's behaviour and ensure accountability, responsibility, transparency and integrity, Jordan adopted an international code of corporate governance, based on these OECD principles. The JSC issued the first Jordanian corporate governance code for firms listed on the ASE, in 2005, however as this was not mandatory, a new code was announced which came into effect on 1 January 2009. This code was based on a 'comply or explain' approach. This was Circular No. 12/1/4659. In order to apply international standards of corporate governance, Jordan later issued new corporate governance directives for companies listed on the ASE, in 2017, which are presented in more detail below.

2.8.2.1 Instructions of governance for shareholding listed companies

Based on Securities Law No. 18, for 2017, the Board of Commissioners of the Securities Commission issued new instructions to improve the practice of corporate governance and regulate Jordanian companies: Instructions of Corporate Governance for Shareholding Listed Companies for 2017, which took effect on 22 May 2017. Several aspects of these instructions involve board membership. For example, an independent board member is defined as a member who does not belong to the firm or any of the board of director's family or the senior executive top management, nor is an external auditor of the firm or any of its subsidiary firms in any material interest, nor has any relationships except that correlated to his or her ownership of stocks in the company. In addition, the new instructions state that the board of directors of such Jordanian listed companies, should consist of at least five members and not more than thirteen, to be elected according to the cumulative voting method by the general assembly of shareholders of the firm, and by secret ballot. As well, one third of the board members should be independent. These instructions address the topic of CEO duality, and confirm that the position of the chairperson of the board of directors and any other executive position of the firm, may not be combined. The new instructions also prescribe the responsibilities and duties of the members of the board. Likewise, they set out that the board should form the four permanent committees: the governance committee, audit committee, nomination and remuneration committee and risk management committee. The first three should comprise at least three non-executive board of director members, two of whom should be independent members.

The main responsibilities of the governance committee, include preparing a governance report and submitting it to the board of directors, developing written procedures for the application of the provisions of these instructions, reviewing and assessing their applicability annually, studying its own notes concerning the application of corporate governance in the firm, and following up on what has been done, and finally, guaranteeing that the corporation complies with the provisions of these instructions. This new code indicates that the board of directors should hold at least one meeting every two months, with at least six meetings throughout the financial year. The general assembly should consist of all shareholders of the company who have the right to vote, and voting should be held at an ordinary meeting at least once a year. The new code also focuses on other areas, such as related party transactions, the appointment and functions of the external auditor, disclosure, transparency and the general rights of shareholders.

Under this code, the corporation shall prepare a governance report and include it in its annual report, provided that it is signed by the board of director's chairman, and to include primarily the following:

1- Information regarding the application of the provisions of this code and the rules of corporate governance in the organisation.
2- Determining the names of resigning and current board members through the year, and whether each board member is independent or non-independent, and executive or non-executive.
3- Determining the names of the board members' legal representatives, and whether those representatives are independent or non-independent, and executive or non-executive.

4- Selecting executive positions in the corporation and determining the names of the individuals who occupy them.
5- Stating all the memberships of other company boards held by a board of director's members, if any.
6- Determining the name of the governance liaison officer and the names of members of the board's formed committees.
7- Providing the name of the chairperson and members of the audit committee, with a complete description of their experience and qualifications in accounting or financial matters.
8- Providing the names of the chairperson and members of the governance committee, audit committee, nomination and remuneration committee and risk management committee.
9- Setting the number of meetings for each of the committees over the year.
10- Setting the number of meetings of the external auditor with the audit committee during the year.

2.8.2.2 Instructions of corporate governance for banks

The Jordanian fiancial system is controlled by the ASE and Central Bank of Jordan (CBJ).

The CBJ is considered an autonomous entity, and has played an important role in encouraging corporate governance in the Jordanian banking sector, having issued codes of practice for corporate governance. These include the Bank Director's Handbook of Corporate Governance for the Year 2004, the Corporate Governance Code for Banks for the Year 2007 and Amended Instructions on Corporate Governance for Banks for the Year 2016 (more details are discussed in Section 2.9.2.3.7).

2.8.2.3 Jordanian corporate governance code

The task of the Ministry of Industry and Trade is to help accomplish continuous economic growth by improving and implementing legislation and programs to promote the investment environment in Jordan. The CCD was set up in 2003 as an authority independent from the Ministry of Industry and Trade, to conduct registration services and perform effective control mechanisms to ensure the good practice of corporate governance principles to encourage the national economy. Due to the CCD having a vested interest in the success of the Jordanian business sector, it has begun to formulate a code for corporate governance specific to Jordan. To this end, the CCD has formed a national committee involving members representing the public and private sectors, to formulate this code which will be particularly applicable to private shareholding firms, private shareholding firms that are not for profit, limited liability firms, limited liability firms that are not for profit and non-listed public shareholding firms.

2.8.2.4 Corporate governance instructions for insurance companies

The board of directors of the Insurance Commission (IC) issued the Corporate Governance Instructions of 2006, based on Insurance Regulatory Law No. 33 of 1999 and its amendments, applicable to insurance companies in Jordan. This code covered many aspects of corporate governance, such as board independence, the responsibilities of the board of directors, the knowledge, experience, qualifications and skills of board members and the company's internal control and supervision system. According to these instructions, the board of directors is responsible for developing and setting plans to implement the corporate governance principles mentioned in these instructions, as well as reviewing and assessing the scope of their implementation annually.

2.8.3 The features of corporate governance in Jordan

Although the practice of governance has its roots in developed countries, each country has a unique structure of governance, which is formidably affected by insider and outsider factors (Short & Keasey 1999; Solomon 2007, 2010). Insider factors comprise its politics, historical background, culture, legal institutions and system of laws (La Porta et al. 1999; La Porta et al. 2000; Solomon 2010). Outsider factors can be classified into the climate of global economics, cross-border investments and foreign capital inflows (Solomon 2010). Many earlier studies (e.g., Prowse 1994; Franks & Mayer 2001; Lane 2003; Bhasa 2004; Goergen et al. 2008 and Rapp & Strenger 2015), compared two preeminent models of corporate governance in the world, the Anglo-American model and the German-Japanese model.

This section of the thesis illustrates three models of corporate governance: the Anglo-American, German-Japanese and Asian models. The significance and influence of national factors in determining the regulations and enforcement of corporate governance are explained, which may help in setting appropriate policies that promote transparency and accountability in Jordanian firms.

2.8.3.1 The Anglo-American model

The Anglo-American model is organised under a capital market based system (Moerland 1995; Lane et al. 2006), and is characterised by a prevalent regulatory and legal environment (Prowse 1996). Market-oriented models involve companies with a widely dispersed ownership structure, supported by well-developed financial markets (Moerland 1995). Shareholders are protected through contracts, while managers are controlled by active external markets (Cernat 2004). In addition, this model is distinguished by a fiduciary relationship between owners and managers (Cernat 2004). Kaplan (1994) pointed out that outside independent directors predominantly govern the board of directors in Anglo-American countries such as Australia, the U.K, the U.S. and Canada.

The diffused share-ownership and the ability of management control over a company, makes it very hard for shareholders to monitor a company's management, a point underscored by Lane et al. (2006, p. 150), who argued that "market model practices do not address the board's ability to monitor management". Consequently, the removal of management by shareholders is very difficult. Furthermore, due to this weak effect of shareholders on company management, the protection of owners' interests is feeble.

2.8.3.2 The German-Japanese model

The German-Japanese model is governed by a bank-based (relationship) system distinguished by large scale closely held firms, group membership of companies and banks playing a central role in financing and monitoring the corporate sector (Moerland 1995). Under this model, corporations attempt to build long-term relationships with the banking sector (Levine 1997). The main banks in Germany, such as Dresdner Bank and Deutsche Bank, "act as suppliers not only of bank loans but also of equity capital" (Moerland 1995, p. 450). Therefore, this system enables corporations to use a high fraction of debt and of equity, in the same company (Aguilera & Jackson 2003). Accordingly, ownership concentration is common under this model (Moerland 1995; Sakawa & Watanabel 2018). Apart from Germany, this model is widespread in other European countries and in Japan.

It is considered that this system may operate as an alternative model of corporate governance for developing countries, where the legal environment, protection of investors, institutional setting are all very poor (La Porta et al. 2000). The Anglo-American model (capital market-based model), and the German-Japan model (bank-based model) is compared in Table 10 below. In addition to Table 10, Solomon (2013) stated the characteristics of the Anglo-American system or 'outsider-dominated system', and the German-Japanese system or insider- dominated system. Table 11 compares the characteristics of the outsider-dominated system and the insider-dominated system, which has been quoted from (Solomon 2013, p. 196).

Table 10: The comparison between Anglo-American and German-Japanese model

Mechanisms	**Capital market-based model**	**Bank-based model**
Ownership concentration	Little	High
Industrial grouping	Little	High
Bank orientation	Little	High
Employee influence	Little	High
Remunerative incentive	High	Little
Monitoring board	Little	High
Stock market	High	Little
Market for firms control	High	Little

Source: Moerland (1995, p. 459)

2.8.3.3 The Asian model

Other Asian countries than Japan are economically volatile (Claessens & Fan 2002). Prior to the Asian Financial Crisis of 1997, the economic growth in such countries was unparalleled, having run between 5 and 10% per annum for decades (Wade 2000). Wade (2000) also documented that since the 1980's the Chinese economy grew at an average of 9% per annum. Since the mid-1990's, the Asian region, including Japan, has accounted for a quarter of the world's output and 50% of world growth (Wade 2000).

Table 11: The characteristics of insider and outsider models

Insider- dominated system	**Outsider-dominated system**
Companies owned predominantly by inside shareholders who wield control over company management.	Large companies controlled by managers but owned predominantly by outside shareholders.
System classified by little separation of ownership and control.	System classified by separation of ownership and control.

The agency and its problems are rare.	The agency and its problems are common.
The activities of hostile takeover are rare.	The activities of hostile takeover acting as a disciplining tool on firm management.
Ownership structure is concentrated in a small group of shareholders, such as state ownership, founding family members and other firms, through a pyramidal structure.	Ownership structure is dispersed.
Excessive control by a small set of insider shareholders.	Moderate control by a large range of shareholders.
The transfer of wealth from minority shareholders to majority shareholders.	No transfer.
Weak investor protection in corporation's law.	Strong investor protection in corporation's law.
The abuse of power by majority shareholders.	Potential for shareholders democracy.
Majority shareholders have more voice in their investments.	Shareholders classified more by 'exit' than by voice.

Source: (Solomon 2013, p. 196).

However, the practice of corporate governance in most of these countries is very weak for three main reasons: a generally weak legal structure, weak government enforcement of property rights and finally, widespread corruption. Therefore, the ownership of firms' shares is concentrated in the hands of a small number of owners (except in China) (Claessens & Fan 2002; Li 2003). Thus, the control of a company due to shares held by one family, is common in most Asian countries (Ho & Wong 2001). Furthermore, due to the weak protection of other investors and their monitoring of top management, company control mechanisms in that region are often insider oriented (Solomon 2007, 2010).

It has been argued that weak corporate governance practice in Asian countries, was one of the most important reasons that led to the 1997 financial crisis (Detthamrong et al. 2017;; Yu & Wang 2018). Unlike the companies in Anglo-American countries, Asian company activities depend heavily on personal relationships in what is known as a 'relation-based system', predominantly between corporations and their dominant shareholders (Solomon 2013). The banking sector is the main source of direct loans to companies. Hence, there are a higher ratios of firm debt to equity in these countries, and consequently, a heavily reliance on external financing.

In addition, because of the relation-based system prevalent in these countries, finance can be obtained by the dominant shareholders. Due to the concentrated structure of ownership in Asian companies, the structure of corporate governance in Asia is also described as an ‘ownership-based model’.

In summary, there is no globally accepted model of governance practice that may encourage accountability and transparency. Due to the variations in institutional settings and legal systems, there is no specific system of corporate governance practice best suited to a specific country. If a system is appropriate to one country, it may not be appropriate to another.

2.8.3.4 The Jordanian corporate governance model

In the context of Jordan, internal factors like legal institutions, laws and regulations, the historical background, culture, political and economic environments, play an essential role in constituting the regime of corporate governance. Due to the attenuated judiciary necessary to implement the existing regulations and laws, the Anglo-American model is not suitable for Jordan. Similarly to Asia, economic activities in the Jordanian companies sector, are based on personal relations.

In Jordan, banks are the prime source of company financing (Al-Najjar & Taylor 2008; Al-Najjar 2011; Zeitun & Tian 2014). The choice between bank financing and bonds depends on several factors, such as the macroeconomic environment and the firm’s particular characteristics. Due to the lack of legal and institutional infrastructure, debt in the form of corporate bonds is absent in Jordanian companies. It is argued that there is no financial institution with sufficient expertise to price and sell a corporate bond issue (Maghyereh 2008). It is worth noting that Jordanian corporate financing from the banks is mostly ‘short-term debt’, similarly to developing countries in general (Booth et al. 2001), and the banking sector supports an arm’s-length relationship with their corporate customers and are not involved in monitoring the corporate activities of their borrowers (Brunello et al. 2001; Di Pietra et al. 2008). Therefore, many features of corporate governance align with the German-Japanese model, in other words, the bank-based system. However, the Jordanian context contrasts markedly with the German and Japanese contexts; Jordanian banks have a very limited role in corporate governance.

Similarly to firms in Germany and Japan, the mechanisms of firms’ control are often internally oriented in developing countries, including in Jordan (Zheng et al.

2017). In Jordan, there is a concentration of ownership by the firm's founding family, leading to a high degree of ownership control (Alqatamin et al. 2017; Jarbou et al. 2018). The ownership structure represents the major investors' own huge stakes within a single company (also denoted as the 'ownership control approach' to firm management) (Xu & Wang 1999). These shareholders are the company's board of directors. Therefore, the separation of ownership control from management is rare (Claessens et al. 2000).

In Jordan, unlike the Anglo-American corporations (Meca & Ballesta 2009; Ngo et al. 2018; Rashid 2018), ownership concentration is intensely high (Zeitun & Tian 2007; Jaafar & El-Shawa 2009; Zeitun 2009; Abu-Serdaneh et al. 2010; Al-Daoud et al. 2016; Alzoubi 2016; Ibrahim & Hanefah 2016; Yassin 2017). Therefore, these shareholders hold positions on the corporation's board and in top management, leading to weak monitoring.

As well, the structure of cross-shareholding is not very popular in Jordan, and individual shareholdings are very large. As a consequence, there are very limited takeover regulations (OECD 2004), a less developed equity market, and reliance on external sources of corporate finance (Sarkar & Sarkar 2000). Because higher transaction costs are associated with the takeover process, there is an apparent absence of some external control mechanisms, such as the market for Jordanian corporations' control (Sarkar et al. 1998). Al-Najjar and Clark (2017) confirmed a lack of good practices for external governance in Middle Eastern and North African (MENA) countries, including Jordan. Therefore, the firm's governance is heavily affected by its dominant shareholders, and Jordanian corporate governance may be termed an 'ownership-based model'.

Similarly to Anglo-American firms, the company boards in Jordan are organised under a one tier system (OECD 2004; European Bank 2017). Thus, the board chairman and CEO perform responsibilities together in one organisational layer, which is prevalent in Anglo-American countries (Maassen 2002). Therefore, CEO duality is likely to be greater in Jordanian firms. Indeed, it is argued that there is no distinction between the board and the management, because the chairman and CEO are the same person in Jordan (Shanikat & Abbadi 2011).

In contrast, it is worth noting that outside directors play a pivotal role in monitoring the company management in Anglo-American countries. It can be argued that in Anglo-American countries, independent members work well because these countries depend on laws and information disclosure to ensure owners' rights (Rashid 2018). Othman and Zeghal (2006) pointed out that there is higher controlling of management by outside directors, financial analysts and the financial press in Anglo-American countries. Unfortunately, these mechanisms have a limited role in disciplining and controlling corporation management in Jordan. For example, there is a requirement in Jordanian firms that all directors should be shareholders, which is contrary to the independence of directors (OECD 2004; European Bank 2017). Furthermore, the government has a substantial impact on the corporation's board structure and control of management. However, in the context of Continental European, such as in Finland, Germany and Netherlands (and excluding the U.K., Spain and France), company boards have been organised under the two-tier structure (Collier & Gregory 1996; Maassen 2002) which strictly separates the chairman and CEO.

Therefore, numerous institutional differences between the Jordanian market and developed markets are apparent in the discussion above. Because of dispersed ownership, corporations in developed markets have a greater tendency and eagerness to employ professional managers (non-family employees). Thus, dispersed ownership and professional managers being in control is very common (La Porta et al. 2000). Many of these professional managers do not have stakes of ownership within the companies. In contrast, executive directors (i.e. senior managers and board members) in Jordanian companies, are the family who own the company. Al-Azzam et al. (2015) stated that 90 per cent of Jordanian companies are controlled and owned by families. These shareholders have huge motivations to control, which mitigates against the need for performance based pay (Banghøj et al. 2010). As a result, long-term incentives in the form of 'equity-based pay' are absent in the Jordanian company sector (Ramadan 2013; Olaniyi et al. 2017).

In conclusion, the main problem for corporate governance in Jordan is its weak institutional framework; there is a lack of enforcement capability along with great dominance by certain firm-owning families. The existing institutional regulatory bodies fail to exert pressure on companies to follow the principles, laws, regulations and standards, detailed in the preceding sections. This failure is due to families hindering the work of governmental institutions in the enforcement of such principles, laws, regulations and standards. It is argued that the familial and political relationships which are a common characteristic of this country, are usually in direct contradiction with the state's rational and legal authority (Uddin & Choudhury 2008). In the context of Jordan, the main form of agency conflict is principal-principal agency conflict (Ahmad et al. 2017), which arises because majority shareholders can disregard the interests of minority shareholders (Dharwadkar et al. 2000).

2.8.4 The assessment of corporate governance in Jordan

The aim of this assessment process is to measure the state of overall compliance with corporate governance practices, such as the assessment of the gaps between national laws and regulations and international principles, and the effectiveness of implementation in the vital areas of corporate governance. It also provides a comparative analysis of both the effectiveness and quality of the local legislation for corporate governance. Likewise, it involves understanding to what extent, if any, the legal structure is linked with proper enforcement tools (e.g., sanctions). Furthermore, such an assessment highlights the significant weaknesses that should be addressed by legislators and all related parties, for developing a national framework of corporate governance. In Jordan, OECD (2004), Shanikat and Abbadi (2011), and the European Bank for Reconstructions and Development (2017), have each assessed Jordanian companies' compliance with the corporate governance principles.

OECD (2004) discussed Jordanian corporate governance, based on the degree of compliance with OECD principles, by classifying these degrees into five categories: observed (5 points), largely observed (4 points), partially observed (3 points), materially not observed (2 points) and not observed (1 point), with the following major findings. Firstly, the assessment of the rights of shareholders was largely observed. Shareholders have the right to investigate the documents and information relevant to the corporation. As well, they have the right to participate, vote and attend general meetings. Secondly, the assessment of the equitable treatment of shareholders was partially observed, although shareholders were observed to have the same rights and obligations. Furthermore, the general manager, directors and employees are not permitted to trade on internal information, or to show it to others with the aim of manipulating the price. Thirdly, the assessment of the role of stakeholders in corporate governance was observed. The stakeholders of Jordanian companies have no specific rights to obtain information or to participate in decision-making. Fourthly, the assessment of disclosure and transparency was largely observed. Jordanian firms have fully adopted IFRSs and IASs. Finally, the assessment of the responsibility of the board was largely observed.

As mentioned earlier, Jordanian boardrooms are organised under a one tier system and directors must be shareholders. The functions of the board include working on behalf of the company's shareholders, appointing management, investing the firm's funds, making loans and preparing and submitting financial statements.

Shanikat and Abbadi (2011) addressed the assessment of corporate governance in Jordan based on the extent of Jordanian companies' compliance with OECD principles according to the law and practice (Further details are presented in Table 12). The European Bank for Reconstructions and Development (2017) performed a comprehensive report of corporate governance in Jordan, identifying the strengths and weaknesses of corporate governance in the Jordanian banking sectors. In doing so, the corporate governance framework has been divided into five main areas: board structure and functioning, transparency and disclosure, internal control, rights of shareholders and rights of stakeholders and institutions, each of which was further subdivided. The assessment is based on a five level rating (i.e., strong or very strong, moderately strong, fair, weak and very weak). The score ranges from one point (very weak) to 5 points (strong or very strong), for which definitions follow (See Table 13).

Table 12: The assessment of Jordanian corporate governance

Principles	Assessment base		Remarks
	In law	**In practice**	
The rights of shareholders	Widely covered	Widely practiced	Shareholders participate in most important decisions except main asset sales. Shareholders AGM rights are also mentioned, but there are no standard proxy forms and no provisions for postal voting.
The equitable treatment of shareholders	Partially covered	Partially practiced	The Controller sometimes acts on shareholders' complaints, but there is no formal complaint-resolution mechanism. There are solid regulations prohibiting insider trading. Related-party transaction rules are not clear.
The role of stakeholders in corporate governance	Covered	Practiced	Stakeholder rights are respected. Stakeholders have a number of legal

			Protections, which are widely covered in the Company Law. Companies typically adopt performance enhancement measures, such as employee savings funds. Employees sometimes share ownership in some companies' issues.
The disclosure and transparency	Covered	Practiced	Annual and semi-annual reports are provided, but only the annual report is required to be audited externally. Monitoring is limited only to quantity rather than quality of disclosures. There are no comprehensive and mandatory rules for corporate-governance disclosure. Jordan has fully adopted the IFRS and ISA standards for accounting and audits.
The responsibility of the board	Covered partially	Practiced	The board is liable for ensuring compliance with the law. In practice, there is no difference between the management and the board; generally the chairman and CEO are the same person. Stakeholders' duties are not clear. The law and regulations determine specific standards related to functions that the board should fulfil. By the law, directors have a right to access all relevant information.

Source: Shanikat and Abbadi (2011, p. 100)

The strong or very strong rating indicates that corporate governance practices are fit for purpose and conform to best practice. Moderately strong means that company practices are fit for purpose but additional reforms are needed for some aspects of corporate governance. With respect to fair, this refers to some elements of company practices being good practice, however a few critical points suggest that, overall, these should be evaluated, with a view to their reform. A weak rating indicates that companies show few elements which are good practice, and generally, the structure is in need of reform, whilst very weak means that company practices offer significant risks and the system is in need of considerable reforms.

Table 13: An overall assessment of corporate governance in Jordan

No.	Key groups	Rating
1	The board structure and functioning	Weak
	Board composition	Fair/Weak
	Gender diversity at the board	Very weak
	Independent directors	Weak
	Board effectiveness	Weak
	Board responsibilities	Fair
2	Transparency and disclosure	Fair
	Non-financial information disclosure	Fair/Weak
	Financial information disclosure	Strong
	Reporting to the market and to shareholders	Fair
	Disclosure on the external audit	Fair
3	Internal control	Weak
	Quality of the internal control framework	Fair
	Quality of internal and external audit	Fair/Weak
	Functioning and independence of the audit committee	Weak
	Control over related party transactions and conflict of interest	Weak
4	Rights of shareholders	Fair
	General shareholders' meeting	Weak
	Protection against insider trading and self-dealing	Moderately Strong
	Minority shareholders protection and access to information	Weak
	Registration of shareholdings	Weak
5	Stakeholders and institutions	Fair
	Corporate governance structure and institutions	Fair
	Corporate governance code	Weak
	Institutional environment	Weak

Source: European Bank (2017)

2.9 Institutional factors affecting practice of the governance in Jordan

The institutional factors affecting corporate governance practices in Jordan, include the capital market, laws, regulations and instructions about Jordanian corporations, the ASE, JSC, the CCD, the SDC, the CBJ and the IC. These are explained in the following paragraphs. Whilst there may be some overlap with the preceding information, this section on institutional factors is designed to complement that information from the lens of the development of relevant Jordanian institutions.

2.9.1 The legal environment of Jordanian companies

To understand corporate governance practice from a legal view in Jordan, it may be useful to provide a brief overview of the legal framework of the Jordanian companies sector, as the legal environment plays a vital role in formulating and enforcing the corporate governance principles. This consists of specific acts and numerous legislative tools, such as laws, regulations, instructions, rules, circulars and notifications, issued by the official bodies like the JSC, ASE, SDC, CCD and CBJ. Furthermore, the Jordan Chamber of Industry and other agencies in the private companies sector also form part of the regulatory and legal system for Jordanian corporate governance. The following paragraphs provide some details concerning the relevant legislation in Jordan.

2.9.1.1 Company laws

2.9.1.1.1 The company law of 1964

In 1964, Jordan issued Company Law No. 12, its first company law, managed by the Ministry of Industry and Trade (Naser 1998). Unfortunately, this law was pretty limited in scope. Only two types of corporations were identified: limited shareholder and partnerships firms (Haddad et al. 2017). Furthermore, there were no articles about disclosure requirements concerning the content or form of financial statements. This law required companies' boards to prepare its profit and loss account and balance sheet, and have audited by a certified auditor. According to this law, the main role of the company's auditor was to ensure the correct procedures were followed in preparing these two documents (Haddad et al. 2017). This law has undergone many amendments, especially in 1966, 1972, 1973, 1976 and 1978.

2.9.1.1.2 The company law of 1989

Company Law No. 12 of 1964 was finally replaced by Company Law No. 1 of 1989 (Al-Akra et al. 2009), which took into account the establishment of the first stock exchange in Jordan (i.e., the AFM), and the increase in the number of Jordanian firms. This law required companies to show its stocks to the public and prepare financial statements in conformity to the Generally Accepted Accounting Principles (GAAP), which were not determined by any law (Al-Akra & Hutchinson 2013) but were accepted international practice. The law required Jordanian firms to prepare annual reports with a balance sheet, a profit and loss statement, an auditor's report and explanatory notes, however, there was no specific form in which information was to be disclosed by companies in their financial statements (Abu-Nassar & Rutherford 1996).

2.9.1.1.3 The company law of 1997

To promote the investment environment and to diminish routine procedures, the Company Law of 1997consisted of 289 articles, and the law applied to all types of companies: public shareholding companies, limited liability companies, private shareholding companies, general partnerships, foreign companies and limited partnerships, which operate in Jordan. The law required all firms to prepare their financial statements with figures comparative to those for the prior years. Furthermore, the financial statements had to present the true and fair value of the financial position of the corporate in keeping with international accounting and auditing standards (Haddad et al. 2017).

The formulation and registration of corporations in Jordan was also realised under this law. Articles 132 203 dealt with public shareholding firms and covered the formation and registration procedures of firms, the capital of corporations, the minimum subscribed shares and the period for payment for the unsubscribed portion, underwriting of stocks by founders and principles for public subscription in stocks, the means of increasing and decreasing the firm's capital, issues related to corporate bonds, the board of directors, representing the government and official institutions on the board of directors, financial reports, the meeting of the general assembly, circumstances for compulsory and voluntary liquidation and methods for transformation and mergers.

It is to be noted that this law was issued for securities regulators, such as the JSC, ASE and SDC, and constitutes the present legal framework for the regulation of the securities market in Jordan. The law requires public shareholding firms to list their securities on the ASE, however, under Article 66 C, this law does not require private shareholding companies to list their securities on the ASE, and they may do so as they see fit.

2.9.1.2 The temporary securities law of 1997 and its 2002 replacement

Securities Law No. 23 of 1997 is considered the cornerstone of government reforms. The law constitutes the legal framework for the principal components of the securities market. To restructure the capital market in Jordan, this law separated the regulatory function from the trading and technical side of the Jordanian market, by setting up three independent official institutions (i.e., the JSC, ASE and SDC). Another essential side of this law is related to the management of financial services, enabling the JSC to issue the Instructions of Financial Services Licensing and Registration 1999 and the requirements for licensing and registering financial services, and specifying practitioners' experience, and criteria for training and competence. As well, the law allows a broad set of financial instruments in the Jordanian capital market. The notion of securities is defined in Article 3, and is far reaching, including any rights or ownership, or any evidence local or foreign that is usually recognised as securities and considered as such by the board. This covers transferable and tradeable corporation shares, bonds issued by firms, securities issued by the government, municipalities and official institutions, securities depository receipts, investment units and shares of mutual funds, equity option bonds, forward contracts and spot contracts, and put and call option contracts.

To regulate mutual funds and investment firms, this law allowed the JSC to issue its Instructions for Mutual Investment 1999. Furthermore, it awarded the JSC responsibility to control disclosure in the initial public offer period to remove informational asymmetry between investors and issuers. Through this law also, the JSC has adopted the IASs and the IFRSs which require firms to prepare and audit their financial statements in agreement with those standards.

The issuance of Securities Law No. 76 in 2002, was a pioneering step in the process of government-led reforms. This law replaced Securities Law No. 23 of 1997 and strengthened the independence of institutions and the authorities that operate in the capital market, particularly the JSC. It enhanced transparency and disclosure in the capital market by establishing an electronic disclosure system according to Articles 37 and 40. Furthermore, the 2002 law established the Investors Protection Fund to improve investor trust. Some updates were made to this law with the issuance of Securities Law No. 18 of 2017.

2.9.1.3 The commercial law of 1966

The first law issued in 1966 was Trade Law No. 12 which required Jordanian firms to keep inventory records, a general journal and a correspondence register. The law covered four separate aspects: commercial contracts, bills of exchange, trade and traders and creditors and bankruptcy. However, numerous supplementary laws were later passed to facilitate the implementation of Jordan's economic policies (Al-Akra et al. 2009).

2.9.1.4 Laws, by-laws and instructions of the Jordanian capital market

In addition to the above laws, provisions in many other laws, by-laws and instructions, govern the capital market in Jordan. These have been issued by the JSC, ASE and SDC. Without going into extensive details about these provisions, some understanding of their intended scope is gleaned by a listing of their names which follows. These institutions have issued internal by-laws regarding the Central Bank of Jordan Law of 1971, Instructions for Criteria for the Solvency of Brokerage Companies Operating on the Stock Exchange in 1995, the Banking Law of 2000, Data and Records of the Securities Depository Centre in 2003, Membership and Code of Conduct in 2004, the Securities Depository Centre's Proceeds for 2004, Instructions for Investigating Violations of the Securities Law in 2004, Instructions for Issuing Companies Disclosure, Accounting and Auditing Standards in Year 2004, By-Law for the Amman Stock Exchange Fees, Charges and Commissions in 2004, Instructions for the Issuance and Registration of Securities in 2005, Instructions for Financial Services Licensing and Registration in 2005, Instructions for Dealing with Subscription Rights in 2006, Instructions on the Accounting Principles and Standards Pertaining to the Preparation of Annual and Interim Financial Statements in 2007.

Likewise, Instructions on the Mandatory Policies and Standards for Re-evaluation of Fair Value and for Disposal of Revaluation Surplus in 2007, Instructions on Anti-Money Laundering and Counter Terrorist Financing in Securities Activities in 2007, Instructions for Conferring Share Options for Public Shareholding Companies' Employees in 2008, the Credit Information Law of 2010, Instructions for the Issuance and Registration of Islamic Finance (Sukuk) in 2013, Instructions on the Disclosure of Information, Instructions for the Registration, Deposit, and Settlement of Sukuk in 2013, Sukuk Trading Instructions in 2013, Owners of the Islamic Finance (Sukuk) Committee Instructions in 2013, Instructions on Listing Islamic Finance (Sukuk) on the Amman Stock Exchange in 2014.

As well, Special Purpose Company Regulation in 2014, Islamic Finance (Sukuk) Contract Regulation No. 45 in 2014, Instructions for Share Buybacks by Public Shareholding Companies (Treasury Stocks) in 2014, Instructions for

Regulating the Operations of Selling Securities in the Implementation of Decisions of Competent Courts and Official Entities in 2015, the Electronic Transactions Law in 2015, the Money Exchange Business Law of 2015, the Amended Instructions for Corporate Governance for Islamic (Sharia Compliant) Banks in 2016, Amended Instructions for Corporate Governance for Banks in 2016.

In addition, a Settlement Guarantee Fund in 2017, Instructions for Regulating the Dealing of Financial Services Companies at Foreign Stock Exchanges in Year 2017, Instructions for the Registration, Deposit and Settlement of Securities in 2017, Instructions for Regulating the Dealing of Financial Services Companies at Foreign Stock Exchanges in 2017, Instructions for Securities Depository Receipts in 2017, Instructions for Margin Finance in Year 2018, Regulation of the Investors' Protection Fund in Securities in 2018, Disclosure Instructions Applicable to the Amman Stock Exchange in 2018, Instructions for Dispute Resolution through Arbitration on the Amman Stock Exchange Company in 2018, Instructions for Investigation, Inspection and Auditing at the Amman Stock Exchange Company in 2018, Directives for Trading with Securities at the Amman Stock Exchange in 2018, Directives for Listing Securities on the Amman Stock Exchange company in 2018, Membership By-laws of the Amman Stock Exchange Company in 2018 and Directives for the Over The Counter Market at the Amman Stock Exchange Company in 2018.

The laws, by-laws and instructions which govern the Jordan capital market, contain many separate provisions for disclosure, governance practices, transparency, accountability, compliance and audit, which allows for more oversight and the good practice of corporate governance in the financial institutions.

2.9.2 Capital market in Jordan

Broadly speaking, the capital market plays an important role in the growth of any country's economy. In Jordan, some public company shares were previously traded in an irregular market, specifically, through private brokers who were used to sell, buy and track trading actions. They sold and bought shares using the open outcry system, which was inefficient, faulty and laborious. Furthermore, at that time, the trading volume was limited (Al-Khouri & Al-Ghazawi 2008). In 1930 and 1931, the Arab Bank and Jordanian Tobacco and Cigarettes were established, respectively. A similarly significant enterprise was introduced when Jordanian Cement Factories was established in 1951. In the early 1960s, the bonds of Jordanian companies were issued and traded (Al-Khouri & Al-Ghazawi 2008).

Economic growth and the increasing number of public companies ensured quick and easy trading and the need to protect investors, so the demand for a developed and organised Jordanian securities market increased. In 1976, the Jordanian government in cooperation with the IFC, established its first securities market, the AFM. This was the only stock exchange in Jordan and it finally began its operation in 1978. As the capital market grew, the number of its transactions increased. The Jordanian government concluded that further reforms of the market were needed to develop it to international standards. Among these reforms, the AFM was replaced by the establishment of three institutions, namely: ASE, JSC and SDC (more details are presented in Section 2.9.2.3).

2.9.2.1 The key developments of the capital market in Jordan

In the late 1990s, the Jordanian government embarked on a comprehensive reform policy of the capital market, which aimed at building on the previous 30 years' experience, diversifying and expanding the national economy, enhancing the private sector and developing regulation of the securities market to reach international standards. Among the most prominent features of the new orientation were institutional changes in the Jordanian capital market, settlement and clearance systems, the application of international electronic trading, the elimination of barriers to investment and boosting capital market monitoring to achieve transparency and safe trading in securities, all in accordance with globalisation and openness to the external world.

As mentioned earlier, the issuance of the Temporary Securities Law in 1997 was a landmark, a qualitative leap and turning point for the capital market in Jordan. The main purpose of this law was to regulate and restructure the Jordanian capital market. It is worth noting that the central point of this restructuring effort was the separation of the supervisory and legislative functions from the executive function of the Jordanian capital market. In setting up three new institutions to replace the AFM (i.e., the ASE, JSC and SDC), the AES and SDC played the executive function, while the JSC played the supervisory and legislative functions.

2.9.2.2 Divisions of the capital market in Jordan

The securities market in Jordan consists of the primary and the secondary markets. The primary market includes the issuance of the securities by the corporations, including private placements. In contrast, in the secondary market, trading happens through the stock exchange (if listed) or off-market by other means.

2.9.2.2.1 The primary market

The primary market is also known as the issue market or new issue market. Any securities (stocks and bonds) issued by the government and companies are termed primary securities. These may be either initial public offerings or secondary offerings. An initial public offering is defined as "the first time that the general public is given the opportunity to buy stock and invest in a firm" (Hafer & Hein 2007, p. 38). This is usually a way through which to raise the capital to finance the growth of an already existing company. In Jordan, the initial public offering trend has been to generate finance for a start-up firm, which has no previous operations or track record, through an offering of stock at a price of 1 Jordanian Dinar (JD) per share.

After issuing on the primary market, new stocks or bonds are traded in the secondary market. A secondary offering may happen where a firm has already increased funds by initial public offerings but wants to issue more stocks and increase additional funds (Al-Tal 2014). Under the secondary offering, the corporation sells its stock to its institutional investors, existing shareholders and the general public (Al-Tal 2014). The secondary offering is also known as a subsequent offering, seasoned offering and follow-on-offering (Al-Tal 2014). Therefore, initial public offerings and secondary offerings represent significant sources of funds for companies' development and growth.

2.9.2.2.2 The secondary market

Unlike the initial public offering, a secondary market represents an exchange between two investors, one selling the shares and the other buying. Most investors do not buy shares at their initial public offering, but at some later date through the secondary market. The critical difference is that in a secondary market, the corporation for which the share represents an ownership obligation, does not receive anything from the transaction (Hafer & Hein 2007).

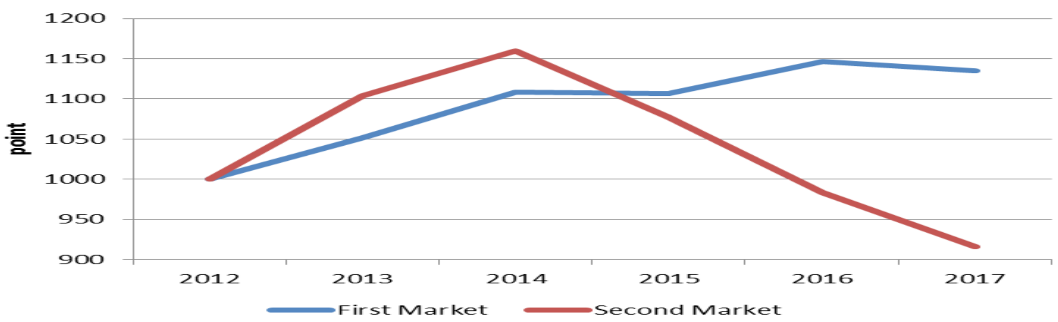
In Jordan, the secondary market is classified into three markets: the first, second and third markets. Trading takes place in securities, managed by special listing rules and regulations according to the directives for listing securities on the ASE (ASE 2018). The listed securities are sold on the first and the second markets, and unlisted securities on the third. Furthermore, there are the bonds market (for development and corporation bonds), the right issues market (for rights issues listed on the ASE), and transactions off the trading floor (ASE 2018). Transactions off the trading floor involve inheritance and inter-family transactions (ASE 2018).

According to the ASE (2018), the value of trading at the secondary market (first, second and third markets, the bonds market, the right issues market and the transactions excluded from trading) amounted to US$4,350 million over the year 2017, compared with US$4,449 million for 2016, a decrease of 2.2% (Figure 5 presents the stock price index weighted by free float market capitalisation by market).

It is worth noting that during 2017, the third market was cancelled and six firms that met the conditions of listing in the second market, were transferred from it to the second market (ASE 2018). Furthermore, during 2017, the ASE delisted 29 firms that did not meet the requirements of listing in the second market or did not submit an audited annual report for 2016 on time, and therefore, transferred their shares to the over the counter (OTC) market.

