

Chapter 1: Introduction

1.1. Introduction and Overview

In recent years, the topic corporate governance has attracted significant attention from academics, practitioners and professional organizations in the field of finance, accounting and law (Leng, 2004). Interest in corporate governance has been particularly sparked by a number of high profile corporate collapses in the last decade occurring in both developed and developing countries, such as those of Enron Corp and WorldCom in the United States (US), Parmalat in Europe, HIH Insurance Group and One Tel in Australia, and many others in different countries (Ball, 2009; Hodne, Murphy, Ottenbacher, & Ruggles, 2013). The recent Global Financial Crisis (GFC) has further encouraged most countries to institute corporate governance codes to protect shareholders and other stakeholders' interest as well as the value of companies, and encouraged research into the role of corporate governance codes in developed and developing financial markets (Aguilera & Cuervo-Cazurra, 2009; Beekes, Brown, & Verhoeven, 2011).

The main purpose of corporate governance is to regulate and monitor the relationships between managers and owners of the corporation. Good governance, therefore, plays a role in company management, ensuring the production of reliable financial information, building investor confidence and attracting investments by encouraging transparency and accountability in the managements of companies, and mitigating conflict of interests, especially in cases where managers' interests do not align with those of the company's owners – the so called agency problem (Jensen & Meckling, 1976). The Organization for Economic Co-operation and Development (OECD 2004, p. 11) defines corporate governance as: “a set of relationships between a company's management, its board, its shareholders and other stakeholders. Corporate governance also provides the structure through which the objectives of the company are set, and the means of attaining those objectives and monitoring performance are determined”. Parum (2005, p. 702) contends that corporate governance can be defined as “a set of principles concerned with the governance of companies and how these principles are disclosed or communicated externally”. Mustapha and Ahmad (2011) consider corporate governance as a term often used to explain the processes and structures used to direct and manage the business activities of a company in order to enhance its shareholders' wealth. Al-Najjar (2010) contends that there are two types of corporate governance mechanisms that have impact on management activities. The first type is known as internal

mechanisms and includes board structure, managers, shareholders and other parties related to the firm. The second type is known as external mechanisms and includes the legal system, regulations and outside monitoring. Although implementation of corporate governance codes is now worldwide, the codes in developed countries differ from those in developing countries in a variety of ways, because of social and economic conditions, markets, institutional and regulatory frameworks, technology, and culture (Denis, 2001).

The financial performance of individual firms is very important to investors, management and shareholders. It is also an important indicator of a country's economic well-being and the growth of the economy. To assess firm performance, managers, investors, researchers and other stakeholders utilise performance indicators (Hoopes, Madsen, & Walker, 2003). Broadly, such indicators include a mixture of different components, such as operational effectiveness, corporate reputation, and the continued existence of the corporation (Richard, Devinney, Yip, & Johnson, 2009) – the latter being the main economic goal of a firm and, therefore, of greatest interest to the accounting and finance disciplines (Venkatraman & Ramanujam, 1986). More specifically, performance indicators fall into two categories: accounting-based and market-based measures. Although performance is often estimated using accounting-based measures, such as return on assets (ROA), return on equity (ROE). (Ittner & Larcker, 1997), they may give misleading signals concerning value relevance, innovation etc., so researchers and other stakeholders often use market-based measures, such as Tobin's Q, market return etc. (Gomes, Yasin, & Lisboa, 2007; Hult et al., 2008).

Corporate financial performance is generally influenced by the economic environment of the country in which the corporations operate. However, regardless of whether companies operate in developed or developing countries, firm performance is influenced by firm-specific factors, such as board structure, ownership structure and corporate governance mechanisms (Al-Tuwaijri, Christensen, & Hughes II, 2004). A number of empirical studies, using different methods, have examined the association between corporate governance mechanisms and firm performance. The findings from these studies are inconclusive. For example, Bøhren and Ødegaard (2001), Larcker et al. (2007) and Bhagat and Bolton (2008) find a positive relationship between corporate governance variables and firm performance consistent with an alignment of interest hypothesis. Other studies reveal a negative relationship between governance mechanisms and firm performance, such as those of Yermack (1996), Chiang and Chia (2005) and Filbeck and Lee (2006) supporting an entrenchment hypothesis. The discrepancy in findings may be explained by a failure to include a sufficiently broad range of

factors, such as the contract environment of the firm (Demsetz, 1983) and dividend policy etc., that influence corporate governance variables.

The dividend policy of companies is an important area of particular interest to shareholders, and a major financial policy matter for businesses as well as most dialectical or debatable issue in corporate finance literature. Black (1976, p. 8) reported that “The harder we look at the dividend picture, the more it seems like a puzzle with pieces that don’t fit together”. Miller and Modigliani (1961) claim that dividends are irrelevant in the determination of share value in a perfect capital market. Lintner (1962) and Gordon (1963) propose, using the ‘Bird-in-the hand’ theory, that, investors prefer to receive certain dividends rather than taking inherent risks in holding out for future access to capital. However, other studies reveal that dividend policy is important because of the presence of preferential taxes on the market, and Mehrani, Moradi, and Eskandar (2011) explain that corporate governance is a factor affecting dividend policy. Easterbrook (1984) asserts that dividend policy may be used to reduce agency cost and mitigate agency conflict between minority and majority shareholders by restraining expropriations by senior management and removing corporate wealth from top management control (Faccio, Lang, & Young, 2001). Maury and Pajuste (2002) explain that there are two approaches to explain how dividend policy mitigates the agency problems: the first approach considers dividend policy as a result of the conflict between large dominating shareholders and minority shareholders as well as between managers (agent) and shareholders (principals), and is known as outcomes model; the second approach argues that dividend policies are substituted to control managers' opportunism, known as the substitute model. Notably, dividend policy varies over time, between firms and across countries, especially between developed and emergent capital markets. In countries governed by Common Law (strong shareholder protection), companies distribute higher dividends than those in Civil Law countries (weak shareholder protection) (La Porta, Lopez-de-Silanes, Shleifer, & Vishny, 2000a).

Recent research shows that alternative corporate governance variables have a significant effect on dividend policy in both developed and developing countries. Hansen (1982) argues that firms with strong governance mechanisms seem to be more prosperous than firms possessing weak governance mechanisms. This implies that corporate governance system is a good starting point for developing policies to promote market efficiency (Jensen, 1986). If good corporate governance practices do play an active role in business success, it will be related to paying higher levels of dividends, protection of minority shareholders, and enhancement of investors trust in financial statements (Bebczuk, 2005). In addition, it also

encourages investments, and leads to high dividends ratios that alleviate agency problems and results in the improvement of firm performance (Arellano & Bond, 1991; Bebczuk, 2005; Jensen, 1986; La Porta et al., 2000a; Rozeff, 1982).

Jordan is an emerging economy in the Middle East. Jordan has achieved a better financial system compared to other Middle Eastern and North African (MENA) markets (Bond, 2002). However, the corporate governance system in Jordan suffers from some of the same problems experienced in other emerging markets. Although the Amman Stock Exchange (ASE) represents a small market, it is evident that the stock markets of Jordan and Egypt are the most active among those the Arab countries (Omran & Bolbol, 2003). In recent years, as a result of steps taken by the Jordanian government, the Jordanian capital market has developed rapidly compared to those of other developing countries (Bond, 2002). Jordan has emerged as the largest emerging equity markets relative to GDP in the world. By the end of 2011, the market capitalization of listed shares on the ASE was JD19.272 billion, equivalent to around US\$27.531 billion or 101.5 per cent of the GDP. The number of listed companies in the ASE in 2011 was 247 companies. At the end February 2012 the top ten companies by market capitalization was 67.1 per cent of the total market capitalization, while the trading value of the best ten companies was 53.5 per cent of the total value traded. In 2005, the ASE promoted a Corporate Governance Code by (ASE, 2005). The aim of this code was to enhance the confidence of investors and protect shareholders' rights (Kato & Long, 2006). As a developing economy, Jordan has less legal protection for minority shareholders when compared to protections provided in developed countries. The ASE code is composed of regulations on the board of directors, annual general meetings, shareholders rights, transparency and disclosure etc. based on Securities Law, Companies Law and Principles of the OECD.