As Figure 5 shows, the index of the first market reached 1135.1 points by the end of year 2017, with a decrease of 96% against the 2016 closing figure. The second market index reached 915.7 points with a decrease of 6.9%. According to the ASE (2018), the third market index closed at 1249.5 points with a decrease of 5.8% compared to the 2016 closing position, until the 13th of April, which is when this market ceased to exist.

Figure 5: Stock price index weighted by free float market capitalisation by market (Closing of 2012 = 1000)



Source: ASE (2018)

2.9.2.3 The institutional structure of the Jordanian capital market

As mentioned above, Securities Law No. 23 of 1997 is considered the cornerstone of government reforms. This law constitutes the legal framework for the principal components of the securities market. To restructure the capital market in Jordan, this law separated the regulatory function from the trading and technical side of the Jordanian market, by setting up three independent official institutions (i.e., the JSC, ASE and SDC) which are discussed below in more detail.

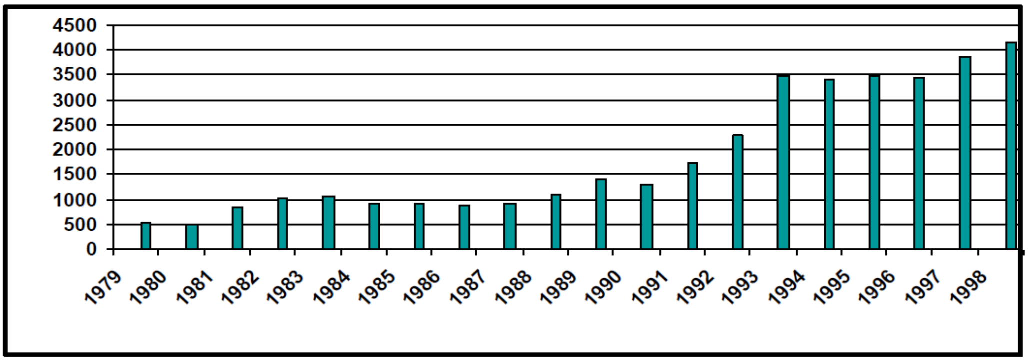
2.9.2.3.1 Amman Financial Market (AFM)

The AFM is a public financial organisation with administrative, legal and financial independence from the state (Omar & Simon 2011). In 1976, the AFM was established, and started its operations in early 1978, commencing with 57 listed firms with a market value of approximately US$400 million (Omar & Simon 2011). According to the Amman Financial Market Law No. 31 of 1978, the main aims of the AFM were: promoting investments and savings in securities to meet the needs of the local economy, organising the process of issuance and dealing in securities to guarantee the ease, speed and soundness of financial transactions and to protect small investors, and collecting, classifying, analysing and publishing essential data and statistics to accomplish AFM goals. The AFM performs supervisory and regulatory functions in the market. The general meeting of the AFM is composed of the CBJ, public shareholding firms, specialised credit institutions, licensed banks and brokers.

Until the early 1990s, the growth level of the AFM was very slow (Figure 6 shows the level of growth of the AFM over 1979 to 1998). As noted by Al-Tal (2014), this was due to the political events in the region, such as the Iranian/Iraqi war and the Arab/Israeli conflict. After the First Gulf War in 1991, cash flows increased to the AFM. This led to an increased level of growth in market capitalisation, trading value and share price index of the AFM, until 1994 (Al-Tal 2014). Thereafter, the trading value became slow due to further political instability in the region (Al-Tal 2014).

One of the most critical reforms in the Jordanian market, as emphasised above, is the issuance of Temporary Securities Law No. 23 of 1997 which aimed to restructure the AFM. As mentioned earlier, a basic feature of this reorganising process was the separation of the supervisory and legislative functions from the executive function of the Jordanian capital market. The executive function was conducted by the ASE and SDC, whereas the JSC performed the supervisory and legislative function.

Figure 6: The level of growth of the AFM from 1979 to 1998 measured by market capitalisation (JD in millions)



Source: Al-Tal (2014, p. 22)

2.9.2.3.2 Amman Stock Exchange (ASE)

Through Temporary Securities Law No. 23 of 1997, the ASE was established (Al-Tal 2014). It is considered a non-profit organisation with financial and administrative independence. Omar and Simon (2011) indicated that the key reason behind the ASE was the privatisation program. On March 11th, 1999, the ASE started its operations with 151 listed firms with a market capitalisation of about US$5,844.2 million by the end of 1999 (ASE 2018).

The ASE's main aims are to perform trading actions in the Jordanian market under the oversight of the JSC. As well, it provides an organised, transparent, fair and efficient market for trading securities in Jordan, and a safe environment for trading securities to deepen confidence in the stock market and thereby serve the local economy. The vision of the ASE is to reach the latest international auditing and accounting standards in the field of financial markets, to provide an attractive investment environment.

As of now, the ASE is the only stock exchange in Jordan. During 2017, it was registered as a public shareholding company entirely owned by the Jordanian government under the name "The Amman Stock Exchange Company (ASE Company)". The ASE firm is the legal and factual successor to the ASE (ASE 2018). The ASE firm is managed by a board of seven directors appointed by the Council of Ministers, and a full time chief executive officer supervises day-to-day duties and responsibilities (ASE 2018).

The transformation of the ASE to a company, is expected to improve the role that the ASE plays in serving the local economy. Furthermore, it will enable it to offer better services, attracting new firms and new customers. It will also enter into regional and international agreements with different related parties, to increase its market share regionally and globally.

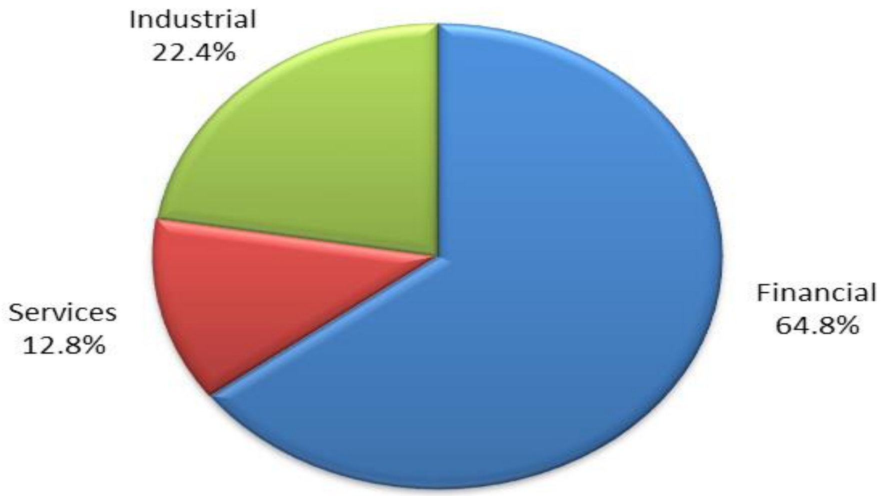
Regarding the performance of the ASE, the trading value increased by 25.6% in 2017 compared to 2016, where it amounted to JD2.9 billion (approximately US$4.08 billion). The ASE general price index decreased by 2.0% compared to the 2016 closing figure, to settle at 2126.8 points, and the market capitalisation of the listed firms by the end of 2017 decreased by 2.2%, accounting for 61.8% of the GDP. Likewise, the total amount of ASE assets for 2017, was JD8.7 million (about US$12.2 million), where the total owners' equity was JD7.6 million (approximately US$10.7 million). The total amount of revenue by the end of 2017 amounted to JD2.5 million (about US$3.4 million), whereas the total expenses reached JD2.0 million (approximately US$2.81 million). Accordingly, the ASE Company achieved a profit of JD468,000 (about US$684,500) before tax (ASE 2018).

The market capitalisation increased from JD4,137.7 million in 1999, to JD26,667.1 million, JD21,078.2 million, JD29,217.2 million, JD25,406.2, JD22,526.9 million, and JD 21,858.1 million, in 2005, 2006, 2007, 2008, 2009 and 2010, respectively. During these years, the Jordanian market witnessed the best performance since the commencement of the AFM in 1978. The market capitalisation went up to JD 26,667.1 million (in US$, about US$37,660.2 million), representing 326.6% of the GDP (ASE 2018).

It is worth noting that the percentage of non-Jordanian ownership in the firms listed on the ASE has grown continuously. This was 43.1% of total market value by the end of 1999, 49.5% in 2010, 51.3% in 2011, 51.7% in 2012 and decreased slightly to 48.1% by the end of 2017. There were many reasons for this. The privatisation program played an important role, with cash flows into the Jordanian market from the Gulf countries. Significantly also, after the Second Gulf War in 2003, Iraqi investors shifted their funds to the Jordanian market.

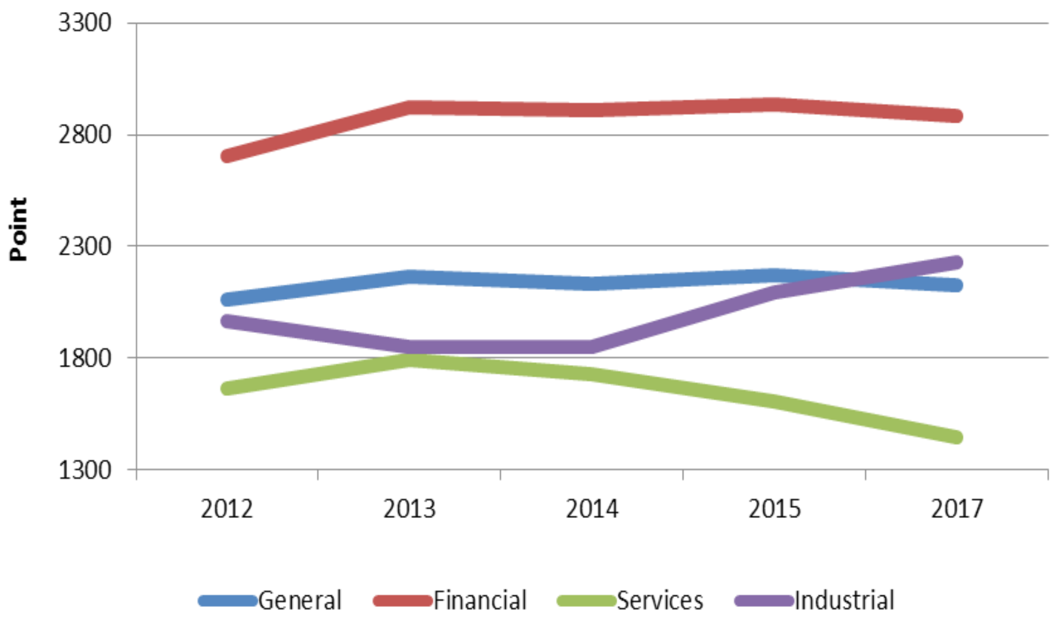
Sectoral distribution of trading value confirmed that the financial sector ranked first, followed by the industrial sector and the services sector. The performance of the price index (weighted by market capitalisation of free float shares and involving 100 of the largest and most active companies in the first and second markets) recorded a decline at the end of 2017 by 2%, compared with the previous year, closing at 2126.8 points. The price index, weighted by full market capitalisation, reached 4009.4 points, a decrease of 1.5%. Figures 7 and 8, respectively, give the detailed illustration of these movements. On the other hand, as a result of the changes in share prices and number of listed shares, the market capitalisation of listed firms decreased by 2.2% at the end of 2017, representing 61.8% of the GDP, as Figure 9 illustrates.

Figure 7: Trading value at the ASE by sector for 2017



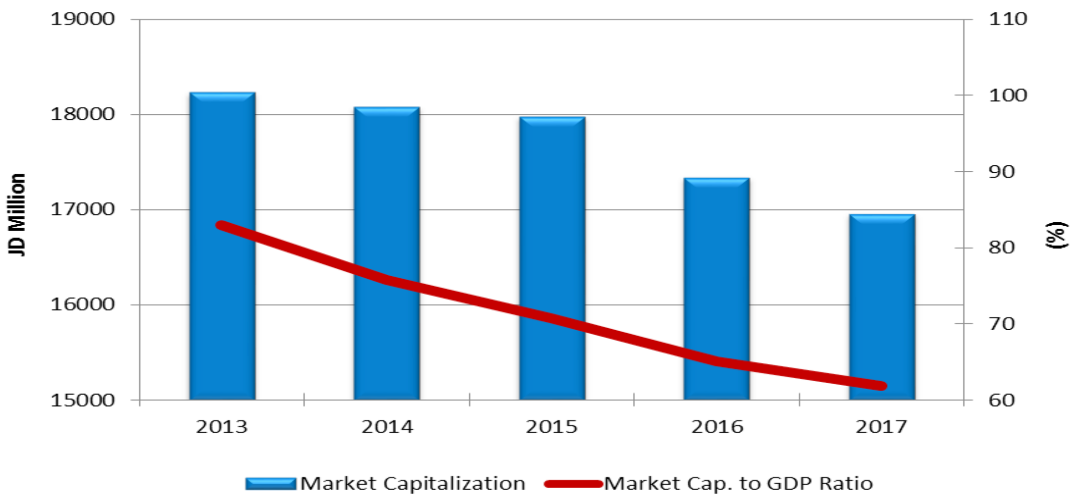
Source: ASE (2018)

Figure 8: Price index weighted by market capitalisation of free float shares (closing of 1999=1000)



Source: ASE (2018)

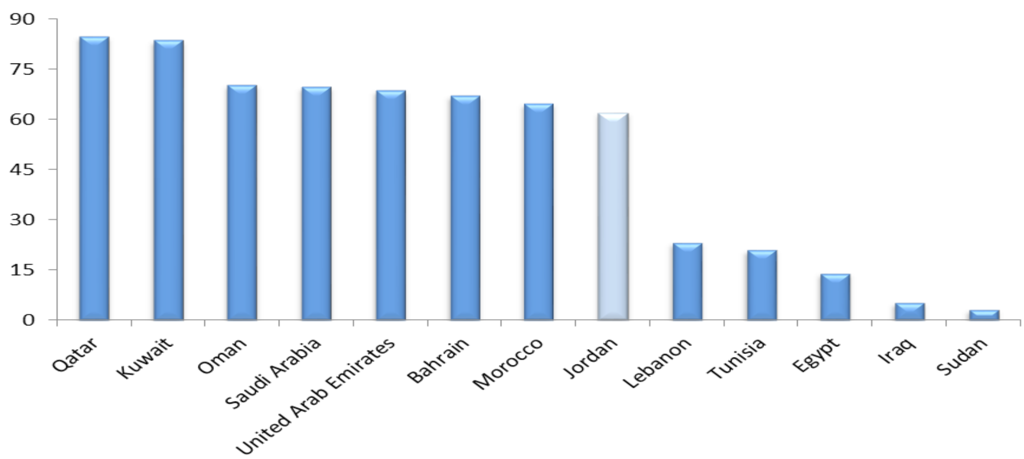
Figure 9: Market capitalisation of the ASE and its percentage of the GDP



Source: ASE (2018)

The performance of all Arab stock exchanges (ASEs) varied in 2017, with some ASEs witnessinga notable increase, whilst others ASEs declined, due to the political situation, and regional and global developments. The S&P AFE 40 Index, which is measured by S&P Indices in cooperation with the Arab Federation of Exchanges, rose by 2.0% by the end of 2017 (Figure 10). Over 2017, some price indices of ASEs denominated in national currencies, rose, compared to their 2016 closing positions.

Figure 10: Market capitalisation of the Arab Stock Exchanges to GDP by the end of 2017



Source: ASE (2018)

The Damascus Stock Exchange reported the highest increase of 269.9%, compared with the other ASEs. This was followed by the Egyptian Exchange, which increased by 21.7% and the Tunis Stock Exchange with 14.4%. As well, the price indices for the Bahrain Bourse, Kuwait Stock Exchange, Palestine Stock Exchange, Saudi Stock Exchange and Casablanca Stock Exchange, rose by 9.1%, 11.5%, 8.4%, 0.2% and 6.4% respectively. In contrast, the Abu Dhabi Securities Exchange, the ASE, Iraq Stock Exchange, Dubai Financial Market, Qatar Stock Exchange, Beirut Stock Exchange and Muscat Securities Market, declined by 3.3%, 2.0%, 10.6%, 4.6%, 18.3%, 5.3% and 11.8%, respectively.

The ASE prepared its strategic plan for the coming three years 2018-2020, which corresponds with the projects and programs selected by the Jordanian government indicated in Jordan’s ten year plan document (2015- 2025). The reason for these projects is to preserve the achievements made so far, and improve the ASE’s work in all aspects. The plan comprises a large number of projects, the most important being applying a new Electronic Trading System, establishing a securities information centre, developing general applications for the ASE on smart devices, establishing an Islamic index, issuing a sustainability report, applying a new electronic disclosure system using XBRL (eXtensible Business Reporting Language) for listed firms and brokerage, launching a new website for the ASE and preparing corporate governance guidance for the ASE. Overall and through these means, the ASE contributes to corporate governance in Jordan, through strengthening shareholders’ rights. On the whole, the contribution of the ASE to Jordanian corporate governance, is to set the legal framework for all listed firms by requiring companies to adopt the Jordanian corporate governance code.

2.9.2.3.3 Jordan Securities Commission (JSC)

The JSC is considered an official government body with legal, financial and administrative independence, and is connected directly to the prime minister. As indicated earlier, it was established through Securities Law No. 23 of 1997, to conduct the regulatory and supervisory functions of the Jordanian capital market, endeavouring to regulate and develop this market to ensure transparency, efficiency, and to protect it from any possible dangers and threats that it may face.

The commission is subject to the supervision of internal and external audits and the Audit Bureau. As well, it complies with the International Organisation of Securities Commissions standards. To achieve its aims, the Securities Law of 2002 gives the JSC the powers to regulate and control the issuance and dealings of securities and issues of licensing, registration and disclosure. In addition, the ASE, SDC, public shareholding firms issuing securities, registered persons, licensed financial services, corporate and mutual funds and investment firms, are subject to the supervision of the commission in line with its instructions and other relevant regulations, laws and by-laws (JSC 2012). The JSC is governed by a board consisting of five full time qualified commissioners, appointed for a five-year term renewable once, by a decision of the Council of Ministers, relying on the prime minister's recommendation. Furthermore, the appointment is ratified by a royal decree. The chairman is the chief executive officer of the JSC and executes policies, authorises expenditure and is responsible for the JSC's management.

The JSC has a vital role in developing and improving the Jordanian code of corporate governance by issuing instructions to enhance corporate governance. In 2015, the JSC has updated this code to be in keeping with the corporate governance principles of the OECD. The commission distributed the Balanced Scorecard for the year 2016 to public shareholding firms listed on the ASE to ensure their extent of compliance with applicable rules of the code of corporate governance. The main reason for these updates is to develop corporate governance practices and promote the protection of investors' and minority shareholders' rights. Likewise, to improve compliance with governance rules, an article has been added to the securities law that allows the JSC the authority and power to transform these into mandatory rules.

2.9.2.3.4 Securities Depositary Centre (SDC)

In 1999, the SDC was instituted by virtue of Securities Law No. 23 of 1997 as a non-profit entity with financial, legal and administrative autonomy. The SDC aims to protect the ownership of securities and to process registration of securities' ownership amongst brokers. It seeks to reinforce investor trust, enabling investors to obtain information regarding their investments quickly and easily (SDC 2019). As well, it seeks to limit the dangers and threats in the settlements of trading transactions.

To achieve its objectives, the SDC is authorised by the Securities Law of 2002, Article 76, to act in the Jordanian market under the JSC's supervision. According to Article 77 of this law 2002, the SDC is the only entity in the Jordanian market to perform the following functions: firstly, register, safe-keep, and transfer ownership of securities; secondly, deposit securities; finally, clear and settle securities. The SDC registers and deposits the shares issued by the public shareholding firms, registers treasury bills, treasury bonds and individual savings bonds issued by the Jordanian government and registers Islamic Sukuk issued by the Jordan Islamic Sukuk Company for Financing Governmental Projects and the National Electric Power Company. SDC membership is mandatory for public shareholding companies (i.e., banks and the insurance, services and industrial sectors), brokers, custodians and any other organisations as determined by the Commissioners' Board of the JSC (SDC 2019).

2.9.2.3.5 Insurance Commission (IC)

By virtue of Insurance Regulatory Law No. 33 of 1999, the IC was established as a government organisation with a legal identity and with financial and administrative independence. The IC aims to monitor, regulate and improve the insurance sector and in doing so, to contribute to protecting the national economy. Specifically, the IC undertakes the following functions:

1- Protect the rights of the insured and the beneficiaries of the insurance business, and oversee the solvency of firms to provide sufficient insurance coverage for these rights.
2- Improve the efficiency of insurance corporations by creating a professional code of conduct and rules of ethics, to enhance the capability of the firm to provide better services for the beneficiaries, and therefore achieve competition between insurance firms.
3- Provide qualified workers to exercise insurance business, including the establishment of an institute for this goal in cooperation with the Jordan Insurance Federation, in accordance with the provisions of the applicable legislation in the Kingdom.
4- Increase insurance awareness and prepare research relevant to the insurance business.
5- Encourage cooperation and strengthen relations with Arab and global insurance regulatory institutions.

The IC issued its Corporate Governance Instructions in 2006 by virtue of the Insurance Regulatory Law No. 33 1999, Article 45(B), applying specifically to insurance firms, specifying the duties, responsibilities and roles of directors, the audit committee, executive management and internal auditors. As well, they deal with the establishment of risk management and internal control in insurance companies. The IC is responsible for following up insurance firms' annual reports which must be checked by the firm's external auditor and presented within specified times. Furthermore, insurance firms' financial statements must be in line with prescribed standards. In 2003, the IC issued the Instructions of Accounting Policies to be adapted by Insurance Companies, together with a set of forms required to prepare financial reports and statements for a standardised approach to the production of such information (Al-Tal 2014).

2.9.2.3.6 Companies Control Department (CCD)

By virtue of Companies Law No. 40, the CCD was established in 2003, as an independent entity to provide registration services and perform effective control mechanisms to ensure and activate corporate governance principles and to provide a secure growing investment environment to improve the national economy. The CCD is a government entity linked with the Ministry of Industry and Trade, whose key purpose is to register various types of companies in the Jordanian market and to control them by attempting to improve the procedures of company registration, and generally strengthen the mechanisms of internal and external control over them. As well as, it updates the principles of the law under which it was set up. The leading player of the control function is the General Controller of Companies.

As indicated earlier in this chapter, according to Article 152.C, the board chairman of public shareholding corporations or any board member, may be appointed as the general manager of a firm or as his or her deputy or assistant, by a decision issued by a two thirds majority vote of members of the board. Therefore, this law allows the existence of CEO duality in the public shareholding companies.

The CCD plays a pivotal role in developing corporate governance in Jordan. The CCD monitors public shareholding firms' disclosures. Companies Law No. 40 grants the CCD authority to monitor the ownership and remuneration of the board of directors and public shareholding firms' reports. According to the Article 138 A, the chairman and the board of directors members of public shareholding firms, the general manager and principal executive managers, must submit to the board of directors at the first meeting, a written statement of the firm's shares held by each one of them, their spouses and any children who are minors. Furthermore, three days before the general assembly meeting, public shareholding firms must submit to the Controller a report which involves the salaries, travel and transport allowances, wages, remunerations, bonuses and privileges of the board of directors' members and top executive management.

Likewise, the CCD is responsible for monitoring the shareholders' rights and the equitable treatment of shareholders. To improve the practice of the corporate governance in Jordan, the CCD took the initiative to prepare the code of the corporate governance in 2012, which is specifically applicable to public shareholding firms that are not listed on the ASE, private shareholding firms, limited liability firms, private shareholding firms that are not for profit and limited liability firms that are not for profit. This code has five main sections: the board of directors (management committee roles and responsibilities), control environment, transparency, disclosure, and the rights of shareholders and stakeholders.

2.9.2.3.7 Central Bank of Jordan (CBJ)

By virtue of the Central Bank of Jordan Law No. 4 of 1959, the CBJ was established in that year, starting its operations five years later in 1964. The CBJ is a public entity with financial, legal and administrative independence, which seeks to continue maintaining financial and monetary stability, and ultimately, contributes to the creation of economic and social growth in Jordan (CBJ 2019). Drawing on Article 4 of Central Bank of Jordan Law No.23 of 1971, the CBJ tries to ensure the convertibility of the Jordanian Dinar, and to develop sustained economic growth in line with the general economic policy of the Jordanian government. Therefore, the CBJ is responsible for issuing and regulation of bank coins and notes in Jordan, managing and maintaining the gold and the foreign exchange reserves of Jordan, regulating the quality, quantity, and cost of credit to achieve the conditions for economic growth and monetary stability, adopting suitable measures to deal with national economic and financial issues, operating as a banker to licensed banks and to specialised credit organisations, controlling licensed banks to guarantee the soundness of their financial positions and the protection of the rights of shareholders and depositors and providing suggestions to the government about the the formulation and implementation of its economic and financial policy.

In Jordan, there were 25 operating licensed banks by the end of 2017. Amongst these were 16 Jordanian banks, 3 of which were Islamic banks and 9 branches of foreign banks, including one branch of a foreign Islamic bank. Overall, these banks conduct their business within a network of 86 representative offices and 805 branches. The number of Jordanian bank branches operating abroad increased from 182 branches at the end of 2016, to 190 branches at the end of 2017. Also, the number of offices rose to 21, in addition to eight representative offices. Amongst these 190 branches, 95 branches and 21 offices were working in the Palestinian territories (CBJ 2019). The consolidated balance sheet of licensed banks rose by JD719 million (1.5%) in 2017, to reach JD49.1 billion, compared to an increase of JD1,250.3 million (2.7%) in 2016.

In 2007, the CBJ enacted the Corporate Governance Code for Banks, relying on the principles of the OECD and the guidance issued by the Basle Committee on Banking Supervision, to encourage good corporate governance practices in Jordanian banks. This code consists of four key features. Firstly, each bank must develop its own code of corporate governance. Secondly, each should act according to its own code by December 31, 2007. Thirdly, each must publish its own code in both its own annual financial report and on its website. Finally, each should attach to its annual financial report, a detailed report describing the extent of its compliance with its code and adopting a "comply or explain" system.

Hence, it can be said that the CBJ granted the Jordanian banks the opportunity to set their code according to their own conditions. However, the CBJ identified the main following principles in order that these banks exercise the best practice of corporate governance: the equitable treatment of all stakeholders, disclosure requirements to assist stakeholders in evaluating the bank's performance, accountability in relationships between the stakeholders and managers, and the determination of the board's and senior management's responsibilities.

Furthermore, the CBJ monitors the compliance of the banks with disclosure requirements, and may publish the results as it deems suitable. It also oversees the board of directors' responsibilities and duties. It supervises the board's performance in setting and formatting the bank's strategies, policies, plans and goals, and controlling their implementation. To improve the good practices of corporate governance in the banking sector, 'Amended Instructions on Corporate Governance for Banks 2016' were issued. These instructions further addressed a number of key areas of corporate governance, such as board composition, board overall responsibilities, conflicts of interest, stakeholders' interests, disclosure and transparency.

2.10 Chapter conclusion

This thesis constitutes an investigation into whether the mechanisms of corporate governance influence firm performance and firm agency cost in developing markets, by considering Jordan as a case study. In doing so, it would be important to explain the institutional environment of this country. In this chapter, an outline of the main challenges and issues in the existing structure of corporate governance and the unique features of Jordanian corporate governance have been presented.

Jordan is a developing market with a small and open economy. The Jordanian economy suffers from a scarcity of natural resources, unemployment, external debt and regional instability, all of which influence the growth of the economy negatively. The capital market in Jordan is considered so far to be an active market. It plays a vital role in developing and managing the economy. To encourage the best practice of corporate governance in Jordan, the JSC, ASE, CBJ, CCD and CBJ have implemented many reforms, including issuing and updating codes of corporate governance in Jordanian companies.

This chapter has addressed the challenges of corporate governance in Jordan, in particular, those related to the board of directors, ownership structure and CEO and management duality. It can be said that although some features of corporate governance are similar in developed and developing economies including Jordan, some are unique. The domination of internal control systems in companies, the predominance of family-owned Jordanian firms and weaknesses in the institutional settings for the current regime of corporate governance, lead to severe challenges to company level effectiveness of governance in Jordan.

In addition, in this chapter, recent reforms of corporate governance in Jordan have been discussed. It is concluded that after the many collapses and scandals of corporations around the world, Jordan seems to be working to promote the corporate governance practices. Many guidelines have been issued both in the public and private sector, for example, instructions of corporate governance for shareholding listed firms, instructions of corporate governance for the banking sector, corporate governance instruction for insurance companies and Jordanian corporate governance code for the private sector.

In a few words, this chapter has given an opportunity for academics, researchers and practitioners to obtain more insighs into the practice of corporate governance in developing countries, such as Jordan.

Chapter Three: Paper One

Board Independence, Firm Performance and Firm Efficiency: Evidence from Jordan

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Board Independence, Firm Performance and Firm Efficiency: Evidence from Jordan

Abstract

Purpose – This study aims to investigate the influence of board independence in the form of the representation of 'outside independent directors' on firm performance and efficiency, also known as 'agency cost', amongst the listed firms and in the context of a developing country, by considering Jordan as a case study.

Design/methodology/approach – By using data from 880 firm-year observations of non-financial firms listed on the ASE for the period of 2006-2016, and by using two measures each for firm performance (ROA and Tobin's Q), and firm's agency cost (asset utilization and expense ratio), this study uses ordinary least square regression models to test its hypotheses.

Findings – The empirical results show that board independence in general has a significant positive impact on firm performance as indicated by the return on assets, and has a significant positive impact on firm efficiency as indicated by the asset utilization ratio. The findings also indicate that board independence has a significant negative impact on firm performance as shown by Tobin's Q, and non-significant impact on firm's agency cost using expense ratio. These results are robust to many robustness checks. Therefore, the results do not reject the predictions of agency theory, supporting outside directors as an effective mechanism.

Research limitations/implications – This research is subject to several limitations, such as the requirement for appointing outside independent members in the Jordanian boardrooms, which was only mandatory from 2009. Hence, there may have been no outside independent directors before 2009, and this may have influenced the results of this study.

Practical implications – The results of this study present valuable implications for policy makers, practitioners and non-financial sector management in developing countries including Jordan. Policy makers should formulate rules regarding the corporate governance of industrial and services-related firms. Rules that promote the adoption of independent members are important. There is a need to apply the true meaning of the 'independent members', as is the need to clearly define the members who serve as independent directors on the board of directors.

Originality/value – This study contributes to the literature on the practices of corporate governance mechanisms, such as board independence in the context of

developing countries.

Keywords – Agency theory, corporate governance, firm performance, firm efficiency, agency cost, independent directors, Jordan.

Paper type – Research paper

Board independence, firm performance and firm efficiency: Evidence from Jordan

1 Introduction

Ideally, the interests of shareholders and managers should be completely aligned (Kim et al. 2007). However, because of the separation of ownership and control of modern companies, control functions are delegated to executive managers (professionals) by the legal owners of companies (Tosi Jr & Gomez-Mejia 1989; Seal 2006; Chaddad & Iliopoulos 2013; Bernstein et al. 2016; Zhu & Yoshikawa 2016; Bao & Lewellyn 2017). It may be argued that the shareholders are incapable of looking after their own benefits (Kole & Lehn 1997). The effective separation of ownership (principal) from management (agent) in firms, leads to problems associated with this situation: so-called agency problems in terms of the contractual view of the corporation (Shleifer & Vishny 1997).

The agency problem is so significant that it has also been termed the 'traditional agency problem'. The problem lies in the conflict of interest between shareholders (principals) and managers (agents) (Dharwadkar et al. 2000). In other words, whilst owners are interested in increasing their returns, managers are concerned with improving their wealth at shareholders' expense (Agrawal & Knoeber 1996; Nazir & Afza 2018). Therefore, this will generate a conflict of interest between principles and agents, which may lead to agency costs (Ang et al. 2000). The appearance of agency problems in corporations, has made managers fabricate different kinds of costs and losses which are borne by owners (Henry 2004). Interestingly, there are mechanisms in place, such as the presence of outside directors on the company board, which can diminish the non-convergence of interests (Brickley et al. 1994).

It is to be noted that scholars such as Coase (1937), Jensen and Meckling (1976) and Fama and Jensen (1983), developed predominant theories on the practices of corporate governance (CG) that illustrate the CG problems that arise due to the separation of ownership and control. A number of monitoring mechanisms are proposed to mitigate agency problems and enhance performance. These comprise external ones, such as the market for corporate control (Bozec et al. 2004), and internal ones, such as an ownership structure with large shareholders (Demsetz & Lehn 1985), and control by the board (Demsetz & Lehn 1985; Zahra & Pearce 1989).

A board is the dominant internal CG mechanism of a company (Shin et al. 2018). In short, a company board's purpose is to monitor management on behalf of shareholders (Chen 2011; Switzer et al. 2018). It is considered to be an essential mechanism for enhancing CG practices, and firm performance and value, and protects shareholders from self-interested managers (Kim & Ozdemir 2014; Chen 2015). The value added by a firm's board of directors is twofold. Firstly, it protects suppliers of finance from management misbehaviour, facilitating access to external resources and decreasing their cost. Secondly, it may give the firm a competitive advantage by providing a network of contacts and good reputation (Bertoni et al. 2014). Hence, it is argued that boards may play a vital role in mitigating agency problems (Rose 2005). Yet, according to Baysinger and Butler (1985, p. 120), the "board of directors is only one of many institutional arrangements that have been invented for controlling agency cost".

In the governance literature, there is a heated debate about whether a company board is actually able to monitor management. The wave of company collapses, such as WorldCom, Adelphi, Tyco, Enron and HIH, has led to the appearance of an issue described as "question the board's ability to monitor management" (Mizruchi 2004, p. 614; Harris & Raviv 2006). WorldCom, Enron and HIH management were all engaged in controversial accounting practices that were not detected by their boards (Bhagat et al. 2008). Therefore, one of the main causes of these scandals, was the board's inadequate monitoring and inability to provide independent advice (Ross 2005).

As a consequence, there has been an increasing focus on boardroom reform. Among these is the idea of board independence. Reports on CG (e.g., the Higgs Report 2003, the Cadbury Report 1992, the Sarbanes-Oxley Act 2002, the Smith Report 2003 and the Ramsay Report 2001), support many boardroom reforms (Rashid 2018), such as a general improvement in the skills of non-executive directors (Kirkbride & Letza 2005). For example, the Cadbury Report (1992) recommended at least three non-executive directors as board members. The Sarbanes-Oxley Act (2002) required greater independence between the main related parties involved with the corporation, such as the board of directors and management, and explained the definition of 'independent' as independent from the company (Gupta & Fields 2009).

Worldwide, reforms to increase the number of independent board directors have been extensively adopted (Muravyev et al. 2014; Cladera & Fuster, 2014). Yet as a solution to agency problems, this proportionality on boards is recognised to be a partial one. Board members' attitude and capacity are also significant: "a board's willingness and ability to responsibly monitor the enterprise is related to board members' independence" (Dalton & Dalton 2011, p. 406). An empirical study by Gordon (2006) found that from 1950 to 2005, the percentage of independent directors of large public firms has risen from almost 20% to 75% in US boardrooms. Bhagat et al. (2008) described independent directors as a vital mechanism of CG for monitoring managers. Therefore, the inclusion of outside directors may constitute a significant CG mechanism to support resolving the conflict of interest between managers and shareholders (Maseda et al. (2015). Implicit in these arguments is the concept that board independence plays a pivotal role in alleviating agency cost and promoting firm performance.

As part of this trend, in 2009, the Jordanian Corporate Governance Code (JCGC) required all listed companies on the Amman Stock Exchange (ASE) to assure the presence of independent directors on a continuous basis.

This study seeks to revisit agency theory by investigating whether board independence in the form of representation of 'outside independent directors', may enhance firm performance and ameliorate agency cost in developing countries, with a specific focus on Jordan. Jordan is an interesting setting to study the effect of board independence on firm performance and efficiency or agency cost for the following four main reasons. Firstly, Jordanian listed companies are characterised by a high ownership concentration while most previous studies have been carried out in the context of listed companies featuring dispersed ownership. Secondly, there are some institutional differences of CG practices in Jordan, for example, chief executive officer (CEO) duality and high insider representation in the boardrooms, and Jordan's legal, financial, regulatory and political systems, internal controls and product factor market systems. It has been confirmed that institutional variations between countries are a significant factor influencing agency costs due to the separation of ownership from control (Ahmed et al. 2006). Thirdly, there is an important role for family-controlled companies. It has been confirmed 90 percent of Jordanian companies are controlled and owned by families (Al-Azzam et al. 2015). Therefore, executive directors in Jordanian companies are family-based owners. In other words, many of these executive directors have large ownership stakes within the firms. Finally, developing countries have been affected by the attention paid to CG practices by independent bodies such as the Organisation for Economic Cooperation and Development, the

World Bank, the International Monetary Fund, the Asian Development Bank and the International Finance Corporation (Solomon 2007; Jamali et al. 2008; Matten & Moon 2008; Rashid 2012; Ngo et al. 2018). These bodies have also been working on improving a culture of investor protection in developing countries (La Porta et al. 2000; Abdallah & Ismail 2017).

The bulk of previous studies which examined the effect of board independence on firm performance, relied on traditional financial measures, such as the return on investment, return on equity, return on assets (ROA), return on sales, Tobin's Q, earnings per share, shareholder returns, abnormal returns, market-to-book ratio, price-to-earnings ratio, and profit margin, to identify the effectiveness of company performance (Dalton & Dalton 2011). However, there is a problem related to traditional financial performance measures. It can be argued that these are relatively noisy measures of firm performance (Pham et al. 2011). To revisit the notion of board independence in the unique setting of agency relationship in the context of Jordan, this study uses two measures of agency cost, namely- asset utilization ratio (AUR) and expense ratio (ER), as additional measures to ROA and Tobin's Q.

The remainder of this study is organised into the following sections. Section 2 explains the context for board independence in Jordan. Section 3 discusses selected previous studies on independent directors and firm performance. Section 4 provides a justification of the theoretical foundation of this study. Section 5 develops the hypotheses for this research. In Section 6, the research method is described. Sections 7 and 8 deal with the presentation and discussion of the results. The final section discusses a conclusion, the study's limitations and implications.

2 Board independence and agency environment in Jordan

The topic of board independence arises from the context of Anglo-American companies in which boards are composed in one tier, whilst in continental Europe, in countries such as Finland, Germany, and Netherlands (but not Spain and France), they comprise two tiers (Maassen 2002). In one-tier boards, the board chairman and CEO perform their responsibilities together, whereas, in two-tier boards, there is a separation of the executive role of the board from its monitoring role (Maassen 2002).

Unlike the firm boards in many countries of continental Europe, the boards in Jordan are organised under a one-tier system (World Bank 2005; European Bank 2017). In this situation, there is no distinction between the board and the management, because the board chairman and the CEO are the same person (Shanikat & Abbadi 2011). Thus, Jordanian boards have little to do with controlling management as CEO duality is prevalent in many listed firms in Jordan. Therefore, the mechanisms of firm control are often internally oriented in developing countries, including Jordan (Zheng et al. 2017). For example, there is concentration of ownership even though shares are listed on stock market, CEO duality and high insider representation on the board (Solomon 2007).

It is worth noting that there are some distinct institutional differences between the Jordanian market and developed markets. For example, because of their dispersed ownership structure, corporations in developed markets have a greater tendency to employ professional managers (La Porta et al. 2000) who do not have a stake of significant ownership within the companies. In Jordan, 90 percent of companies are controlled and owned by families (Al-Azzam et al. 2015). Hence, with their significant ownership right, executive directors are able to exercise control over the company board. In practice, Jordanian boards are strongly dominated by owners who belong to one family. Thus, CEO duality and family duality in the Jordanian corporate sector is common. The latter case is where the father serves as board chairperson, and the son as the chief executive officer. Consequently, it seems that JCGC needs some reforms, especially the notion of board independence or 'independent member'.

Basically, the governance structure is designed to oppose the appointment of professional directors in Jordanian boardrooms, yet it has been argued that the requirement that board members should be shareholders, seems to be inconsistent with the concept of independent directors (World Bank 2005; European Bank 2017). European Bank (2017), noted that only two of the ten largest Jordanian listed firms disclosed the identity of the independent directors on their boards. Furthermore, it may be argued that in Jordan, as with many developing countries, institutional regulatory bodies fail to exert pressure on companies to follow CG principles and standards reliably. This is due to the fact that families hinder the work of governmental institutions in the enforcement of regulations and rules. As Uddin and Choudhury (2008) argue, the families' political relationships are usually in direct contradiction with the state's rational and legal authority.

However, outside directors play a pivotal role in monitoring firm management in Anglo-American countries. It can be argued that outside board members work well, because these countries depend on laws and information disclosure to ensure owners' rights (Rashid 2018). Othman and Zeghal (2006) have pointed out that there is higher control of management by outside directors, financial analysts and the financial press in Anglo-American countries, with directors and managers basically acting as agents for owners and, therefore, maximising shareholder wealth. Furthermore, there is a conflict of interest between shareholders and managers in which managers tend to engage in opportunistic behaviour in the best interests of themselves at the expense of owners' interests (Yang & Zhao 2014; Aktas et al. 2018). Thus, there may be information asymmetry between owners and management. This is the context in which board independence is played out in Anglo-American and continental European contexts. The independence of the board may act as a balancing mechanism between the board of directors and top management (Dalton & Daily 1999).

Unlike in developed countries, the main problem of CG in Jordan is the weakness of an institutional framework, where there is a lack of enforcement capabilities along with great dominance by certain families. The existing institutional regulatory bodies fail to exert pressure on companies to follow principles, rules and standards as reliable guidelines. Therefore, the differences in governance structure and regulatory systems between the developed countries and developing countries like Jordan, mean that the Jordanian corporate sector is potentially prone to inherent agency conflicts.

To improve the practices of CG, in 2005, the Jordan Securities Commission (JSC) issued the first JCGC for firms listed on the ASE, the adoption of which, however, is not mandatory. In addition, Jordan announced this new CG code was based on a 'comply or explain' approach. Later, the JSC issued Circular No. 12/1/4659 about its CG code for shareholding companies listed on the ASE, which came into effect on 1 January 2009. Special provisions were made for the banking sector. A publication entitled the "Bank Directors' CG Handbook" was issued in 2004, which was strengthened by a CG code specifically for Jordanian banks in 2007, followed by CG instructions for banks in 2014.

More recently, Jordan also issued new CG directives for firms listed on the ASE, which came into effect on 22 May 2017. Among numerous requirements, it was recommended that at least one-third of board members should be independent members. According to JCGC, that independent member is not to be tied to the firm or any of its top executive management, affiliate firms and its external firm auditors by any financial interests or associations other than his owners in the firm that may be suspected to bring that member benefit, whether financial or incorporeal or that affect member's decisions. Apart from this, other regulations exist to address issues concerning boards.

3 Literature review

The concept of CG has been defined repeatedly. One working definition is "the system by which companies are directed and controlled" (Cadbury 1992, p. 15). As well, according to the governance structure, the main role of shareholders is to appoint managers (Cadbury 1992). Therefore, the board plays an important role in enhancing CG in their firms (Baysinger & Butler 1985). It is argued that the board of directors is a primary internal mechanism of CG that may impact firm performance and agency costs (Masulis & Mobbs 2011; Che & Langli 2015; Barka & Legendre 2017; Rubino et al. 2017). From a review of the literature, it appears that weak governance practices in firms, may lead to more agency problems on one hand, and, on the other, weak shareholder protection. Weidenbaum (1986) suggested that boards without outside directors work as a 'rubber stamp', and domination by the CEO may lead to a conflict of interests between shareholders and managers. Hence, the presence of an efficient board can assist in avoiding the opportunistic behaviour of directors, determining that their aims are aligned with those of the firm's shareholders (Rubino et al. 2017).

The idea of the board of directors as a mechanism of CG is to provide owners with some level of affirmation that their investments will be protected (Maseda et al. 2015). Due to the corporation's directors having access to valuable information associated with strategic management, the board of directors is the best way to monitor the management of the company's resources and allows for the controlling of the CEO's activities (Barka & Legendre 2017). To be more specific, agency theory asserts that the central role of the board of directors is to monitor the management team (Eisenhardt 1989; Romano & Guerrini 2014; Che & Langli 2015; Kumar & Zattoni 2017). This theory treats the corporation as a nexus of contracts through which different participants transact with each other (Voordeckers et al. 2007). Therefore, the effectiveness of the board of directors may help in enhancing firm performance and in mitigating agency costs (Anderson & Reeb 2004).

Broadly speaking, the board is divided into insiders (executive directors) including the CEO and other current members of the company's (or its subsidiaries') management and outsiders (non-executive directors). Outside directors may be non-affiliated or affiliated (Anderson & Reeb 2004; Dey 2008). Affiliated outside board members, such as lawyers or former executives, have personal links with the company (Pearce & Zahra 1992; Voordeckers et al. 2007; Jones et al. 2008). Non-affiliated outside board members are referred to as independent directors (Zahra & Pearce 1989; Pearce & Zahra 1992). Earlier studies propose that the board's composition is a critical variable in understanding managers' performance of their duties and boards' contributions to ameliorate agency problems (Fama & Jensen 1983; Hermalin & Weisbach 1988; Kumar & Zattoni 2017).

An abundance of studies has been conducted on boards in the fields of finance, management, economics and even law, with most carried out in developed countries and featuring diffuse ownership (Rashid 2015). Some studies investigating the company board based on four board attributes (i.e., composition, process, structure and characteristics) indicate that these attributes may directly affect the firm's performance and agency costs (Zahra & Pearce 1989; Dalton & Daily 1999). Empirically, much work has been conducted on the relationships among board independence, performance and agency cost (Voordeckers et al. 2007; Rubino et al. 2017). Yet, findings of studies that addressed the relationship between the proportion of independent outside board directors and firm performance, have been mixed (Kryzanowski & Mohebshahedin 2016; Zattoni et al. 2017). This study attempts to provide complementary evidence about whether board independence should influence firm performance and agency costs of non-financial Jordanian companies.

Again, on the positive side, in an investigation of 403 firms for the period 1992 to 1999, Anderson and Reeb (2004) found the presence of outside independent directors to be positively related to performance and to mitigate agency problems. This is in line with Al-Najjar's (2014) evidence from five Middle Eastern countries, and two Hong Kong studies (Leung et al. 2014; Cheng et al., 2012), Bathala and Rao's (1995) research in the United States, the studies of Liu et al. (2015) and Zhu et al. (2016) in China, Barka and Legendre's (2017) research in France and Lefort and Urzúa's (2008) findings in Chile. Kuo and Hung (2012) found outside independent directors mitigate the negative influence of family control on investment cash flow sensitivity. Masulis and Mobbs (2011) confirmed that the announcement of outsider directors' appointments, increase the wealth of shareholders, and outside directors are a main source of inside director's incentives.

Likewise, Rashid (2015) looked at the relationship between board independence and agency cost based on a sample of 118 non-financial companies listed on the Dhaka Stock Exchange, for the period 2006 to 2011. The results indicated that board independence can alleviate agency cost in terms of the AUR measure. Gul et al. (2012) examined the influence of CG variables on agency cost, by employing a sample of 50 listed firms on the Karachi Stock Exchange for the period 2003 to 2006. The authors indicated that a higher proportion of outside directors may lead to lower agency costs, as measured by AUR. Similar results were found by Hamdan (2018) in the Gulf Cooperation Council. Zhu et al. (2016) found a higher percentage of such directors is linked with less earnings management, and therefore improved firm value.

On the negative side, Yasser et al. (2017) reached the conclusion that the appointment of outside independent directors may negatively affect a firm's value. It may be argued that a higher percentage of such directors decreases market-based measures, such as Tobin's Q (Song et al. 2017). Dey (2008) asserted that the companies with higher agency problems have better CG practices in place, most especially those related to the independence of the board. Additionally, Rubino et al. (2017) indicated that independent directors do not seem beneficial for resolving agency problems in family companies, based on Tobin's Q. Similarly, Singh and Davidson (2003) maintained that independent outside directors do not seem to protect the company from agency cost. Muravyev et al. (2014) found that in Russia, independent directors are linked with a higher private benefit of control and thus do not seem to support better CG practices. Another study produced ambivalent results with no clear empirical evidence that outside independent directors are more or less valuable than other directors (Rosenstein & Wyatt 1990). Rashid (2018) investigated the association between board independence and firm performance in Bangladesh, finding that these do not positively influence each other, as measured by accounting and market performance measures.

As well, studies carried out by Hermalin and Weisbach (1991), Christensen et al. (2010), Bird et al. (2018) and Zhou et al. (2018), claimed a significant negative association between independent directors and firm performance. On the other hand, McKnight and Weir (2009) looked at the relationship between agency cost and CG mechanisms, finding that the percentage of outside directors on a firm's board has no impact on agency costs in a sample of United Kingdom firms from 1996 to 2003.

Finkelstein and Hambrick (1996) stated numerous reasons for such differences in findings. These include not considering contextual factors (e.g., company strategy and life cycle), and not efficiently considering how members of a firm's board interact to make decisions. However, despite these differences, they agree that in general, the board of directors may affect the performance directly by quality controlling (Finkelstein & Hambrick 1996).

It is to be noted that many of the earlier studies have employed accounting-based measures, such as ROA and return on equity, and market-based measures, such as Tobin's Q (Dalton & Dalton 2011). However, it is confirmed that the accounting profit can be manipulated simply (Holthausen et al. 1995; Murphy 1999; Barth et al. 2005; Pham et al. 2011). Thus, this study addresses the CG and agency cost relationship for listed companies featuring highly concentrated ownership, by using two measures of agency costs, namely, AUR and ER, as additional measures to ROA and Tobin's Q.

4 Theoretical background

Proponents of agency theory (such as, Jensen & Meckling 1976; Fama 1980; Eisenhardt 1989) argue that there is a conflict of interest between the related parties, such as shareholders, and managers. Based on agency theory, that the managers are self-opportunist and self-interested, rather than unselfish. It can be argued that the managers will increase their wealth, more likely at the expense of shareholders' interests. Supporting this argument, Solomon (2007), Qiao et al. (2017) and Lew et al. (2018), claim that the CEO duality (dual leadership structure) contribute to the aggregation of executive authority and power, which may help incursion of CEO by mitigating the effectiveness of monitoring roles of the board of directors. Elsayed (2007) indicates that the CEO duality has a negative effect on firm performance by reducing the monitoring function of the board of directors. Moreover, Sheikh et al. (2018), (McKnight & Weir (2009) and Lin et al. (2014), note that the duality alleviates the board independence and boosts the executive powers over control decisions. Inferentially, the CEOs will conduct self-interested activities that could be hindered to the economic welfare of the shareholders, unless they are restricted (Deegan 2006). Thus, CEO duality is considered as an indication of inefficient CG in the agency theory.

By contrast, stewardship theory contends that the agent is motivated to act in the interests of owners (Donaldson & Davis 1991), that "managers are not motivated by individual goals, rather, they are stewards, whose motives are aligned with the objectives of their principals” (Davis et al. 1997, p. 21), and shareholders, because of their fiduciary responsibilities (Donaldson 1990). Therefore, there is no conflict between shareholders and managers. As Tricker (1994, p.3) argues, “classical corporate governance, derived from the mid-nineteenth concept of the corporation, is rooted in the philosophy that men can be trusted; that directors can be relied on to act in the best interests of the company”. Stewardship theory states that fewer outside directors should be present on boards, owing to the mitigated need for a controlling purpose (Che & Langli 2015). Therefore, the principal mission of the board is to support the management team, rather than to supervise and monitor it (Barka & Legendre 2017).

Drawing on resource dependence theory, the function of resource provision relates directly to the capacity of a board of directors to bring new external resources to companies. Johnson et al. (1996, p. 411) described the board “as a means for facilitating the acquisition of resources critical to the firm’s success”. Therefore, according to the resource dependence perspective, a board of directors can serve important other roles for corporations, such as providing resources for organisations, and outside directors are a crucial link for a corporate board to an external environment (Daily & Dalton 1994). It is also argued that outside directors could bring to the boardroom a diversity of expertise and perspectives that the company can draw upon in implementing the company’s strategy (Johnson et al. 1996).

This study is based on the assumption that the separation of ownership and management may lead to managers engaging in self-interested actions. It has been confirmed that board independence provides an essential monitoring function in trying to resolve agency problems (Bathala & Rao 1995). As this study investigates whether the independence of the board improves performance and alleviates agency cost, it relies on agency theory. It is argued that the independent directors will produce independent advice, which stewardship theory ignores (Nicholson & Kiel 2007). In addition, it is assumed that independent directors will offer alternative roles, such as monitoring and advice, which resource dependence theory ignores by focusing only on links to the external environment of corporations (Kiel & Nicholson 2003).

5 Research hypothesis

Agency theory suggests that as directors exercise a controlling role in the company, these directors may be able to pursue acts that benefit themselves but not shareholders (Dalton et al. 1998). Board independence is usually associated with the existence of outside directors, who are not part of the management of the company, in contrast to internal or executive directors who are present on the management team (Uribe-Bohorquez et al. 2018). Kang et al. (2007) argued that the independence of the board is assumed to be closely linked to the support of the board. Due to outside independent directors having experience and qualifications (Fields & Keys 2003), they are viewed as a good mechanism for monitoring the performance of managers and inhibiting opportunistic activities as a result of the strong motivation of such directors and their interest in overseeing managerial operations, and thus adding value to the company (Fama & Jensen 1983). The representation of outside independent directors on the company board should offer a positive relationship to the firm's performance (Fuzi et al. 2016).

Empirically, prior studies (e.g., Luan & Tang 2007; Dahya et al. 2008; Liu et al. 2015; Fuzi et al. 2016; Shaukat & Trojanowski 2018) have reported a positive relationship between board independence and firm performance. The positive influence of board independence is justified by the fact that the higher financial and psychological independence of outside directors concerning managers, allows them to exercise their roles of monitoring, supervising and assessing the management team more effectively (Baysinger & Butler 1985). Therefore, this can effectively influence the financial performance and eventually add value to the company. Therefore, the relevant hypothesis is:

H 1a: There is a positive relationship between board independence and firm performance.

Promoters of agency theory argue that the central role of the board of directors is to monitor the activities of managers to protect the interests of shareholders (Fama & Jensen 1983; Hillman & Dalziel 2003; Kaymak & Bektas 2008). From this perspective, the independence of the board will emerge from a balance of power between outside and inside directors. Ample earlier evidence suggests that the presence of independent directors protects owners when agency problems exist (Brickley & James 1987; Hermalin & Weisbach 1988). This is consistent with Che and Langli (2015), who pointed out that as conflicts of interest between shareholders and managers are commonly found in listed companies, it is essential to have independent directors to control CEOs.

However, it is worth noting that the outside directors work in tandem by acting either as a substitute for or complement to the ownership structure. It is argued that large shareholders have the ability to appoint independent directors to company boards by using their ownership rights to monitor management in order to mitigate agency costs between managers and shareholders (Kim et al. 2007). It is argued that a company board has the legal power to monitor management activities, make contributions of objectivity and expertise, and evaluate the performance of top management (Byrd & Hickman 1992). Therefore, outside independent directors are "supposed to be guardians of the shareholders' interests through monitoring" (Singh & Davidson 2003, p. 796). Further, outside directors tend to favour replacing a poor management (Byrd & Hickman 1992; Borokhovich et al. 1996). Therefore, this study considers that the proportion of outside independent directors will serve an essential monitoring function in trying to resolve agency problems (Chen 2011). This leads to the following hypotheses:

H 1b: Board's independence will reduce firm agency costs.

6 Research method

6.1 Sample selection

Based on Bloomberg database and firm annual reports, 80 non-financial firms listed on the ASE for the period of 2006-2016, were considered, representing 35.71% of the total number of listed firms as of 31st December 2016. This excluded listed financial companies from the sample given the unique characteristics of their financial statements (Campbell & Keys 2002; Lemmon & Lins 2003). This sample consists of almost 36.19% of the market capitalisation of all listed companies as of 31st December 2016. The total number of firm-year observations is 880. The data related to the CG variables were manually collected from firm annual reports. The Bloomberg database was the basis for obtaining the firm's accounting information.

The sample is composed of a variety of industries as per the Global Industry Classification Standard (GICS). Table 1 displays industry classification of the sampled Jordanian companies according to GICS.

Table 1: Industry classification of the sample

Industries	Number of firms in the sample	Observed firm years
Consumer Discretionary	19	209
Consumer Staples	9	99
Energy	1	11
Health Care	3	33
Industrials	19	209
Materials	26	286
Telecommunication Services	1	11
Utilities	2	22
Total	80	880

6.2 Definition of variables

6.2.1 Dependent variables

In order to understand the multiple aspects of performance, measurement is an essential subject in studying CG, and is a great dilemma for researchers. There is a heated debate about the appropriate financial measures of performance (Johnson et al. 1996). As a consequence, multiple measures of performance have emerged (Daily & Dalton 1993). As noted by Ghalayini and Noble (1996), there are two stages of firm performance measurement. The first is accounting-based and the second is market-based.

It is argued that accounting information provides a vital source of independently verified information about the performance of management in reducing agency conflicts (Sloan 2001). Furthermore, such information also provides relatively reliable financial information to relevant parties (Dai et al. 2013). Therefore, it helps shareholders to understand the firm's activities and thus mitigates the information asymmetry between owners and managers (Dai et al. 2013), and ultimately alleviates agency problems. Accounting-based measures, such as ROA, are used as a proxy for firm performance in numerous related studies (e.g., Zahra & Stanton 1988; Kang & Kim 2012 and O'Connell & Cramer 2010; Rashid 2018).

In line with these previous studies, both market-based and accounting-based measures are adopted in this study. According to Core et al. (1999), Salim and Yadav (2012) and Mangena et al. (2012), ROA is calculated as the ratio of profit (before interest and tax) divided by total assets. For Tobin's Q, consistent with Agrawal and Knoeber (1996) and Rashid (2018), is defined as the ratio of the market value of the company to the replacement cost of its average total assets.

However, problems also exist with using both accounting and market performance measures (Dalton & Dalton 2011; Pham et al. 2011). Firstly, accounting profits can be manipulated simply (Healy 1985; Chakravarthy 1986; Wiwattanakantang 2001; Pham et al. 2011; and Nazir & Afza 2018). It is argued that these are prepared within the managers' guidelines, and managers are likely to use particular accounting rules to promote firm performance (Barth et al. 2005). Furthermore, it may be contended that the accounting profit may be high even with the existence of agency cost (Nicholson & Kiel 2007). Furthermore, as Wiwattanakantang claimed, "not all agency costs are reflected in the accounting measures" (2001, p. 334). Secondly, to use market-based measures, the stock price of companies should reflects their market value. However, The Jordanian market is undeveloped; it is classified by thin and unregulated trading and more likely less well-informed investors (Bouri 2015). Furthermore, most developing countries depend on 'debt financing' rather than finance from the stock market or 'equity financing', therefore, market-based measures do not represent true profits made by the shareholders on their investments (Kumar 2004). Furthermore, Pham et al. (2011, p. 373) indicate that the measurement of Tobin's Q is "subject to accounting treatment of balance sheet items".

To address these concerns, this study uses AUR and ER as reliable proxies for agency cost in addition to the performance-based measures of ROA and Tobin's Q. Ang et al. (2000) have had a prominent role in developing these agency costs measures. Subsequently, numerous studies (e.g., Singh & Davidson 2003; Florackis 2008; Wellalage & Locke 2012; Rashid 2013 and Rashid 2015) addressing the issues of CG, have employed these measures. According to Ang et al. (2000, p. 82), AUR is the "proxy for the loss in revenues attributable to inefficient asset utilization", and is calculated as the ratio of annual sales to total assets. Put another way, it measures management's capacity to use assets efficaciously (Singh & Davidson 2003). Studies that have addressed agency cost have used AUR as a reliable proxy for it (Ang et al, 2000; Singh & Davidson 2003; McKnight & Weir 2009). A low AUR has been interpreted to mean "that management is using assets in non-cash flow generating and probably value destroying ventures" (Singh & Davidson 2003, p. 799), and vice versa.

ER is well known as a direct reliable proxy for agency cost. It is defined as the ratio of operating expenses to total annual sales, and refers to how effectively a firm's management controls operating costs. This has been very frankly described by Ang et al (2000, p. 82): "this measure captures excessive expenses including perk consumption". A low ER indicates that the management is controlling the operating expenses. Therefore, a low ER should reflect lower agency costs (Singh & Davidson 2003).

As evidence of the mitigation of a firm's agency costs, it is likely that there will be a negative association between board independence and agency cost as indicated by ER. Likewise, a positive relationship between board independence and agency cost is probable using AUR.

6.2.2 Key independent variable

In this study, the independent variable refers to the number of outside directors as a percentage of the total number of board of directors (BDIND), which is in line with earlier studies (e.g., Zahra & Stanton 1988; Bertoni et al. 2014 and Rashid 2018).

6.2.3 Other control variables

A number of control variables are included in this study based on the earlier literature on governance and firm performance. These are ownership structure, free cash flow (FCF), board size, firm size, firm age, sales growth, liquidity, leverage, research and development expenditure (R&D), years of operation and industry.

Globally speaking, an insider ownership structure plays a pivotal role in disciplining a company's management. Monitoring by outside members of the board is less critical for companies with high insider ownership (Prevost et al. 2002). Three ownership control variables are used in this study: director ownership (DIROWN), institution ownership (INSOWN) and largest block holding ownership (LBOWN). DIROWN is measured as the percentage of shares owned by directors. INSOWN, in line with Kula (2005) and Kholeif (2008), is defined as the percentage of shares held by financial institutions. It is argued that financial institutions may be in an informed position to monitor management's actions and decisions (Kholeif 2008). The LBOWN draws on the 'convergence of interest' hypothesis, that monitoring shareholding may align the interests between shareholders and managers, and eventually promote firm performance and ameliorate agency cost (Jensen 1993). It is confirmed that the existence of shareholders holding a high percentage of the firm's capital, is another method to reduce the effects of the separation of ownership and control on company value. As a consequence, more than 90% of corporations around the world have block holders who hold >40% of the common shares in aggregate (Dai et al. 2017). LBOWN is measured as the percentage of shares owned by the three largest block holders.

It is argued that to increase FCF, managers may invest in projects which are unnecessary or not economically feasible (Jensen 1986). In the present study, FCF is measured as the operating income before depreciation minus the sum of taxes plus interest expenses and dividends paid, scaled by the total assets.

It may be argued that board size plays an important role in disciplining the company and monitoring its management. Therefore, board size may influence the capacity of boards to work efficiently (Coles et al. 2008). Similarly to Elsayed (2007), Donnelly and Mulcahy (2008) and Fedaseyeu et al. (2018), in this study, board size (BDSIZE) is used as the total number of members on the board of directors. Large firms have been found to have a greater capacity to create internal funds, be more diversified and be less likely to make an omission regarding debt. However, they may also have higher agency problems. In line with Carter et al. (2010), Al-Bassam et al. (2015), Ararat et al. (2015) and Ducassy and Guyot (2017), firm size (size) is measured as the natural logarithm of the total assets.

The performance of a firm may be influenced by a firm's age; older firms have been found more likely to be more efficient and effective than younger ones (Ang et al. 2000). On the other hand, for young firms, this rating may not only indicate economic wealth but also the probability of survival (Czarnitzki & Kraft 2006). Consistent with Madanoglu et al. (2018) and Ngo et al. (2018), firm age (AGE) is calculated as the natural logarithm of the total number of years a firm has been listed on the stock exchange.

It may be argued that firms with growing sales are likely to grow more quickly than those without (Durnev & Kim 2005). Therefore, the sales growth rate may indicate future firm performance. Borrowing from Short and Keasey (1999) and Ducassy and Guyot (2017), sales growth (GROWTH) is measured as the percentage of current year sales minus previous year sales, scaled by previous year sales.

It has been confirmed that liquidity helps identify firm-specific attributes, "since the ability to manage working capital and acquire a greater quantity of cash balances relative to current liabilities, reflects superior skills" (Majumdar & Chhibber, 1999, p. 296). Consistent with Al-Najjar (2014) and Connelly et al. (2017), liquidity (LIQ) is calculated by employing the current ratio, dividing current assets by current liabilities.

It is argued that debt is an essential governance tool because higher debt levels assist in decreasing the agency cost of FCF (Akbar et al. 2016). On the other hand, debt may ameliorate the agency problem of the debtholder and may affect performance (Jensen & Meckling 1976). Hence, it may be considered as a mechanism of CG. Leverage (LEV) is defined as the ratio of total debt to total assets (Ararat et al. 2015; Ararat et al. 2017).

It is argued that firms with high R&D expenses are more likely to be high growth companies and may have a high valuation (Durnev & Kim 2005). Furthermore, R&D in production processes and technologies, may help in improving a firm's performance (Akbar et al. 2016). R&D is calculated as R&D as a percentage of total expenditure, scaled by sales (Anderson & Reeb 2003; Choi et al. 2012; Farag et al. 2014; Ararat et al. 2017).

Controlling for industry effects is an important consideration. It is argued industry effects may assist in identifying "unobserved heterogeneity at the industry level" (Elsayed 2007, p. 1207). On the other hand, the performance measures may vary amongst industries. In the current study, industry effects (GICS) are controlled for by the inclusion of dummy variables using the value of (1) if the firm is in the industry, or (0) otherwise. In addition, the regression equations are controlled for a time effect. This is done by adding 'time dummies' for the year in which the observations are made.

6.3 Regression model

For this study, the following model has been developed to test the association between board independence and firm performance:

$$Y_{i,t}=\alpha+\beta_1 BDIND_{i,t}+\beta_2 DIROWN_{i,t}+\beta_3 LBOWN_{i,t}+\beta_4 INSTOWN_{i,t}+\beta_5 BDSIZE_{i,t}+\beta_6 SIZE_{i,t}+\beta_7 AGE_{i,t}+\beta_8 GROWTH_{i,t}+\beta_9 LIQ_{i,t}+\beta_{10} LEV_{i,t}+\beta_{11} FCF_{i,t}+\beta_{12} R\&D_{i,t}+\varepsilon_{i,t}$$

where, $Y_{i,t}$ comprises the overall measure of performance, including agency cost, namely, $ROA_{i,t}$, Tobin's $Q_{i,t}$, $AUR_{i,t}$ and $ER_{i,t}$. $BDIND_{i,t}$ is the proportion of independent directors to the total number of directors. $DIROWN_{i,t}$ is the percentage of shares owned by directors. $LBOWN_{i,t}$ is the percentage of shares owned by the three largest block holders. $INSTOWN_{i,t}$ is the percentage of shares owned by institutions. $BDSIZE_{i,t}$ is the natural logarithm of the total number of board members. $SIZE_{i,t}$ is the natural logarithm of the total assets. $AGE_{i,t}$ is the natural logarithm of the total number of years a firm has been listed on the stock exchange. $GROWTH_{i,t}$ is the changes in sales. $LIQ_{i,t}$ is the liquidity. $LEV_{i,t}$ is the ratio of total debt to total assets. $FCF_{i,t}$ is measured as operating income before depreciation, minus the sum of taxes plus interest expenses and dividends paid, scaled by total assets. $R\&D_{i,t}$ is calculated as R&D's percentage to sales. α is the intercept, β is the regression coefficient and ε is the error term.

For performing an accurate statistical analysis, there is a need to meet statistical analysis assumptions, such as multicollinearity, normality and heteroscedasticity. The assumption of normality requires that all observations should be distributed normally in the population. It is confirmed that the normality violations are of little concern when the size of a sample is high (higher than 30) (Coaks & Steed 2001). In addition, the Residual Test/Histogram-Normality Test of the regression model provided a bell shape, conforming to data normality.

Multicollinearity indicates high correlations amongst the explanatory or (independent) variables. In other words, when the explanatory or (independent) variables are significantly linked with one other. When there is a high degree of correlation between two or more independent or (explanatory) variables, these variables must be excluded. Table 3 illustrates that there is no correlation between the independent variables, due to the correlation coefficients being either less than 75% or negative. Furthermore, based on Table 3, the variance inflation factors of all the variables of this study are less than 4 whilst it is confirmed that the variance inflation factor of higher than 10 is evidence of multicollinearity (Gujarati 2003).

Under the assumption of heteroscedasticity, this indicates that the variance of the error is constant across observations (all levels of independent variables), or residuals of the dependent variables of the study are almost equal/constant. That is, the plot of standardized residuals ZRESID against the standardized predicted value ZPRED of the all study's models, resemble a curve shape, pointing to the presence of heteroscedasticity. The chi-square statistics and a corresponding p-value of the Breusch–Pagan–Godfrey test, indicate that heteroscedasticity is present in the regression model, which is adjusted employing a correction technique for unknown heteroscedasticity as proposed by White (1980).

7 Empirical results

7.1 Descriptive statistics

Descriptive statistics of the examined variables are displayed in Table 2. The descriptive statistics include the mean, median, maximum, minimum and standard deviation. The table reveals that the averages of firm performances in terms of ROA and Tobin's Q, are 5% and 110% respectively. It also shows that the averages of agency costs in terms of AUR and ER are 57% and 41% respectively. These results for agency cost are consistent with an expected high AUR and a comparatively lower ER.

On average, 52 percent of company board members are independent, and these range from 0% (no independence) to 100% of total directors. This number is consistent with the JCGC that recommended that at least one-third of board members should be independent. Furthermore, this number is fairly close to some standards of Anglo-American countries. Brennan and McDermott (2004) pointed out that 61 percent of non-executive board members are outside independent directors of the listed companies on the Irish Stock Exchange. As well, as noted by Yermack (1996), the average percentage of outside directors in the largest United State public companies, is 54. Al-Najjar and Clark (2017) indicated that the average of independent directors is 41.2% in the Middle East and North African region, which includes Kuwait, Oman, Saudi Arabia, Bahrain, Jordan, Tunisia, the UAE, Egypt and Qatar. However, this is low compared to Australian corporations where the average percentage of independent directors is 71.0% (Krishnamurti & Velayutham 2017).

Based on Table 2, the mean board size is 8.47 members with a minimum of 3 members and a maximum of 14. This is lower than the mean reported for large American public firms. Yermack (1996), Bhagat and Black (2002) and Pathan (2009), produced corresponding means of 12.25, 12.3 and 12.92 respectively. In addition, Green and Homroy (2018) found that the mean number of directors in the Euro Top 100 firms to be much higher, at 16.963. However, the mean board size of Jordanian listed firms is closer to that of the Australian figure of 8.63, as noted by Krishnamurti and Velayutham (2017). Likewise, in Malaysia, Germain et al. (2014) calculated the mean number of directors as between 7.5 and 7.8. In Jordan, the average percentages of director ownership, largest block holders and institutional investors, are 49%, 53% and 9% respectively. Table 2 presents an average of the mean debt ratio and R&D

measures of approximately 32% and 3% respectively. Table 2 displays descriptive statistics of the sampled Jordanian companies.

Table 2: Descriptive statistics of the sample

Variables	N	Mean	Median	Maximum	Minimum	Std. Dev.
ROA	880	0.05	0.05	0.36	-0.28	0.10
Tobin’s Q	880	1.10	0.86	4.45	0.21	0.82
AUR	880	0.57	0.52	4.43	0.01	0.44
ER	880	0.41	0.25	4.65	0.03	0.61
BDIND	880	0.52	0.55	1.00	0.00	0.23
DIROWN	880	0.49	0.47	0.99	0.01	0.27
LBOWN	880	0.53	0.51	0.99	0.09	0.22
INSTOWN	880	0.09	0.03	0.64	0.00	0.12
BDSIZE	880	8.47	9.00	14.00	3.00	2.36
SIZE	880	17.01	16.92	21.31	12.89	1.46
LNAGE	880	2.72	2.83	3.66	0.00	0.75
GROWTH	880	0.12	0.03	5.02	-0.82	0.69
LIQ	880	2.81	1.69	29.04	0.07	3.99
LEV	880	0.32	0.29	0.93	0.00	0.21
FCF	880	-0.01	0.00	0.13	-0.33	0.07
R&D	880	0.03	0.00	0.36	0.00	0.06

In this study, regression model analysis was applied to measure the effects of board independence on firm performance and firm’s agency cost. Different models were constructed to examine board independence as an independent variable with ROA, Tobin’s Q, AUR and ER as the dependent variables. The results of the regression analysis of the influence of board independence on firm performance and agency cost of non-financial Jordanian companies, are presented in Tables 4, 5, 6 and 7 respectively.

The regression of coefficients of the relationship between board independence and firm performance are presented in panel A of Tables 4 and 5. It is noted that there is a significant positive relationship between BDIND and ROA as a measure of firm performance and a non-significant negative relationship between BDIND and the market-based measure of Tobin’s Q.

Table 3: Correlation coefficients

		1	2	3	4	5	6	7	8	9	10	11	12	VIF
1	BDIND	1.00												1.49
2	DIROWN	-0.53***	1.00											3.64
3	LBOWN	-0.38***	0.66***	1.00										2.65
4	INSTOWN	0.27***	-0.45***	-0.03	1.00									1.57
5	BDSIZE	0.07*	0.12***	-0.22***	-0.11***	1.00								1.63
6	SIZE	-0.17***	0.23***	0.07**	-0.06*	0.46***	1.00							1.97
7	LNAGE	0.00	-0.01	0.05	0.07**	0.11***	0.14***	1.00						1.13
8	GROWTH	-0.04	0.02	0.06*	0.08*	-0.04	-0.06*	-0.19***	1.00					1.07
9	LIQ	0.04	0.10***	0.09***	-0.06*	-0.12***	-0.34***	-0.19***	0.11***	1.00				1.38
10	LEV	0.07**	-0.15***	-0.01	0.16***	0.02	0.29***	0.23***	-0.01	-0.44***	1.00			1.64
11	FCF	-0.10***	0.13***	0.10***	0.04	0.07**	0.31***	-0.08**	0.06*	0.04	-0.21***	1.00		1.32
12	R&D	0.08*	0.03	0.00	-0.01	0.09***	0.07**	0.07**	-0.03	-0.14***	0.27***	-0.13***	1.00	1.12

The t-statistics asterisks indicate significance at $P < 0.001$ (***), $P < 0.01$ (**), and $P < 0.10$ (*) levels respectively.

Table 4: Board independence and firm performance (regression results)

Table 4 shows the summary of results of the effects of board independence on firm performance, as measured by ROA. The t-tests are displayed in parentheses.

Model	**Panel A (before controlling for industry and time)**	**Panel B (after controlling for industry and time)**	**Pane C (random effect model)**
Intercept	-0.1936 (-4.72)***	-0.1931 (-3.24)**	-0.1293 (-1.43)
BDIND	0.0296 (2.70)**	0.0390 (3.19)**	0.0289 (1.75)*
DIROWN	0.0462 (3.50)***	0.0330 (2.41)*	0.0205 (0.88)
LBOWN	-0.0219 (-1.63)	-0.0250 (-1.82)*	-0.0304 (-1.30)
INSTOWN	-0.0067 (-0.35)	-0.0090 (-0.48)	-0.0203 (-0.77)
BDSIZE	-0.0016 (-1.41)	-0.0022 (-1.70)*	-0.0033 (-1.70)*
SIZE	0.0140 (5.41)***	0.0131 (3.40)***	0.0132 (3.10)**
LNAGE	0.079 (2.47)*	0.0101 (3.15)**	0.0100 (1.65)*
GROWTH	0.0036 (0.95)	0.0031 (0.81)	0.0042 (1.44)
LIQ	0.0004 (0.74)	0.0006 (0.81)	0.0004 (0.42)
LEV	-0.0649 (-5.42)***	-0.0567 (-3.73)***	-0.1014 (-4.92)***
FCF	0.7820 (11.41)***	0.7956 (11.72)***	0.7543 (19.58)***
R&D	-0.1406 (-5.17)***	-0.1374 (-4.25)***	-0.0261 (-0.64)***
Year	No	Yes	Yes
Industry	No	Yes	Yes
Adj. R-squared	0.4623	0.4760	0.4310
F-Statistics	46.12	21.00	23.10
Probability	0.0000	0.0000	0.0000
N	880	880	880

The t-statistics asterisks indicate significance at $P < 0.001$ (***), $P < 0.01$ (**), and $P < 0.10$ (*) levels respectively.

Based on Tables 4 and 5, the results also confirm that BDZISE and R&D had a significant negative explanatory power in influencing ROA. Hence, it can be concluded that the small boards with outside independent directors are more effective in managing companies and enhancing their performance. In comparison, BDZISE had no significant effect on firm performance for Tobin's Q.

Table 5: Board independence and firm performance (regression results)

Table 5 shows the summary of results of the effects of board independence on firm performance, when assessed by Tobin's Q. The t-tests are displayed in parentheses.

Model	**Panel A (before controlling for industry and time)**	**Panel B (after controlling for industry and time)**	**Pane C (random effect model)**
Intercept	1.724 (3.30)***	1.747 (2.37)*	6.147 (6.51)***
BDIND	-0.0414 (-0.34)	0.0667 (0.53)	-0.2967 (-1.94)*
DIROWN	0.7730 (4.73)***	0.7007 (4.11)***	0.0917 (0.42)
LBOWN	0.1501 (1.03)	0.2815 (1.77)*	0.3152 (1.45)
INSTOWN	0.6550 (3.24)**	0.4230 (2.13)*	0.2161 (0.91)
BDSIZE	0.0354 (2.32)*	0.0165 (1.03)	0.0100 (0.53)
SIZE	-0.0602 (-1.76)*	-0.0665 (-1.65)*	-0.2771 (-6.34)***
LNAGE	-0.0766 (-2.00)*	0.0094 (0.23)	-0.0608 (-1.02)
GROWTH	0.0471 (0.91)	0.0323 (0.61)	0.0211 (0.80)
LIQ	0.0193 (1.82)*	0.0232 (2.10)*	0.0186 (2.00)*
LEV	-0.8146 (-5.10)***	-0.7340 (-3.86)***	-0.1822 (-0.96)
FCF	-0.6001 (-093)	-0.5805 (-0.92)	0.4685 (1.36)
R&D	0.5030 (1.36)	0.9394 (2.55)*	0.9801 (2.70)**
Year	No	Yes	Yes
Industry	No	Yes	Yes

Adj. R-squared	0.1693	0.2089	0.1300
F-Statistics	20.97	18.78	5.37
Probability	0.0000	0.0000	0.0000
N	880	880	880

The t-statistics asterisks indicate significance at $P < 0.001$ (***), $P < 0.01$ (**), and $P < 0.10$ (*) levels respectively

The findings point out that LIQ had a significant positive explanatory power in influencing firm performance for the Tobin's Q measure, but it shows no significant influence for the ROA measure. The LEV variable had a significant negative explanatory power in influencing ROA. SIZE had a significant negative explanatory power in influencing firm performance for Tobin's Q; but it presents a significant positive relationship with ROA. LNAGE and FCF had a significant positive explanatory power in influencing firm performance as measured by ROA; whereas they had no significant explanatory power in influencing firm performance when using Tobin's Q.