Australia is a developed economy with a strong financial market in the Asia-Pacific region providing strong legal protection for stakeholders. The Australian financial market follows the Anglo-American system of corporate governance and is, thus, the same as that of the US and the United Kingdom (Weimer & Pape, 1999). As statistics show, Australia Securities Exchange (ASX) is one of the ten best exchange markets in the world. In December 2011, the number of companies listed on the ASX was 1922 with market capitalization of US \$1.198 trillion, which is 86 per cent of the GDP. In March 2003, the Corporate Governance Council published the ASX Corporate Governance Principles. The Principles are composed of ten core principles and twenty-eight best practice guidelines for effective corporate governance (ASX, 2003). A substantially re-written second edition was released in 2007 and new

recommendations on diversity and the composition of the remuneration committee were added in 2010. Since the release of the second edition in 2007, there has been considerable focus across the world on corporate governance practices in light of the events leading up to, and during, the Global Financial Crisis. In response, a number of jurisdictions have adopted new legislation regulating corporate behaviour and/or upgraded their corporate governance codes. Following a comprehensive review in 2012, the 21 members of the ASX Corporate Governance Council (Council) agreed that it was an appropriate time to issue a third edition of the Principles and Recommendations. The changes in the third edition reflect global developments on the corporate governance front since the second edition was published. The opportunity has also been taken to simplify the structure of the Principles and Recommendations and to afford greater flexibility to listed entities in terms of where they make their governance disclosures (ASX, 2013).

The ASX Principles are not compulsory; a company may elect not to adopt the Principles, if it thinks they are inappropriate in the current circumstances. According to ASX listing rules, companies must include a note stated that the Principles have been adopted in their financial reports. If the company has not adopted the Principles, the financial reports must disclose how corporate governance has been implemented and why the ASX Principles were not adopted (ASX, 2003).

This thesis investigates whether corporate governance mechanisms have significant influence on both firm performance and dividend policy in Jordan and Australia. Since corporate governance is a blend of laws, policies and practices, all aimed at maximizing shareholder returns (Larcker, Richardson, & Tuna, 2007), this study examines some corporate performance and dividend policy indicators aligned with those various aspects of corporate governance. The economy of Jordan presents an ideal opportunity to study the relationship between corporate governance practices and corporate performance, and dividend policy because, like many developing countries, Jordan has started to integrate with the global economy and adopted a corporate governance code based upon international standards. However, being an emerging economy, most companies in Jordan suffer from poor management and lack of experience in modern business management approaches (Al-Shiab & Abu-Tapanjeh, 2005). Most Jordanian companies owned and managed by members of the family (Warrad, Abed, Khriasat, & Al-Sheikh, 2012). Therefore, a comparative study between Jordan's and Australia's financial systems will be of value to relevant stakeholders in emerging markets as well contributing to the literature in this field of research.

1.2. Problem Statement

The aim of this study is to provide an insight into the relationship between corporate governance mechanisms and corporate performance, and dividend policy in Jordan and Australia. Arguably, this study is of particular importance to the needs of the Jordanian environment in light of the Australian experience. The results of this research may be applicable to other countries, such as Libya and other members of MENA countries. The Jordanian and Australian corporate sectors have been chosen for this research. Because, Jordan is a good example of an emerging market that has been implemented economic reforms successfully and attained significant success in market liberalization to attract more and more foreign investments. Also, Jordan is well ahead of neighbouring Gulf Cooperative Council (GCC) member countries in the emergence of governance regime, aligned with foreign investments, as evidenced in the development of Corporate Governance Code in 2005 as well as becoming the largest emerging equity markets relative to GDP in the world in 2011. On the other hand, Australian companies have some of the best practices of corporate governance in the Western world, which, unlike the US and EU countries, has experienced little effect from the GFC – as supported by the unemployment and economic growth statistics of the country. Therefore, Jordan is taken as a proxy for a developing economy and Australia as a developed economy.

Succinctly stated, the problem guiding this research is:

To what extent the association between governance attributes and firm performance and dividend policy are tested? And to what extent does effective governance structure improve firm performance and dividend policy?

Two sub-questions have been designed to address the main research problem:

- What is the effect of corporate governance variables and corporate performance, and how do these effects differ in developed (Australia) and developing (Jordan) country contexts?
- What is the influence of corporate governance variables on dividend policy, and how does this influence differ in developed (Australia) and developing (Jordan) economy contexts?

1.3. Significance and Expected Contributions of the Study

The importance of this study derives from its coverage, which attempts to assess the relevance of the theories and approaches on corporate governance, financial performance and

dividend policy in the literature by analysing the possible relationship between corporate governance and firm performance, and dividend policy. This study compares the effect of corporate governance on both corporate performance and dividend policy in Jordan and Australia by identifying how companies adopt corporate governance codes. The implementation of good corporate governance practices is urgently needed in the current globalized and open markets environment to prevent economic crises caused by weak corporate governance practices; many countries around the world have suffered from the consequences of poor corporate governance practices in recent years (El Mehdi, 2007; Eltony & Babiker, 2005; Leng, 2004).

This study is among the earliest to examine the effects of corporate governance variables on firm performance and dividend policy in Jordanian companies after that country's implementation of the Jordanian code of corporate governance. There are few studies in Jordan that have determined the relationship between corporate governance and firm performance, and these studies (Al-Najjar, 2010; Warrad et al., 2012) have examined only the impact of ownership structure on performance. This study chooses Jordanian listed non-finance firms to test the relationship between corporate governance, firm performance and dividend policy for three reasons. First, Jordan is considered as the pioneer country to adopt a code of corporate governance in the Middle Eastern region. Therefore, it is important to assess corporate governance effectiveness in improving firm performance as well as dividend policy. Second, the Jordanian market is important because it attracts a lot of local and foreign investors, especially Arabian investors. Jordan has established economic regions and promotional institutions, such as the Jordan Investment Board (JIB), established in 1995, to encourage investors to invest in the private sectors, especially because the Jordanian government has adopted a privatization program and aims to attract foreign investments (Kato & Long, 2006). An important factor in this research is analysing the advantages of foreign investors on firm performance, corporate governance practices and dividend policy. Thirdly, Jordanian listed firms at the ASE are characterized by strong block-holding and weak firm performance (Zeitun & Tian, 2007), thus providing an opportunity for investigating the reasons behind the low performance of Jordanian listed firms.

Following the collapses of giant corporations around the world, there have been a number of studies on corporate governance in the context of developed markets, such as those in the US, UK, Germany, Japan and Australia. However, there are only a few studies on corporate governance in emerging markets, especially in the MENA regions, such as Jordan. Findings from a comparison between a developed economy and a developing economy will be

especially useful to the policy makers and other stakeholders in Jordan but also relevant to both finance managers and researchers from both developed and developing countries. Thus, this study will make a significant contribution to the growing body of literature in the area of good corporate governance practices, and their implication on firm performance and dividend policy. This study is also expected to contribute to practice because scholars, regulators and shareholders in Jordan and other countries in the Middle East will better understand the role of good corporate governance practices and their impacts on performance and dividend policy. Accordingly, an appropriate corporate governance system can be designed to improve the future value of firms and the economic well-being of all associated parties.

Given the recent emphasis of regulatory bodies on strengthening governance structure of firms globally, an empirical study on the association between the governance structure and firm performance is worthwhile and timely. In the Jordanian context, this study provides an important opportunity to investigate the role and effectiveness of various governance attributes in enhancing firm performance in the presence of significant ownership concentration typically by family members and a developing governance regime and capital market, the findings of which can be extrapolated to other developing countries. This type of study is not particularly well researched yet. Again, in the Australian context, this study extends prior research and adds to, and accords with the findings of those studies. Although the characteristics of the Australian corporate governance system including legal system, ownership characteristics, market for corporate control, and other corporate governance features are markedly different from that of Jordan that may have potential impact on the governance-performance and governance-dividend policy relationships, by comparing the Australian and Jordanian contexts this study offers new insights in explaining the key drivers of governance attributes promoting firm performance and dividend policy in both countries.

The findings of this study would be important to regulators, auditors, government, and capital markets, in particular in the Jordanian context where regulatory enforcement mechanisms and specialised media releases of corporate activity are lacking, and with stock that are not consistently followed by analysts and firms' tend to have inadequate governance structures to assist firm performance. This could be of interest to regulatory authorities in Jordan given the power and influence of family based strictures of firms, or family holding significant power and shareholdings of major corporations. Australian regulators can also take note of any changes occurring in governance practices driving firm performance and dividend policy.