The regression of coefficients of the relationship between board independence and firm agency cost/efficiency are presented in panel A of Tables 6 and 7. From the regression coefficients, it is revealed that there is a significant positive relationship between BDIND and firm's agency cost of AUR. Likewise, it is noted that there is no significant relationship between BDIND and firm's ER.

Table 6: Board independence and agency cost (regression results)

Table 6 shows the summary of results of the effects of board independence on firm's agency cost for AUR. The t-tests are displayed in parentheses.

Model	**Panel A (before controlling for industry and time)**	**Panel B (after controlling for industry and time)**	**Pane C (random effect model)**
Intercept	-0.8373 (-3.17)**	0.4322 (2.00)*	0.6115 (1.60)
BDIND	0.1460 (2.17)*	0.0580 (1.10)	0.1105 (1.80)*
DIROWN	-0.0548 (-0.65)	-0.0264 (-0.40)	0.1090 (1.25)
LBOWN	-0.1302 (-1.31)	-0.1813 (-2.36)*	-0.1020 (-1.15)
INSTOWN	0.1832 (1.44)	0.2071 (1.83)*	0.0801 (0.84)

BDSIZE	-0.0050 (-0.68)	-0.0007 (-0.10)	-0.0070 (-0.91)
SIZE	0.0560 (3.62)***	0.0032 (0.25)	-0.0152 (-0.85)
LNAGE	0.0941 (6.12)***	0.0674 (4.87)***	0.2118 (5.04)***
GROWTH	0.0360 (1.88)*	0.0375 (1.80)*	0.0596 (5.60) ***
LIQ	0.0150 (3.13)**	0.0034 (0.90)	-0.0019 (-0.51)
LEV	0.8104 (7.00)***	0.3337 (3.25)**	0.2989 (3.90) ***
FCF	1.093 (5.00)***	1.280 (6.17)***	0.7768 (5.60) ***
R&D	-1.822 (-9.10)***	-0.9051 (-5.15)***	-0.1460 (-1.00)
Year	No	Yes	Yes
Industry	No	Yes	Yes
Adj. R-squared	0.2837	0.5234	0.20
F-Statistics	14.00	24.60	8.31
Probability	0.0000	0.0000	0.0000
N	880	880	880

The t-statistics asterisks indicate significance at $P < 0.001$ (***), $P < 0.01$ (**), and $P < 0.10$ (*) levels respectively

Table 7: Board independence and agency cost (regression results)

Table 7 shows the summary of results of the effects of board independence on firm's agency cost, when measured by ER. The t-tests are displayed in parentheses.

Model	**Panel A (before controlling for industry and time)**	**Panel B (after controlling for industry and time)**	**Pane C (random effect model)**
Intercept	1.830 (6.21)***	2.133 (5.24)***	3.505 (5.52)***
BDIND	0.0140 (0.17)	-0.0211 (-0.25)	0.0584 (0.46)
DIROWN	0.3093 (2.82)**	0.1902 (1.86)*	0.2955 (1.67)*
LBOWN	-0.1524 (-1.45)	-0.0746 (-0.72)	-0.0665 (-0.40)
INSTOWN	0.3477 (1.56)	0.2463 (1.10)	0.4535 (2.22) *
BDSIZE	-0.0228 (-2.40)*	-0.0247 (-2.57)*	-0.0231 (-1.54)

SIZE	-0.0638 (-3.80)***	-0.0645 (-3.36)***	-0.1388 (-4.52) ***
LNAGE	-0.1088 (-3.46)***	-0.1066 (-3.70)***	-0.1822 (-4.10)***
GROWTH	-0.1125 (-3.13)**	-0.1114 (-3.07)**	-0.1522 (-6.36) ***
LIQ	0.0153 (1.25)	0.0074 (0.55)	0.0017 (0.22)
LEV	-0.1647 (-1.50)	-0.2216 (-1.40)	-.0271 (-0.17)
FCF	-2.47 (-4.16)***	-2.484 (-4.25)***	-2.13 (-7.00) ***
R&D	1.55 (3.17)**	1.410 (2.81)**	0.7814 (2.43) **
Year	No	Yes	Yes
Industry	No	Yes	Yes
Adj. R-squared	0.2076	0.2398	0.1801
F-Statistics	8.05	11.00	7.35
Probability	0.0000	0.0000	0.0000
N	880	880	880

The t-statistics asterisks indicate significance at $P < 0.001$ (***), $P < 0.01$ (**), and $P < 0.10$ (*) levels respectively

From the results of the regression analysis, it can be noted that the BDIND are in expected directions. Therefore, it can be concluded that BDIND enhance firm efficiency and performance by controlling the best utilizing company resources and firm ROA.

Concerning Tables 6 and 7, this is consistent with the idea that firm age, firm growth and FCF, may reduce agency cost. LNAGE, GROWTH and FCF seem better aligned to owners' interests and management, and this was confirmed by the results, where LNAGE, GROWTH and FCF were positively related to AUR and negatively related to ER, with a higher AUR reflecting a firm's lower agency cost, and with a lower ER reflecting alleviate firm's agency cost. In addition, LEV had a significant positive explanatory power in influencing firm's agency cost as measured by AUR. The findings also show that SIZE had a significant negative association with firm discretionary expenses. Hence, it can be said that debt ratio, firm's age, FCF, firm size and firm growth, act as mechanisms to diminish the company's agency cost. Therefore, these variables may be a substitute for other control mechanisms to promote firm value.

Overall, the results of this study point out the significant effects of the association between board independence, firm performance and efficiency, when measured by ROA and AUR. The findings of this study using the ROA and AUR measures support the agency theory. It is argued conflicts of interest between shareholders and managers are commonly found in listed companies; it is essential to have independent directors to control CEOs in order to resolve this problem (Che and Langli (2015), and thereby reduce agency problems.

It has been argued that the knowledge and ability of outside independent directors may vary across companies and industries (Rashid 2015). Therefore, the relationships between board independence, agency cost and firm performance, may be industry or time specific. This may point to good control of a firm's agency cost in some industries and years, and limited control in other industries and years. In addition, the need for advice and monitoring functions may vary across companies; therefore, there are probably significant variables driving the selection of company board members (Brickley & Zimmerman 2010).

In line with this argument, the above model is modified. This was done by adding INDUSTRY dummies for the GICS codes which relate to the sector to which the company belongs, and TIME dummies for the year for which the observation was made. Therefore, the following model has been derived:

$$Yi,t=\alpha+\beta1BDINDi,t+ \beta2DIROWNi,t +\beta3LBOWNi,t+\beta4INSTOWNi,t+\beta5 BDSIZEi,t +\beta6\ SIZEi,t + \beta7AGEi,t+ \beta8GROWTHi,t+ \beta9LIQi,t+\beta\ 10LEVi,t + \beta11FCFi,t + \beta12R\&Di,t +\Omega YEAR+ \gamma INDUSTRY+ \varepsilon i,t$$

The results after adding these industry and year dummies are displayed in Panel B of Tables 4, 5, 6 and 7. The revised results of the regression coefficients indicated that many coefficients of variables altered from positive to negative and vice versa. Likewise, many coefficients of variables altered from a significant influence to a non-significant influence and vice versa. Specifically, for firm performance, LBOWN and BDSIZE changed from non-significant to significant for ROA. R&D and LBOWN moved from non-significant to significant for Tobin's Q. In contrast, BDIND, BDSIZE and LNAGE were modified from significant to non- significant for Tobin's Q. For firm's agency cost, BDIND, SIZE and LIQ changed from significant to non-significant using AUR. Conversely, LBOWN and INSTOWN were transformed from non-significant to significant for the same measure. Additionally, the dummy for consumer staples had a positive effect for ROA.

7.2 Endogeneity test

Endogeneity is the association between any of the independent variables with the error term (Gippel et al. 2015; Rashid 2015). It is important that endogeneity is taken into account as any indication of evidence of unobserved influences is likely to create a degree of correlation between independent variables and the error term. This leads to biased estimates of the independent variables' coefficients. In case it exists, the Ordinary Least Square (OLS) is inconsistent. To deal with the endogeneity problem, the Instrumental Variables (IVs) techniques are used. As proposed by Gujarati (2003), and following Elsayed (2011), Rashid (2013, 2015) Al-Najjar and Clark (2017) and Uribe-Bohorquez et al. (2018), the F-test for the predicted value of board independence was not significant. Specifically, using ROA as a proxy for firm performance, F= 0.4778 (P = 0.4896), and Tobin's Q as a proxy for firm performance, F = 0.0031 (P = 0.9554), and with AUR as a proxy for firm's agency cost, F = 0.2987 (P = 0.5848), and with ER as a proxy for firm's agency cost, F = 0.0336 (P = 0.8544). These results point out that there are no signs of a potential endogeneity problem amongst board independence, firm performance and firm's agency cost, suggesting both OLS and IVs are consistent. Following the earlier studies, such as Al-Najjar (2014), this research adopts the lag board independence as IVs.

7.3 Robustness check

As this research employed an unbalanced panel data (there are not 80 companies in all years), it may create some unobserved heterogeneity. In other words, there may be variation within a company and across the companies or to capture the company specific characteristics. To address this issue, the above model is run again by employing fixed-effect model or random-effect model, also known as panel data model. A 'Hausman test' is conducted to test the significance of the difference between the fixed effect and the random effect estimates.

The coefficient of the 'Hausman test' indicated that the random effect model is consistent. The regression coefficients of the association between board independence, firm performance and agency cost under the random effect model, are displayed in Panel C of Tables 4, 5, 6 and 7 respectively. The revised findings of the regression coefficients pointed out that many coefficients of variables altered from positive to negative and vice versa. Likewise, many coefficients of variables altered from a significant influence to a non-significant influence, and vice versa. As well, the signs of the coefficients of BDIND are changed from non-significant positive to significant positive using AUR. Also, BDIND are modified from non-significant positive to significant negative using Tobin's Q. Thus, it can be confirmed that the variation across companies has influence on board independence, firm performance and firm efficiency.

8 Conclusion, implications and limitations

8.1 Conclusions

The purpose of the current study was to empirically examine the predictions of agency theory with respect to the relationship between a board's independence, a firm's performance and a firm's agency cost, based on accounting and market-based measures. AUR and ER were used as additional measures to ROA and Tobin's Q, to capture the effectiveness of board independence in alleviating a firm's agency cost. This responded to the call of earlier studies that there have not, as yet, been adequate studies of this nature conducted in the context of developing countries. This research involved collecting the related data on over 80 non-financial listed firms in the country context of Jordan.

The results of this research are that board independence in the form of the 'representation of outside independent directors', indicate that there is a significant positive relationship between board independence and firm performance, of return on asset, and a significant positive relationship between board independence and firm's agency cost of AUR. These results are consistent with the findings of Al-Najjar (2014) and Rashid (2015). However, the results also report that there is non-significant positive association between board independence and firm efficiency of ER. This finding is consistent with earlier studies, such as Singh and Davidson (2003), McKnight and Weir (2009) and Rashid (2015).

According to this, board independence does not fully serve as an effective mechanism to capture agency cost of corporates in general. In other words, it is revealed that the outside independent directors on boardrooms are concerned with employ of a company's asset in a revenue generating venture, but they are not are concerned with controlling operating expenses of the company. The first explanation for this can be that, in the context of corporations with a high ownership concentration, such as the Jordanian case, the nature of agency conflict may be different from agency conflict in Anglo-American countries. In the Anglo-American context, there is a conflict of interest between dispersed shareholders and company management whereas countries with a high concentration of ownership may face another type of conflict, that is, a conflict of interest between majority shareholders and minority shareholders (Sun et al. 2017). The second explanation is that corporate boards in companies with a high ownership concentration are composed of members who represent the interests of shareholders and managers, therefore, "being unable to deal with the specific agency problem adequately" (Lefort & Urzúa 2008, p. 615). Another explanation is that, in developing countries, outside directors are more likely not to be truly independent (Barako et al. 2006). In Jordan, there is a requirement that all directors should be shareholders, which ignores the concept of independence altogether. Yet another explanation is that, in the context of Jordan, even if the company board is composed of new outsider directors, they are elected to those positions by the insider board directors. Thus, there are close associations between family shareholders and outside directors, in which case outside and inside directors may act on a system of 'give and take' (Singh et al. 2018).

For Tobin's Q measure, the results also document that there is a significant negative association between board independence and market-based measure using Tobin's Q. This result is a line with prior research, such as that of Sakawa and Watanabel (2017), Rashid (2018) and Singh et al. (2018). This study's findings did not support the prevailing belief that board independence is positively associated with Tobin's Q. It can be said that, in order to apply market-based measures to measure company performance, these have to reflect the real value of the firm (Lindenberg & Ross 1981). Hence, such measures may not be effective in developing countries as, on one hand, the capital market is not well developed (Lindenberg & Ross 1981; Joh 2003). As well, as Bacidore et al. (1997, p. 11) have argued, market-based measures "may not be an efficient contracting parameter because they are driven by many factors beyond the control of the firm's executives". Jordan is no exception to this. The Companies Control Department in Jordan has pointed out that the Jordanian market witnessed during the period from 2000 to 2011, 44 bankruptcy cases in Jordanian firms, including 26 cases in the industrial sector (Zureigat et al. 2014). Claessens and Djankov (1999, p. 502) asserted that employing the market-based measures may "lead to a downward bias in the relationship between concentrated ownership and firms' valuation" in countries with weak protection of minority shareholders such as Jordan.

However, these results do not rebuff the predictions of agency theory for the following three key reasons. Firstly, it is argued that the mechanisms of CG are an integrated system. It can be said that companies may use numerous tools to capture firm's agency cost, board independence being one among several. Furthermore, outside independent directors "may still be in a position to perform some oversight monitoring role, and outside directors' inability to monitor may be captured by the insider ownership" (Rashid 2015, p. 193). Secondly, in some developed countries, these independent directors failed to add any value for companies, such as in various high profile United State cases (Singh & Davidson 2003). Finally, it may be argued that inside directors are more effective due to their having adequate knowledge and information about the company, more so than outside directors. As Nicholson and Kiel (2007, p. 588) argue, "inside (or executive) directors spend their working lives in the company they govern, they understand the businesses better than outside directors, and so can make superior decisions". Therefore, the results of this research are not surprising.

8.2 Implications

The results of this study present valuable implications for policy makers, regulatory authorities, practitioners and non-financial sector management, in developing countries including Jordan. Firstly, policy makers should formulate regulations and rules regarding the CG of industrial and services-related firms. Regulations and rules that promote the adoption of outside independent directors are important. There is a need to apply the true meaning of the 'independent members', as is the need to clearly define the members who serve as independent directors on the board of directors. Indeed, the importance of this research for related parties is that it has strong implications for the present reform movement of CG practices in Jordan. Secondly, it is important to support companies not to have very large boards. It is argued that large board's members are easier for the CEO to control (Jensen 1993). Finally, firm age, FCF and firm growth, are becoming important control mechanisms that can add value to the firm. These play an important role in mitigating firm's agency cost; therefore, having a positive impact on firm efficiency.

8.4 Limitations and future research

This study has some limitations that might warrant future investigations. Firstly, this research investigated the influence of board independence in the form of representation of ‘outside independent directors’ on firm performance and efficiency. The requirement of appointing outside independent members in the Jordanian boardrooms, was mandatory only from 2009. Hence, there were no independent directors before 2009 and that may have influenced the results of this study. Secondly, the research’s data relating to the CG variables, was manually collected from firm annual reports, to carry out quantitative analysis, however, annual reports may not be accurate. Therefore, future research may support this research’s evidence by using qualitative research methods, such as conducting face-to-face interviews. A third limitation is the inclusion of only one board characteristic, i.e. board composition, however, it is suggested that a future research direction would be to explore the effect of various other company board characteristics on firm performance and efficiency or agency cost. Forthly, the current study excluded financial firms, because these are managed by different rules and instructions, thus the sample size was decreased from 224 firms to 80, which is a limited number. Finally, the empirical analyses of this research are based on a single country setting. Future study can examine CG across different Arab countries with similarly shared cultures, economies, institutional settings and financial infrastructure. Additional future research may find that outside independent directors are considered an important resource to the firm in that they may provide advice, legitimacy and counsel, which enhance performance. Therefore, future research could use resource dependence theory by investigating certain board characteristics, such as gender, age, experience and qualifications, which may improve firm performance and mitigate agency cost. This study addressees the importance CG mechanisms within the industrial and services sector in Jordan, and provides a basis for other related research.

Chapter Four: Paper Two

Board Gender Diversity, Firm Performance and Efficiency in Jordanian Boardrooms: A Revisit of Resource Dependence Theory

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Board Gender Diversity, Firm Performance and Efficiency in Jordanian Boardrooms: A Revisit of Resource Dependence Theory

Abstract

Purpose – This study aims to examine the impact of board gender diversity in the form of the representation of 'women on the board of directors' on firm performance and efficiency, also termed firm's agency cost, in the context of a developing country, by considering Jordan as a case study and taking the data from that nation's listed firms.

Design/methodology/approach – By utilising data from 880 firm-year observations of non-financial firms listed on the Amman Stock Exchange for the period of 2006-2016, and by employing two measures each for firm performance (return on assets and Tobin's Q), and firm's agency cost or firm efficiency (asset utilization and expense ratio), this study uses a regression model to test its hypotheses.

Findings – The results of the estimation of random effect regression indicate a non-significant and positive relationship between the number of women on the board of directors and the return on assets, Tobin's Q and asset utilization. The random effect regression also produces weak evidence (significant in one of four measures) that there is a significant and negative link between board gender diversity and firm efficiency in terms of the expense ratio. These findings have passed many robustness checks. Therefore, the results do not support the predictions of resource dependence theory.

Research limitations/implications – The study's data relating to the corporate governance variables, were manually collected from company annual reports to conduct a quantitative analysis, however annual reports may not be accurate.

Practical implications – The empirical evidence of this study does not support the gender quota law to increase the percentage of women on companies' boards. Thus, the decision to appoint females to a company's board should not be based on the view that gender diversity on corporate boards will promote the performance and efficiency of firms.

Originality/value – This study contributes to the literature on the practices of corporate governance mechanisms, such as board gender diversity in the context of developing countries, by considering Jordan as a case study.

Keywords Resource dependence theory, corporate governance, agency cost, firm efficiency, firm performance, board gender diversity, Jordan.

Paper type- Research paper

Board Gender Diversity, Firm Performance and Efficiency in Jordanian Boardrooms: A Revisit of Resource Dependence Theory

1 Introduction

In modern companies, the separation of ownership and control leads to problems associated with this situation: so-called agency problems (Shleifer & Vishny 1997). Drawing on agency theory, company managers have the tendency to use the firm's resources for their own benefit, not that of company owners (Jensen 1986). That is, whilste shareholders are interested in increasing their returns, managers are concerned with growing their wealth at owners' expense (Agrawal & Knoeber 1996; Nazir & Afza 2018). Agency costs consist of the sacrifice of wealth by the shareholders and the potential costs associated with monitoring the managers (Jensen & Meckling 1976). As well, information asymmetry is another cause of these agency conflicts, where managers have more information than owners (Jurkus et al. 2011). Therefore, the appearance of agency problems in corporations, hinders firm performance by increasing the firm's agency cost.

Interestingly, there are mechanisms in place, such as the board of directors, which can mitigate the non-convergence of interests (Brickley et al. 1994). Worldwide, the vast majority of firms are governed and managed by a board of directors (Hermalin & Weisbach 2003). The composition of the company board is a vital tool within the corporate governance (CG) structure. The company's board is the most important internal control mechanism seeking to monitor corporate management activities to hinder managers from opportunistic behaviour (Fama & Jensen 1983).

The value added by the board of directors of a firm is twofold. Firstly, board members are expected to fulfil a variety of roles that include the monitoring of managers to reduce the company's agency cost (Jensen 1993). It is argued that the "board of directors is only one of many institutional arrangements that have been invented for controlling agency cost" (Baysinger & Butler 1985, p. 120). Secondly, it may provide new external resources to companies (Pfeffer 1972). It is confirmed that boards of directors function "as vehicles for co-opting important external organisations with which they are interdependent" (Pfeffer & Salancik 1978, p. 167). Therefore, the board of directors can serve as monitors of a corporation's management; they also serve as a vital device to provide external resources to the firm (Hillman et al. 2000).

However, the financial crisis of 2008 and company scandals such as the bankruptcies of WorldCom and Enron in the United States, and HIH, Ansett and OneTel in Australias have led to rising shareholders' concerns about the effectiveness of CG practices in organisations. As a consequence, there has been growing attention about promoting the effectiveness of the board of directors, especially ways of 'cleaning up' the firm boardroom (Liu et al. 2014; Wahid 2018).

Amongst these is the issue of board gender diversity. To maximise owner's wealth, reports on CG (e.g., Higgs Report, 2003, Cadbury Report 1992, Sarbanes-Oxly Act 2002, Smith Report 2003 and Ramsay Report 2001) support many boardroom reforms (Rashid 2018), such as the participation of women on the board of directors (Ahmadi et al. 2018). For instance, the Higgs Report in the United Kingdom suggested females be included on firms' boards (Adams & Ferreira 2009) specifically, in an effort to enhance the effectiveness of boards. Furthermore, these reforms have been promoted by many advocacy organisations, such as Catalyst (Marquardt & Wiedman 2016). Reforms to increase the number of women on the board of directors have extensively been adopted. Increasing efforts for gender diversity equality have led to a spread of laws and regulations that plan to increase women's representation on companies' boards across the world (Dale-Olsen et al. 2013; Bianco et al. 2015). It has been argued that these laws and regulations provide guidelines on board gender diversity, which make it obligatory upon firms to comply with laws and regulations (Saeed et al. 2016). For example, many countries have adopted specific legalisation to promote gender diversity in the corporate boardrooms (Francoeur et al. 2008; Armstrong et al. 2010). Botero et al. (2004) supported the presence of employment protection laws. In many countries around the world, the board of directors must now comprise 30-50% of females according to gender quotas (Hillman 2015).

In 2003, Norway introduced a gender quota law to increase the percentage of females on companies' boards from 9% to 40% by 2005 (Ahern & Dittmar 2012). Until recently, Spain and France have followed Norway to support a gender quota law for a rise to 40% by 2015 and 2017, respectively (Adams & Ferreira 2009). In a similar move in Italy, women must take on 33% of Italian companies' board positions by 2015 (Chapple & Humphrey 2014). The Netherlands has supported the idea of a gender quota law (Bøhren & Strøm 2010). Other countries, such as Australia, Canada and the United Kingdom, have issued soft laws based on 'the comply or explain principle', to encourage gender diversity in the corporate boardrooms (Kumar & Zattoni 2016). The reason behind the increasing participation of women on corporate boards is premised upon the idea that this has a positive influence on CG, and ultimately, on firm value (Green & Homroy 2018).

However, developing countries such as Jordan remain unregulated in terms of company board gender diversity. This is due to the fact that CG regulations, laws and rules are less developed and enforced (World Bank 2005; European Bank 2017). Regulations and rules that require increased board independence may lead to creating new opportunities for females to serve on firms' boards. More recently, there has been a heated debate on the concept of board diversity in the CG literature, including how board gender affects firm performance and efficiency (e.g., Smith et al. 2006; Brammer et al. 2007; Rose 2007; Triana et al. 2013; Nguyen et al. 2015; Sila et al. 2016; Ahmadi et al. 2018; Green & Homroy 2018). The reasons behind the preference for board gender diversity can be categorised into two principal groups: firstly, social and individual justice and secondly, the business case. According to social justice principles, it is argued that as women constitute approximately half of the total population, they should hold half of the corporate board seats. Similarly, as claimed by proponents of individual justice, there should be support for the concept of the equal treatment of individuals (Kumar & Zattoni 2016). Drawing on business case justifications, gender diversity on firms' boards is conducive to an increase in a firm's number of options, and therefore, may make a positive mark on its creativity and the efficiency of its collective decision-making (Hillman 2015). This third justification is elaborated on at the end of Section 2.

This study tests whether board gender diversity lowers agency cost that in turn, ultimately improves firm performance in the context of a developing country by considering Jordan as a case study. The current study is noteworthy for the following four key reasons. Firstly, investigating firm efficiency or agency cost is interesting in that it may be argued that the company's performance is enormously correlated with its agency costs (Bruton et al. 2002), and the CG literature has provided evidence that board gender diversity can reduce a firm's agency cost (Jurkus et al. 2011).

Secondly, most of the earlier studies on gender diversity were using data from developed economies with firms featuring diffuse ownership, such as in Australia (Kang et al. 2007), Canada (Ben-Amar et al. 2013), Italy (Zona et al. 2013), and the United States (Carter et al. 2003; Hillman et al. 2002). Unfortunately, much less attention has been given to gender diversity issues in developing countries, such as

Jordan (Wellalage & Locke 2013; Adams et al. 2015; Nguyen et al. 2015; Saeed et al. 2016). Therefore, there is not enough information or knowledge about the determinants of gender diversity in countries with different institutional, regulatory and legal systems. This study provides new insight into practices of CG in the context of a far less examined kind of institutional setting. The legal institutions in Jordan regarding CG, investor protections and accounting standards, are much less developed than those in developed countries.

Thirdly, with a unique ownership structure that differs from the developed markets, Jordan offers an exciting setting for the study of board gender diversity. A high level of ownership concentration is a distinct feature of the Jordanian firms sector. It has been asserted that 90 % of Jordanian firms are owned and controlled by families (Al-Azzam et al. 2015). By contrast, listed firms in developed countries are characterised by a high level of dispersed ownership.

Fourthly, unlike in developed countries, Jordanian firms are distinguished by an insider structure of CG. In Jordan, significant shareholders control most of the company's decision-making as well as the appointment of board members. Therefore, gender diversity on boards may well be useful for countries such as Jordan, in which practices of CG are weak. It is argued that weakly governed firms may benefit from including more females on their boards, thus enhancing firm value. Gul et al. (2011, p. 314) pointed out that the gender diversity of a board "could act as a substitute mechanism for corporate governance that would be otherwise weak".

Finally, with a unique culture that differs from Anglo-American ideologies, Jordan has a distinct cultural setting. It is argued that cultural differences can affect management actions, leadership and individuals' behaviour. Furthermore, company management philosophies ordinarily develop in synchrony with the national culture (Wellalage & Locke 2013). It is timely to shed light on the notion of board gender diversity in the agency relationship, in the particular context of Jordan. Therefore, this study aims at examining the influence of board gender diversity on firm performance and efficiency, also known as agency cost, in 80 non-financial listed firms in Jordan, over an eleven-year period from 2006 to 2016.

The study proceeds as follows. In Section 2, corporate governance, firm performance and board gender diversity are discussed. In Section 3, board gender diversity in Jordan is explained. Selected previous studies on board gender diversity, firm performance and efficiency, are reviewed in Section 4, followed by a justification for the theoretical foundation of this study, in Section 5. In Section 6 the hypotheses for this research are developed. In Section 7, the research method is described. Section 8 deals with the presentation and discussion of the results. The final section offers a conclusion, the study's limitations and its implications.

2 Good corporate governance, firm performance and board gender diversity

CG is a general concept that includes many aspects related to specific issues, including both theories and the actual board practices of executive and non-executive directors (Maassen 2002). Daily et al. (2003) describe governance as the mechanism board members use, firstly, to determine which organisational resources will be deployed, and secondly, to establish the resolution of conflicts of interest among the related parties in a company. The idea that the board of directors must include outside directors, with independence from company management, is not a new phenomenon. Chandler (1975, p. 75) stated: "If it is true that the board must steadfastly represent the stockholders in making a continuous evaluation of the chief executive officer's (CEO) performance, then a board of predominantly (even overwhelmingly) outsiders logically follows". Therefore, many of the earlier studies addressed a single question regarding the board of directors: does having more outside directors improve firm performance?

The structure of the board is closely related to the quality of CG mechanisms. From a review of the literature, it appears that weak governance practices and an inadequate protection of shareholder rights may lead to more agency problems. Hence, the presence of an active board of directors can avoid the opportunistic behaviour of directors, and determine the alignment of their aims with those of the firms' shareholders (Rubino et al. 2017). Good CG attempts to effect the improvement of practices and systems, which make certain the accountability of managers (agents) and promote better firm performance. Recent proposals for CG reforms have emphasised the effectiveness of board gender diversity in the corporate boardrooms, for ultimately better CG (Brammer et al. 2007; Adams & Ferreira 2004).

Walt and Ingley (2003) define 'board diversity', from the point of view of CG, as the composition of the board and the commixture of characteristics, attributes, expertise, qualities and expertise, contributed by board members about corporate board processes and other decision-making. Pelled (1996) pointed out that there are two categories of diversity. The first set is demographic diversity, such as gender, academic level and race. The second set is non-visible attributes (e.g., skills, knowledge and individual capacities).

This study focuses on board gender diversity for many reasons. Firstly, there is growing attention paid to board gender diversity through legislation, such as for gender quotas, in many countries around the world (e.g., Spain, Norway, France, Canada and the Netherlands). Secondly, gender diversity is the most easily distinguished demographic characteristic in comparison to culture, ethnicity, religion and age, for instance. Finally, this study aims to support the idea of board gender diversity in Jordan, which is a setting where gender diversity is very low, external mechanisms of CG are ineffective, and ownership is concentrated. Furthermore, there are obstacles for women in the labour market, such as more female unemployment and lower wages.

Business case related arguments for gender diversity on boards, have been supported by research in a number of ways. Two main rationales are presented here. It has been confirmed that gender diversity plays a vital role in improving board monitoring, and women board members tend to take their tasks very seriously in such companies, which can lead to better CG, enhancing firm performance and reducing agency costs (Liu et al. 2014; Low et al. 2015). Singh (2007, p. 2131) has indicated that such corporations show that "they are responding to calls for increased diversity for better governance or better use of available talent". Empirical studies by Liu et al. (2014) and Adams and Ferreira (2009), revealed that women managers tend to be more efficient in controlling activities, which may lead to more audit and management accountability. Hence, the findings of previous studies have noted that the increased diversity of the gender on corporate boards, is linked to better performance. In addition, the presence of females may develop management team performance, due to more gender diversity potentially leading to the exchange of a broader range of ideas, and therefore achieving better decision-making. These decisions can eventually lead to higher performance (Burgess & Tharenou 2002). Thus, gender diversity is a pivotal dimension of CG practices.

3 Board gender diversity in Jordanian boardrooms

Gender diversity is a relatively recent phenomenon in the CG literature (Gopalan & Watson 2015). Although CG practices have gained increasing international importance, as has improving government laws, regulations and rules to exercise more pressure on publicly listed firms to increase the number of more diverse boards (Wahid

2018), Jordan has made no progress on the subject of gender diversity. Females represent approximately 49% of the total population in the Middle East and North Africa (MENA) (OECD 2017). However, the rate of women's participation in the labour force was only 13.96% in Jordan by the end of 2017 (Global Economy 2018). Therfore, the rate of the labor force participation of females in Jordan, is one of the lowest in world (Assaad et al. 2012). In contrast, information indicates that Jordanian women are outperforming in the field of education (World Bank 2016). Thus, there is a striking gap in Jordan, where women have a higher performance in all grades and subjects, combined with low rates of women's participation in the workforce (OECD 2017). Gender disparities may be due to a number of issues, such as a history of inequality, and poverty, and the dynamics of the Jordanian labour market. Consequently, women in the MENA region, including Jordan, remain an untapped resource for promoting an economy. Indeed, it is high time to explore the effect of board gender diversity on firm performance efficiency in developing countries, with a specific focus on Jordan.

Unlike most developed countries, the social structure in Arab countries like Jordan differs from other countries. It has been confirmed that families tend to be the dominant element in society rather than individuals (Singh 2009). These families support sons rather than daughters, regarding their career. Furthermore, it is argued that the cultural and social barriers to female labour persist, despite some increase in the participation of women at work (Miles 2002). Generally, female behaviour is restricted and paid labour has not been considered part of women's role in Arab societies. In fact, unemployment is a significant problem faced by Jordanian women (Ibrahim & Hanefah 2016). Therefore, the lack of female representation on corporate boards in Jordan, becomes a vital issue that needs to be addressed because of the benefits which have been established as deriving from board gender diversity.

To improve the practices of Jordanian CG, Jordan has issued four codes that addressed CG issues. These codes are the CG code for the banks, the CG code for listed firms, the CG instructions for insurance companies and the CG code for the privately held firms. More recently, Jordan also issued a new directive concerning CG for shareholding listed firms on the Amman Stock Exchange (ASE), which came into effect on 22 May 2017. In addition, other legislation, regulations and rules, influence the implementation of Jordanian CG, such as Company Law No. 22, 1997 (and its amendments), and those concerning the functions of the Central Bank, Insurance

Commission, Securities Commission and Companies' Control Department. This legislation and all these codes, regulations and rules, address issues related to the board of directors, for instance, the board of directors' responsibilities, tasks and appointment (Jordan Institute of Directors 2014). However, the latest issue of 2017 of the Jordanian Corporate Governance Code (JCGC) for shareholding firms listed on the ASE, did not yet include an article about the subject of board gender diversity.

Despite CG reforms in Jordan, the calls for more independent directors do not seem to contain a call for more women in Jordanian companies, whether financial or non-financial. The structure of Jordanian CG has been designed to work against the appointment of women on corporate boards. According to the World Bank (2005, P.13) and the European Bank (2017, p. 8), the practice that "directors must be shareholders" as a requirement, is not consistent with the best practices of the concept of independent directors. Yet this is the case generally in Jordan. Hence, only wealthy women have the opportunity to hold positions on corporate boards. Furthermore, according to a report by the Jordan Institute of Directors in partnership with the IFC, the requirements for qualifications and a diversity of composition under the CG code for listed firms, specify that board members should be qualified with adequate experience and knowledge (Jordan Institute of Directors 2014). Therefore, an element of diversity is restricted through an optimal mix of ages, skills and experience. Moreover, the lack of outside directors on boards, means that professional women do not have more opportunities for firms' board membership.

It is confirmed that only two amongst the ten largest listed firms on the ASE, disclose having independent directors on their boards (European Bank 2017). On the other hand, there are six women out of 112 board members (European Bank 2017). Furthermore, in the ten largest Jordanian listed companies, the female representation rate on their boards is 6.46% (European Bank 2017). Additionally, 78% of Jordanian listed companies, have no women in their boardrooms. Therefore, gender diversity in Jordanian companies' boards is indeed very low.

Interestingly, the importance of board gender diversity on the global agenda is increasing, specifically, with a growing demand from shareholders, stakeholders and consumers. For instance, there are calls from Apple's shareholders to make changes to gender diversify its board, which Apple has vowed to consider (Satariano 2014). In addition, other companies, such as Facebook and Twitter have been criticised because they have no women on their boards (Satariano 2014). The International Finance

Corporation (IFC) has strongly supported the idea of gender diversity in Jordanian boardrooms. It is claimed that gender diversity can add value to Jordanian firms (World Bank 2016). As a response to these national and international opinions, this study attempts to examine the relationship between board gender diversity and firm performance, and its ability to mitigate agency cost in Jordan.

4 Literature review

As mentioned previously, there has been ongoing, extensive debate in the CG literature about the representation of women on corporations' board. It is argued that the diversity of skills and characteristics in both sexes, can bring benefits and unique perspectives to the company through expertise and unique resources. The existence of women on the board of directors, has been referred to as is a pivotal aspect of corporate boards' diversity (Carter et al. 2003; Wachudi & Mboya 2012; Boulouta 2013). A review of the CG literature reveals that gender diversity plays an important role in improving board monitoring and women tend to assume their roles in companies with probity, which can lead to better CG, enhancing firm performance and reducing agency costs (Liu et al. 2014; Low et al. 2015). On the other hand, more gender diversity increases the independence of companies' boards because females may ask questions that would not come from male directors (Carter et al. 2002; Bennouri et al. 2018). Therefore, the presence of women on corporate boards is assumed to provide a positive consequence on the effectiveness of boards.

Further, gender diversity has been found to improve performance by the support of decision-making capacity (Erhardt et al. 2003), the expression of new ideas (Triana et al. 2013), and through added creativity and innovation (Carter et al. 2010). In terms of female managers in general, studies by Liu et al. (2014) and Adams and Ferreira (2009) reveal that women managers tend to be more efficient in controlling activities, which may lead to more audit and management accountability. Nonetheless, based on the assumption that women are fundamentally different from men, there is an argument against gender diversity on corporation boards in that it may mitigate firm performance by increasing conflict through differing opinions, and that this may cause a higher cost for decision-making in boardrooms, with resulting negative influences for performance (Carter et al. 2010; Dezsö & Ross 2012; Julizaerma & Sori 2012; Triana et al. 2013; Conyon & He 2017).

Several earlier studies have been carried out to provide insight on board gender diversity and its relation to firm performance. Jurkus et al. (2008) used a sample of the top directors of Fortune 500 United State corporations, and examined the influence of board gender diversity on agency costs of the firm. The authors indicated that corporations with a higher proportion of women officers may lead to lower agency costs, as measured by Q*FCF and dividend payout ratio, but that the negative association is not robust when considering the endogeneity of diversity. By using a sample of 100 large firms listed on the Bourse Istanbul for 2006, Ararat et al. (2015) documented that demographic diversity, such as gender and age, have a positive influence on firm performance. Liu et al. (2014) explored the effect of women directors on firm performance in China, using a panel data set of China's firms listed over the period 1999-2011. Interestingly, that study documented that performance was affected by the extent of board gender diversity. To be specific, a board with three or more women directors had a greater influence on performance, than a board with two or fewer women directors. Supporting this argument Terjesen et al. (2016) indicated that more women directors on a board was correlated with a higher performance, as measured by return on asset (ROA) and Tobin's Q. That study used a sample of 3,876 firms in 47 countries in 2010. Similar results were found by Ahmadi et al. (2017), Conyon and He (2017), García-Meca et al. (2015) and Vafaei et al. (2015).