1.4. Objectives of the Study

The main aim of this thesis is to examine the effect of corporate governance mechanisms on firm performance and dividend policy in non-finance companies listed at the ASE in Jordan and ASX in Australia. Relevant theoretical frameworks in corporate governance, firm performance and dividend policy are used to help achieve this aim. This study also aims to provide an overview of the rules of corporate governance in listed companies in Jordan and Australia. The period chosen for this study is between 2005 and 2011. This is because this period signifies the introduction of the governance requirements of ASX in 2003 and the Jordanian Corporate Governance Code in 2005. The time frame represents a large variation in governance practices used by listed companies in Jordan and Australia. Hence, this period is taken to identify the determinants of firm performance and dividend policy through corporate governance variables, and internal and external mechanisms. The following is a summary of the major objectives of this study:

- To examine the corporate governance practices in Jordanian and Australian listed firms.
- To explore the effect of corporate governance mechanisms on corporate performance in Jordanian and Australian listed firms.
- To test the effect of corporate governance variables on dividend policy in Jordanian and Australian listed firms.

1.5. Conceptual Framework and Methodology

The conceptual framework used in this thesis is illustrated in: Figure 1.1, which shows how the relationship between corporate governance variables and firm performance is measured using return on assets (ROA), return on invested capital (ROIC) and Tobin's Q (TQ); and Figure 1.2, which shows the relationship between corporate governance variables and dividend policy as measured by the dividend payout ratio (POUT) and dividend yield (DY). The Figures show all variables investigated in the study.

First, the study examines whether the corporate governance variables affect firm performance (see Figure 1.1). The relationship between corporate governance variables (board size, board independence, frequency of board meetings, CEO duality, independence of the audit committee, frequency of audit committee meetings, remuneration committee independence, managerial ownership, institutional ownership, government ownership, foreign ownership, board salaries and audit quality) and firm performance as measured by return on assets

(ROA), return on capital invest (ROIC) and Tobin's Q (TQ) is explained by Agency Theory. That theory focuses on the separation of ownership and control in a firm, proposing that corporate governance mechanisms develop to resolve agency conflicts between the principal and agent in a firm (Fama & Jensen, 1983a). The conflict of interests that results from the differing interests of owners and managers is highlighted in the work of Berle and Means (1932). These authors contend that agency problem arises when the managers pursue objectives which may differ significantly from those pursued by shareholders. Firms with strong corporate governance systems mitigate the problem of information asymmetry and reduce agency costs through the alignment of interests between managers and shareholders. Thus, increased firm performance could be expected in firms with stronger corporate governance (Shleifer & Vishny, 1986). The research framework illustrated in Figure 1.1 includes control variables (firm size, leverage, growth rate, firm risk, firm age and liquidity ratio) in the analysis. These variables are included because previous studies show they have an impact on firm performance.

Second, this study examines whether the corporate governance variables affect dividend policy (Figure 1.2). The relationship between corporate governance variables (board size, board independence, frequency of board meetings, CEO duality, audit committee independence, managerial ownership, institutional ownership, government ownership, foreign ownership, board salaries, and audit quality) and dividend policy as measured by dividend payout ratio (POUT) and dividend yield (DY) is explained in Signalling Theory. Many studies use Signalling Theory and information asymmetry to explain the relationship between insiders (managers) and outsiders (shareholders), as well as to explain corporate dividend policies. Again, control variables (firm size, leverage, growth rate, firm risk, firm age and profitability) are included in the analysis because previous studies show they have an impact on dividend policy.

Figure 1.1: Relationship between corporate governance variables and firm performance

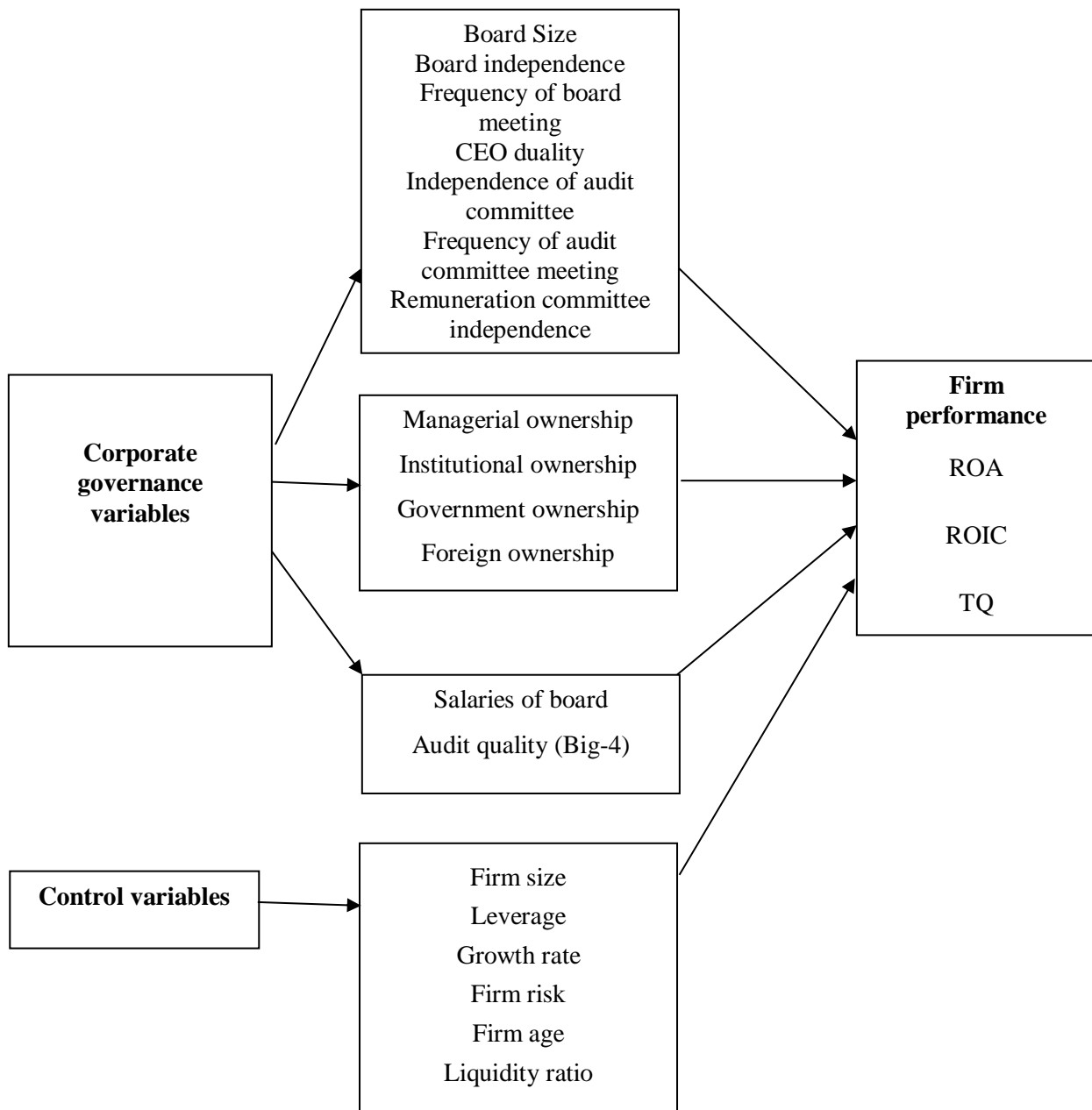
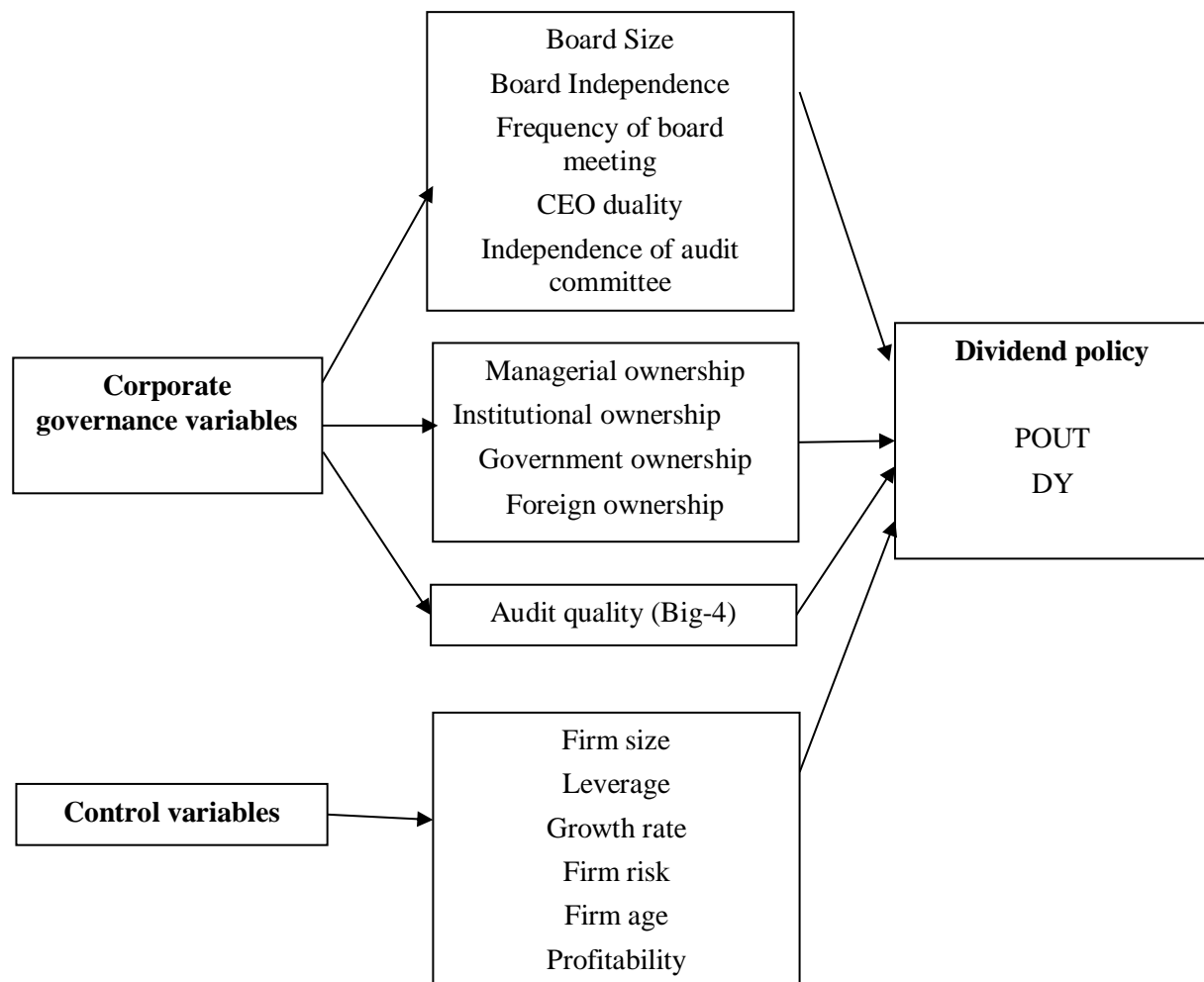


Figure 1.2: Relationship between corporate governance variables and dividend policy



The conceptual framework is developed from the literature, reviewed in Chapters 3 and 4 of this thesis. The most important theories informing the development of the conceptual framework are the Agency and Signalling Theories. The target population of this study are Jordanian and Australian listed non-finance companies from the AES and the ASX. The study includes a sample of 70 Jordanian listed non-finance companies, and 206 Australian listed non-finance companies. The sample period is from 2005 to 2011. This study used annual reports of Australian and Jordanian listed non-finance companies. Data have been collected from several sources, such as DataStream, SIRCA and Jordanian Shareholding Companies Guide, extracting accounting and market data from 2005 to 2011.

In analysing the data, the research employs two distinct regression models. The first model seeks to explain the relationship between corporate governance mechanisms and firm performance, and uses three financial performance measures: ROA, ROIC and TQ as measures of financial performance. Three regression approaches are used to test this relationship: ordinary least squares (OLS); fixed effects (FE) and/or random effects (RE); and the generalized method of moments (GMM) approaches. The second model tests the association between corporate governance variables and dividend policy, and uses two proxies: POUT and DY as measures of dividend policy. Two regression approaches are used to test this relationship: OLS and either FE and/or RE approaches.

1.6. Thesis Structure

The structure of this thesis is as follows:

Chapter 1 describes the aim of the study, which is to analyse the impact of corporate governance on the financial performance and dividend policy in the context of corporations in two economies – Jordan and Australia.

Chapter 2 explores the institutional context in Jordan (a developing economy) and Australia (a developed economy), including an exploration of the development of the Jordanian and Australian capital markets.

Chapter 3 discusses the main theories and interpretations of the relationship between corporate governance practices, firm performance and dividend policy. It also provides an overview of empirical evidence and development of the hypotheses on the relationship between corporate governance mechanisms, firm performance and dividend policy.

Chapter 4 focuses on the data and research methodology, regression models, variables' specifications and their measurements.

Chapter 5 presents descriptive statistics, correlation analysis, and results and discussion of the empirical analysis on the relationship between corporate governance variables and firm performance in Jordanian and Australian non-finance listed firms.

Chapter 6 presents the descriptive statistics, correlation analysis and results of the empirical analysis on the relationship between corporate governance variables and dividend policy in Jordanian and Australian non-finance listed firms.

Chapter 7 presents the conclusions and implications of the study.

Chapter 2: Institutional Context in Jordan and Australia

2.1. Introduction

Chapter 1 described the aim of the study, which is to analyse the impact of corporate governance on the financial performance and dividend policy of corporations in two economies: Jordan and Australia. This chapter explores the institutional contexts of Jordan (a developing country) and Australia (a developed country) to gain an understanding of the corporate practices, including corporate governance, financial performances and dividend policies implemented by corporations in Jordan and Australia. Such an understanding is important because the structure of the two economies, including their financial structures, stock exchanges, banking systems and regulations, that determine corporate behaviour are significantly different.

This chapter is organized as follows: Section 2.2 discusses the institutional context in Jordan and is made up of five parts: Section 2.2.1 provides a brief overview of the economy of Jordan; Section 2.2.2 discusses the development of the Jordanian capital market; Section 2.2.3 provides a brief description of the market structure in Jordan; Section 2.2.4 discusses Jordan's institutional setting; and Section 2.2.5 provides an overview of corporate governance in Jordan. Section 2.3 is concerned with Australia's institutional context. This section is also in five parts, mirroring those of Section 2.2 but in the Australian context. Section 2.4 presents a comparative analysis of institutional settings in both countries while Section 2.5 summarizes the chapter's discussion and findings.

2.2. Institutional Context in Jordan

2.2.1. Overview of Jordanian Economy

Jordan is a small country in Middle East and North Africa regions (MENA). A large area of the country is covered by the Arabian Desert. Approximately 10 per cent of land is arable and this, combined with low rainfall and non-renewable ground water resources make agriculture unprofitable. Agriculture employs only 3.05 per cent of Jordan's workforce. As a result, rates of poverty and unemployment are generally high as compared to the neighbouring countries. Jordan has one of the smallest economies in the Middle East. The country lacks coal and oil reserves and relies upon tourism, phosphates mining, potash and its fertilizer derivatives, overseas remittances from Jordanian citizens working across the border in oil rich countries including Saudi Arabia and foreign aid (Adjaoud, Zeghal, & Andaleeb, 2007). The country's service sector accounts for 66 per cent of its workforce and the remaining 30.95 per cent is

employed in the industrial sector. The key features of the Jordanian economy include high unemployment, declining growth, contained inflation, and huge investments in services sector.