Low et al. (2015) highlighted the influence of board gender diversity on performance in South Korea, Hong Kong, Singapore and Malaysia, based on a sample of 5,503 observations of firms for the period 2012 to 2013, and using pooled ordinary least squares (OLS) and two-stage least squares. The results suggested that increasing numbers of women on the company board has a positive impact on performance, as measured by ROA. Wiley and Monllor-Tormos (2018) used a sample of Fortune 500 firms, for the period 2007–2013. They observed a positive effect of board gender diversity on firm performance, which increases when there is at least a 'critical mass' of 30% of women in boardrooms. Based on a sample of 125 non-financial companies listed on the Madrid Stock Exchange for the period 2005- 2009, Reguera-Alvarado et al. (2017) reached the conclusion that the increase in the number of females on the corporate boards, is positively related to higher firm performance results. In Jordan, Ibrahim and Hanefah (2016) reported a positive relationship between board gender diversity and the level of corporate social responsibility disclosure. Also in Jordan, Al-Rahahleh (2017) pointed out that board gender diversity has a positive impact on a company's dividend policy. Hence, the findings of previous studies have noted that increasing diversity of the gender on boards is linked to better firm performance (Chapple & Humphrey 2014). In spite of high efforts to improve the proportion of women's presence on companies' boards, males still dominate firms' boards (Adams & Ferreira 2009; Labelle et al. 2015; Pletzer et al. 2015; Terjesen et al. 2016).

However, in United State companies, Shrader et al. (1997) found a negative correlation between gender diversity and performance. With a sample of 200 United States firms for the financial year of 1992, they found that the increased percentage of female directors had a negative effect on firm performance, as measured by ROA, return on sales, return on equity and return on investment. By using a sample of 248 listed Norwegian companies for the period 2001–2009, Ahern and Dittmar (2012) found that the inclusion of female directors was negatively related to firm value, as measured by Tobin's Q. Adams and Ferreira (2009) found a negative board gender diversity impact on firm performance, in a sample of US companies from 1996 to 2003 by using ROA and Tobin's measures. Shehata et al. (2017) in an empirical United Kingdom study, found a significant negative relationship between gender diversity and company performance, represented by ROA and Tobin's Q. In addition, Wellalage and Locke (2013) conducted a study on non-financial listed firms on the Colombo Stock Exchange in Sri Lanka for 2006 to 2010, and found a significant negative association between the percentage of women on companies' boards and company value, along with an increase in firm's agency cost, as measured by Q* free cash flow (FCF).

On the other hand, some research could not find any association between board gender diversity and firm performance. Pletzer et al. (2015), used data in a meta-analysis of 20 studies on 3,097 firms published in peer review academic journals. Results suggested that a higher representation of women is neither related to an increase, nor to a decrease in firm performance. Similarly, Rose (2007) employed Tobin's Q to measure firm performance for a sample of all Danish companies listed on the Copenhagen Stock Exchange for the period 1998-2001, in a cross-sectional analysis. The author found no relationship between the representation of women on boards and firm performance. Supporting this view, Carter et al. (2010) used a sample of main United States companies, with findings indicating no significant relationship, as measured by ROA and Tobin's Q. Using panel data consisting of the top 200 listed Indian firms between 2010 and 2014, Kagzi and Guha (2018) examined the relationship between board demographic diversity (age, board gender tenure, and education) and firm performance. That study confirmed that gender diversity does not significantly influence firm performance. Similar findings appeared in Australia (Chapple and Humphrey, 2014).

In a nutshell, it seems that there is inconclusive evidence about the effects of board gender diversity on firm performance and efficiency (Bennouri et al. 2018; Skała & Weill 2018). The conflicting findings may be due to the various estimation methods applied by the numerous studies. For instance, in some research, no controls were made for other variables (e.g., leverage, board size and firm size) which affect performance (Adams et al. 2015). Additionally, some of the conflicting results may be due to the failure to address issues of unobserved firm heterogeneity and endogeneity (Vafaei et al. 2015). Therefore, the mixed results of earlier studies provide an opportunity for conducting this research.

From this review, it seems that previous research on board gender diversity and its influence on firm performance and agency cost, has some limitations. Firstly, it was found that most previous research employed accounting measures or market measures. It is confirmed that these are noisy measures of company performance, and accounting profit could be simply manipulated (Pham et al. 2011). Secondly, many of the prior studies that addressed the issues of gender diversity were conducted in developed countries, such as the United States and the United Kingdom, and so this issue has not been sufficiently covered in developing countries, with only a few studies to date. Finally, some prior research was carried out within a single year, such as that of Ararat et al. (2015). It has been confirmed that single year data may not be acceptable for obtaining empirical evidence (e.g. see Fosberg 1989). Overall, these limitations give an opportunity for conducting this research, by employing different measures to fill the gap in investigating the influence of gender diversity on firm performance and agency cost on non-financial companies listed on the ASE.

This research differs from the previous studies in some ways. Firstly, this study constructs two proxies for firm efficiency or firm's agency cost (i.e., asset utilization ratio (AUR) and expense ratio (ER)), as additional measures to ROA and Tobin's Q, to capture the effectiveness of board gender diversity in mitigating a firm's agency cost. Secondly, this research provides the empirical evidence of board gender diversity in developing countries with weak CG practices. Thirdly, in some earlier studies, no controls were made for variables such as leverage, firm size, FCF and research and development expenditure (R&D), which are known to influence firm performance and firm's agency cost. Finally, to capture other unobserved variables which affect firm performance and efficiency, this study employs the panel data for eleven years. It is argued that panel data provides a more reliable insight than that resulting from cross-sectional research or time series research (Campbell & Minguez-vera 2008). To capture the effectiveness of board gender diversity in Jordan, the current research addresses these limitations identified in earlier studies into the influence of board gender diversity on firm performance and efficiency/or firm's agency cost.

5 Theoretical background

In order to obtain a reasonable answer about whether board gender diversity adds value to the corporation by improving firm performance and ameliorating agency cost, researchers have extensively relied on certain theories, the most common being resource dependence theory and agency theory, with mixed results. As a consequence, this has attracted the attention of researchers and professionals from different disciplines (finance, management, economies and even law) (Hillman & Dalziel 2003). A brief outline of these theoretical foundations follows.

The board of directors has several main functions. The monitoring role, also known as a 'control role', relates to the capacity of a board to monitor or control managers on behalf of owners (Hillman & Dalziel 2003). The theoretical basis of the monitoring function of a board of directors, stems from agency theory, which describes the possible agency problems that may arise from the separation of ownership and control in corporations (Fama & Jensen 1983). Drawing on agency theory, the board's main function is to monitor the activities of company managers by ensuring that they act in the interests of shareholders (Bennouri et al. 2018). Hence, proponents of agency theory argue that managers and shareholders are more likely to have conflicting aims, and then describe the mechanisms of CG that limit the managers' behaviour of self-service (Eisenhardt 1989). Therefore, these proponents argue that the board is one of several mechanisms for the internal control of corporations (Walsh & Seward 1990). Thus, the main function of the board of directors is to diminish the agency costs resulting from the delegation of strategic decision-making to executives and managers by exercising 'decision control', which includes monitoring managerial decision-making and performance (Westphal 1999). Therefore, outside directors, who are not employees of the firms or unaffiliated with the firms (independent directors) can provide monitoring roles in attempting to resolve the agency conflicts between owners and managers (Che & Langli 2015). Hence, boards with a high percentage of outside directors, will protect the owners' rights and will contribute to the reduction of a firm's agency costs (Zahra & Pearce 1989; Daily et al. 2003).

Agency theorists argue that the diversity of the board may act as a better internal control. It is confirmed that a broader range of ideas and opinions improves the board independence, therefore gender diversity can serve as a mechanism to alleviate firm's agency conflict (Lückerath-Rovers 2013; Reguera-Alvarado et al. 2017). Carter et al. (2003), Adams and Ferreira (2009) and Liu et al. (2014), support the idea that more board diversity leads to better exercise monitoring function of management. Hence, the diversity on a corporate board helps lower agency cost of firms. Thus, this approach improves the value of the firm.

Agency conflicts in most developed countries are principal-agent conflicts. However, Ahmad et al. (2017) have asserted that companies with high ownership concentration are experiencing the problem of principal-principal agency conflict. This conflict arises because majority shareholders can disregard the interests of minority shareholders (Dharwadkar et al. 2000). This is the situation in Jordan and some other developing countries. Firm ownership concentration causes dynamics quite distinct from those in companies with diffused ownership, which is the norm in developed countries, i.e., the countries in which most studies of the phenomenon of interest have been conducted.

Importantly, as noted by Zahra and Pearce 1989, there are two roles for the board of directors beyond the monitoring and controlling of managers: strategy and service roles. According to Zahra and Pearce (1989, p. 292), "the service role involves enhancing company reputation, establishing contacts with the external environment". Likewise, according to Johnson et al. (1996, p. 411), the "board as a means for facilitating the acquisition of resources (is) critical to the firm's success". Johnson et al. (1996) suggest that there are three primary functions of the board of directors (i.e., control, service and resource dependence functions).

Thus for these researchers, the latter two functions approximate to the service function as delineated by Zahra and Pearce (1989). This perspective has been adopted by many scholars, such as (Pfeffer 1972; Pfeffer 1973; Pfeffer & Salancik 1978; Boyd 1990; Daily & Dalton 1994a, 1994b; Hillman et al. 2000). Pfeffer (1972) and Pfeffer (1973) define the board of directors as the most important of mechanisms that can be employed in dealing with the corporations in its environment. The function of providing resources relates directly to the capacity of a board of directors to bring new external resources to companies. Wernerfelt (1984, p. 172) describes the provision of resources as “anything that could be thought of as a strength or weakness of a given firm”.

The theoretical basis of the monitoring function of a board of directors, stems from resource dependence theory which indicates that the corporate board can provide various types benefits to the firm (i.e., the human capital of board members, legitimacy, advice and counsel, and access to external resources) (Liu et al. 2014).

As argued by Pfeffer and Salancik (1978, p. 163), “when an organisation appoints an individual to a board, it expects the individual will come to support the organisation, will concern himself with its problems, will variably present it to others, and will try to aid it”. From a resource dependence theory perspective, those outside directors are a crucial link for a corporate board with its external environment (Daily & Dalton 1994b). Johnson et al. (1996) asserted that outside directors could bring to the boardrooms a diversity of expertise and perspectives that the company can draw upon in implementing the company’s strategy. Thus, the provision of resources may alleviate uncertainty problems for the companies (Pfeffer 1972), and protect the firms from a financial crisis (Zahra & Pearce 1989). Therefore, the provision of the resources function is linked to firm performance (Hillman & Dalziel 2003), and ultimately, the firm’s success (Johnson et al. 1996).

Pfeffer and Salancik (1978) summarised the benefits of the link between a firm and its environment. Board members may provide useful information, a channel for communication and obtain commitments of support from important related external parties that aid in the company’s survival and its performance and legitimising organisation. Therefore, by connecting it to the external environment, this reduces uncertainty for the company (Siciliano 1996). Thus, this link is necessary for good corporate performance.

Hillman et al. (2007) pointed out that amongst the various characteristics of board diversity, such as education, tenure and age, gender diversity is the most valuable. It has been confirmed that board gender diversity has the capacity to provide an enhanced resource function. Resource dependence theory suggests that the role of resources provided is directly linked to firm performance and efficiency. It may be argued that such resources assist in alleviating dependency between company and external contingencies (Hillman & Dalziel 2003). Therefore, resource dependency theory suggests that increased diversity benefits firm performance and efficiency.

The traditional idea of a board of directors is that it is homogeneous with similar professional experience, education, culture and backgrounds, and hence the same opinions and views on business which may support decision-making (Farag et al. 2014; Reguera-Alvarado et al. 2017). However, nowadays, firms are facing political and technological challenges and tough economic conditions that require board members in a multicultural environment to include a pool of skilled and talented managers (Chambers et al. 1998). Furthermore, agency theory focuses on the board's function as an independent internal control device. Hillman et al. (2000) noted that many of the earlier studies on company boards had investigated board composition, employing agency theory for classifying directors, such as delineating how any independent directors had board positions.

In contrast, the literature on boards from a resources perspective, focuses on directors' role in proving ongoing advice and counsel to top management, and resource and supplies legitimacy (Carpenter & Westphal 2001). Agency perspectives are not informative with regard to the director's resource, strategy and service functions (Daily et al. 2003). Moreover, Walsh and Kosnik (1993, p. 696) indicated that researchers "need to be alert to the possibility that the hypothesised effects may be much more narrowly circumscribed than the theory's proponents might argue". In support, Davis et al. (1997, p. 20) noted that "exclusive reliance upon agency theory is undesirable, because the complexities of organisational life are ignored".

This study is based on the assumption that different types of directors will provide different beneficial resources to the firm. It has been confirmed that, e.g., to access proper external financing, firms should have a higher percentage of outside directors on their boardrooms (Pfeffer 1972). As a result, a more diverse board will provide more valuable resources, which should produce better firm performance and efficiency (Hillman et al. 2000). This study investigates whether the gender diversity of a board improves firm performance and efficiency - it relies on resource dependence theory, rather than agency theory.

6 Research hypotheses

Overall, resource dependence theory supports board diversity on the basis that a diverse board acts to alleviate agency costs, facilitates access to untapped resources and networks, and improves performance (Kakabadse et al. 2015).

The links among good CG, gender diversity, firm performance and efficiency, have a long history in the CG literature, with most previously concentrated on profitability, and so far, mixed results on the relationship between female participation on boards and firm efficiency (Gregory-Smith et al. 2014). From the resource dependence view, Farag and Mallin (2016) found a bi-directional relationship between the proportion of female directors sitting on the board of directors, and firm performance. Reguera-Alvarado et al. (2017) supported the idea that gender diversity on boards should be incremented, because of the proportion of women in the boardrooms is positively linked to higher economic outcomes. In addition, Lückerath-Rovers (2013) showed that companies with a high percentage of female directors perform better than companies without a female on their boards. Therefore, the relevant hypothesis has been developed:

H 1a: There is a positive relationship between board gender diversity and firm performance.

In an empirical study, Abad et al. (2017) provided a negative association between board gender diversity and the level of information asymmetry. It has been argued that the differences in gender will very probably provide unique information that is available to managers for better decision-making (Carter et al. 2010). Furthermore, gender diversity on boards helps in mitigating financial reporting mistakes, and eventually, less fraud (Wahid 2018). Overall, resource dependence theory support that increasing gender diversity enhances firm performance and efficiency. As argued by Jurkus et al. (2011), that board diversity mitigates agency costs of companies, which in turn, enhance firm efficiency, especially for those companies with a weak CG structure. Ahmadi et al. (2018) claimed that gender diversity plays a pivotal role in alleviating the firm’s agency cost, by aligning the interests between managers and shareholders. Accordingly, the hypothesis has been formulated:

H 1b: Board gender diversity will reduce agency costs.

7 Research method

7.1 Sample selection

This research considers the panel data gathered from various companies over ten years from a sample of 80 non-financial firms listed on the ASE over the period from 2006 to 2016. There were 224 listed firms on the ASE as of 31st December 2016. From these, 224 were not listed for the whole study period, and so were excluded. In addition, the companies which had insufficient data in terms of the study's purposes, have also been excluded. Furthermore, consistent with other studies, such as Rose (2005) and Peasnell et al. (2005), this study excluded firms in the financial sector as they have unique CG characteristics and a different regulatory structure. Therefore, the total number of company-year observations reached was 880. The data associated with the CG variables was manually gathered from company annual reports. The Bloomberg database was the basis for obtaining the firm's accounting data. The sample is composed of a variety of industries as per the Global Industry Classification Standard (GICS). Table 1 displays industry classification of the sampled Jordanian companies, according to GICS.

Table 1: Industry classification of the sample

Industries	Number of firms in the sample	Observed firm years
Consumer Discretionary	19	209
Consumer Staples	9	99
Energy	1	11
Health Care	3	33
Industrials	19	209
Materials	26	286
Telecommunication Services	1	11
Utilities	2	22
Total	**80**	**880**

7.2 Definition of variables

7.2.1 Dependent variables

A heated debate exists about the appropriate financial measures of performance (Johnson et al. 1996). As a result, multiple performance measures have appeared (Daily & Dalton 1993). As noted by Ghalayini and Noble (1996), there are two types of firm performance measurement: accounting-based measures and market-based measures.

It has been confirmed that accounting information offers a central source of independently verified information about the performance of management in mitigating principle-agent conflicts (Sloan 2001). Moreover, such information and data also display relatively reliable financial information to stakeholders (Dai et al. 2013). Therefore, this aids owners to understand the firm's activities and thus reduces the information asymmetry between shareholders and managers (Dai et al. 2013), and finally, decreases agency conflicts. Accounting-based measures, such as ROA, are employed as a proxy for firm performance in much related research (e.g., Erhardt et al. 2003; Liu et al. 2014; Green & Homroy 2018). Likewise, some previous studies used only market measures, such as Tobin's Q (e.g., Nguyen et al. 2015). In contrast, both accounting and market measures have been adopted in many studies (e.g., Carter et al. 2010; García-Meca et al. 2015; Conyon & He 2017).

Therefore, this study uses both accounting-based and market-based measures, i.e., ROA and Tobin's Q. According to Mangena et al. (2012), Julizaerma and Sori (2012) and Rashid (2018), ROA is defined as the ratio of profit (before interest and tax) scaled by total assets. For Tobin's Q, consistent with Agrawal and Knoeber (1996), Conyon and He (2017) and Rashid (2018), this is defined as the ratio of the market value of the corporate to the replacement cost of its average total assets.

However, problems also exist with employing both accounting measures and market measures (Dalton & Dalton 2011; Pham et al. 2011). Firstly, accounting profits can be readily manipulated (Wiwattanakantang 2001; Pham et al. 2011; Nazir & Afza 2018). It is argued that these are prepared within the managers' guidelines, and managers are likely to employ particular accounting methods to enhance performance (Barth et al. 2005). Furthermore, it may be contended that the accounting profit may be high with the existence of the firm's agency cost (Nicholson & Kiel 2007). Furthermore, as noted by Wiwattanakantang, "not all agency costs are reflected in the accounting measures" (2001, p. 334).

Secondly, to use market measures to measure company performance, these have to reflect the actual value of the company (Lindenberg & Ross 1981). Hence, such measures may not be effective in developing markets, as on the one hand, the capital market is not well developed, and on the other, it is very hard to obtain related financial information in these countries (Lindenberg & Ross 1981; Joh 2003). As well, Bacidore et al. (1997, p. 11) have argued market measures "may not be an efficient contracting parameter, because they are driven by many factors beyond the control of the firm's executives". Claessens and Djankov (1999, p. 502) indicated that using market measures may "lead to a downward bias in the relationship between concentrated ownership and firms' valuation", in economies with a weak protection of minority shareholders, as is the case in Jordan.

To address these concerns, this research constructs AUR and ER as reliable proxies for firm's agency cost, in addition to the firm performance-based measures of ROA and Tobin's Q. Ang et al. (2000) have had a prominent role in developing these firm efficiency measures. Subsequently, many studies (e.g., Singh & Davidson 2003; Florackis 2008; Wellalage & Locke 2012; Rashid 2015) addressing the issues of board practices, have employed them.

According to Ang et al. (2000, p. 82), AUR is the "proxy for the loss in revenues attributable to inefficient asset utilisation", and is defined as the ratio of annual sales to total assets. Put another way, it measures management's capacity to use assets efficaciously (Singh & Davidson 2003). Studies that have addressed firm efficiency have used AUR as a reliable proxy for it (Ang et al. 2000; Singh & Davidson 2003; McKnight & Weir 2009). A low AUR has been interpreted to mean "that management is using assets in non-cash flow generating and probably value destroying ventures" (Singh & Davidson 2003, p. 799), and vice versa.

ER is well known as a direct, reliable proxy for firm efficiency or agency cost. It is calculated as the ratio of operating expenses to total annual sales, and refers to how effectively a firm's management controls operating costs. This has been very frankly described by Ang et al. (2000, p. 82): "this measure captures excessive expenses including perk consumption". A low ER indicates that the company management is controlling the operating expenses. Therefore, a low ER should reflect lower firm agency costs (Singh & Davidson 2003).

As evidence of the mitigation of agency costs, it is likely that there will be a negative association between board gender diversity and a firm's agency cost, as positively indicated by ER. Likewise, a positive relationship between board gender diversity and a firm's agency cost is probable, using a positive association with AUR.

7.2.2 Independent variable

In this study, the independent variable refers to the number of women as a percentage of the total number of board of directors (BGDIV), which is in line with prior studies such as Campbell and Minguez-Vera (2008), Carter et al. (2010), Wellalage and Locke (2013), Low et al. (2015), Liao et al. (2015), Conyon and He (2017) and Wahid (2018).

7.2.3 Control variables

As argued by Campbell and Minguez-Vera (2008), the ambiguous and mixed results on the relationship between board gender diversity and firm performance, could be attributed to other missing variables that influence such performance. For that reason, and consistent with previous studies that have employed a relatively integrated group of control variables (e.g., Anderson & Reeb 2003; Adams & Ferreira 2009), a range of CG variables and other firm related characteristics that are widely used, are employed as control variables that are deemed to have an influence on the dependent variables of this study. These are board independence, ownership structure, board size, firm age, firm size, leverage, liquidity, sales growth, R&D, FCF, years of operation and industry.

Board independence (BDIND) is proxied by the ratio of outside independent directors to the total number of directors. Resource dependence theory suggests that firms' boards are a device for managing external dependencies (Pfeffer & Salancik, 1978), and mitigating the transaction costs related to environmental interdependency (Hillman et al. 2000). Furthermore, it is argued that the outside directors bring valued resources (Daily & Dalton 1994b). Therefore, it is expected that board independence may have a positive impact on gender diversity. Hence, female participation on a company's board improves its independence, promotes its efficiency and reduces agency conflict. However, results associating board independence and firm performance are not conclusive. It is argued that independent directors could lack information about the company's strategies (Bennouri et al. 2018). Accordingly, this study uses BDIND as a control variable consistent with earlier research (e.g., Abad et al. 2017; Ahmed & Ali 2017; Saeed & Sameer 2017; Galbreath 2018; Wiley & Monllor-Tormos 2018).

The structure of ownership has witnessed evident theoretical development by the work of Demsetz (1983). Ownership structure is described as "an endogenous outcome of competitive selection in which various cost advantages and disadvantages are balanced to arrive at an equilibrium organisation of the firm" (Demsetz 1983, p. 384). Shareholders with significant ownership positions have both the power to bring about changes they feel will be helpful to the corporation, and the incentive to monitor the management team (Daily et al. 2003). Moreover, large shareholders could affect corporate strategies and plans through exercising their voting rights and control of power (Hoang et al. 2017). Therefore, they can alleviate the problems arising from the opportunistic behaviour of managers (Rashid 2016), and improve firm performance and efficiency in countries in which the protection of investors is weak (Ma et al. 2010). Hence, concentrated ownership can be one effective tool to resolve agency problems. However, the possible influence of ownership concentration on firm performance and efficiency, has been a pivotal question in research on CG practices, with decidedly contradictory and mixed empirical evidence on the nature of the association.

Drawing on resource dependence theory, improving financial performance and efficiency requires specific and valuable resources. Individual organisations usually do not have sufficient resources for enhancing firm performance and efficiency (Choi et al. 2012). Consequently, this researcher expects that more resource-rich shareholders can bring in necessary external resources, resulting in better firm performance and efficiency. Consistent with this argument, three ownership control variables are used in this research (i.e., largest block holding ownership, institution ownership and director ownership). Following previous studies, such as Nguyen et al. (2015) and Gordini and Rancati (2017), in this study, block-holder ownership (LBOWN) is used as a control variable, and this is defined as the percentage of shares held by the three largest block holders.

Institutional ownership is a form of ownership concentration (Wei et al. 2005) that helps in alleviating agency costs and enhancing company performance. It is argued that institutional investors, unlike other types of owners (i.e., individual owners), have incentives and the ability to control and discipline company managers (Wahal & McConnell 2000). In developing countries, the prevailing belief is that the main banks are the institutional shareholders, a view which is supported in this study. Banks play a pivotal role in designing strategic directions and allocating corporate resources, which significantly affects the investment process. Consistent with earlier research (e.g., Chen et al. 2016; Conyon & He 2017; Wahid 2018), institutional ownership (INSOWN) in included as a control variable, calculated as the proportion of stocks owned by financial institutions.

Many of the earlier studies, such as McConnell and Servaes 1990 and Rashid 2016, have identified that insider ownership positively influences performance by diminishing the firm's agency cost in terms of ownership by directors. Such managers might be able to exert their professional knowledge in making strategic decisions concerning the company's development and survival. For example, insider shareholders, such as directors, are more likely to invest in long-term projects of research and development, for the improvement of a firm's reputation and its stable competitive position. In line with prior studies (Carter et al. 2010; Liao et al. 2015; Abad et al. 2017), director's ownership (DIROWN) is a control variable and measured as the ratio of shares held by directors.

Board size (BDSIZE) is measured as the total number of members on the board of directors. It has been argued that "the greater the need for effective external linkage, the larger the board should be" (Pfeffer & Salancik 1978, p. 172). For instance, Pfeffer (1972, 1973), supported the view that board size is linked with a corporation's ability to secure significant resources, such as external leverage from an environment and an amount of the budget. Hence, under resource dependence theory, the argument for a positive relationship between board size and firm value is that large company boards will offer an increased range of resources and expertise to companies (Dalton et al. 1999). This variable is also significant as a control variable, because large boards play an important role in increasing gender diversity on boards. As a result, following the prior research of Joecks et al. (2013); Liao et al. (2015); Marquardt and Wiedman (2016) and Ahmadi et al. (2018), this study uses board size as a control variable, measured directly as the number of members on a board.

Many other variables are more likely to have an effect in determining firm performance, including firm size (Van der Walt et al. 2006). Resource dependence theory suggests "that the need for environmental linkage will increase as a direct function of firm size" (Boyd 1990, p. 422). This may be because large companies have more impact on their environments than smaller companies (Pfeffer & Salancik 1978). Furthermore, it is noted that CEOs are less constrained by appropriate governance structures in small firms, hindering firm performance (Daily & Dalton 1992). As noted by Perryman et al. (2016), as company size increases, the risk linked with companies decreases. Therefore, firm size (SIZE) is considered a control variable in this study, and is defined as the natural logarithm of the total assets (Dwyer et al. 2003; Jurkus et al. 2011; Abad et al. 2017).

A firm's age may affect the performance of a company either negatively or positively; old firms have been found more likely to be more effective than younger ones (Ang et al. 2000). It is noted that an old firm may have a greater network of connections, which can assist the firm to access external resources (Bonn et al. 2004).

Ahmed and Ali (2017) indicated that young companies are more likely to be linked with higher information asymmetry between shareholders and managers, therefore jeopardising firms' performance and efficiency. However, it is claimed that an old firm may have a stricter organisational structure, which can adversely affect firm efficiency (Bonn et al. 2004). Accordingly, in line with the earlier research, such as Perryman et al. (2016), Ahmed and Ali (2017) and Wiley and Monllor-Tormos (2018), firm age (AGE) is included as a control variable, defined as the natural logarithm of the number of years a firm has been listed on the stock exchange. Leverage is argued to be a tool that potentially contributes to the firm's agency cost reduction (Ang et al. 2000). As noted by Ahmed and Ali (2017), more leveraged companies exercise more transparency to alleviate the higher monitoring cost. However, Sila et al. (2016) pointed out that higher leverage can be considered risky. The control variable of leverage (LEV) is determined as the ratio of total debt to total assets, consistent with previous studies (e.g., Ararat et al. 2015; Gordini & Rancati 2017).

Globally speaking, companies with high liquidity are less prone to default or bankruptcy. It has been proved that liquidity assists identify firm-specific characteristics "since the ability to manage working capital and acquire a greater quantity of cash balances relative to current liabilities, reflects superior skills" (Majumdar & Chhibber 1999, p. 296). However, it may increase the agency cost of FCF (Rashid 2015). In line with Miller and Triana (2009), liquidity (LIQ) is defined by using the current ratio, scaling current assets by current liabilities. Florackis (2008) supported the idea that the effectiveness of CG mechanisms in mitigating agency conflict, is dependent on a company's growth opportunities. It has been confirmed that firms with growing sales are likely to grow as compared to firms with no growth in sales (Durnev & Kim 2005). Thus, this has been treated as a control variable. Therefore, the sales growth rate may refer to future firm performance and efficiency. According to Bennouri et al. (2018), sales growth (GROWTH) is measured as the ratio of the annual change in sales.

It is argued that firms with high R&D expenses are more likely to be high growth firms and may have a large valuation (Durnev & Kim 2005). Furthermore, R&D in production processes and technologies, may help in enhancing a firm's performance and efficiency (Akbar et al. 2016). The control variable of R&D in this study, is measured as a percentage of total expenditure to total sales (Dezsö & Ross 2012; Bennouri et al. 2018).

Agency problems within a corporation are associated with FCF (Florackis 2008). FCF describes the cash that the corporation is able to create after laying out all positive net present value projects when discounted relative to the cost of capital (Wellalage & Lock 2013). Jurkus et al. (2011) claimed that the higher the FCF, have the higher the agency costs. Agency problems including FCFs are more likely to be prevalent in low-growth corporations (Jurkus et al. 2011). Due to FCFs, managers may invest in projects which are unnecessary or not economically feasible (Jensen 1986).

By contrast, high growth corporations are not likely to be subject to the problem of FCF, because they do not have sufficient cash after utilising internal funds for new projects, and they depend on outside financing (Jurkus et al. 2011). This justifies its inclusion as a control variable. Following prior studies (e.g., Doukas et al. 2000; McKnight & Weir 2009), FCF is calculated as the operating income before depreciation minus the sum of taxes plus interest expenses and dividends paid, scaled by the total assets. Earlier studies, such as Jurkus et al. (2011), Lam et al. (2013), Perryman et al. (2016), Farag and Mallin (2016) and Saeed and Sameer (2017), have controlled for industry effects and year effects.

Elsayed (2007, p. 1207) claimed that industry consequences could assist in knowing "unobserved heterogeneity at the industry level". Performance measures can vary amongst the industries and to capture such industry effects and time specific effects not captured by the independent (or explanatory) variables), year dummies and nine industry dummies were created for inclusion as dummy variables, using the value of (1) if the company is in the industry, or (0) otherwise. In addition, regression equations control for the time effect. This is done by adding 'time dummies' for the year in which the observations are made.

7.3 Regression model

The regression equation was used in destemming the statistical association between the board gender diversity of the non-financial listed firms used in the research. Since this research uses panel data, a series of control variables were entered into the regression equation. The model as formulated is:

$$Y_{i,t} = \alpha + \beta_1 BGDIV_{i,t} + \beta_2 BDIND_{i,t} + \beta_3 DIROWN_{i,t} + \beta_4 LBOWN_{i,t} + \beta_5 INSTOWN_{i,t} + \beta_6 BDSIZE_{i,t} + \beta_7 SIZE_{i,t} + \beta_8 AGE_{i,t} + \beta_9 GROWTH_{i,t} + \beta_{10} LIQ_{i,t} + \beta_{11} LEV_{i,t} + \beta_{12} FCF_{i,t} + \beta_{13} R\&D_{i,t} + \varepsilon_{i,t}$$

Where Yi,t comprises the overall measures of performance, including agency cost, namely, ROA, Tobin's Q, AUR and ER. BGDIV is the percentage of women out of the total number of directors on the board. BDIND is the proportion of independent directors to the total number on the of directors on the board. DIROWN is the percentage of shares owned by directors. LBOWN is the percentage of shares owned by the three largest block holders. INSTOWN is the percentage of shares owned by institutions. BDSIZE is the natural logarithm of the total number of board members. SIZE is the natural logarithm of the total assets. AGE is the natural logarithm of the total number of years a firm has been listed on the stock exchange. GROWTH is the changes in sales. LIQ is the liquidity. LEV is the ratio of total debt to total assets. FCF is measured as operating income before depreciation, minus the sum of taxes plus interest expenses and dividends paid, scaled by total assets. R&D is calculated as R&D's cost as a percentage of sales. α is the intercept, β is the regression coefficient and ε is the error term.

To obtain an accurate statistical analysis, there is a need to meet statistical analysis assumptions, such as normality, multicollinearity and heteroscedasticity. The assumption of normality requires that all observations should be distributed normally in the population of the study. It is argued that the normality violations are of little concern when the size of the study sample is high (>30) (Coaks & Steed 2001). In addition, the Residual Test/Histogram-Normality Test of the regression model, provided a bell shape, conforming to data normality.

Multicollinearity refers to the high correlations among the independent or explanatory variables. In other words, when the independent variables are significantly correlated with one other. When there is a high degree of correlation between two or more independent variables, these independent variables must be removed. Table 3 illustrates that there is no correlation amongst the independent variables due to the correlation coefficients being either less than 75% or negative values. Furthermore, based on Table 3, the variance inflation factors of all the variables of this research are less than four, whilst it is pointed out that the variance inflation factor of <10, is an indication of multicollinearity (Gujarati 2003).

According to the assumption of heteroscedasticity, the variance of the error is constant across observations (all levels of explanatory or independent variables), or residuals of the dependent variables of the research are almost equal/constant. That is, the plot of standardized residuals ZRESID against the standardized predicted value

ZPRED of all the research's models, resemble a curve shape, indicating the existence of heteroscedasticity. The chi-square statistics and a corresponding p-value of the Breusch–Pagan–Godfrey test, indicate that heteroscedasticity is existing in the regression model, which is adjusted using a correction technique for unknown heteroscedasticity as recommended by White (1980).

8 Empirical results

8.1 Descriptive statistics

Descriptive statistics of the investigated variables are presented in Table 2. The descriptive statistics comprise the mean, median, maximum, minimum and standard deviation. The table reports that the averages of company performances regarding ROA and Tobin's Q, are 5% and 110% respectively. It also reveals that the averages of the firm's agency costs in terms of AUR and ER, are 57% and 41% respectively. These outcomes for agency cost are consistent with an expected high AUR and a comparatively lower ER.

On average, 52 percent of board members are independent, and these range from 0% (no independence) to 100% of total directors. This number is consistent with the JCGC that mentioned that at least one third of board members should be independent. Moreover, this number is relatively close to thestandards of some Anglo-American countries. As noted by Yermack (1996), the average rate of outside members in the largest United States, public firms, is 54%. Al-Najjar and Clark (2017) pointed out that the average of outside independent directors is 41.2% in the Middle East and North African region, which includes Bahrain, Oman, Saudi Arabia, Kuwait, Jordan, Tunisia, the UAE, Qatar and Egypt. However, this is low compared to Australian companies where the average percentage of outside independent directors is 71.0% (Krishnamurti & Velayutham 2017). Based on Table 2, the mean percentage of women on Jordanian boards of directors is 3%. This is consistent with earlier studies in Jordan, such as those of Ibrahim and Hanefah (2016), Al-Rahahleh (2017) and the European Bank (2017), which recorded the percentage of women on company boards as 2.7 %, 4.3% and 6.46%, respectively. These are lower than the numbers documented for the United States market. For instance, Carter et al. (2003) and Farrell and Hersch (2005), documented values of 9.6% and 10.2%, respectively. Further, Liu et al. (2014) observed that the percentage of women on boards is 10.2% in China. Ahmed and Ali (2017) noted an increase in the rate of women board members from 4.51% in 2008 to

7.64% in 2013, for Australian firms. For Malaysian companies, Julizaerma and Sori (2012) reported the percentage of women directors to be 10.62%. Drawing on Table 2, the mean board size is 8.47 members, with a minimum of 3 members and a maximum of 14. This is lower than the mean recorded for large United States companies. Yermack (1996), Bhagat and Black (2002) and Pathan (2009), provided the corresponding means of 12.25, 12.3 and 12.92, respectively. In addition, Green and Homroy (2018) observed that the mean number of directors in the Euro Top 100 companies was much higher, at 16.963. However, the mean board size of Jordanian listed firms is closer to that of the Australian figure of 8.63, as documented by Krishnamurti and Velayutham (2017). Likewise, Germain et al. (2014) calculated the mean number of directors as between 7.5 and 7.8 in Malaysia. In Jordan, the average percentages of director ownership, largest block holders and institutional ownership, are 49, 53 and 9, respectively. Table 2 also displays an average of the mean debt ratio and R&D measures, of approximately 32% and 3%, respectively.

Table 2: Descriptive statistics of the sample

	N	Mean	Median	Maximum	Minimum	Std. Dev.
ROA	880	0.05	0.05	0.36	-0.28	0.10
Tobin's Q	880	1.10	0.86	4.45	0.21	0.82
AUR	880	0.57	0.52	4.43	0.01	0.44
ERN	880	0.41	0.25	4.65	0.03	0.61
BDGDIV	880	0.03	0.00	0.43	0.00	0.07
BDIND	880	0.52	0.55	1.00	0.00	0.23
DIROWN	880	0.49	0.47	0.99	0.01	0.27
LBOWN	880	0.53	0.51	0.99	0.09	0.22
INSTOWN	880	0.09	0.03	0.64	0.00	0.12
BDSIZE	880	8.47	9.00	14.00	3.00	2.36
SIZE	880	17.01	16.92	21.31	12.89	1.46
LNAGE	880	2.72	2.83	3.66	0.00	0.75
GROWTH	880	0.12	0.03	5.02	-0.82	0.69
LIQ	880	2.81	1.69	29.04	0.07	3.99
LEV	880	0.32	0.29	0.93	0.00	0.21
FCF	880	-0.01	0.00	0.13	-0.33	0.07
R&D	880	0.03	0.00	0.36	0.00	0.06

In this study, regression model analysis was employed to measure the effects of board gender diversity on firm performance and efficiency or firm's agency cost. Different models were constructed to examine board gender diversity as an independent variable with ROA, Tobin's Q, AUR and ER, as the dependent variables.

Table 3: Correlation coefficients

		1	2	3	4	5	6	7	8	9	10	11	12	13	VIF
1	BDGDIV	1.00													1.07
2	BDIND	-0.13***	1.00												1.49
3	DIROWN	0.13***	-0.53***	1.00											3.64
4	LBOWN	0.11***	-0.38***	0.66***	1.00										2.66
5	INSTOWN	-0.10***	0.27***	-0.45***	-0.03	1.00									1.58
6	BDSIZE	-0.05	0.07*	0.12***	-0.22***	-0.11***	1.00								1.64
7	SIZE	0.01	-0.17***	0.23***	0.07*	-0.06*	0.46***	1.00							1.97
8	LNAGE	-0.13***	0.01	-0.01	0.05	0.07*	0.11***	0.14***	1.00						1.14
9	GROWTH	0.04	-0.04	0.02	0.06	0.08*	-0.04	-0.06*	-0.19***	1.00					1.07
10	LIQ	0.01	0.04	0.10***	0.09*	-0.06	-0.12***	-0.34***	-0.19***	0.11***	1.00				1.39
11	LEV	-0.16***	0.07*	-0.15***	-0.01	0.16***	0.02	0.29***	0.23**	-0.01	-0.44***	1.00			1.67
12	FCF	0.09***	-0.10***	0.13***	0.10***	0.04	0.07*	0.32***	-0.08*	0.06*	0.04	-0.21***	1.00		1.32
13	R&D	-0.02	0.08*	0.03	0.01	-0.01	0.09**	0.07*	0.07*	-0.03	-0.14***	0.27***	-0.13***	1.00	1.12

The *t*-statistics asterisks indicate significance at $P < 0.001$ (***), $P < 0.01$ (**), and $P < 0.10$ (*) levels respectively.