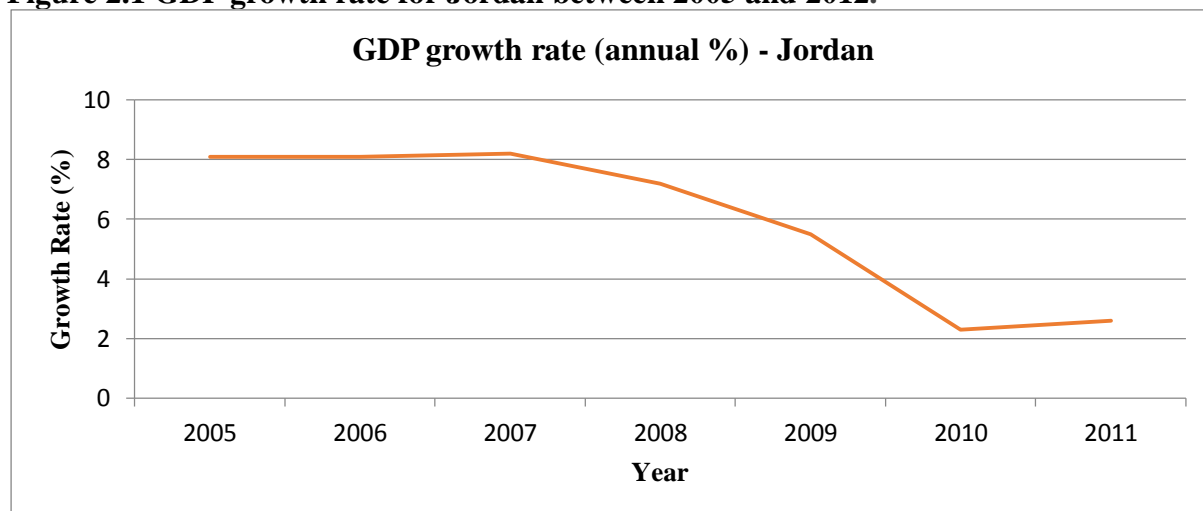
In 1999, King Abdullah implemented significant economic reforms, including opening of the trade regime, privatization of state-owned companies and elimination of fuel subsidies. These reforms spurred the growth of the economy by attracting foreign direct investments and creating employment in the country (Klapper & Love, 2004). The 1999 liberalising policies together with ongoing educational reforms spurred economic growth in Jordan, making it an ‘Emerging Economy’. Table 2.1 provides key Economic indicators and Figure 2.1 gives the GDP growth rate in Jordan for the period 2005-2011.

Table 2.1: Jordan – selected economic indicators, 2005-2011

Indicators	2005	2006	2007	2008	2009	2010	2011
Total population (000s)	5,473	5,600	5,723	5,850	5,980	6,113	6,249
Population growth Rate %	2.27	2.29	2.23	2.18	2.19	2.21	2.19
GDP (current US\$) billions	12,588	15,056	17,110	21,971	23,820	26,425	28,840
GDP growth (annual %)	8.1	8.1	8.2	7.2	5.5	2.3	2.6
Inflation Rate (CPI)	8.12	8.11	8.18	7.23	5.48	2.31	2.58
Economic Structure							
Agriculture, value added (% of GDP)	3.09	2.95	2.84	2.7	3.05	3.42	3.33
Industry, value added (% of GDP)	29	29	32	34	32	31	31
Services, etc., value added (% of GDP)	68	68	66	63	65	66	66
Unemployment rate (%)	14.84	14.05	13.1	12.65	12.93	12.5	13.1

Source: World Bank, Data World Bank Indicators 2005-2011.

Figure 2.1 GDP growth rate for Jordan between 2005 and 2012.



Source: Data World Bank, Indicators 2005-2011.

As shown in Table 2.1 and Figure 2.1, the slowdown in the global economy and unrest in the Middle East has contributed to depressed growth of GDP in Jordan in 2008–2010. Between 2005 and 2007 Jordanian economy has shown higher GDP growth rate compared to many countries in Middle East region. Between 2007 and 2010, GDP growth rate declines. In 2007, Jordan's GDP growth rate was 8.2 per cent while in 2010 it was 2.3 per cent due to the GFC. However, GDP growth rate has started increasing in 2011 at 2.6 with GDP US\$28,840 billion. It is noted that continued supply of energy has been particularly hard hit: until 2003, Jordan was reliant upon Iraq for its oil supplies, but the problems in Iraq have limited that source. In addition attacks on the pipelines of natural gas from Egypt have resulted in the need to purchase more expensive fuels for the purpose of generating electricity (Hutchinson & Gul, 2004). The export-oriented sectors, tourism and construction were especially impacted by these problems (Khoury, 2003). Foreign assistance, mostly from the Gulf State countries, helped Jordan to offset the extra budgetary expenses, but budget deficits remained high, at approximately 10 per cent of the GDP less the grants. In 2011, the Jordanian government approved two relief programs and supplement for the budget, in order to improve the living conditions of the poor and middle classes.

2.2.2. Overview of Jordanian Capital Market

The Jordanian government has adopted a comprehensive policy of reform of the country's capital market with a view to boosting the country's private sector, diversifying and expanding the economy, and improving the regulation of the securities market. The most significant features of the reform are the changes in the institutions of the capital market, the usage of the global electronic trading, clearance and settlement systems, elimination of

obstacles to making investments, and strengthening monitoring of the capital market. Such reforms are aimed at increasing transparency in the trade of securities, reflecting reflect international standards and the impact of globalisation (Caylor & Brown, 2006).

In 1997 the formulation of the *Temporary Law of Securities No. 23 (Securities Law)*, was considered a landmark decision. It aimed to restrict the capital market of Jordan and focused on restructuring the Jordanian capital market. The major feature of the restructure was to separate the legislative and supervisory roles of the capital market from the executive operating roles in the capital market where Securities Depository Commission (SDC) is responsible for legislative and supervisory roles, and Amman Stock Exchange (ASE) for executive operating roles. The *Securities Law* regulates the capital market and provides for its supervision, the framework for the SDC, market intermediaries and the ASE. The JSC can draft new secondary instructions; instructions issued to implement the laws, including instructions on the disclosure (Al-Akra et al., 2009). The law provided three new institutions to operate in the Amman financial market, namely:

- 1) Jordan Securities Commission (JSC)
- 2) Amman Stock Exchange (ASE)
- 3) Securities Depository Centre (SDC)

JSC is the regulator of the securities market. Part of its mandate is to provide protection to all investors and ensure transparency and fairness (Khatab, Masood, Zaman, Saleem, & Saeed, 2011). The Ministers of the Council appoint Commissioners who report to the Prime Minister and may be removed without cause. The JSC's budget must be approved by the Prime Minister, but the JSC is self-financing. It has a staff of 90, including ten staff in the department of enforcement. Staff salaries are less than those offered by the Central Bank and the private sector. The JSC has delivered significant revenue to the government in recent years.

In 2002, a new legal entity, private shareholding company, was created as part of the company law amendments and designed to appeal to foreign investors. Although the entity can also be listed, it has more flexible rules for governance and capital voting (AL Basheer, 2003). In 2002, company law amendments significantly increased the authority and powers of the JSC, enabling the Commission to suspend trading, impose fines and issue delisting notices. The JSC also has power to order deregistration and obtain phone records. Appeals against JSC decisions are made first to the Board of the JSC (Malkawi & Haloush, 2007). In 2003 the JSC took 356 actions of enforcement, including 145 actions against issuers. Most of the actions related to lack of disclosure. The ASE is only stock exchange in Jordan and it is

regulated by the *Securities Law* (SL), the Listing Rules for 2003. Until recently the ASE, which is the only stock exchange in Jordan and is regulated by the *Securities Law*, did not play an important role in providing regulations to listed companies. In the first half of 2004, the power of the Government strengthened ASE significantly, enabling it to issue fines and warnings, as well as de-list and suspend the issuer (ROSC, 2004). The SDC offers online clearance, registry and settlement of services for private service companies. The SDC is directly linked to the ASE and JSC. All trade in the listed shares must be executed through SDC.

In 2003, Jordan became one of the biggest emerging equity markets on the basis of its GDP (i.e. GDP at 113%) (Lam & Lee, 2008). In 2004 the equity market of Jordan was valued at US\$11.3 billion. Currently there are more than 165 companies listed on the ASE. The top ten companies listed account for 67.3 per cent of the market capitalization, and the top ten trading companies represent almost 50 per cent of the volume of trading. The sector of listed companies is dominated by insurance and banking companies, the dominant one being Arab Bank, one of the five largest banks in the world. Together, insurance and banking companies listed comprise more than 55 per cent of the market capitalisation. The pressure of delisting is not an important issue in Jordan. In Jordan, ownership is less concentrated than is the case in most emerging markets. The free float average on the ASE is calculated to be 40 per cent (Al-Akra, Ali, & Marashdeh, 2009; Al-Fayoumi, Abuzayed, & Alexander, 2010). Foreign ownership, generally from MENA countries is almost 40 per cent of the market capitalisation. The legal framework for corporations originates in French Civil Law. The dominant legal form of public shareholding companies are those of listed and large companies. All public shareholding companies must be listed according to the law.