The results of the regression analysis of the influence of board gender diversity on firm performance and efficiency of non-financial Jordanian firms, are shown in Tables 4, 5, 6 and 7, respectively. The regressions of coefficients of the relationship between board gender diversity and firm performance, are displayed in Panels A of Tables 4 and 5. Based on Panels A of Tables 4 and 5, it is noted that there is a significant positive relationship between BDGDIV and ROA as a measure of firm performance, and a significant positive relationship between BDGDIV and Tobin's Q, as a measure of firm performance.

Table 4: Board gender diversity and firm performance (regression results).

Table 4 shows the summary of results of the effects of board gender diversity on firm performance, as measured by ROA. The t-tests are displayed in parentheses.

Model	**Panel A (before controlling for industry and time)**	**Panel B (after controlling for industry and time)**	**Panel C (random effect model)**
Intercept	-0.1980 (-4.86)***	-0.2027 (-3.40)***	-0.1300 (-1.44)
BDGDIV	0.0772 (2.23)*	0.0852 (2.37)*	0.0370 (0.87)
BDIND	0.0309 (2.85)**	0.0405 (3.34)***	0.0281 (1.70)*
DIROWN	0.0468 (3.57)***	0.0337 (2.50)*	0.0200 (0.86)
LBOWN	-0.0243 (-1.84)*	-0.0281 (-2.11)*	-0.0307 (-1.31)
INSTOWN	-0.0037 (-0.20)	-0.0045 (-0.24)	-0.0195 (-0.75)
BDSIZE	-0.0015 (-1.32)	-0.0020 (-1.54)	-0.0032 (-1.60)
SIZE	0.0138 (5.35)***	0.0131 (4.41)***	0.0131 (3.06)**
LNAGE	0.0085 (2.70)**	0.0106 (3.32)***	0.0101 (1.67)*
GROWTH	0.0034 (0.90)	0.0028 (0.73)	0.0042 (1.43)
LIQ	0.0006 (0.90)	0.0007 (0.98)	0.0004 (0.42)
LEV	-0.0604 (-4.88)***	-0.0507 (-3.23)*	-0.1010 (-4.90)***
FCF	0.7793 (11.41)***	0.7928 (11.71)***	0.7524 (19.50)***

R&D	-0.1433 (-5.24)***	-0.1421 (-4.36)***	-0.0273 (-0.67)
Year	No	Yes	Yes
Industry	No	Yes	Yes
Adj. R-squared	0.4645	0.4787	0.4310
F-Statistics	43.13	20.44	22.38
Probability	0.0000	0.0000	0.0000
N	880	880	880

The *t*-statistics asterisks indicate significance at $P < 0.001$ (***), $P < 0.01$ (**), and $P < 0.10$ (*) levels respectively.

The results also indicate that BDIND, SIZE, LNAGE, GROWTH, LEV and FCF, had a significant positive relationship with ROA. In contrast, R&D had a significant negative relationship with firm performance of ROA. As well, DIROWN, INSTOWN, BDSIZE, LIQ, had a significant positive relationship with Tobin's Q, whilst SIZE, LNAGE and LEV, had a significant negative relationship with firm performance as measured by Tobin's Q.

Table 5: Board gender diversity and firm performance (regression results)

Table 5 shows the summary of results of the effects of board gender diversity on firm performance, as measured by Tobin's Q. The t-tests are displayed in parentheses.

Model	**Panel A (before controlling for industry and time)**	**Panel B (after controlling for industry and time)**	**Panel C (random effect model)**
Intercept	1.664 (3.23)**	1.645 (2.25)*	6.130 (6.5)***
BDGDIV	1.046 (2.72)**	0.9022 (2.64)**	0.1055 (0.27)
BDIND	-0.0220 (-0.182)	0.0823 (0.65)	-0.2993 (-2.00)*
DIROWN	0.7824 (4.76)***	0.7106 (4.11)***	0.0912 (0.42)
LBOWN	0.1175 (0.80)	0.2473 (1.54)	0.3146 (1.44)
INSTOWN	0.7055 (3.40)***	0.4700 (2.35)*	0.2181 (1.00)
BDSIZE	0.0367 (2.41)*	0.0182 (1.14)	0.0105 (0.55)
SIZE	-0.0621 (-1.82)*	-0.0661 (-1.65)*	-0.2764 (-6.33)***

LNAGE	-0.0673 (-1.73)*	0.0157 (0.40)	-0.0606 (-1.01)*
GROWTH	0.0446 (0.87)	0.0296 (0.58)	0.0212 (0.80)
LIQ	0.0207 (1.95)*	0.0246 (2.50)*	0.0186 (2.00) *
LEV	-0.7545 (-4.60)***	-0.6704 (-3.44)***	-0.1834 (-1.00)
FCF	-0.6256 (-1.00)	-0.6095 (-1.00)	0.4611 (1.33)
R&D	0.4658 (1.27)	0.8889 (2.43)*	1.007 (2.70) **
Year	No	Yes	Yes
Industry	No	Yes	Yes
Adj. R-squared	0.1755	0.2133	0.4310
F-Statistics	20.00	18.61	22.38
Probability	0.0000	0.0000	0.0000
N	880	880	880

The *t*-statistics asterisks indicate significance at $P < 0.001$ (***), $P < 0.01$ (**), and $P < 0.10$ (*) levels respectively.

The regressions of coefficients of the relationship between board gender diversity and firm efficiency/firm's agency cost, are displayed in Panel A of Tables 6 and 7. Panel A of Tables 6 and 7 reveal that there is a significant negative association between BDGDIV and firm's agency cost of AUR, and a non-significant negative relationship between BDGDIV and firm's ER as a measure of firm efficiency. As well, it is noted that BDIND, SIZE, LNAGE, GROWTH, LEV and FCF, had a significant positive association with firm of AUR, whilst R&D had a significant negative one with AUR. The findings also indicate that BDSIZE, SIZE, LNAGE, GROWTH and FCF, had a significant negative association with firm ER as a measure of firm efficiency. In contrast, DIROWN and R&D had a significant positive association with ER. Therefore, it can be said that firm size, firm age, firm's growth and FCF, act as mechanisms to alleviate the firm's agency cost. Therefore, these variables may be a substitute for other control mechanisms to promote firm value

Table 6: Board gender diversity and agency cost (regression results)

Table 6 shows the summary of results of the effects of board gender diversity on firm efficiency for AUR. The t-tests are displayed in parentheses.

Model	Panel A (before controlling for industry and time)	Panel B (after controlling for industry and time)	Panel C (random effect model)
Intercept	-0.8204 (-3.10)**	0.4793 (2.24)*	0.6117 (1.60)
BDGDIV	-0.3070 (-1.80)*	-0.4191 (-2.16)*	0.0731 (0.46)
BDIND	0.1405 (2.07)*	0.0507 (0.92)	0.1083 (1.74)*
DIROWN	-0.0574 (-0.67)	-0.0309 (-0.45)	0.1074 (1.22)
LBOWN	-0.1210 (-1.22)	-0.1654 (-2.15)*	-0.1023 (-1.16)
INSTOWN	0.1716 (1.36)	0.1852 (1.65)*	0.0812 (0.84)
BDSIZE	-0.0054 (-0.72)	-0.0015 (-0.21)	-0.0067 (-0.86)
SIZE	0.0564 (3.64)***	0.0030 (0.23)	-0.0152 (-0.86)
LNAGE	0.0914 (6.08)***	0.0644 (4.75)***	0.1217 (5.04)***
GROWTH	0.0366 (1.92)*	0.0388 (1.91)*	0.0596 (5.60) ***
LIQ	0.0144 (-0.87)	0.0028 (0.74)	-0.0020 (-0.51)
LEV	0.7933 (6.64)***	0.3043 (3.06)**	0.2987 (3.90) ***
FCF	1.103 (5.00)***	1.302 (6.14)***	0.7730 (5.55) ***
R&D	-1.812 (-9.00)***	-0.8717 (-5.03)***	-0.1480 (-1.01)
Year	No	Yes	Yes
Industry	No	Yes	Yes
Adj. R-squared	0.2848	0..5268	0.2002
F-Statistics	13.02	23.62	8.05
Probability	0.0000	0.0000	0.0000
N	880	880	880

The *t*-statistics asterisks indicate significance at $P < 0.001$ (***), $P < 0.01$ (**), and $P < 0.10$ (*) levels respectively.

Table 7: Board gender diversity and agency cost (regression results)

Table 7 shows the summary of results of the effects of board gender diversity on firm efficiency, when measured by ER. The t-tests are displayed in parentheses.

Model	Panel A (before controlling for industry and time)	Panel B (after controlling for industry and time)	Panel C (random effect model)
Intercept	1.833 (6.17)***	2.143 (5.25)***	3.553 (5.60) ***
BDGDIV	-0.0800 (-0.40)	-0.0878 (-0.42)	-0.7237 (-2.20) ***
BDIND	0.0125 (0.15)	-0.0226 (-0.27)	0.0715 (0.56)
DIROWN	0.3085 (2.83)**	0.1893 (1.86)*	0.3050 (1.73) *
LBOWN	-0.1510 (-1.44)	-0.0712 (-0.70)	-0.0586 (-0.31)
INSTOWN	0.3446 (1.55)	0.2417 (1.08)	0.4380 (2.14) *
BDSIZE	-0.0230 (-2.38)*	-0.0250 (-2.60)**	-0.0256 (-1.70) *
SIZE	-0.0636 (-3.80)***	-0.0645 (-3.36)***	-0.1396 (-4.53) ***
LNAGE	-0.1096 (-3.50)***	-0.1072 (-3.70)***	-0.1858 (-4.17)***
GROWTH	-0.1123 (-3.11)**	-0.1111 (-3.05)**	-0.1524 (-6.40) ***
LIQ	-0.0151 (-1.24)	-0.0072 (-0.54)	0.0014 (0.20)
LEV	-0.1693 (-1.54)	-0.2278 (-1.45)	-0.0373 (-0.23)
FCF	-2.471 (-4.16)***	-2.481 (-4.24)***	-2.088 (-6.84) ***
R&D	1.561 (3.17)**	1.401 (2.83)**	0.7954 (2.48) *
Year	No	Yes	Yes
Industry	No	Yes	Yes
Adj. R-squared	0.2068	0.2400	0.1814
F-Statistics	7.42	10.57	7.28
Probability	0.0000	0.0000	0.0000
N	880	880	880

The *t*-statistics asterisks indicate significance at $P < 0.001$ (***), $P < 0.01$ (**), and $P < 0.10$ (*) levels respectively.

It is argued that the industry dummies control for environmental effects, because gender diversity may vary by industry. In other words, the sources of gender diversity disparities may vary across firms and industries (Graham & Hotchkiss 2003).

Therefore, the associations among board gender diversity, firm performance and agency cost may be industry or time specific. For instance, gender diversity may occur to coincide with industries that have various financial or operating characteristics, and these variations may lead to the correlation amongst agency costs, firm performance and gender diversity (Jurkus et al. 2011).

Following this argument, the above model is modified. This was done by adding INDUSTRY dummies and TIME dummies. Industries are created based on the GICS codes- industry classification which relate to the sector to which the corporation belongs, and for the year for which the observation was made. Therefore, the following model has been developed:

$$Yi,t=\alpha+ \beta 1BGDIVi,t +\beta 2BDINDi,t+ \beta 3DIROWNi,t +\beta 4LBOWNi,t+\beta 5INSTOWNi,t+ \beta 6BDSIZEi,t +\beta 7SIZEi,t + \beta 8AGEi,t+ \beta 9GROWTHi,t+ \beta 10LIQi,t+\beta 11LEVi,t + \beta 12FCFi,t + \beta 13R\&Di,t + \varepsilon i,t + \Omega YEAR+ \gamma INDUSTRY+ \varepsilon i,t$$

Tables 4, 5, 6 and 7 illustrate the revised findings of the regression coefficients. Many coefficients of variables altered from negative to positive, and vice versa. Likewise, many coefficients of variables changed from a significant influence to a non-significant influence, and vice versa.

8.2 Endogeneity test

Generally speaking, there are very few empirical works on CG which have addressed the issue of endogeneity between board characteristics and firm performance (Hermalin & Weisbach 2003). Endogeneity is the relationship between any of the independent variables with the error term (Gippel et al. 2015; Rashid 2015). It is important that endogeneity is taken into account, as the pointing out of an unobserved influence is more likely to lead to a degree of correlation between the error term and independent variables. Carter et al. (2003) showed that problems arise with OLS if two or more variables are jointly endogenous. Therefore, employing OLS regression can provide biased coefficient estimates. In case where it exists, the OLS is inconsistent.

To deal with the endogeneity problem, instrumental variable techniques (IVs) are employed. As suggested by Carter et al. (2003), and consistent with the prior studies such as those of Jurkus et al. (2011), Saeed and Sameer (2017) and Galbreath (2018), the F-test for the predicted value of board independence was not significant.

Specifically, tests were performed using ROA as a proxy for firm performance, F= 0.32 (P = 0.5682), and Tobin's Q as a proxy for firm performance, F = 0.0001 (P = 0.9977), AUR as a proxy for firm's agency cost, F = 2.01 (P = 0.1582), and ER as a proxy for firm's agency cost, F = 0.1974 (P = 0.6569). These findings indicate that there are no signs of a potential endogeneity problem among board gender diversity, firm performance and firm's agency cost, suggesting both IVs and OLS are consistent. Following earlier studies, such as that of Al-Najjar (2014), this study adopts the lag board gender diversity as IVs.

8.3 Robustness check

As an unbalanced set of panel data was used in this research (because there were not 80 corporations listed in all years), this may lead to some unobserved heterogeneity. In other words, there may be variation within a company and across the companies or to capture the company specific characteristics. To this end, the above model was run again by using a fixed effect model or random effect model, also known as panel data modelling. A Hausman test was employed to test the significance of the difference between the fixed effect and the random effect estimates.

The coefficient of the Hausman test indicated that the random effect model is consistent. The regression coefficients of the association among board gender diversity, firm performance and efficiency under the random effect model, are shown in Panel C of Tables 4, 5, 6 and 7, respectively. The revised findings of the regression coefficients indicate that many coefficients of variables altered from positive to negative, and vice versa. Likewise, many coefficients of variables altered from a significant influence to a non-significant influence, and vice versa. Interestingly, it is noted that the signs of the coefficients of BDGDIV are changed from significantly positive to non-significantly positive, using ROA and Tobin's Q as measures of firm performance. The results also point out that the coefficients of BDGDIV are modified from significantly negative to non-significantly positive, using AUR as a measure of a firm's agency cost. In addition, it is noted that the coefficients of BDGDIV are transformed from non-significantly negative to significantly negative using ER as a measure of a firm's agency cost. Thus, it can be said that the variation across companies has an influence on board gender diversity, firm performance and firm's agency cost.

9 Conclusion, implications and limitations

9.1 Conclusions

The current research aims to empirically investigate one of the more critical suggestions in the CG theory. The CG theory suggests that the structure of the company board has a substantial impact on the actions of the board of directors and management that eventually influence firm performance and efficiency (Kim et al. 2009). The suggestion is that the diversity of the boardrooms is one dimension of the structure of the corporate board that matters (Carter et al. 2010).

The results of the estimation of random effect regression indicate a non-significant and positive relationship between the number of women on the board of directors and the ROA and Tobin's Q. When AUR is employed as the measure of firm's agency cost, the results also reveal a non-significant and positive relationship to female board representation. Therefore, the results of this research do not find any significant relationship between firm performance as measured by ROA and Tobin's Q, and firm efficiency as measured by AUR. These results are consistent with the findings of Rose (2007), Carter (2010), Chapple and Humphrey (2014), Pletzer et al. (2015) and Kagzi and Guha (2018). In contrast, the findings from the random effect regression give weak evidence (significant in one of four measures) that there is a significant and negative link between board gender diversity and firm efficiency, as measured by the ER.

The hypotheses tested were developed in this study from resource dependence theory, a theory which presents the most support for a positive relationship between gender diversity and firm performance. However, the results of random effect estimations broadly support the prevailing belief that "there are reasonable theoretical arguments and empirical evidence that suggest either no effect of board diversity on firm performance, or a detrimental effect" (Carter et al. 2010, p. 410).

The first plausible explanation for this can be issues, such as the culture, economic situation and legal environment, which can influence the board gender composition of corporations (Saeed et al. 2016). Julizaerma and Sori (2012) and Iannotta et al. (2016) claimed that cultural attitudes are one of the main reasons for the low participation of women on the board of directors. Unlike most developed countries, Jordan has a cultural setting that appears strongly resistant to gender equality. In the context of Jordan, the social structure differs from most developed countries. As argued by Singh (2009), Jordanian families tend to function as the dominant unit in society, rather than individuals. Furthermore, Jordanian families support males in the labour market rather than females (Singh 2009). Therefore, there are other factors preventing women from participating in the labour market, such as limited resources, poverty, women’s behaviours are restricted, and paid work is not considered part of women’s role in Jordanian society. As a consequence, there are very few females on Jordanian companies’ boards, and this small number does not have the adequate ability to influence firm performance and efficiency. Only 3% of women are present on the Jordanian firms' boards.

The second possible explanation can be that, in the context of companies with a high ownership concentration, such as the Jordanian case, the nature of agency problems may be different from agency problems in Anglo-American countries. In the Anglo-American context, there is a conflict of interest between shareholders and managers, whereas countries with a high concentration of ownership may face another type of agency conflict, that is, a conflict of interest between minority shareholders and majority shareholders (Sun et al. 2017).

A third explanation is that boards in firms with a high ownership concentration, are composed of members who represent the interests of owners and managers, thus “being unable to deal with the specific agency problem adequately” (Lefort & Urzúa 2008, p. 615).

Another explanation is that gender diversity in boardrooms may bring costs to the company due to communications problems and interpersonal conflicts. Although gender diversity on company boards may be useful, it has also been contended that the gender diversity of a board may have a reverse effect on the firm performance of well-governed companies, due to excessive monitoring (Adams and Ferreira 2009). Erhardt et al. (2003) indicated that diversity both improves performance by increasing decision-making ability but reduces firm group performance by increasing conflict. Treichler (1995) argued that diversity on corporate boards requires higher costs due to increased initiatives and coordination to provide for the needs of various kinds of employees. Further, Triana et al. (2013) stated that diversity leads to conflict, which could impede the capacity of the company to make a strategic change, particularly in times when the company performance is low.

Yet another explanation is that increasing gender diversity does not mitigate agency cost for all companies. As noted by Jurkus et al. (2011), increasing the number of women in boardrooms may lead to improvements in the performance of companies and alleviate agency cost in some, but not all, companies. Therefore, the results of this study do not support the resource dependence theory.

9.2 Implications

The critical implications of this study are twofold. Firstly, its empirical evidence does not support the gender quota law to increase the percentage of women on companies' boards. Thus, the decision to appoint females to a company's board should not be based on the notion that gender diversity on corporate boards will promote the performance and efficiency of firms. Because the overall results of gender diversity do not seem to have a negative link with firm performance and firm's agency cost, gender diversity should be enhanced for ethical reasons to improve fairness.

Secondly, the results of this study will assist companies to find a 'board-performance' fit that will ensure the high performance and efficiency of Jordanian companies. Overall, this study documents a non-significant and positive influence of board gender diversity on firm performance and efficiency. Therefore, these results will assist firms in designing their boards.

9.3 Limitations and future research

Just like any other research, this one also suffers from some limitations, which opens the way for potentially fruitful future study opportunities. Firstly, the study's data related to the CG variables were manually collected from company annual reports in order to conduct the quantitative analysis. However, annual reports may not be accurate. Therefore, future research may complement this research's evidence by using qualitative research methods, such as conducting face-to-face interviews.

Secondly, this study has been limited to examining the inclusion of only one board characteristic, i.e. gender diversity. However, it is suggested that a future research direction would be to explore the effect of various other types of company board diversity, such as age, experience, years and level of education, on firm performance and agency cost.

A third limitation is that the use of other methods or financial measures may produce a more conclusive result. Also, the current study excluded financial firms because these are managed by unique rules and instructions, thus the sample size was reduced from 224 firms to 80, which is a limited number. Lastly, the empirical analyses of this study are based on one special national context. Further research should examine the phenomena of interest in corporations across countries. It is argued that the cultural and institutional context may be of importance when investigating board gender diversity and its effects (Grosvold et al. 2007).

Chapter Five: Paper Three

CEO Duality, Agency Cost and Firm Performance: Evidence from Jordan

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CEO Duality and Agency Cost and Performance: Evidence from Jordan

Abstract

Purpose – This study aims to investigate the influence of CEO duality as a proxy for board leadership structure, on firm performance and firm efficiency, also known as 'firm's agency cost', amongst non-financial listed firms in the context of a less developed country by considering Jordan as a case study.

Design/methodology/approach – By using data from 880 firm-year observations of non-financial firms listed on the Amman Stock Exchange over the period of 2006-2016, and by using two measures each for firm performance (return on assets and Tobin's Q), and firm efficiency or firm's agency cost (asset utilization and expense ratio), this study uses a regression model to test its hypotheses.

Findings – The empirical results show that CEO duality has a significant positive impact on firm performance as indicated by the return on assets and a significant positive impact on firm efficiency as indicated by the asset utilization ratio. The findings also reveal that CEO duality has a significant negative relationship with firm agency cost (in other words, efficiency) as shown by the expense ratio. These findings have been shown to be robust by various kinds of robustness checks. Therefore, the results of this study document that CEO duality helps in ameliorating the firm's agency cost and promoting firm performance. These results seem to corroborate the stewardship theory.

Research limitations/implications – Although the derived findings are specific to the Jordanian context, the governance model in Jordan shares a similarity with those of other developing countries. Thus, an extended examination of this phenomenon in the Gulf Cooperation Council countries and the Middle East and North Africa region is recommended.

Practical implications – The implication of this study is that CEO duality is becoming an important control mechanism that can add value to the firm by mitigating firm agency cost and enhancing firm performance.

Originality/value – This study contributes to the governance literature on the practices of corporate governance mechanisms, specifically CEO duality, in the context of developing countries.

Keywords – Agency theory, corporate governance, firm performance, firm efficiency, firm's agency cost, CEO duality, Jordan.

Paper type – Research paper

CEO Duality and Agency Cost and Performance: Evidence from Jordan

1 Introduction

The separation of ownership and management characterises most large firms in modern markets. This situation is termed by Jensen and Meckling (1976) as an agency relationship and described 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). Consequently, they argued that the managers (agents) would increase their wealth at the expense of owners’ wealth. Thus, the owners need to incur special costs which are known as an ‘agency cost’ to monitor the managers’ activities, to guarantee that a conflict of interest between managers and owners is mitigated.

In the governance literature, the mechanisms for corporate governance (CG) are considered to be crucial devices in ameliorating agency conflicts between shareholders and management. Supporting this, the prevailing belief, Mallin (2001) indicated that in firms without good CG, shareholders’ wealth and performance might be at risk. Hence, this leads to less transparency and accountability, and ultimately more opportunity for managers to engage in actions which may have detrimental effects. Therefore, CG has increased in significance.

Interestingly, there is a heated debate about the role of the board of directors in disciplining and monitoring the senior management. The company board is the primary line of defence against the misconduct of its chief executive officer (CEO) (Barka & Legendre 2017). Thus, it plays a pivotal role in firm performance and is considered to be a vital device for protecting owners from self-interested managers (Kim & Ozdemir 2014). Furthermore, it is argued that the board of directors is responsible for assuring the implementation of CG and ethical accounting practices (Katti & Raithatha 2018). Therefore, the board of directors plays a critical role in the success of CG implementation.

The ability of corporate boards to exercise the functions of CG relies on a number of board characteristics. Research has shown these to be, for example, the distribution of responsibilities and duties between CEO and board chair (Pearce & Zahra 1991; Hermalin & Weisbach 2003); the ability of the corporate board to appoint the CEO based on attributes of real leaders, such as providing meaning and integrity, communicating values and generating trust (Bennis & O'Toole 2000); board independence (Bhagat et al. 2008; Dalton & Dalton 2011; Cladera & Fuster 2014) and board size (Chaganti et al. 1985; Eisenberg et al. 1998; Mak & Kusnadi 2005; Guest 2009; Ciftci et al. 2019).

However, after the accounting scandals and financial collapses that have happened in modern firms, such as Maxwell Communications and Enron (Iyengar & Zampelli 2009; Fuzi et al. 2016), shareholders' confidence has crumbled due to firm failures and questionable accounting practices (Kang & Zardkoohi 2005). These events and the reaction to them are related to a lack of transparency and accountability, particular institutional settings and the avoidance of responsibility on the part of corporation boards and top management. As noted by Brick et al. (2006, p. 421) "the Enron debacle and the Global Crossing bankruptcy have renewed concerns about the effectiveness of board monitoring".

One of the most important causes of these accounting scandals has been that there was no split of roles between the CEO and board chair. Consequently, there have been recommendations focusing on reforms of company boards. Among these is the structural independence of the board. For board best practice, Cadbury (1992, p. 22) suggests "there should be a clearly accepted division of responsibilities at the head of a company, which will ensure a balance of power and authority, such that no one individual has unfettered powers of decision". Therefore, the Cadbury code recommends what is known as the splitting of responsibilities and duties of CEO and board chair which is also termed 'CEO non-duality'. Supporting these reforms is Aguilera (2005, p. 39) who claims that these reforms help to bring more balance of power within the company "particularly reining in over-mighty chief executives" so that no single person has unlimited decision-making power. The issue of splitting the two positions between two different people has been addressed in many countries (eg., France, The Netherlands, Japan), which require listed firms to separate the roles of CEO and board chairman (Kakabadse et al. 2006; Yang & Zhao 2014). As part of this trend, the same division of roles was adopted in Jordan.

This study examines whether CEO duality lowers firm's agency cost to eventually enhance firm performance in the context of a less developed country, by considering the case of Jordan. Jordan is an interesting setting to study CEO duality and its effects on firm efficiency (agency cost) and firm performance for two key reasons. Firstly, while most prior research has been performed in the context of listed corporations featuring highly dispersed ownership, Jordanian listed firms feature a high concentration. Al-Azzam et al. (2015) indicated that more than 90% of Jordanian firms are controlled, owned and managed by families. Secondly, there are some institutional variations of CG practices in Jordan, for instance, great insider representation in company boardrooms, CEO duality, and Jordan's legal, financial, regulatory and political systems, as well as the system of internal controls within a company. It has been argued that institutional differences between countries are a vital factor affecting firms' agency costs due to the separation of ownership from management (Ahmed et al. 2006). The current study endeavours to contribute to the heated debate in the literature about CEO duality and its effects on firm efficiency and firm performance.

The rest of the study is organised as follows: in Section 2 board leadership structure is discussed whilst in Section 3, board characteristics in Jordan are described. A literature review and the theoretical background of this study are presented in Sections 4 and 5, respectively. The hypothesis development is presented in Section 6. In Section 7, the study method is described. Empirical results are provided in Section 8, whilst conclusions, implications, limitations and future research, are set out in Section 9.

2 CEO duality

The corporate board has been described as "at the apex of the internal control system, and has the final responsibility for the functioning of the firm" (Jensen 1993, p. 862). However, opponents of CEO duality argue that when the CEO and the chairman of the company board is the same person, the effectiveness of the board to monitor top management is decreased, because of a conflict of interest and a lack of board independence, eventually hindering the firm's performance (Heracleous 2001; Kang & Zardkoohi 2005; Peng et al. 2007). This situation has been explained by Abdullah (2004), who stated that the rationale behind favouring the splitting of the roles is that when both the monitoring role (board chairperson) and implementation role (CEO) are vested in a single manager, the monitoring of the company board will be diminished.

There are many reasons why CEO duality is problematic. It makes it difficult for a corporate board to remove poorly performing directors (Goyal & Park 2002). The question that arises when firms practice CEO duality is "who monitors the management?" (Abdullah 2004). Consequently, in a firm that is dominated by one person as the CEO and board chair, there is no separation between decision control and decision management (Fama & Jensen 1983). Furthermore, when the company board gives the final responsibility for monitoring to the individual manager (i.e., the CEO), this structure is more likely to foster a board whose role is that of a "rubber stamp" (Rechner 1989). Therefore, the presence of one group of managers monitoring another group in the same company board, may cause problems for the corporations. Accordingly, the board may be unable to protect the interests of shareholders. Splitting the roles of board chairperson and CEO, lessens the likelihood of the CEO using the opportunistic behaviour, which will in turn, permit the board to exercise its monitoring role effectively (Daily & Dalton 1994a).

However, opponents of CEO non-duality argue for the need for CEO duality, reasoning that this promotes firm performance and enhances conformity (Tricker 1994). Such duality makes it easier to quickly respond to antagonistic external conditions (Boyd 1995). Furthermore, it is argued that duality is necessary for controlling corporate operations and making swift decisions (Finkelstein & Hambrick 1996). As the CEO provides particular knowledge and experience about the firm, this is claimed to improve firm efficiency (Jensen & Heckling 1995; Brickley et al. 1997), most especially when CEOs have complete power and both functions are vested in one individual manager (Donaldson & Davis 1991).

2.1 The costs and benefits of CEO duality

As argued by Brickley et al. (1997) and Elsayed (2007), there is no one optimal leadership structure, as both CEO duality and CEO non-duality may have benefits and costs. In other words, CEO non-duality will benefit some companies while duality is likely to be a cost for others. For example, when a CEO imposes duality on a board to reinforce his/her authority in the company, it is logical to expect an increase in a firm's agency costs, one that will negatively affect firm performance. In contrast, if a CEO adopts duality to provide strong leadership and increase the speed of strategic decision-making, without doubt, there will be a positive influence on firm performance. There is research support and recognition of the benefits of CEO duality (Brickley et al. 1997; Elsayed 2010; Yang & Zhao 2014; Tang 2017), just as there is research advocating the opposite (Rechner 1989; Donaldson & Davis 1991).

Elsayed (2010) summarised the benefits and costs of CEO non-duality and CEO duality, by inspecting the previous literature, reporting four benefits for each. For CEO non-duality benefits, Elsayed (2010) found firstly, that it reduced a firm's agency cost.

Secondly, it split decision control from decision management. Thirdly, it improved decision-making authority efficiency as a result of more discussion. Finally, it mitigated the problem of the managerial entrenchment. In contrast, that study documented sic costs related to CEO non-duality: increasing the firm's agency cost of monitoring the conduct of a non-CEO chairperson, deficient information flow between the chairperson and CEO, extra pay to compensate an outside director, the existence of conflict leading to inconsistency in the process of the decision-making, the presence of two spokespeople leading to confusion, inadequate knowledge of the chairperson about routine activities, and the non-CEO chairpersons' limited ability to face environmental changes.

As for Elsayed's (2010) benefits of CEO duality, firstly, this offers a fast response to the external environment. Secondly, quick and effective decisions can be made. Thirdly, duality allows for more complete knowledge about routine actions. Finally, there is an enhanced and more informed ability to formulate and apply strategies. In terms of the costs of CEO duality, the study identified four: increasing the problem of managerial entrenchment, a weak company board monitoring function, the existence of a conflict of interest between managers and shareholders, and the ineffectiveness of individual decisions.

A key debate in the CG research is the influence of CEO duality (employed as a proxy of board leadership structure) on a firm's agency cost and firm performance. The main motivation for this research is the fact that, although duality is very common in Jordan, there are no studies on CEO duality, firms' agency cost, and firm performance. Therefore, this study examines if duality operates positively in a less developed country such as Jordan.

3 Board characteristics: the Jordanian case

In the Jordanian context, CG has been seen as an increasingly important issue. Examples of recent CG developments in this country include the execution of a joint project between international donor agencies, such as the International Finance Corporation (IFC) and the World Bank, to benchmark the practices of CG in Jordan against the principles of CG in the Organisation for Economic Cooperation and Development, namely, the rights of shareholders, the equitable treatment of shareholders, the role of stakeholders in CG, disclosure and transparency, and the responsibility of the company board. Supporting this is the establishment of three new institutions, (i.e., the Jordan Securities Commission (JSC), the Amman Stock Exchange (ASE), and the Securities Depository Centre (SDC)), all of which have contributed to the development of the country's regulatory environment (Jaafar & El-Shawa 2009).

Supporting this, the Jordanian Institute of Directors (JIoD) was set up in 2012. The JIoD is registered as a non-profit limited liability company. It is the first of its kind in Jordan and constitutes the Jordanian centre for CG training, tasked with creating proper CG awareness amongst Jordanian firms, and emphasising the roles and functions of the board of directors in achieving corporate goals. The IFC is considered the JIoD's main partner for providing the necessary expertise for it to achieve its mission.

Due to the increased interest in CG practices in Jordan, various CG reforms have become increasingly significant agenda items in Jordan's pursuit of sustainable and strengthened economic growth. These are outlined in the final part of this section. Recently, the Jordanian market has reformed to reflect CG practices, such as complying with new regulations, rules, and laws. As a result, the number of listed firms on the ASE increased from 163 with a market capitalisation of $ 4,944 million in 2000, to 194 with a market capitalisation of $16,963 million in 2015. However, the number of listed firms decreased from 224 in 2016 to 194 at the end of 2017 (ASE 2018).

CEO non-duality or unitary board leadership, which refers to separating the monitoring function of the board from its executive function, is very common in a two-tier board. Such boards are prevalent in European countries (e.g., Germany and Finland) (Maassen 2002). In this system, the management role of the firm board mostly oversees the operational functions, and this is supervised by the CEO. Whereas the supervisory role of the board monitors the top management, and this is overseen by a non-executive manager as chairperson (Solomon 2007).

As mentioned above, CEO duality or dual board leadership indicates a situation where an executive manager also serves as the board chairman or one single manager holds the positions of both board chairman and CEO (Elsayed 2007; Mutlu et al. 2018). CEO duality is a popular concept in Anglo-American countries (e.g., the United States and Canada) in which boards have a one-tier structure (Maassen 2002). Therefore, there may not be any separation between the executive role and the monitoring role of the board (van Veen & Elbertsen 2008).

In the Jordanian context, non-financial firms are characterised by a one-tier board system, whilst the banking sector is required to be organised under a two-tier board system (European Bank 2017). In Jordanian non-financial firms' one-tier board system, CEO duality is very common. This is largely because of the centralised ownership within the typical Jordanian corporation. In essence, shareholders who belong to one family heavily dominate Jordanian boardrooms. Due to the massive clout of one family on these firms' boards, it is complicated to split the management and monitoring functions of boards.

However, as alluded to above, in recent years, the Jordanian governance environment has witnessed a wave of reforms. The JSC announced Circular No. 12/1/4659 about its Jordanian CG code for shareholding firms listed on the ASE, which came into effect on 1 January 2009. Special provisions were made for the banking sector. In addition, Jordan also issued new CG directives for companies listed on the ASE, which came into effect on 22 May 2017. Among various requirements, it was suggested that it is not permissable for a single manager to hold the positions of chairperson of the board and an executive role in the corporation at the same time. As well, it was recommended that at least one-third of company board members should be independent members (SDC 2018).

However, there is a requirement that all directors should be shareholders, which ignores the notion of board member independence altogether. Therefore, the main problem in Jordanian boardrooms remains - board members are more likely not to be really independent. As a result, there exists a need to apply the true meaning of the term 'independent board members', and to clearly define what it means to be an independent director on a company board.

4 Literature review

CEO duality and its influence on a firm's agency cost and performance, is a heated debate in the literature with non-conclusive or mixed evidence. In modern corporations, the implications of the separation of ownership from management are the subject of different opinions concerning the associations of CEO duality with firm efficiency and performance.

According to agency theory, in this arrangement, the executive managers will be engaged in self-interested actions. Thus, it has been suggested that external and internal monitoring tools need to be used to reduce the divergence in interests between owners and managers (Jensen & Meckling 1976; Fama & Jensen 1983). Corroborating the agency theory, many of the earlier studies (e.g., Rechner & Dalton 1991; Desai et al. 2003; Syriopoulos & Tsatsaronis 2012; Gohar & Batool 2015; Duru et al. 2016; Mohd et al. 2016; Tang 2017; Abdulsamad et al. 2018; Dang A et al. 2018; Nazar 2018; Singh et al. 2018) reported a significant negative effect of CEO duality, on firm's agency cost and firm performance. Therefore, these results imply that CEO duality (i.e., a dual leadership structure) is not desirable for company performance.

However, underscoring the benefits of CEO duality and supporting the stewardship theory, some other studies argue against the predictions of agency theory. Authors of these papers documented a positive effect of CEO duality on firm performance and firm efficiency (e.g., Donaldson & Davis 1991; Ramdani & Witteloostuijn 2010; Guillet et al. 2013; Goh & Rasli 2014; Peni 2014; Yang & Zhao 2014; Mamatzakis & Bermpei 2015; Ahmadi et al. 2018; Katti & Raithatha 2018; Nguyen et al. 2018). Consequently, these findings imply that CEO duality is fruitful for firm performance. Additionally, the other research indicated a non-significant correlation between CEO duality and both firm efficiency and firm performance (e.g., Daily & Dalton 1992, 1993, 1994b; Baliga et al. 1996; Daily & Dalton 1997; Dalton et al. 1998; Abdullah 2004; Elsayed 2007; Lam & Lee 2008; Iyengar & Zampelli 2009; Rashid 2010, 2013; Gafoor et al. 2018).

It is worth noting that some of the prior studies addressed the issue of CEO duality and its effect on firm performance based on the contingency theory. For instance, Boyd (1995) claimed that under various circumstances, both theoretical frameworks are beneficial. Thus duality may be positively correlated with firm performance in some conditions, but adversely related in others. Inconsistent with this argument, Peng et al. (2007) supported the contingency theory to determine particular conditions (e.g., environmental dynamism and resource scarcity), in which duality can be specifically valuable.

Further, Brickley et al. (1997) pointed out that the leadership structure varies across companies. Elsayed (2007) examined the industry specific influence of CEO duality and company performance, proposing that CEO duality and financial performance are contingent and differ across industries. In a similar vein, Rhoades et al. (2001) reported that the independence of the leadership structure has a significant impact on firm performance, but this association varies depending on the context of the study. Rashid (2010) documented that the relationship between CEO duality and performance is contingent. In summation, there is no one optimal leadership structure that is universal, as investigations have shown that both dual leadership structure and unitary board leadership have benefits and costs.

Previous studies can be criticised in different ways. Firstly, most of the earlier research used several performance measures, such as return on asset (ROA), return on equity (ROE), return on sales (ROS), return on investment (ROI), return on capital, total share return, operational self-sufficiency, portfolio yield, market-to-book ratio and Tobin's Q, to capture the effectiveness of financial performance (Dalton & Dalton 2011). However, it can be said that, to some degree, accounting and marketing based measures are noisy measures of financial performance (Pham et al. 2011). Secondly, the problem of endogeneity among CEO duality, firm efficiency and firm performance, is a significant one that needs to be taken into account in a study such as this. However, it is argued that there are very few works on CG which have taken into account the issue of endogeneity between company board characteristics and firm performance (Hermalin & Weisbach 2003). Thirdly, many of the prior studies focused on a single industry with few works controlling for industry effects and other variables of CG as moderating variables. For these reasons, the association between CEO duality and firm efficiency have been confounded.

The central question that has received attention in the governance literature is whether there is a link between CEO duality and firms' agency cost, or CEO duality and firm performance. In other words, which is better: to have a single manager to fulfil the chairperson of the board and the CEO positions at the same time (CEO duality), or separating two positions to different managers (CEO non-duality)?

In response, to revisit the notion of CEO duality in the unique setting of the agency relationship in the context of Jordan, the current study endeavours to make a number of key contributions to the literature on CEO duality. First of all, this study adds to the existing global debate on CEO duality research in developing countries. Most of the prior CEO duality studies focused on developed economies. This is corroborated by Judge et al. (2003) and Peng et al. (2010), who claimed that the previous studies have seldom focused on the data from emerging markets. Fan et al. (2011, p. 211) support this by arguing that "until now, we still do not know much about how managers of emerging market firms are paid and promoted, and factors that influence these decisions". Furthermore, Doidge et al. (2007) suggested that because of the institutional settings, CG practices may vary broadly across corporations and countries. Secondly, this research employs two different proxies of a firm's agency cost (i.e., asset utilization ratio (AUR) and expense ratio (ER)), as additional measures to ROA and Tobin's Q of firm performance. In other words, this study combines measures of a firm's agency cost and firm performance. It can be said that the firm performance is strongly linked with its agency cost (Bruton et al. 2002). Thirdly, this study explores if CEO duality mitigates a firm's agency cost in the context of a less developed country, by using a sample of non-financial Jordanian companies, which characteristically feature highly concentrated ownership. Fourthly, in this empirical study, some effort is allocated to consider tests for industry and time effects, and the issue of the endogeneity. Finally, it provides the most contemporary analysis in the Jordanian context using a recent and large panel that covers all publicly listed non-financial firms in Jordan over the period 2006–2016. It is argued that panel data is more dependable than those resulting from cross-sectional or time series studies (Campbell & Mínguez-Vera 2008). This study uses many robustness checks to provide complementary evidence on the role of CEO duality by investigating how CEO duality and other board attributes affect a firm's ability to protect owners' interests by ameliorating agency cost and promoting firm performance in the listed firms in Jordan.

5 Theoretical background

Globally speaking, there are two views so far seen in the governance literature in illustrating the relationships between CEO duality and firm efficiency, and CEO duality and firm performance. These are agency theory and stewardship theory. The two views drawn from these theories are in direct contradiction with each other.

Proponents of the agency theory (e.g., Jensen & Meckling 1976; Fama 1980; Eisenhardt 1989), argue that there is a conflict of interest between shareholders and managers, drawing on that theory's assumption that managers are opportunistic and self-interested, rather than concerned, as the major priority, with the overall benefit for the company. It follows from this that managers will act to increase their wealth, more likely at the expense of shareholders' interests. Supporting this view, Solomon (2007), Qiao et al. (2017) and Lew et al. (2017), claim that CEO duality (i.e., a dual leadership structure) contributes to the aggregation of executive authority and power, which may help the incursion of the CEO by mitigating the effectiveness of the board of directors' monitoring role. Elsayed (2007) indicates that CEO duality has a negative effect on firm performance by reducing the monitoring function of the board of directors.

Moreover, Sheikh et al. (2018), McKnight and Weir (2009) and Lin et al. (2014), note that this duality lessens the board's independence and boosts the executive's powers over decision control. Inferentially, CEOs will conduct self-interested activities that could be hindrances to the economic welfare of shareholders unless they are restricted in some way (Deegan 2006). Thus, CEO duality is considered as an indication of inefficient CG, according to the agency theory.

By contrast, proponents of the stewardship theory, such as Davis et al. (1997, p. 21) argue that "managers are not motivated by individual goals, rather (they) are stewards whose motives are aligned with the objectives of their principals". Hence, managers (agents) are motivated to act in the interests of shareholders (Donaldson & Davis 1991). Accordingly, the stewardship theory proposes the aggregation of executive authority and power. Put another way, the stewardship function can be exercised when the roles of the chair of the board and CEO are both fulfilled by the same individual (Donaldson & Davis 1991). Therefore, proponents of stewardship theory refer to the positive effects of CEO duality on firm efficiency and firm performance (Boyd 1995). Thus, CEO duality is considered as a positive indication of effective CG practices, from the perspective of the stewardship theory.

The current research is based on the assumption that the separation of ownership and control may lead to agents engaging in self-interested activities. Agency theory argues that the primary function of the board of directors, is monitoring the operations of managers (agents), to protect the interest of owners (principals) (Eisenhardt 1989; Hillman & Daiziel 2003). Drawing on agency theory, that CEO duality hinders the company performance, likening it to the same person marking her/his "own examination papers" (Wan and Ong 2005, p. 278). As a corollary, this research examines whether CEO duality decreases firm efficiency and firm performance, as defenders of the agency theory would contend.

6 Research hypothesis

Thus the key research question is whether the dual leadership structure decreases firm performance and increases firm agency cost. Duality provides prodigious power to the CEO, which tends to impede the internal control system of corporations (Jensen 1993) and mitigates the balances and checks made by the company board (Tricker 1994). It is argued that, in essence, the CEO does not substantially own the companies and thus may pursue her/his self-service at the expense of owners (Tang 2017). It follows that in this situation, the CEO is not likely to aspire to there being an active company board as this might challenge the CEO's power and authority. Inevitably therefore, the CEO may resist board members' increased interest and engagement in important issues (e.g., strategic issues) (Zahra 1990). Most importantly, according to the agency theory, the CEO cannot simultaneously serve the interests of both the management and shareholders (Rechner & Dalton 1991). To improve firm performance, opponents of duality pressure for the structural independence of the board, with the positions of chairman and CEO compulsorily separated (Duru et al. 2016). Hence, this hypothesis has been posed:

H 1a: CEO duality is negatively associated with firm performance.

Ideally, corporate boards contribute to mitigating the firm's agency cost and protecting the interests of its owners (Zahra & Pearce 1989). However, the presence of CEO duality may create a conflict of interest due to it permitting the CEO to control the information exposed to board members (Detthamrong et al. 2017). Thus, CEO duality is detrimental to the monitoring function. "CEO/Chair duality concentrates power with the CEO, potentially making disagreement on the part of outsiders costlier, which can exacerbate potential conflicts of interest" (Cornett et al. 2007, p. 1775). Rashid (2018) focused on such duality's effect on firm efficiency, claiming the CEO's direction of information mitigates independent directors' decision-making.

Thus, duality increases the level of agency problems within companies and ultimately enhances agency cost as noted by Fama and Jensen (1983). CEO non-duality has been suggested to diminish agency cost by researchers such as Chen et al., 2008; while Jensen (1993) argued that it would eventually alleviate agency cost by improving the board's effectiveness. Consistent with the monitoring role of the board, this research argues that if the board chair also serves as CEO (CEO duality), it will increase firm's agency cost. Therefore, the second hypothesis has been formulated:

H 1b: CEO duality is positively associated with firm agency cost.

7 Research method

7.1 Sample selection

The sample period is 2006-2016. According to the ASE, there were 224 companies listed on it as of 31st December 2016. Following the earlier studies of Shivdasani and Yermack (1999), McKnight and Weir (2009), Peni (2014) and Ahmadi et al. (2018), this research was restricted to non-financial firms, and therefore ignored financial institutions (e.g., insurance firms and banks) because these have different CG disclosure rules and a different regulatory structure. As well, companies with inadequate data were eliminated. The remaining 80 companies represented 35.71% of the total population of listed firms. After adjustments, the panel dataset provided 880 firm observations from these 80 firms. The company specific data was collected from the Bloomberg database (for accounting information such as assets, liabilities and operating expenses), and firms' annual reports were used to manually collect CG information. The sample is composed of a variety of industries as per the Global Industry Classification Standard (GICS). Table 1 presents the industry classifications of the sampled Jordanian firms, according to this standard.

Table 1: Industry classification of the sample

Industries	**Number of firms in the sample**	**Observed firm years**
Consumer Discretionary	19	209
Consumer Staples	9	99
Energy	1	11
Health Care	3	33
Industrials	19	209
Materials	26	286
Telecommunication Services	1	11
Utilities	2	22
Total	**80**	**880**

7.2 Definition of variables

7.2.1 Dependent variables

The main dependent variables in this study are the firm's agency cost (i.e., firm efficiency) and firm performance. Authors in the CG literature have adopted two approaches for measuring firm performance. The first set has applied accounting-based measures of performance: ROA, ROE, ROS, and ROI. The second set has used market-based measures, most especially the Tobin's Q ratio (Muth & Donaldson 1998; Erhardt et al. 2003; Dalton & Dalton 2011).

However, both accounting and market performance measures have been criticised as untrustworthy and easily subject to manipulation by a firm's management

(Muth & Donaldson 1998; Pham et al. 2011; Nazir & Afza 2018). Notwithstanding this, these indicators have been utilised widely in management studies, specifically in CG research. It is recommended therefore that multiple measures of profitability should be used due to the inherent limitations in any one financial indicator (Muth & Donaldson 1998). Furthermore, Rechner and Dalton (1991) suggested that such multiple measures provide a more accurate picture of a firm's performance. Therefore, in an attempt to mitigate the possible confounding due to a single kind of measure, the present research used both accounting and market measures (i.e., ROA and Tobin's Q). According to Arosa et al. (2013), Ramdani and Witteloostuijn (2010), Rashid (2015) and Shaukat and Trojanowski (2018), ROA is defined as the ratio of profit (before interest and tax) scaled by total assets. Following prior studies such as Terjesen et al. (2016), Nguyen et al. (2018), Singh et al. (2018) and Pillai and Al-Malkawi (2018), Tobin's Q is measured as the ratio of the market value of the firm to the replacement cost of its average total assets.

Unfortunately, as Nicholson and Kiel (2007) argue, the accounting profit may be high even with the presence of agency cost. Furthermore, "not all agency costs are reflected in the accounting measures" (Wiwattanakantang 2001, p. 334). To avoid these concerns, this study constructs AUR and ER as reliable proxies for firm agency cost (i.e., firm efficiency) in addition to the accounting and market measures of ROA and Tobin's Q. These proxy measures are well accepted in the governance literature (see e.g., Ang et al. 2000; Singh & Davidson 2003; McKnight & Weir 2009; Henry 2010; Rashid 2013, 2015; Allam 2018; Katti & Raithatha 2018). Ang et al. (2000, p. 82) refer to AURs as the "proxy for the loss in revenues attributable to inefficient asset utilization", and it is calculated as the ratio of annual sales scaled by total assets. Put another way, it measures management's capacity to employ assets dynamically (Singh & Davidson 2003). A low AUR has been described by Singh and Davidson (2003, p. 799) as indicating "that management is using assets in non-cash flow generating and probably value destroying ventures", and vice versa. ER is well known as a direct reliable proxy for firm efficiency. It is measured as the ratio of operating expenses to total annual sales, and refers to how efficaciously a firm's management controls its operating costs. This has been very forthrightly interpreted by Ang et al. (2000, p. 82): "this measure captures excessive expenses including perk consumption". A low ER means that the management is controlling the operating expenses well. Thus, a low ER indicator should reflect lower firm agency costs (Singh & Davidson 2003). Therefore, as evidence of the alleviation of a firm's agency costs, it is expected that there will be a negative association between CEO duality and ER, and a positive association between CEO and AUR.

7.2.2 Key independent variable

The key independent variable in this research is CEO duality (i.e., a dual leadership structure). A binary variable is employed as a proxy for CEO duality (CEOD). The binary variable is one (1) if the CEO holds a dual role as the board chair, and (0) zero otherwise.

7.2.3 Other control variables

This study has controlled for other variables like ownership structure, board independence, board size, firm size, firm age, firm growth, liquidity, leverage, free cash flow (FCF), research and development expenditure (R&D), and industry and year effects. The selection of control variables is motivated by earlier governance literature.

It is argued that an insider ownership structure has a prominent role in monitoring and disciplining a company's management. A number of ownership structures are controlled in this study, namely institution ownership (INSOWN), director ownership (DIROWN), and largest block holding ownership (LBOWN). Following previous research (e.g., Elsayed 2007; Henry 2010; Terjesen et al. 2016), INSOWN is measured as the percentage of shares owned by financial institutions. Consistent with Nguyen et al. (2018) and Guerrero-Villegas et al. (2018), DIROWN is calculated as the percentage of shares held by directors. LBOWN is measured as the proportion of shares owned by the three largest block holders (Wu et al. 2018).

As asserted by proponents of the agency theory, boardrooms with independent members are more likely to perform their monitoring function compared to boardrooms with non-independent members (Fama & Jensen 1983). This study used board independence (BDIND), proxied by the percentage of independent outside directors on the board (Peng et al. 2010; Chang et al. 2018; Wu et al. 2018). It is confirmed that the board's size (BDSIZE) may impact the capacity of boards to perform efficiently. According to García-Ramos et al. (2017), Tang (2017), and Shaukat and Trojanowski (2018), BDSIZE is employed as the natural logarithm of the total number of directors on the board. Firm size (SIZE) is defined as the natural logarithm of the total assets (Guillet et al. 2013; Deman et al. 2018; Pillai & Al-

Malkawi 2018). Concerning firm age (AGE), Ang et al. (2000) claimed that older firms have been found more likely to be more effective and efficient than younger firms, and is thus included as a control variable. In line with prior studies, AGE is measured as the natural logarithm of the total number of years a company has been listed on the stock exchange (Tang 2017; Katti & Raithatha 2018). Firm growth (GROWTH) is calculated as the proportion of current year sales minus previous year sales, divided by previous year sales (Rashid 2013; Chang et al. 2018; Singh et al. 2018).

According to Majumdar and Chhibber (1999, p. 296), "since the ability to manage working capital and acquire a greater quantity of cash balances relative to current liabilities, reflects superior skills". Following previous research (Rashid 2013, 2015), liquidity (LIQ) is defined by using the current ratio, dividing current assets by current liabilities. Debt ratio may also be considered as a tool to indicate CG as higher debt levels assist in mitigating the firm's agency cost of free cash flows. Thus (LEV) is included, measured as the ratio of total debt to total assets (Henry 2010; Guillet et al. 2013; Nazar 2018).

Agency problems within a company are associated with FCF. Due to managers' extensive FCF, they may invest in projects which are unnecessary or not economically feasible. FCF is defined as the operating income before depreciation, minus the sum of taxes plus interest expenses and dividends paid, scaled by the total assets (McKnight & Weir 2009). R&D may promote firm performance and is calculated as a ratio of total expenditure to total sales (Peni 2014; Duru et al. 2016; Tang 2017). In line with prior research (e.g., García-Ramos et al. 2017; Nguyen et al. 2018; Wu et al. 2018), this study also controlled for industry and time specific effects. Nine industry dummy variables were constructed to represent the different industry groups identified by the GICS. Likewise, the current study used a year dummy variable to control for the influence of variation across years.

7.3 Model estimation

The following equation was devised to test the panel data sample.

$$Yi,t=\alpha+ \beta1CEODi,t +\beta2BDINDi,t+ \beta3DIROWNi,t +\beta4LBOWNi,t+ \beta5INSTOWNi,t+\beta6BDSIZEi,t +\beta7SIZEi,t + \beta8AGEi,t+ \beta9GROWTHi,t+ \beta10LIQi,t+\beta11LEVi,t + \beta12FCFi,t + \beta13R\&Di,t + \varepsilon i,t$$

Where, Yi,t comprises the overall measures of performance, including agency cost/firm efficiency, namely, ROA, Tobin's Q, AUR and ER. CEODi,t refers to CEO duality. BDIND is the proportion of independent directors to the total number of board directors. DIROWN is the percentage of shares owned by directors. LBOWN is the percentage of shares owned by the three largest block holders. INSTOWN is the percentage of shares owned by institutions. BDSIZE is the natural logarithm of the total number of board members. SIZE is the natural logarithm of the total assets. AGE is the natural logarithm of the total number of years a firm has been listed on the stock exchange. GROWTH is the changes in sales. LIQ is defined by dividing current assets by current liabilities. LEV is the ratio of total debt to total assets. FCF is measured as operating income before depreciation, minus the sum of taxes plus interest expenses and dividends paid, scaled by total assets. R&D is calculated as R&D's percentage to sales. α is the intercept, β is the regression coefficient and ε is the error term.

To attain an accurate statistical analysis, there is a need to meet statistical analysis assumptions, such as heteroscedasticity, normality, and multicollinearity. The assumption of normality requires that all observations should be distributed normally in the population study. It is confirmed that the normality violations are of little concern when the size of the study sample is high (>30) (Coaks & Steed 2001). Likewise, the residual test, also known as the histogram normality test, of the model, provided a bell shape, conforming to data normality.

Multicollinearity indicates any high levels of association amongst the independent variables. In other words, it shows when the independent variables are significantly related with one other. In such circumstances, these independent variables must be eliminated. Table 3 shows the correlation matrix of all the company-specific and governance-related variables under consideration of panel data analysis. The table illustrates that there is no correlation amongst the independent variables, because the correlation coefficients are either less than 75% or negative values. Multicollinearity was not found between any independent variables because the variance inflation factors (VIFs) were within the permissible range (less than 4). It is argued that VIFs of higher than ten are an indication of multicollinearity (Gujarati 2003).

Drawing on the assumption of heteroscedasticity, the variance of the error is constant across observations (at all levels of independent variables), or residuals of the dependent variables of the study are almost equal/constant. That is, the plot of standardized residuals ZRESID against the standardized predicted value ZPRED of the all research's models, resembles a curve, indicating the existence of heteroscedasticity. The chi-square statistics and a corresponding p-value of the Breusch–Pagan–Godfrey test, show that heteroscedasticity is existing in the model estimation, which is adjusted using a correction technique for unknown heteroscedasticity, as presented by White (1980).

8 Empirical results

8.1 Descriptive statistics

Descriptive statistics of the preceding variables are presented in Table 2. The descriptive statistics indicate that the average firm performance expressed by ROA is 5% for the sample companies, and by Tobin's Q is 110%. As well, the parameters that reveal the proxy measure of firm agency cost, found an average of 57% for AUR and 41% for ER. These results are consistent with an expected high AUR and low ER.

CEO duality was present in approximately 20% of the sample. This figure is much higher compared with previous studies in other contexts. For example, McKnight and Weir (2009) report that duality decreased from 10% to 6% in the United Kingdom; it represented 18% of the sample in Henry's Review (2010) of the Australian context. Likewise, this is much lower compared with other studies. There is a 33% incidence of duality in India (Katti & Raithatha 2018), which is below 46.7% in Rashid's (2013) study in Bangladesh; duality rates of 78.2% and 79% were found in Elsayed's Egyptian research for 2007 and 2011, respectively. In the United States, Chang et al. (2018) reveal a 61% incidence of CEO duality; 59 % in France (Ahmadi et al. 2018); 36% in Vietnamese stock exchanges (Dang et al. 2018); and 34% in Pakistan (Sheikh et al. 2018).

Table 2: Descriptive statistics of the sample

Variables	**N**	**Mean**	**Median**	**Maximum**	**Minimum**	**Std. Dev.**
ROA	880	0.05	0.05	0.36	-0.28	0.10
Tobin's Q	880	1.10	0.86	4.45	0.21	0.82
AUR	880	0.57	0.52	4.43	0.01	0.44
ERN	880	0.41	0.25	4.65	0.03	0.61
CEOD	880	0.20	0.00	1.00	0.00	0.40
BDIND	880	0.52	0.55	1.00	0.00	0.23
DIROWN	880	0.49	0.47	0.99	0.01	0.27
LBOWN	880	0.53	0.51	0.99	0.09	0.22

INSTOWN	880	0.09	0.03	0.64	0.00	0.12
BDSIZE	880	8.47	9.00	14.00	3.00	2.36
SIZE	880	17.01	16.92	21.31	12.89	1.46
AGE	880	2.72	2.83	3.66	0.00	0.75
GROWTH	880	0.12	0.03	5.02	-0.82	0.69
LIQ	880	2.81	1.69	29.04	0.07	3.99
LEV	880	0.32	0.29	0.93	0.00	0.21
FCF	880	-0.01	0.00	0.13	-0.33	0.07
R&D	880	0.03	0.00	0.36	0.00	0.06

The mean value of the proportion of outside directors is found to be 52%, which is as expected due to the regulatory compliance that firms had been undertaking, whereas the Jordanian CG code recommended at least one-third of board members should be independent. Director ownership and large shareholding on average are observed to be 49% and 53%, respectively. These figures, therefore illustrate that there is a domination of ownership by directors and large shareholders, who are originally family based owners. On average, the institutional ownership is 9% which is much lower compared with some countries like Australia (McKnight & Weir 2009; Henry 2010), Bangladesh (Rashid 2013), and Egypt (Elsayed 2007). The average board size of Jordanian non-financial firms is observed to be around 8.47 and ranges from a minimum of three members to a maximum of 14. This is lower than the mean documented board size for large United States public companies (Yermack 1996; Pathan 2009).

Tables 4, 5, 6 and 7, show the regression results identifying the effect of CEO duality and other governance variables in determining firm performance and firm agency cost/efficiency. Panel A of Table 4 presents firm performance as a dependent variable in the form of ROA. In this study, the impact of CEO duality on the firm performance expressed by ROA, was tested before controlling for industry and time specific effects. The results indicate a significant positive relationship between CEO duality and ROA. However, it is noted that the signs of the CEO duality coefficients are not in the expected directions. Hence, it can be said that the CEO duality enhances firm performance by controlling ROA. In terms of the control variables, Table 4 reveals that the BDIND, DIROWN, SIZE, AGE, and FCF, have a positive explanatory power in influencing firm performance in terms of the ROA measure, whereas LEV and R&D have a significant negative explanatory power.

Table 3: Correlation coefficients

		1	2	3	4	5	6	7	8	9	10	11	12	13	VIF
1	CEOD	1.00													1.05
2	BDIND	0.06	1.00												1.49
3	DIROWN	-0.05	-0.53**	1.00											3.65
4	LBOWN	-0.12**	-0.38**	0.66**	1.00										2.68
5	INSTOWN	-0.02	0.27**	-0.45**	-0.03	1.00									1.57
6	BDSIZE	-0.010	0.07	0.12**	-0.22**	-0.11**	1.00								1.64
7	SIZE	-0.04	-0.17**	0.23**	0.07*	-0.06	.463**	1.00							1.97
8	LNAGE	-0.10**	0.002	-0.01	0.05	0.07*	.114**	0.14**	1.00						1.14
9	GROWTH	0.03	-0.04	0.02	0.06	0.08*	-0.037	-0.06	-0.19**	1.00					1.07
10	LIQ	0.09**	0.04	0.10**	0.09**	-0.06	-.116**	-0.34**	-0.19**	0.11**	1.00				1.39
11	LEV	-0.11**	0.07*	-0.150*	-0.01	0.16**	0.023	0.29**	0.23**	-0.01	-0.44**	1.00			1.64
12	FCF	0.09*	-0.10**	0.13**	0.10**	0.04	.069*	0.32**	-0.08*	0.06	0.04	-0.21**	1.00		1.32
13	R&D	-0.06	0.08*	0.03	0.002	-0.01	.091**	0.07*	0.07*	-0.03	-0.14**	0.27**	-0.13**	1.00	1.12

The *t*-statistics asterisks indicate significance at $P < 0.001$ (***), $P < 0.01$ (**), and $P < 0.10$ (*) levels respectively.

Table 5 provides the results for testing the influence of CEO duality on firm performance as expressed by Tobin's Q. According to Panel A, the results document that there is a non-significant relationship before controlling for industries and years. Noteworthy is that the signs of the CEO duality coefficients are not in the expected directions. The results also show that DIROWN, INSTOWN, BDSIZE, and LIQ, have a significant positive influence on firm performance as measured by Tobin's Q. In contrast, SIZE, AGE, and LEV, have a significant negative influence.

Table 4: CEO duality and firm performance (regression results)

Table 4 shows the summary of results of the effects of CEO duality on firm performance, as measured by ROA. The t-tests are displayed in parentheses.

Model	**Panel A (before controlling for industry and time)**	**Panel B (after controlling for industry and time)**	**Panel C (random effect model)**
Intercept	-0.2024 (-4.91)***	-0.1883 (-3.17)***	-0.1365 (-1.51)
CEOD	0.0224 (3.14)**	0.0257 (3.55)***	0.0245 (3.11)**
BDIND	0.0278 (2.54)*	0.0357 (2.95)**	0.0293 (1.80)*
DIROWN	0.0441 (3.40)***	0.0297 (2.23)*	0.0192 (0.83)
LBOWN	-0.0152 (-1.15)	-0.0163 (-1.24)	-0.0260 (-1.11)
INSTOWN	-0.0063 (-0.32)	-0.0084 (-0.44)	-0.0175 (-0.67)
BDSIZE	-0.0014 (-1.26)	-0.0018 (-1.45)	-0.0033 (-1.66) *
SIZE	0.0140 (5.42)***	0.0127 (4.30)***	0.0135 (3.15)**
LNAGE	0.0085 (2.72)**	0.0102 (3.26)**	0.0091 (1.51)
GROWTH	0.0034 (0.91)	0.0030 (0.77)	0.0043 (1.47)
LIQ	0.0003 (0.50)	0.0002 (0.31)	0.0003 (0.31)
LEV	-0.0633 (-5.32)***	-0.0595 (-3.91)***	-0.1004 (-4.90)***
FCF	0.7711 (11.19)***	0.7829 (11.50)***	0.7533 (20.00)***
R&D	-0.1364 (-5.08)***	-0.1283 (-4.03)***	-0.0234 (-0.58)

Year	No	Yes	Yes
Industry	No	Yes	Yes
Adj. R-squared	0.4701	0.4860	0.4358
F-Statistics	45.74	22.96	23.00
Probability	0.0000	0.0000	0.0000
N	880	880	880

The *t*-statistics asterisks indicate significance at $P < 0.001$ (***), $P < 0.01$ (**), and $P < 0.10$ (*) levels respectively.

Table 5: CEO duality and firm performance (regression results)

Table 5 shows the summary of results of the effects of CEO duality on firm performance, as measured by Tobin's Q. The t-tests are displayed in parentheses.

Model	**Panel A (before controlling for industry and time)**	**Panel B (after controlling for industry and time)**	**Panel C (random effect model)**
Intercept	1.694 (3.20)**	1.760 (2.40)*	6.138 (6.47) ***
CEOD	0.0757 (1.22)	0.0630 (0.94)	0.1066 (1.45)
BDIND	-0.0473 (-0.38)	0.0587 (0.47)	-0.2933 (-1.91)*
DIROWN	0.7662 (4.66)***	0.7030 (4.03)***	0.0845 (0.39)
LBOWN	0.1728 (1.16)	0.3024 (1.90)*	0.3321 (1.52)
INSTOWN	0.66.63 (3.23)**	0.4243 (2.12)*	0.2282 (1.00)
BDSIZE	0.0360 (2.38)*	0.0173 (1.08)	0.0100 (0.52)
SIZE	-0.0604 (-1.76)*	-0.0674 (-1.68)*	-0.2765 (-6.30) ***
LNAGE	-0.0743 (-1.90)*	0.0098 (0.24)	-0.0668 (-1.11)
GROWTH	0.0466 (0.90)	0.0320 (0.60)	0.0216 (0.82)
LIQ	0.0188 (1.74)*	0.0223 (2.00)*	0.0183 (2.00) *
LEV	-0.8093 (-5.06)***	-0.7406 (-3.88)***	-0.1741 (-1.00)
FCF	-0.6268 (-0.95)	-0.6116 (-1.00)	0.4704 (1.36)***
R&D	0.5169 (1.40)	0.9616 (2.62)**	1.002 (2.73) **
Year	No	Yes	Yes

Industry	No	Yes	Yes
Adj. R-squared	0.1696	0.2090	0.1311
F-Statistics	21.96	18.90	5.28
Probability	0.0000	0.0000	0.0000
N	880	880	880

The *t*-statistics asterisks indicate significance at $P < 0.001$ (***), $P < 0.01$ (**), and $P < 0.10$ (*) levels respectively.

In Tables 6 and 7, the present study shows the regression results of the dependent variables of AUR and ER, as measures of firm agency cost. In Table 6, the results of Panel A indicate a negative association between CEO duality and firm agency cost as AUR before controlling for industries and years. This finding is contrary to expectations (with a higher AUR reflecting a firm's lower agency cost). Thus, it can be noted that CEO duality does not promote firm efficiency by best utilising the company's resources. Concerning the control variables, it is revealed that BDIND, SIZE, AGE, GROWTH, LIQ, LEV and FCF, all have positive relationships with AUR. These findings imply that they serve as tools to enhance firm efficiency. Therefore, these variables may be a substitute for other control tools to mitigate firm agency cost. Also, t results indicate that R&D has an adverse effect on firm efficiency.

Table 6: CEO duality and firm performance (regression results)

Table 6 shows the summary of results of the effects of CEO duality on firm's agency cost, as measured by AUR. The t-tests are displayed in parentheses.

Model	Panel A (before controlling for industry and time)	Panel B (after controlling for industry and time)	Panel C (random effect model)
Intercept	-0.8245 (-3.15)**	0.4326 (2.00)*	0.5798 (1.50)
CEOD	-0.0326 (-1.20)	0.0022 (0.10)	0.0786 (2.65) **
BDIND	0.1486 (2.20)*	0.0576 (1.06)	0.1138 (1.84)*
DIROWN	-0.0519 (-0.60)	-0.0266 (-0.40)	0.1062 (1.21)
LBOWN	-0.1400 (-1.40)	-0.1805 (-2.35)*	-0.0898 (-1.02)
INSTOWN	0.1826 (1.44)	0.2071 (1.83)*	0.0897 (1.00)
BDSIZE	-0.0053 (-0.71)	-0.0006 (-0.10)	-0.0070 (-1.00)
SIZE	0.0560 (3.62)***	0.0032 (0.25)	-0.0135 (-0.76)
LNAGE	0.0930 (6.05)***	0.0674 (4.90)***	0.1178 (4.90) ***

GROWTH	0.0361 (1.88)*	0.0375 (1.80)*	0.0609 (5.65) ***
LIQ	0.0151 (3.18)**	0.0034 (0.90)	-0.0022 (-0.60)
LEV	0.8081 (7.00)***	0.3335 (3.30)**	0.3035 (3.60) ***
FCF	1.110 (5.00)***	1.277 (6.12)***	0.7775 (5.60)***
R&D	-1.830 (-9.02)***	-0.9043 (-5.15)***	-0.1382 (-1.00)
Year	No	Yes	Yes
Industry	No	Yes	Yes
Adj. R-squared	0.2837	0..5228	0.2044
F-Statistics	13.04	23.78	8.28
Probability	0.0000	0.0000	0.0000
N	880	880	880

The *t*-statistics asterisks indicate significance at $P < 0.001$ (***), $P < 0.01$ (**), and $P < 0.10$ (*) levels respectively.

The findings reported in Table 7 suggest that CEO duality is positively associated with ER as a measure of firm efficiency. However, these results are not significant and are contrary to expectations (with a lower ER reflecting the alleviation of a firm's agency cost). Thus, it can be concluded that CEO duality does not reduce firm agency cost by controlling company discretionary expenses. Table 7 also presents the findings for other control variables, documenting that BDSIZE, SIZE, AGE, GROWTH, and FCF, have a negative correlation with ER. These results imply that the variables serve as tools to improve firm efficiency. Therefore, they may be a substitute for other control tools to alleviate firm agency cost. In contrast, DIROWN and R&D are positively related to ER.

Table 7: CEO duality and firm performance (regression results)

Table 7 shows the summary of results of the effects of CEO duality on firm's agency cost as measured by ER. The t-tests are displayed in parentheses.

Model	**Panel A (before controlling for industry and time)**	**Panel B (after controlling for industry and time)**	**Panel C (random effect model)**
Intercept	1.821 (6.07)***	2.142 (5.27)***	3.527 (5.60) ***
CEOD	0.0182 (0.40)	0.0480 (1.10)	-0.1253 (-2.10) *
BDIND	0.0125 (0.14)	-0.0271 (-0.322)	0.0589 (0.47)

DIROWN	0.3076 (2.80)**	0.1844 (1.80)*	0.3033 (1.73) *
LBOWN	-0.1500 (-1.36)	-0.0586 (-0.55)	-0.0924 (-0.52)
INSTOWN	0.3481 (1.57)	0.2474 (1.10)	0.4405 (2.17) *
BDSIZE	-0.0226 (-2.36)*	-0.0241 (-2.52)**	-0.0235 (-1.58)
SIZE	-0.0638 (-3.80)***	-0.0652 (-3.40)***	-0.1396 (-4.60) ***
LNAGE	-0.1083 (-3.37)***	-0.1063 (-3.67)***	-0.1790 (-4.05) ***
GROWTH	-0.1126 (-3.13)**	-0.1117 (-3.10)**	-0.1527 (-6.42) ***
LIQ	-0.0152 (-1.25)	-0.0067 (-0.50)	0.0042 (0.32)
LEV	-0.1635 (-1.48)	-0.2269 (-1.44)	-0.0293 (-0.18)
FCF	-2.482 (-4.15)***	-2.50 (-4.30)***	-2.120 (-7.00)***
R&D	1.562 (3.18)**	1.413 (2.86)**	0.7642 (2.40) *
Year	No	Yes	Yes
Industry	No	Yes	Yes
Adj. R-squared	0.2068	0.24	0.1812
F-Statistics	8.04	10.51	7.27
Probability	0.0000	0.0000	0.0000
N	880	880	880

The *t*-statistics asterisks indicate significance at $P < 0.001$ (***), $P < 0.01$ (**), and $P < 0.10$ (*) levels respectively.

It is confirmed that CEO duality, firm performance, and firm agency cost, are contingent, and this may mean there is better firm performance and efficiency in some conditions and worse in other conditions. As argued by Elsayed (2010), a suitable board leadership structure promoting high firm performance and efficiency, is likely to vary across countries, industries, and firms. Furthermore, Donaldson and Davis (1991) consider that the extent of any confounding of board structure impacts by industry influences, is unknown. For these reasons, steps were taken in an attempt to control for industry variance and variation across years.

Following previous studies such as those of Elsayed (2007), Rashid (2013), García-Ramos et al. (2017), Nguyen et al. (2018) and Wu et al. (2018), the above model estimation has been altered by adding INDUSTRY dummies to control for differences across industries in terms of the GICS codes. This produced nine industry classifications. In accordance with the earlier governance literature, this study employed a dummy year variable to control for the influence of variation across years (Wu et al. 2018). Therefore, the following regression equation is suggested:

$$Y_{i,t}=\alpha+ \beta_1 CEOD_{i,t} +\beta_2 BDIND_{i,t}+ \beta_3 DIROWN_{i,t} +\beta_4 LBOWN_{i,t}+ \beta_5 INSTOWN_{i,t}+\beta_6 BDSIZE_{i,t} +\beta_7 SIZE_{i,t} + \beta_8 AGE_{i,t}+ \beta_9 GROWTH_{i,t}+ \beta_{10} LIQ_{i,t}+\beta_{11} LEV_{i,t} + \beta_{12} FCF_{i,t} + \beta_{13} R\&D_{i,t} + \gamma INDUSTRY+ \Omega YEAR+ \varepsilon_{i,t}$$

The results after adding these industry and year dummies are presented in Panel B of Tables 4, 5, 6 and 7. The revised results of the regression coefficients mean that many coefficients of variables altered from positive to negative signs, and vice versa. As well, many variable coefficients moved from a significant to a non-significant influence, and vice versa. It is noted that the signs of the coefficients of CEO duality are unchanged. Thus, it can be said that CEO duality, firm performance (expressed by ROA and Tobin's Q) and firm agency cost, (expressed by AUR and ER) do not have industry and year specific effects.

8.2 Endogeneity test

Globally speaking, extant literature on CG has recognised that models containing CG or ownership structure variables may suffer from issues of endogeneity (Himmelberg et al. 1999; Hermalin & Weisbach 2003; Elsayed 2007; McKnight & Weir 2009; Coles et al. 2012; Rashid 2013; Tang 2017; Gafoor et al. 2018; Pillai & Al-Malkawi 2018). It is confirmed that the expected link between endogenous variables and error terms, may lead to inconsistent and biased estimates (Elsayed 2007; McKnight & Weir 2009). Thus, using ordinary least square (OLS) regression can provide biased coefficient estimates. In such a case, the OLS is inconsistent (Gafoor et al. 2018). In addition, it is claimed that the bulk of the existing literature typically utilises panel data estimation by applying random effects or fixed models. However, these models do not control for endogeneity problems (Sheikh et al. 2018).

One solution to address this problem of endogeneity is to use instrumental variables (IVs) (McKnight & Weir 2009; Tang 2017; Pillai & Al-Malkawi 2018). Therefore IVs are used in this study. As well, the lagged values of the endogeneity variables are adopted as instruments to overcome endogeneity. Consistent with the earlier studies of Elsayed (2011), Rashid (2013) and Pillai and Al-Malkawi (2018), the F-test for the predicted value of CEO duality has not been found to be significant. Using ROA as a proxy for firm performance, F= 3.55 (P = 0.0610), and using Tobin's

Q as a proxy for firm performance, F = 0.30 (P = 0.5886). With AUR as a proxy for firm agency cost/firm efficiency, F = 0.60 (P = 0.4400), and with ER as a proxy for the same construct, F = 01.96 (P = 0.1613). These results indicate that there are no signs of potential endogeneity issues among CEO duality, firm performance and firm's agency cost, which suggests that both IVs and OLS are consistent.

8.3 Robustness check

As this research employed unbalanced panel data (because there are not 80 companies in all years), it may generate some unobserved heterogeneity. In summation, there may be variation within a company and it is not possible to capture such company specific characteristics. To this end, the preceding model is run again by using a fixed-effect model and a random-effect model. A Hausman test is performed to examine the significance of the difference between the fixed effect and the random-effect estimates.

Panel C of Table 4, 5, 6 and 7 provide the results of the Hausman test and indicates that the random-effect model is a proper fit. The revised results of the regression coefficients indicate that many coefficients of parameters altered from positive to negative, and vice versa. Likewise, many coefficients of parameters changed from a significant influence to a non-significant influence, and vice versa. However again, the signs of the coefficients of CEO duality are unchanged using ROA and Tobin's Q. Thus, it can be argued that the variation across firms has little or no influence on CEO duality's association with firm performance in the form of ROA and Tobin's Q. Conversely, CEO duality moved from a non-significant positive sign to a significant positive one using AUR. As well, it altered from a non-significant positive sign to a significant negative sign using ER. Thus, it can be confirmed that the variation across companies has an influence on CEO duality and firm agency cost/efficiency.

9 Conclusions, implications, and limitations

9.1 Conclusions

The purpose of this study was to investigate to what extent CEOs' dual roles (as chairperson and CEO), can affect firm agency cost and firm performance in Jordan. A main motivation for this empirical work was that earlier studies about the influence of CEO duality on these two constructs arrived at mixed and inconclusive results, indicating variously both a positive and a negative impact.

It is claimed that "duality has been blamed for poor performance and slow response to change in firms such as General Motors, Digital Equipment Corporation, and Goodyear Tire and Rubber" (Boyd 1995, p. 301). Furthermore, it is confirmed that the CEOs have engaged in controversial accounting practices that have led to scandals in the USA. However, as noted by Kang and Zardkoohi (2005), this does not necessarily imply that CEO duality is a poor governance structure. CEO duality might be an ideal solution for external environmental difficulties or it might function as a reward for a CEO whose firm has a good performance (Kang & Zardkoohi 2005).