2.2.2.1 The Amman Financial Market (AFM)

In Jordan, shares in public shareholding companies were traded long till the establishment of the Jordan Securities Market (JSM). In 1930 the first public shareholding institution the Bank of Arab was established in Jordan, throughout the 1930s the Jordanian public traded in and subscribed to shares in Bank Arab. The initial issue of bonds was in the 1960s (Malkawi & Haloush, 2007) but the securities market that emerged was disorganised and non-specialised, and the government stepped in to regulate issuances and securities to ensure speedy, easy and safe trading that protects small investors through a fair pricing mechanism based on the demand and supply (Heugens, Van Essen, & Van Oosterhout, 2009).

In 1975-76, the Central Bank carried out studies in collaboration with the International Finance Corporation (IFC) of the World Bank. The studies indicated that the size of Jordan's economy, the private sector's shares of the public companies and its diverse investors base is justified (Mashayekhi & Bazaz, 2008). The establishment of a caterer market, which acts to create opportunities required for the growth of the economy and stimulates the activity of the economy (Klapper & Love, 2004). In 1976 the *Temporary Law No. 31* was promulgated, which led to the establishment of AFM. In 1977 Cabinet resolved to create an Amman Administration Committee to establish the AFM, which was done in 1978. The law laid out the objectives of the AFM as follows:

- (1) To mobilise savings for investments in securities, and channel the savings to support the economy.
- (2) To regulate the dealing and issuance of securities in such a manner that it would ensure the ease, soundness and speed of the transactions to safeguard the financial interests of the nation and provide protection to small savers.
- (3) To provide statistics and data important for achieving the objectives of the AFM).

During its inception, the AFM was delegated the double task of role as SEC and role as a conventional Stock Exchange (Brick & Chidambaran, 2007). In other words, it was the regulator of its own conduct. The AFM operated in this way for 20 years; later the Government launched a comprehensive policy for capital market reforms amidst changing technological requirements, institutional demands, and increased volume of transactions owing to globalisation and, most of all, to meet international standards (Al-Akra et al., 2009). As previously noted, the enactment of the *Temporary Law of Securities No. 23* in 1997 was instrumental in restructuring the market. The separation of the supervisory, legislative and executive functions into three discrete entities was a major reform.

2.2.2.2 The Amman Stock Exchange (ASE)

In 1991, the ASE was established as an organized securities market in Jordan. It is a non-profit private entity having independence as to its legal and financial matters. Its prime objective is to run the securities market in the most efficient manner. ASE is the only Stock Exchange in Jordan. Since its inception, the ASE has witnessed tremendous growth in the trading activities undertaken under its control. In 2000 the ASE took a major step by implementing an Electronic Trading System (ETS). The ETS is a modern trading system enabling real time trading making transaction easier and quicker. ETS not only increased investor confidence with prompt delivery of shares/prices but also increased market

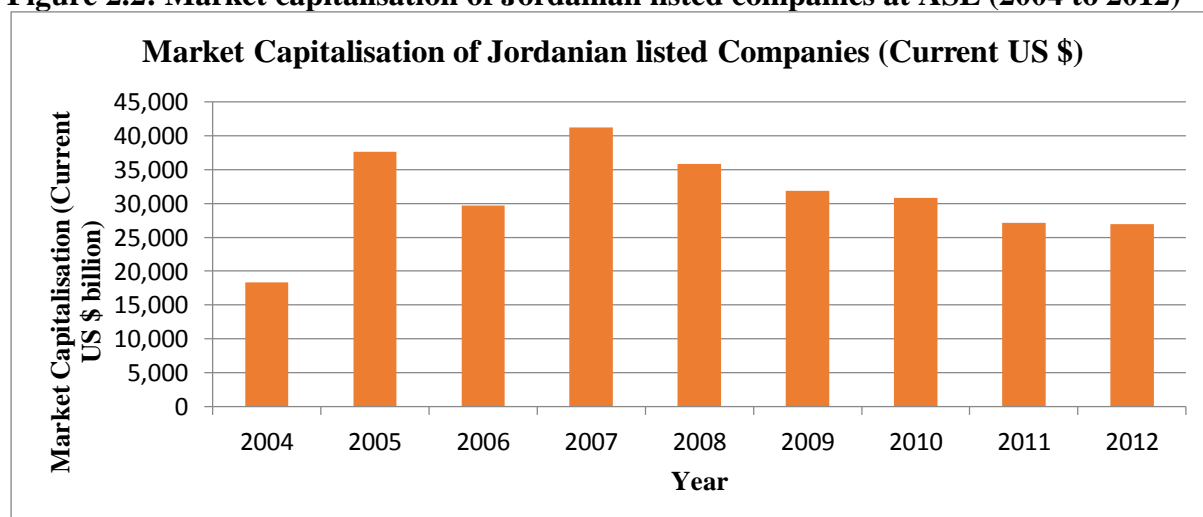
efficiency. In October 2003, the ASE joined the International Organization of Securities Commissions (IOSCO) as an affiliate member. In 2006 ASE launched an Internet Trading System (ITS) to make its operations more efficient and make its services available to a larger base of end users. A negative feature of the Jordanian capital market is its high concentration. For example, nearly 67 per cent of market capitalization in Jordan is limited to the top 10 companies listed on the ASE. Table 2-2 and Figure 2.2 give key statistics and market capitalization of the ASE respectively from 2005 to 2011 and 2004 to 2012.

Table 2.2: Main indicators for ASE 2005-2011

Indicators	2005	2006	2007	2008	2009	2010	2011
Number of Listed Companies	201	227	245	262	272	277	247
Market Capitalization (JD billion)	26,66	21,07	29,21	25,40	22,52	21.85	19.27
Average Daily Trading (JD billion)	69.1	58.7	50.0	82.9	38.8	26.75	11.5
No. of Traded Shares (million)	2,583	4,104	4,479	5,442	6,023	6,989	4,072
Turnover Ratio (%)	94.1	101.1	91.2	91.5	91.3	102.2	58.2
ASE General Weighted Price Index (point)	8191.5	5518.1	7519.3	6243.1	5520.1	5318.0	4648.4
ASE General Un-Weighted Price Index (point)	2171.0	1608.1	1798.1	1235.5	1056.1	834.4	606.8
No. of Traded Bonds (Thousand)	3.4	1.2	1.6	0.4	0.8	0.14	0.6
Value of Traded Bonds (JD million)	3.1	1.9	3.8	0.6	2.5	0.14	0.6
P/E Ratio (times)	44.2	16.7	28.0	18.8	14.4	26.3	22.6
P/BV (times)	3.2	2.9	3.0	2.2	1.8	1.7	1.5
Dividend Yield Ratio (%)	1.6	2.3	1.8	2.5	2.8	2.7	3.3
Non-Jordanian Ownership of Market Cap. (%)	45.0	45.5	48.9	49.2	48.9	49.6	51.3
Non-Jordanian Buying (JD million)	2,152.2	1,995.1	2,825.3	4,219.8	2,135.5	1036.6	555.6
Non-Jordanian Selling (JD million)	1,739.2	1,814.5	2,359.1	3,910.0	2,139.3	1051.2	477.2
Net Investment of Non-Jordanian (JD million)	413.0	180.6	466.2	309.8	(3.8)	(14.6)	78.6
Market Capitalization / GDP (%)	326.6	233.9	289.0	216.7	149.6	122.7	102.7

Source: Various Annual Reports of Amman Stock Exchange 2005-2011 and Companies guides 2005-2011.

Figure 2.2: Market capitalisation of Jordanian listed companies at ASE (2004 to 2012)



Source: Amman Stock Exchange, Companies Guides 2005-2011.

As shown in Table 2-2, the number of companies listed on the ASE (including those on the AFM) increased from 201 companies in 2005 to 247 in 2011. Further, the percentage of market capitalization to GDP was 326 per cent in 2005; however, amidst the recent turmoil in the global financial markets, the ratio dropped to 103 per cent in 2011. This is still high by international standards and, among the Arab stock markets Jordan has the largest market capitalization in terms of per cent of GDP.

2.2.2.3 The Securities Depository Centre (SDC)

The SDC issues and trades the securities, and monitors and regulates the operations and activities of all departments under its supervision. It provides supervision and regulation of information disclosure related to securities, insider trading and even the major shareholders. The SDC was established in 1999 to confirm safe custody of securities' ownership, transfer and registration of securities traded on the ASE and of prices for settling securities between brokers. It is a non-profit legal entity with administrative and financial autonomy and is operated by the private sector.

2.2.2.4 The Jordan Securities Commission (JSC)

The JSC has both administrative and financial autonomy and is directly associated with the Prime Minister, who has the authority to enhance its role in the future and enable it to effectively assume the role of supervisor of the capital market. The Commissions' Board has five full-time members entrusted with the following functions:

- (1) Formulating draft regulations and laws regarding securities.
- (2) Providing approvals of regulations and rules that are formulated by the ASE and SDC.
- (3) Grant licenses that are issued based on the law.

- (4) Set limits for the members of SDC and financial services commissions of companies.
- (5) Adopt standards of auditing and accounting for all the departments that fall under its supervision as well as for the auditors of these departments.

2.2.3. Market Structure in Jordan

As with any other national capital market, the one in Jordan can be divided into two parts: Primary Market and Secondary Market. The Primary Market refers to the market that deals with the issue of new securities, for example, initial public offerings. The Secondary Market refers to the market that facilitates trading of already issued financial instruments (i.e. stocks, bonds, future, options, etc.). The Jordanian capital market regulates these two parts of market with respect to four sectors: Banking, Insurance, Services and Industry.

2.2.3.1 Primary Market

The Primary Market can be further divided into two parts: the Stock Market and the Bond Market. The Stock Market deals with newly listed securities. Table 2.3 gives the value of primary market issues at ASE from 2005 to 2010:

Table 2.3: Value of primary market issues

Year	Stocks	Corporate Bonds	Public Entity Bond	Development Bonds	Treasury Bills	Treasury Bonds	Total
2005	888,825,951	60,600,000	74,000,000	-	-	540,000,000	1,563,425,951
2006	2,408,835,009	70,750,000	43,000,000	-	300,000,000	500,000,000	3,322,585,009
2007	885,771,902	168,700,000	46,000,000	-	550,000,000	592,500,000	2,242,971,902
2008	827,957,704	141,750,000	128,000,000	-	1,716,000,000	1,265,200,000	4,078,907,704
2009	317,321,922	151,750,000	138,500,000	-	2,787,000,000	1,404,000,000	4,798,571,922
2010	119,281,271	93,768,170	159,500,000	109,000,000	1,651,500,000	2,989,800,000	5,122,849,441

Source: ASE (2012) and Companies Guides 2005-2011.

2.2.3.2 Secondary Market

The Secondary Market refers to the market place for already issued securities, including stocks, bonds, futures and options. It is classified into three parts; First, Second and Third Market. There are also other classifications of the market: Bonds Market, Off-Trading Floor Transactions and Mutual Fund Market. Table 2.4 gives the Trading Value of the Secondary Market for securities listed on the ASE from the year 2005 to 2011, and Table 2.5 provides ASE definitions of the different segments of the JCM.

Table 2.4: Trading value of the secondary market

Year	Stocks	Mutual Funds	Bonds	Off-Trading Floor Transactions	Total
2005	16,871,051,948	-	3,135,705	939,475,471	17,813,663,124
2006	14,209,870,592	-	1,868,010	835,905,455	15,047,644,057
2007	12,348,101,910	-	3,799,874	790,963,903	13,142,865,686
2008	20,318,014,547	-	605,819	618,039,845	20,936,660,211
2009	9,665,312,328	-	2,529,800	218,010,354	9,885,852,482
2010	6,689,987,155	-	140,175	142,094,354	6,832,221,684
2011	2,850,252,628	-	555,039	321,302,833	3,172,110,500

Source: ASE (2012) and Companies Guides 2005-2011

Table 2.5: Market segmentation

Secondary Market	The market through which securities are traded in accordance with the provisions of laws, regulations and directives in force.
First Market	That part of the Secondary Market through which trading takes place in securities, governed by special listing rules according to Directives for Listing Securities on Amman Stock Exchange.
Second Market	That part of the Secondary Market through which trading takes place in securities, governed by special listing rules according to Directives for Listing Securities on Amman Stock Exchange.
Third Market	That part of the Secondary Market through which trading takes place in securities, governed by special listing rules according to Directives for Listing Securities on Amman Stock Exchange.
Bonds Market	That part of the Secondary Market through which trading in development bonds and corporate bonds takes place.
Right Issues' Market	That part of the Secondary market through which right issues listed on the Stock Exchange are traded.
Transactions off the Trading Floor	That part of the Secondary Market through which inheritance and inter-family transactions takes place.

Source: ASE (2012)

The market can also be classified into three main sectors as shown in Table 2.6 and Table 2.7: Financial, Services and Industry sectors, presenting, respectively, their trading value and market capitalization of listed companies by sector in ASE from 2005 to 2011.

Table 2.6: Trading value of primary and secondary markets by new sector classification

Year	Financial	Services	Industry	Total
2005	13,200,688,924	1,195,920,637	2,474,442,386	16,871,051,948
2006	11,570,201,564	942,189,854	1,697,479,173	14,209,870,592
2007	8,779,234,370	1,657,992,661	1,910,874,879	12,348,101,910
2008	9,638,936,812	5,422,241,865	5,256,835,871	20,318,014,548
2009	6,363,773,746	2,030,846,061	1,270,692,520	9,665,312,328
2010	4,174,112,697	1,744,663,490	771,210,968	6,689,987,155
2011	1,757,351,376	576,006,319	516,894,934	2,850,252,629

Source: ASE (2012) and Companies Guides 2005-2011

Table 2.7 Market capitalization of listed companies by sector in ASE from 2005 to 2011 (JD billion)

Year	Financial	Services	Industry	Total
2005	19346.1	3300.2	4020.9	26667.1
2006	14669.8	2882.8	3525.7	21078.2
2007	18922	4091	6202	29215
2008	15501	3630	6276	25407
2009	12559	3877	6091	22527
2010	11442	3735	6381	21858
2011	9847	3481	5944	19273

2.2.4. Institutional Setting in the Jordanian Capital Market

The financial setting in Jordan is developing rapidly. The total assets of the financial system in 2007 were 10.8 per cent of yearly growth, worth US\$37,876 billion. This compares to growth ratio of 7.6 per cent, worth US\$53,154 billion dollar by the end of 2011. The Monetary and Financial Sectors of Jordan are strong and robust. This is evidenced by the fact that, despite the GFC and a liquidity crunch in Jordan, it increased by 11.5 per cent (JD2.3 million, equivalent to around US\$3.2 million) from 2009 to 2010, reaching a level of JD 22.31 million, equivalent to around US\$31.42 million dollars. In addition the balance of foreign reserves available at the Central Bank of Jordan improved from US\$10.88 billion in 2009 to US\$12.24 billion in 2010; a growth of 12.5 per cent (IMF, 2012).

2.2.4.1 Banking System in Jordan

The banking sector in Jordan is an important part of the Jordanian financial system, contributing more than 80 per cent of GDP. Therefore, it can play an important role in the improvement the Jordanian economy (Brown, 2012). The Jordanian economy is, basically, a bank-based economy, which means that the bank and financial intermediaries play an

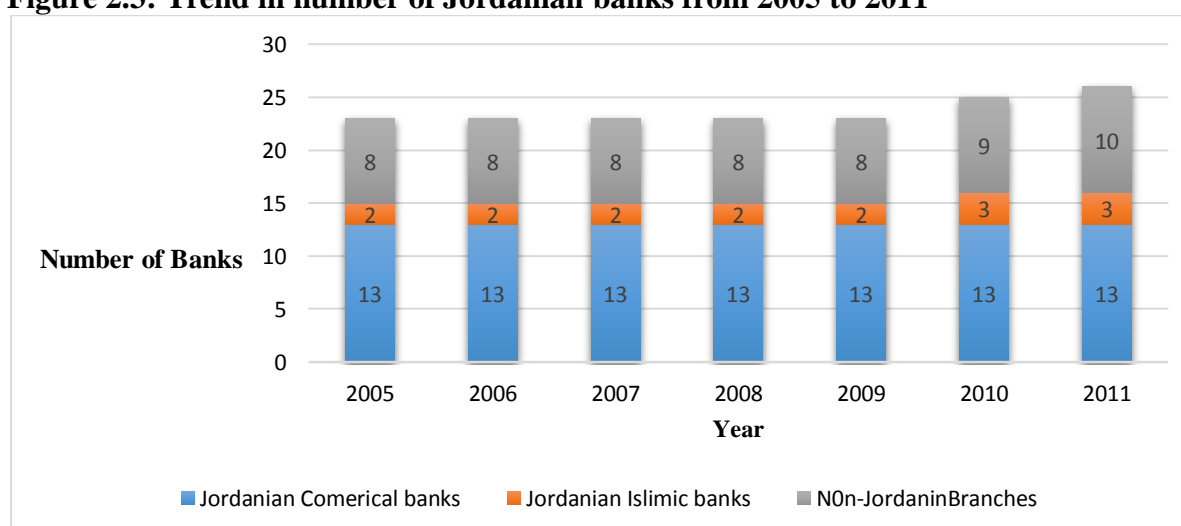
important role in deciding the mode of the Jordanian economy. Based on assets, the financial system's size has improved from US\$37,876 billion in 2007 to US\$53,154 billion in 2011, showing an increase of almost 9.2 per cent. Jordan's financial system comprises three financial institutions with the most crucial roles in the growth of the Jordanian economy are: the AMF (includes a reference to ASE); the CBJ; and the Arab Bank, which is the largest commercial bank of Jordan, other banks/financial institutions (Al-Akra et al., 2009).