The empirical analysis conducted in this study has indicated that CEO duality in developing countries like Jordan is important in improving a firm's performance (expressed by ROA) and in mitigating a firm's agency cost (as measured as two ratios of efficiency AUR and ER). The random-effect regression results indicate that CEO duality is positively significant in determining ROA and AUR and negatively significant in determining ER. It is noted that CEO duality is concerned with employing a company's assets in a revenue generating venture and controlling the operating expenses of the firm. Therefore, the results of this study imply that a dual leadership structure promotes the board members' ability to exercise the function of governance in the context of Jordan, which supports the stewardship theory.

This research provides support for the conclusions of Finkelstein and D'aveni (1994) and Ramdani and Witteloostuijn (2010), that poorly performing companies need a strong leadership structure and unity of command to enhance their performance. It is argued that averagely performing companies like the majority of Jordanian companies in this study, have complex operational and managerial matters that need a solid and strong leadership structure (Ramdani & Witteloostuijn 2010). Thus, this study is inconsistent with arguments that dual leadership (CEO duality) leads to an unambiguous leadership structure. The results also provide support for the argument that CEOs with dual roles have more authority, power, and freedom to be more decisive, and therefore more positively influence firm efficiency and firm performance. In addition, a single leadership structure can effectively respond to the firms' difficulties as they present themselves in their unique environments (Guillet et al. 2013). Therefore, the findings may imply that Jordanian firms obtain significant benefits from a dual leadership structure. As well, the results of this study support the idea that CEO duality may have both benefits and costs (Brickley et al. 1997; Elsayed 2007; Dey et al. 2011; Tang 2017). In particular, CEO non-duality involves the agency costs of monitoring the behaviour of the board chair and also information costs (Brickley et al. 1997). In developing markets like Jordan, the costs of splitting the roles of CEO and board chair is higher than the benefits of CEO duality (Katti & Raithatha 2018).

From the random-effect model's regression coefficients, a positive but non-significant relationship is revealed between CEO duality and firm performance as measured by Tobin's Q. This goes against the prevailing belief that CEO duality is negatively associated with Tobin's Q. Some reflections need to be made to position this finding in its context. As argued by Lindenberg and Ross (1981), market-based measures should reflect the true value of the corporations. Hence, the stock prices of companies should reflect their market values. Yet such measures may not be effective in developing economies as the capital market is undeveloped (Joh 2003). As Bouri (2015) confirms, the Jordanian market is less developed, it is characterised by thin and unregulated trading and probably less well-informed investors.

Likewise, Bacidore et al. (1997, p. 11) note that market-based measures "may not be an efficient contracting parameter because they are driven by many factors beyond the control of the firm's executives". Jordan is no exception to this. Claessens and Djankov (1999, p. 502) indicate that market measures may "lead to a downward bias in the relationship between concentrated ownership and firms' valuation" in countries with weak protection of minority shareholders, such as Jordan. Moreover, most developing markets count on 'debt financing' rather than finance from the share market or 'equity financing'. Thus, market measures do not represent the real profits made by the owners on their investments (Kumar 2004). Finally, Pham et al. (2011, p. 373) indicate that the measurement of Tobin's Q is "subject to the accounting treatment of balance sheet items", and is thus subject to manipulation in all countries.

9.2 Implications

The current research contributes to the governance literature by considering an aspect of the governance framework (CEO duality) as a determinant of firm agency cost/efficiency in less developed countries. Earlier studies in this context do not confirm that a dual leadership structure is to be blamed for weak firm performance (Elsayed 2007). In the Jordanian scenario, the evidence of present research supports the argument that CEO duality will improve some companies' performance, whilst CEO non-duality may be more beneficial for others.

The theoretical implication is that regulatory authorities, practitioners, policy makers, and non-financial sector management in Jordan, need to take into account the particular features of the country's economy. Results indicate that the Anglo-American system of a dual leadership structure may actually promote firm performance and alleviate a firm's agency costs in Jordan. Consequently, it should be mandatory to adopt CE duality through the listed companies at ASE.

9.3 Limitations and future research

As with all studies, this one is not free from limitations. Firstly, the research's data related to the CG parameters were manually gathered from firms' annual reports. It is argued that the accounting standards are weak in developing markets like Jordan (Lins & Servaes 2002; Jara-Bertin et al. 2015). Thus, annual reports may not actually portray a true picture. Secondly, the study employed two proxies of agency cost; other measures of agency costs (i.e., Q-free cash flow interaction) can be utilised in future research. Thirdly, although this research used a comprehensive group of CG variables, future studies can extend this study by including more independent variables (e.g., other ownership variables and CEO compensation). Finally, although the derived findings are specific to the Jordanian context, the similarity of Jordan's governance model with those of other developing countries indicates an extended examination of the subject in the Gulf Cooperation Council countries and the Middle East and North Africa region, is recommended. As well, it is confirmed that the dual leadership structure relies on some contextual variables (e.g., CEO's experience, age, and qualifications) within the relevant industry, which has also been termed 'CEO charisma' (Tosi et al. 2004). Thus, future studies can be carried out investigating the effects of CEO duality on company performance, by employing 'CEO charisma' as a moderating factor.

Chapter Six: Summary and Conclusion

6.1 Introduction

The purpose of this thesis has been to provide an insight into practices of corporate governance in Jordan, by employing company level data, to empirically investigate whether the different corporate mechanisms, such as board independence, board gender diversity and CEO duality, influence firm performance and efficiency (the latter also known as firm agency cost). Drawing on the theoretical discussions and empirical examination, the results and conclusions from this thesis are an attempt to inform regulatory bodies in improving and/or framing the best practices and guidelines for corporate governance in the Jordanian company sector.

Chapter 1 of this thesis has presented the history of corporate governance, its definition, its best practices and the issues of corporate governance in developed and developing countries. As well, this chapter has provided the motivation of this study, the statement of the problem, research questions, research significance, the study objectives and the contributions of this research to the academic literature. This chapter has also offered an outline of the theoretical framework, methodology, research method and thesis outline.

Chapter 2 has provided the overview of the existing system of corporate governance in Jordan. It commenced with a detailed discussion of the Jordanian economy, its privatisation program, and developments in the Jordanian investment environment. This was followed by an overview of the accounting and auditing professions in Jordan, the evolution of requirements for practice in these professions and the types of disclosure requirements. A general insight into corporate governance in Jordan has been given, with an outline of the development of Jordanian corporate governance codes for the various Jordanian sectors. Likewise, this chapter has offered a discussion on the common models of corporate governance around the world and, in comparing them, an explanation of the Jordanian governance model. Based on the previous studies and reports, an assessment of the corporate governance in Jordan has been made, followed by a detailed description of its legal environment. In this, an overview has been given of different legal instruments such as the various company, securities and commercial laws. The chapter concludes with a brief idea about the

Jordanian capital market, in particular the roles of the ASE, JSC, SDC, CCD, IC and CBJ.

By employing agency theory, Chapter 3, (paper 1), has tried to answer two questions: (1) does board independence in the form of the representation of outside independent directors influence the firm's performance, and (2) does board independence in the form of the representation of outside independent directors, influence the firm efficiency (i.e., firm agency) cost. By using data from 880 firm-year observations of non-financial firms listed on the ASE for the period of 2006-2016, and by using two measures each for firm performance (return on assets and Tobin's Q), and firm efficiency (asset utilization and expense ratio), in this study a regression model was used to test the hypotheses. This paper has described the study period, data set and the sources of the data. As well, all the variables relevant to this study were illustrated. Moreover, in this paper, many robustness checks have been presented. The model specification was tested before controlling for industry and time effects, and again, after adding industry and time effects. To overcome the variation across the companies and within a company and to capture company specific characteristics, the regression model was run again by employing the Hausman Specification Test, also known as the 'random effect' or 'fixed-effect' model. In order to deal with the endogeneity, instrumental variable techniques were used, as discussed in the final part of this chapter.

Drawing on the resource dependence theory, Chapter 4, (paper 2), has answered two questions: (1) does board gender diversity in the form of the representation of women on the board of directors, influence firm performance, and (2) does board gender diversity in the form of the representation of women on the board of directors, influence firm efficiency (also known as firm agency cost)? This paper used the same data, procedures and measures of analysis as in paper 1, by considering Jordan as a case study. Although many countries around the world have adopted specific legalisation to encourage gender diversity in the boardrooms (Francoeur et al. 2008; Armstrong et al. 2010), including Norway, Italy, the Netherlands, Australia, the UK, Canada and Spain, this study does not support the resource dependence theory predictions concerning gender diversity, as a means to promote firm performance and efficiency.

In Chapter 5 (paper 3), an investigation is presented into the effect of CEO duality as a proxy for board leadership structure on firm performance and firm efficiency among non-financial listed firms in the context of a less developed country, by considering Jordan as a case study. By adopting the agency theory, this paper used the same steps as in paper 1 and paper 2. Although it has been argued elsewhere that when the CEO and the board chairperson is the same person, the board's effectiveness to monitor and control the management team is diminished due to a conflict of interest and lack of board independence, eventually hindering the firm's performance (Kang & Zardkoohi 2005), this study seems rather to corroborate the stewardship theory.

The current chapter of this thesis summarises the whole study and presents its conclusions. The rest of this chapter is organised as follows. Firstly, a summary of the empirical results is offered. Secondly, an explanation of the implications of the findings is given as well as some relevant concluding remarks. Thirdly, the results and recommendations follow. Finally, the research's limitations are listed and further studies are proposed.

6.1 The results and discussion

6.1.1 The empirical results

The empirical results of paper 1, paper 2 and paper 3, are derived by investigating whether the specific mechanisms of corporate governance (i.e., board independence, board gender diversity and CEO duality) influence firm performance and firm agency cost, by considering Jordan as a case study. These papers tested six hypotheses by using a regression model. A summary of the empirical results is presented below.

6.1.1.1 Board independence, firm performance and firm efficiency

The empirical results of the relationships between board independence, firm performance and firm efficiency/firm agency cost, suggest that board independence in the form of the representation of outside independent directors on the board can influence firm performance and firm efficiency. Based on this analysis, the relevant hypotheses are accepted.

H 1a: There is a positive relationship between board independence and firm performance.

H 1b: A company board's independence will mitigate corporate agency costs.

6.1.1.2 Board gender diversity, firm performance and firm efficiency

The empirical results of the relationships between board gender diversity, firm performance and firm efficiency/firm agency cost, indicate that board gender diversity in the form of the representation of women on the board of directors, does not affect firm performance or firm efficiency. Based on this analysis, the following hypotheses are rejected.

H 1a: There is a positive relationship between board gender diversity and firm performance.
H 1b: A company board's gender diversity will reduce corporate agency costs.

6.1.1.3 CEO duality, firm performance and firm efficiency

The empirical results of the relationships between CEO duality, firm performance and firm efficiency/firm agency cost, propose that CEO duality (also known as a dual leadership structure) can positively influence firm performance and inversely (negatively) influence agency cost. Based on this analysis, the following hypotheses are rejected.

H 1a: CEO duality is negatively related with firm performance.

H 1b: CEO duality is positively associated with firm agency cost.

6.1.2 The discussion of the results

Although the results of these papers support a number of prior studies, they could not provide conclusive empirical evidence on some issues (e.g., board independence) in the form of the representation of outside independent directors. It is argued that due to the variations in financing patterns and ownership structure of firms around the world, agency conflict may vary. Furthermore, the practices of corporate governance may vary broadly at the level of the companies and the countries (Doidge et al. 2007). It is confirmed that the mechanisms of governance act well in developed markets. In contrast, these mechanisms may not act well in some developing markets (Majumdar & Chhibber 1999).

Overall, agency problems can be categorised into two main groups. The first is termed 'traditional agency problems' which are prevalent in developed countries. The second is known as 'unique agency problems' which are common in developing countries. Dharwadkar et al. (2000, p. 651) stated that the "traditional agency solutions that mitigate agency problems in the strong governance context of developed economies, might not necessarily be effective in the weak governance context prevalent in emerging economies”, a finding which is relevant to the empirical results of the current study. The problem of corporate governance in developing countries such as Jordan, may not resemble those of other countries. Thus, the divergence of some of the current study’s results from previous research supports the idea that ‘one size does not fit all’, in other words, that one set of governance mechanisms may not suit every country. The following sections explain the implications of these three papers’ findings.

6.1.3 Board independence, firm performance and firm efficiency

The aim of paper 1 was to empirically investigate agency theory predictions regarding the associations between a board’s independence, a firm’s performance and a firm’s agency cost. ROA, Tobin’s Q, AUR and ER, were employed to capture the effectiveness of board independence in improving firm performance and reducing its agency cost. This study responded to the call of prior research that there have not, as yet, been sufficient studies of this nature carried out in the Jordanian context, and involved gathering the relevant data for over 80 non-financial listed firms on the ASE.

The empirical results of this study are that board independence in the form of the representation of outside independent directors, can act as a control mechanism to improve the firm’s performance and mitigate its agency cost. A significant positive association among board independence, ROA and AUR ratios was found. These findings are consistent with the results of Al-Najjar (2014) and Rashid (2015). However, no significant association was found between board independence and ER for firm efficiency, which is consistent with previous research, e.g., Singh and Davidson (2003), McKnight and Weir (2009) and Rashid (2015).

Accordingly, board independence does not fully act as an effective tool to identify a firm’s agency cost in general. It is noted that outside directors on corporate boards are concerned with the use of a firm’s assets in a revenue generating venture, but they are not concerned with controlling s firm’s operating expenses.

The first possible explanation for this can be that, in the context of firms with a high ownership concentration like Jordanian companies, the nature of agency conflict may differ from agency conflict in Anglo-American countries. In the context of Anglo-American countries, there is a conflict of interest between dispersed shareholders and corporate management, whilst countries such as Jordan with a high concentration of ownership, may face another type of conflict, that is, a conflict of interest between majority shareholders and minority shareholders (Sun et al. 2017). The second explanation is that companies' boards in firms with a high ownership concentration are comprised of directors who represent the interests of shareholders and managers, hence, "being unable to deal with the specific agency problem adequately" (Lefort & Urzúa 2008, p. 615).

Another explanation is that, in developing markets, outside independent directors are probably not really independent (Barako et al. 2006). In Jordan, there is a requirement that all directors should be shareholders, which ignores independence altogether. Yet another explanation is that, in the Jordanian scenario, even if the firm's board has some new outside independent directors, they are elected to these positions by the inside directors. Therefore, there are close associations between family shareholders and outside directors, in which case outside and inside directors may serve on a system of 'give and take' (Singh et al. 2018).

The empirical findings also indicate a significant negative relationship between board independence and Tobin's Q. This result is in line with previous research, such as that of Sakawa and Watanabel (2018), Rashid (2018) and Singh et al. (2018), which does not support the common belief that there is a postive influence of board independence on Tobin's Q.

It can be argued that, to apply market-based measures to measure firm performance, these have to reflect the actual value of the firm (Lindenberg & Ross 1981). Thus, such measures may not be effective in developing economics as the capital market is not well developed (Lindenberg & Ross 1981).

As well, as Bacidore et al. (1997, p. 11) suggested, market-based measures "may not be an efficient contracting parameter because they are driven by many factors beyond the control of the firm's executives". The Jordanian market is no exception to this. The CCD in Jordan has indicated that the Jordanian market witnessed over the period 2000-2011, 44 bankruptcy cases in its company sector, including 26 cases in the industrial sector (Zureigat et al. 2014). Claessens and Djankov (1999, p. 502) confirmed that employing market-based measures may "lead to a downward bias in the relationship between concentrated ownership and firms' valuation" in countries with weak protection of minority shareholders, such as Jordan.

However, these findings do not deny the agency theory predictions for the following three important reasons. Firstly, it is confirmed that the mechanisms of corporate governance are an integrated system. It can be said that firms may use numerous mechanisms to identify firm's agency cost, board independence being one among several. Moreover, outside directors "may still be in a position to perform some oversight monitoring role and outside directors' inability to monitor may be captured by the insider ownership" (Rashid 2015, p. 193).

Secondly, in some developed markets, these independent directors failed to add any value for corporations, such as in various high profile U.S. cases (Singh & Davidson 2003). Finally, and conversely, it may be argued that inside directors are most effective due to their having adequate knowledge, expertise and information about the firm, more so than outside directors. As Nicholson and Kiel (2007, p. 588)) argued, "inside (or executive) directors spend their working lives in the firm they govern, they understand the businesses better than outside directors, and so can make superior decisions". Therefore, the results of this research are not surprising.

6.1.3.1 Board gender diversity, firm performance and firm efficiency

The governance literature proposes that the structure of the board is a real impact on the actions of the board of directors and top management, which ultimately affects firm performance and firm agency cost (Kim et al. 2009). The suggestion is that board diversity is one dimension of the structure of the company board that matters (Carter et al. 2010). The findings of the random effect regression estimation show non-significant relationships among board gender diversity in the form of the number of women on the board of directors, an accounting based measure (i.e., ROA) and a market-based measure (i.e., Tobin's Q). When AUR is used as the proxy of a firm's agency cost, the findings also report a non-significant relationship to female board representation.

In sum, the empirical findings of this study do not indicate any significant relationship between firm performance as measured by ROA and Tobin's Q, and firm efficiency as measured by AUR, which is in accordance with the results of Rose (2007), Carter et al. (2010), Chapple and Humphrey (2014), Pletzer et al. (2015) and Kagzi and Guha (2018). However, the results from the random effect regression indicate some weak evidence (significant in one of four measures) that there is a significant and negative association between board gender diversity and the expense ratio.

The study's hypotheses were developed based on resource dependence theory. Resource dependence theory shows the most support for a positive relationship between board gender diversity and the performance of the firm. However, the outcomes of the random effect estimations expansively support the prevailing belief that "there are reasonable theoretical arguments and empirical evidence that suggest either no effect of board diversity on firm performance or a detrimental effect" (Carter et al. 2010, p. 410).

The first probable explanation for this can be that the culture, the economic position and the legal environment can shape the board gender composition of corporations (Saeed et al. 2016). Julizaerma and Sori (2012) and Iannotta et al. (2016) argued that cultural attitudes are one of the principal reasons for the weak participation of women in boardrooms. Unlike most developed markets, Jordan has great resistance against gender equality, and in this sense and others, the social structure varies from most developed markets. As noted by Singh (2009), in Jordan, families have the desire to be the dominant component in society rather than individuals. Furthermore, Jordanian families support males in the labour market rather than females (Singh 2009). Other conditions also operate to prevent women from participating in the labour market: poverty, women's behaviours are restricted, limited resources, unemployment and paid labour not being considered part of women's role in Jordanian society. As a consequence, there is a low percentage of females in Jordanian companies' boardrooms, and this small number does not have sufficient ability to control the firm performance and efficiency. Only 3% of women are present on firms' boards in Jordan.

The second potential explanation can be that, in the context of firms with a high ownership concentration, such as Jordanian firms, the nature of agency problems may be different from agency problems in Anglo-American companies. In the latter, there is an agency conflict between shareholders and managers whereas companies with a high concentration of ownership may face a conflict of interest between minority shareholders and majority shareholders (Sun et al. 2017).

A third explanation is that boards in corporations with a high ownership concentration, consist of members who represent the interests of shareholders and managers, thus, "being unable to deal with the specific agency problem adequately" (Lefort & Urzúa 2008, p. 615).

Another explanation is that, board gender diversity may bring costs to the firm because of communications problems and interpersonal conflicts. Erhardt et al. (2003)

argued that such diversity both improves performance by increasing decision-making ability, but reduces group performance by rising conflict. Treichler (1995) claimed that gender diversity on company boards requires higher costs because of expanded initiatives and coordination to provide for the needs of different kinds of employees. Furthermore, Triana et al. (2013) indicated that diversity leads to conflict, which could impede the capacity of the corporation to make strategic changes, in particular in times when organisational performance is low.

Yet another explanation is that rising gender diversity does not decrease agency cost for all firms. As argued by Jurkus et al. (2011), increasing the proportion of women on company boards may lead to improving their performance and mitigating against agency cost in some, but not all firms. Therefore, the outcomes of this research do not support the resource dependence theory predictions, and it can be seen that the position of Jordanian women is quite limited when compared with Anglo-American societies.

6.1.3.2 CEO duality, firm performance and firm efficiency

A further purpose of this study was to examine whether CEO duality can influence firm agency cost and firm performance in Jordanian companies. A main motivation for this study was that previous studies on the influence of CEO duality on firm agency cost and firm performance, have arrived at inclusive and mixed findings, with empirical evidence offered to support the arguments for and against CEO duality.

Such duality "has been blamed for poor performance and slow response to change, in firms such as General Motors, Digital Equipment Corporation, and Goodyear Tyre and Rubber" (Boyd 1995, p. 301). Furthermore, it has been argued that CEOs engaged in controversial accounting practices that led to severe financial collapses in U.S.A. However, as noted by Kang and Zardkoohi (2005), this does not necessarily imply that CEO duality constitutes a weak governance system. Conversely, duality might be an ideal solution for external environmental difficulties or a reward for a CEO's good firm performance (Kang & Zardkoohi 2005).

The empirical analysis of this research illustrates that CEO duality in developing economies such as Jordan, is important in improving firm performance (expressed by ROA) and in diminishing firm agency cost as measured as two ratios of firm efficiency (i.e., AUR and ER). The estimation of random effect regression findings show that CEO duality as a proxy of a dual leadership structure, is positively significant in determining ROA, and that CEO duality is positively significant in determining AUR and negatively significant in determining firm agency cost as measured by ER. It is noted that CEO duality is concerned with the use of a corporation's assets in a revenue generating venture and with controlling its operating expenses. Therefore, the results of this study imply CEO duality encourages the board of directors' ability to exercise the function of governance in Jordan, which supports stewardship theory predictions.

The empirical findings of this study provide support for the results of Finkelstein and D'aveni (1994) and Ramdani and Witteloostuijn (2010), that low-performing firms need a strong leadership structure and unity of command to promote their performance. It is confirmed that in average-performing firms in Jordan, complex operational and managerial matters need a solid and strong leadership structure (Ramdani & Witteloostuijn 2010). Hence, this research is inconsistent with arguments that a dual leadership structure (CEO duality) leads to an unambiguous leadership structure and unity of command. Likewise, the results provide support for the argument that CEOs with dual roles (CEO duality) have more authority, power and freedom to make numerous decisions, and therefore, more positively affect firm agency cost and firm performance. In addition, a single leadership structure can respond to the difficulties in a firm's unique environment effectively (Guillet et al. 2013). Therefore, these results may imply that Jordanian firms obtain significant benefits from CEO duality. As well, the results of this research support the common belief that CEO duality may have benefits and costs (Brickley et al. 1997; Elsayed 2007; Dey et al. 2011; Tang 2017). In developing countries like Jordan, the cost of splitting of the CEO and board chairman roles is higher than the benefits (Katti & Raithatha 2018). Brickley et al. (1997) indicate some costs of CEO non-duality, such as agency costs of monitoring the actions of the chairperson, and information costs. Thus, the firm's agency cost is lower for the firms that promote the dual role of CEO and chairperson.

From the regression coefficients of the random effect, a non-significant and positive relationship is noted between CEO duality and market-based measures (i.e., Tobin's Q). As noted by Lindenberg and Ross (1981), market-based measures such as Tobin's Q should reflect the true value of the firms. Thus, such measures may not be effective in less developed markets as the capital market is undeveloped (Joh 2003), and this is the case in Jordan (Bouri 2015); it is classified by thin and unregulated trading and probably less well-informed investors. Likewise, Bacidore et al. (1997, p. 11) noted that the market-based measures "may not be an efficient contracting parameter because they are driven by many factors beyond the control of the firm's executives". Jordan is no exception to this. Claessens and Djankov (1999) suggested that using the market-based measures may "lead to a downward bias in the relationship between concentrated ownership and firms' valuation" in markets with weak protection of minority shareholders, such as the Jordanian market. Moreover, most developing economies count on debt financing rather than finance from the share market (i.e., equity financing); thus, market-based measures do not represent an actual gain made by the shareholders on their investments (Kumar 2004). Specifically, Pham et al. (2011, p. 373) stated that the measurement of Tobin's Q is "subject to accounting treatment of balance sheet items". Therefore, the empirical results support the prevailing belief that market-based measures do not work well in developing countries.

6.2 Implications of the results

The results of this thesis have a number of critical implications for policy makers, authorities, practitioners, regulators and managers of the non-financial companies sector in Jordan. Paper 1 (Chapter 3) has shown that policy makers should formulate rules and regulations concerning the corporate governance of industrial and services-related companies that boost the adoption of outside independent directors. There is, however, a need to apply the right meaning to the term 'independent members', as also is the need to clearly define the members who serve as independent members on a board of directors. Indeed, the importance of this study for related parties is that it has strong implications for the current reform movement of corporate governance practices in Jordan. Secondly, it is necessary to support firms not to have very large boards. It is argued that boards with a large number of members are easier for the CEO to control (Jensen 1993). Finally, firm age, free cash flow and firm growth, are becoming useful control tools that can add value to the company. These play a vital role in reducing a firm's agency cost; therefore having a positive influence on a firm's efficiency.

Paper 2 (Chapter 4) indicates that the empirical evidence of this study does not support the gender quota law to raise the percentage of women on firms' boards. Thus, the decision to appoint females to a company's board should not be based on the idea that such gender diversity will improve the performance and efficiency of firms. The study's outcomes point to gender diversity not seeming to have a negative link with firm performance and firm agency cost; gender diversity should be enhanced for ethical reasons to improve fairness. Secondly, the empirical findings of this study will help the corporation to find a 'board-performance' fit that will guarantee high performance and efficiency of the Jordanian company sector. Overall, this research shows a non-significant and positive effect of gender diversity on firm performance and efficiency. Therefore, these findings will assist firms in designing their boards.

Paper 3 (Chapter 5), drawing on the governance literature, holds that prior studies do no confirm that CEO duality as a proxy dual leadership structure is to be blamed for poor firm performance (Elsayed 2007). In the Jordanian scenario, supporting the argument that CEO duality will improve some firms while CEO non-duality may be of more benefit for other ones, the theoretical implication is that regulatory authorities, policy makers, practitioners, and non-financial sector managers in Jordan, need to if the system of Anglo-American dual leadership structure may promote firm performance and alleviate firm's agency costs in Jordan, should it mandatorily adopt CEO duality (dual leadership structure) through the listed firms at the ASE.

6.3 Recommendations of the study

This thesis has been carried out in the context of Jordan, and has elaborated on the evolution of corporate governance in Jordan, highlighting different internal factors like its laws and legal institutions and its political and economic environments, all of which shape the current structure of corporate governance in Jordan. It is noted that although there are many similarities between the developed countries and developing countries including Jordan about corporate governance structures, some of Jordan's features are different.

This thesis makes a critical contribution to the accounting literature and mitigates against the scarcity of studies on corporate governance in developing markets. Although its empirical results confirm the results of a number of earlier studies, it also goes against many previous studies which have focused on developed markets. Therefore, the results of this thesis confirm that corporate governance practice is not, and cannot be, uniform around the world.

Based on the empirical evidence and theoretical discussions, it is revealed that the practices of corporate governance in Jordan need to be improved. International standards of corporate governance may assist in formulating and correcting the governance system in any country by adopting the beneficial characteristics of corporate governance which exist in developed countries. Therefore, this thesis makes some recommendations relying on the best practices of corporate governance around the world, in keeping with the current structure of corporate governance in Jordan and the empirical results of papers 1, 2 and 3. These are summarised below:

1 The current code of corporate governance in Jordan may be continued with a few improvements. A few significant inconsistencies were found in the corporate governance code for companies and regulations in the company laws. For example:

   A) Instructions of corporate governance for shareholding listed companies for the year 2017, state that it is not allowed for the CEO to serve as board chairman at the same time. However, Article 152 (C) of the Company Law of 1997, states that the CEO of a public shareholding firm can be appointed as the general manager of that firm. Therefore, this law allows the existence of CEO duality in public shareholding companies.

   B) The requirement for all board members to be shareholders in the same firm seems to conflict with best practice of corporate governance and the concept of the independence of board members.

   C) To guarantee the effective performance of the board members, it is essential to have an annual formal evaluation process. However, instructions concerning corporate governance for shareholding listed companies are silent on this issue.

   D) The instructions of corporate governance for shareholding listed companies and the Jordanian corporate governance code for non-listed companies, have different definitions of an independent director.

   E) There is no specific requirement to disclose information on the corporation's website.

2 The theoretical discussion in Chapter 3 (paper 1) includes the statement that outside independent directors can be good monitors; the empirical results in this study also recommend that outside independent directors in the context of Jordan are good monitors as board independence in the form of the representation of outside independent directors positively influences the firm's performance and reduces its agency cost. Therefore, the regulatory bodies, such as ASE and JSC in Jordan, may consider promoting the effectiveness of boardrooms by increasing the number of independent directors who will become a part of the group of non-executive directors. By way of comparison, the Higgs report for 2003, which

makes recommendations for companies, indicated that at least half the board members should be independent directors (non-executive directors).

3 As mentioned above, the code of corporate governance for shareholdings firms listed on the ASE does not allow both non-executive and executive directors to conduct their duties and responsibilities together in one company. However, the empirical results of Chapter 5 (paper 3) document that CEO duality (i.e., a dual leadership structure) can work well in the context of Jordan. It can improve firm performance and mitigate against firm agency cost. Hence, these results support the Company Law of 1997.

4 It is noted that cultural issues can influence board gender diversity in Jordan. Unlike most developed countries, Jordan has a cultural setting that appears strongly resistant against gender equality. The social structure of Jordanian families supports males with respect to the labour market, rather than females. The empirical findings of Chapter 4 (paper 2) indicate board gender diversity may not work well in Jordan's context. It may alleviate the ability of the board to exercise the functions of governance, and lead to conflict between board members. Such conflict may diminish the board's effectiveness, and therefore create severe problems.

5 The regulatory bodies in Jordan may consider specifying the accountability structure of the board members required by the management, and the prevention of fraud issues by the management.

6.4 Limitations of the study

As with all studies, this research is not free from limitations. Firstly, the studies' data related to the corporate governance parameters was manually collected from firms' annual reports. It is argued that the governance arrangements and accounting standards are weak in developing markets like Jordan (Lins & Servaes 2002; Jara-Bertin et al. 2015). Thus, the annual reports may not actually represent all data accurately. Secondly, these studies used one set of ownership structures, (director ownership, institutional ownership and block holders ownership) as control variables. Yet it has been argued that "the use of a single category of ownership may not capture all effects of the ownership/performance relationship" (Lukviarman 2004, p. 95). Thirdly, this research investigated the influence of board independence in the form of the representation of outside independent directors on firm performance and efficiency. The requirement of appointing outside independent members to Jordanian boardrooms, was mandatory only from 2009. Hence, the fact that there was no requirement for independent directors before 2009 may have influenced the results of this study. A fourth limitation is the inclusion of only three board characteristics, i.e. board independence, board gender diversity and CEO duality. However, it is suggested that a future research direction would be to explore the effect of various other governance mechanisms on firm performance and efficiency. Fifthly, the current studies excluded financial firms because these are managed by different rules and instructions, thus the sample size was decreased from 224 firms to 80, which is a limited number. Finally, the empirical analyses of this research are based on a single country setting.

6.5 Areas for future research

Generally speaking, both the term and idea of corporate governance in developing countries are relatively new. Therefore, there are broad issues within this field of research. Although the derived findings are specific to Jordanian context, their similarity with other developing countries' governance models recommends an extended examination into the Gulf Cooperation Council countries and the Middle East and North Africa region. For example, future research can examine corporate governance across different Arab countries with similarly shared cultures, economies, institutional settings and financial infrastructures. On the other hand, the studies employed two proxies of agency cost; other measures (i.e. Q-free cash flow interaction) can be inserted in future research. Additional future research may examine if outside independent directors are considered an important resource to the firm in that they may provide advice, legitimacy and counsel that enhance performance. Therefore, future research could use resource dependence theory by investigating certain board characteristics, such as age, experience and qualifications, which may improve firm performance and mitigate against agency cost. Likewise, future studies can extend these studies by including more independent variables (e.g. other ownership variables and CEO compensation). Paper 2 examined only one board characteristic, i.e. gender diversity. However, it is suggested that a future research direction would be to explore the effects of various other company board diversity indicators, such as age, experience in years, and level of education, on firm performance and agency cost. Paper 3 addressed CEO duality and its effect on firm performance and firm efficiency. It is confirmed that the dual leadership structure relies on some contextual variables (e.g. CEO’s experience, age and qualifications) which, within the relevant industries, has also been termed ‘CEO charisma’ (Tosi et al. 2004). Therefore, future studies can be carried out investigating the effects of CEO duality on company performance, by employing such CEO charisma as a moderating factor.

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Appendices

Appendix 1: Summary of definitions and measurements of variables

Panel A: The Variables of Firm Performance (Dependent Variable)	
ROA	It is return on assets. It is measured as the (EBIT) earning before interest and tax, divided by the total assets.
Tobin's Q	It is defined as the replacement of the firm. It is calculated as the market value of equity plus total libilities, scaled by the total assets.
Panel B: The Variables of Firm Efficiency/Firm Agency Cost (Dependent Variable)	
AUR	It is the asset utilsation ratio. It is measured as as the ratio of annual sales scaled by total assets.
ER	It is expense ratio. It is measured as the ratio of operating expenses to total annual sales.
Panel C: Independent Varibles	
BODIND	It is the board independence. It is defined as the number of outside directors as a percentage of the total number of directors on the board.
BGDIV	It is the board gender diversity. It is calculated as the number of women as a percentage of the total number of directors on the board.
CEOD	It is the CEO duality. It is measured as a binary variable, assigning one (1) if the CEO holds a dual role as the board chair, otherwise the study assigns (0) zero.
Panel D: Other Variables	
INSOWN	It is the institutional ownership. It is measured as the percentage of shares owned by financial institutions.
DIROWN	It is the directors ownership. It is calculated as the percentage of shares held by directors.
LBOWN	It is the three largest block holders. It is measured as the proportion of shares owned by the three largest block holders

BDSIZE	It is the board size. It is employed as the natural logarithm of the total number of directors on the board.
SIZE	It is the firm size. It is defined as the natural logarithm of the total assets.
AGE	It is the firm size. It is measured as the natural logarithm of the total number of years a company has been listed on the stock exchange.
GROWTH	It is the firm growth. It is calculated as the proportion of current year sales minus previous year sales, divided by previous year sales.
LIQ	It is the current ratio of the firm (liqudity). It is defined by using the current ratio, dividing current assets by current liabilities.
LEV	It is the debt ratio of the firm. It is measured as the ratio of total debt to total assets.
FCF	It is the free cash flow of the firm. It is defined as the operating income before depreciation, minus the sum of taxes plus interest expenses and dividends paid, scaled by the total assets.
R&D	It is the research and development expenditure of the firm. It is calculated as a ratio of total expenditure to total sales.

Appendix 2: The summary of the studies' hypotheses

Board of directors	Hypothese
Board independence	***H 1$_a$*:** There is a positive relationship between board independence and firm performance. ***H 1$_b$*:** A company board's independence will mitigate corporate agency costs.
Board gender diversity	***H 2$_a$:*** There is a positive relationship between board gender diversity and firm performance. ***H 2$_b$:*** A company board's gender diversity will reduce corporate agency costs.
CEO duality	***H 3$_a$:*** CEO duality is negatively related with firm performance. ***H 3$_b$:*** CEO duality is positively associated with firm agency cost.

Appendix 3: The volume of the trading, the number of listed companies and market capitalisation of the ASE, from 1999-2017

Year	No. of listed companies	No. of shares	Trading value (JD)	No. of transactions	Market capitalisation (JD)
1999	151	271,100,000	389,430,783	154,600	4,137,711,690
2000	163	178,300,000	334,724,633	133,100	3,509,640,709
2001	163	332,400,000	668,652,674	293,200	4,476,364,817
2002	163	455,600,000	950,272,994	446,400	5,028,953,990
2003	163	1,008,564620	1,855,176,028	786,208	7,772,750,866
2004	163	1,338,703,981	3,793,251,050	1,178,163	13,033,833,515
2005	163	2,581,744,423	16,871,051,948	2,392,509	26,667,097,118
2006	163	4,104,285,135	14,209,870,592	3,442,558	21,078,237,222
2007	163	4,479,369,609	12,348,101,910	3,457,915	29,217,202,327
2008	262	5,442,267,689	20,318,014,547	3,780,934	25,406,265,528
2009	272	6,022,471,335	9,665,310,642	2,964,610	22,526,919,428
2010	277	6,988,858,431	6,689,987,155	1,880,219	21,858,181,603
2011	247	4,072,337,760	2,850,252,628	1,318,278	19,272,757,327
2012	243	2,384,058,415	1,978,813,878	975,016	19,141,521,210
2013	240	2,705,796,950	3,027,255,186	1,074,438	18,233,491,417
2014	236	2,321,802,789	2,263,404,594	955,987	18,082,617,433
2015	228	2,585,816,584	3,417,079,026	898,982	17,984,673,970
2016	224	1,836,711,983	2,329,466,130	786,156	17,339,384,851
2017	194	1,716,744,042	2,926,233,590	717,494	16,962,550,802

Source: ASE (2018)

Appendix 4: The assets and liablities of licensed banks in Jordan from 2013 to 2017

Foreign assets	2013	2014	2015	2016	2017
Cash in iaults (in foreign currencies)	238.7	210.5	184.2	174.5	201.6
Balances with foreign banks	3348.1	3289.6	3258.5	3934.9	4,064.8
Portfolio (non-resident)	508.9	641.9	692.6	716.9	757.2

Credit facilities to private sector (non-resident)	818.0	481.9	477.1	479.8	500.2
Other foreign assets	238.2	107.2	72.1	138.5	137.9
Total	5,151.9	4,731.1	4,684.5	5,444.6	5,661.7
Domestic assets					
Claims on public sector	10,458.8	11,015.4	11,514.1	11,0186.2	10,292.6
Claims on private sector (resident)	17,201.9	17,830.3	18,681.3	20,567.4	22,502.9
Claims on financial institutions	90.3	91.1	89.4	182.8	302.9
Cash in vaults and deposits with the CBJ	6,497.0	7,591.0	7,972.4	6,768.0	6,690.6
Other assets	3,402.9	3,609.2	4,191.5	4,334.5	3,651.8
Total	37,650.9	40,137.0	42,448.7	42,938.9	43,440.8
Liabilities					
Capital, reserves and provisions	6,146.2	6,773.7	7,107.8	7,261.2	7,564.2
Foreign liabilities	6,716.1	6,738.3	6,671.4	6,430.7	6,799.1
Central government deposits	744.0	1,380.0	1,293.2	1,130.2	955.9
Public entities deposits	1,262.4	1,091.2	1,423.8	1,339.9	1,380.3
Private sector deposits (resident)	22,195.8	23,976.8	25,799.8	26,952.9	26,916.3
Financial institutions deposits	277.9	360.4	443.2	385.5	309.5
Credit from the CBJ	842.7	645.6	500.6	499.3	527.4
Other liabilities	4,617.7	3,902.1	3,893.4	4,383.8	4,649.8
Total	42,802.8	44,868.1	47,133.2	48,383.5	49,102.5

Source: CBJ (2018)