The Central Bank of Jordan (CBJ) commenced operations in 1964 and is vested with all the authorities to pursue the monetary policies of the economy. It also provides banking facilities to the government, statutory corporations and other financial companies. Furthermore, it manages the resources of the foreign exchange in the country, regulates the quality, cost and quantity of credit, and, most of all, and supervises financial institutions. The Banking system in Jordan comprises of:

- a) CBJ.
- b) 26 licensed Banks controlled by the CBJ in 2011 comprising 16 Jordanian Banks including 3 Islamic Banks) and 10 Non-Jordanian Bank branches (including 6 of the Arab Banks) (CBJ Annual Report, 2013).

Figure 2.3 shows the development of Jordanian and Foreign banks operating in Jordan.

Figure 2.3: Trend in number of Jordanian banks from 2005 to 2011



Source: Central Bank of Jordan Annual Report 2013.

The number of operating banks in Jordan reached 26 banks at the end of 2011, the banking sector registered 26 banks working through more than 695 branches spread across the Kingdom, and this created a high level of competition in performance, quality, and prices of the financial services. The CBJ classifies the banks into two major categories; namely national banks and branches of foreign banks. Each of these categories is further divided into

commercial banks and Islamic banks. The 26 licensed banks are privately owned but subject to Central Bank control by the CBJ. The CBJ was established with capital entirely provided by the Jordanian Government, but it operates independently from the government. It exercises control over the banks in three forms: licensing, desk work supervision (through the data and statement it receives periodically from other banks) and field control (through physical inspection at banking premises to check compliance with the rules and regulations). The CBJ defines its major objectives and functions as follows:

- a) Issuing and regulating bank notes and coins,
- b) Maintaining and managing the country's reserves of gold and foreign exchange
- c) Acting as a banker and fiscal agent to the government and public institutions
- d) Acting as a banker to banks and specialized credit institutions
- e) Maintaining the safety of the banking system
- f) Advising the government on the formulation and implementation of fiscal and economic policies
- g) Managing monetary problems and participating in solving the country's local economic problems
- h) Regulating credit
- i) Other roles relating to the establishment and development of other financial institutions for economic developments in Jordan.

Jordanian banks have developed to become efficient and profitable. The financial health of the banks is evident from figures in Table 2.8, which provides details of the total assets held by the banks. The table indicates that the domestic assets of the banks operating in Jordan has increased from JD15724.7 million, equivalent to around US\$22,147.4 million in 2005 to JD31400.5 million, equivalent to around US\$44226.0 million, in 2011, demonstrating a growth of more than 200 per cent. It is pertinent to note here that the share of foreign assets of the banks has decreased from 25.4 per cent in 2005 to 16.6 per cent in 2011, which can largely be accounted for by the GFC. Despite the decrease in foreign assets, the Jordanian banks are able to sustain growth in their total assets from JD21086.5 million, equivalent to around US\$29699.2 million in 2005 to JD37686.4 million, equivalent to around US\$53079.4 million in 2011.

Table 2.8: Total assets of banks operating in Jordan and its ratio to GDP (2005–2011)

Year	Total Assets	Domestic Assets		Foreign Assets		Change in Total Assets	Total Assets/GDP
	JD Million	JD Million	% of total Assets	JD Million	% of total Assets	(%)	(%)
2005	21086.5	15724.7	74.5	5361.8	25.4	18.3	236.2
2006	24237.6	18034.2	74.4	6203.4	25.5	14.9	218.5
2007	26815.6	20299.1	75.7	6516.5	24.3	10.6	212.8
2008	29796.6	23986.3	80.5	5810.3	19.5	11.1	184.9
2009	31956.9	26647.2	83.3	5309.7	16.6	7.2	179.3
2010	34973.1	28868.6	82.5	6104.5	17.4	7.5	176.0
2011	37686.4	31400.5	83.3	6285.7	16.6	7.7	106.7

Source: Central Banks of Jordan, Various Annual Reports 2005-2011.

2.2.4.2 Companies and Securities Laws in Jordan

Al-Akra et al. (2009) report several pieces of legislation that govern the operation of Jordanian financial market, including -

- *Company Law 1964*
- *Commercial Law 1966*
- *Company Law No. 22 1997*
- *Temporary Securities Law No. 23 1997*
- *Privatization Law No. 25 2000*
- *Securities Law No. 76 2002*
- *Accounting profession Law 2003*

The *Companies Law No. 22 1997* as amended from time to time since 1964 should be read together with *Companies Regulations and Amendments (No. 50 of 1997)*. Some rules in the *Company Law* provides for corporate governance with regard to the corporation's auditors, stating the requirements for auditors' reports and the manner in which auditors are appointed. It allows companies to appoint an auditor at the Annual General Meeting of the general shareholders. Auditors should not be changed while the process of auditing is in progress except for some reasons that are stipulated in the *Company Law*. In the context of corporate governance and dividend policy, companies in Jordan are required to adhere to the following provisions under the *Companies Law No. 22 of 1997* as amended from time to time:

- a) Article 113 – methods for increasing capital

Article 113 of the *Companies Law No. 22*, as amended, provides for different methods by which a Jordanian company can increase its capital, such as issue of shares, capitalization of reserves or debts, or conversion of bonds to shares.

b) Article 114 – reducing unsubscribed capital

Article 114 of the *Companies Law* provides for the right of Jordanian companies to reduce their unsubscribed capital in certain circumstances. Further Article 115 outlines the procedure for the reduction of unsubscribed capital.

c) Article 125 – negotiable corporate bonds prospectus

Article 125 of the *Companies Law No. 22*, as amended, provides authorities to companies to issue corporate bonds in order to secure debt financing. The detailed procedure for the same and other related provisions is given by Article 117 to Article 130.

d) Article 131- company right to redeem the corporate bonds

Article 131 of the law provides a right to Jordanian companies to redeem their corporate bonds.

e) Article 184 – Observance of accounting principles

In particular, Article 184 (a) of the *Companies Law No. 22*, as amended, requires for the companies in Jordan to follow International Accounting Standards (IAS) or International Financial Reporting Standards (IFRS) to maintain their books of accounts and registers. Article 184 (a) can be reiterated as: “A Public Shareholding Company shall organize its accounts and keep its registers and books in accordance with the recognized international accounting and auditing standards” (Source: *Companies Law No. 22 1997*, Jordan).

f) Article 186 – distribution of profit and compulsory reserve and Article 191 – profits, the method for distribution, and the forms necessary for the preparation and presentation of the accounting statements

g) Article 186 and 191 of the *Companies Law No. 22* outlines the conditions and processes for the distribution of profits, including in the form of dividends.

The *Securities Law No. 76 of 2002* as amended from time to time since 1997 should be read together with *Companies Regulations and Amendments of 2004*. In the context of corporate governance, companies in Jordan are required to adhere to the International Financial Reporting Standards (IFRS) requirements for the preparation of their Annual Reports (Al-Akra et al., 2009; Jordan, 2002).

2.2.5. Corporate Governance in Jordan

The rise of large corporations in the 20th century reinforced the significance of ensuring better corporate governance within those entities. The Jordan Securities Commission has, while providing for guideline of corporate governance practices for corporations listed at ASE, underlined the importance of corporate governance as follows: corporate governance practices are considered the better way to ensure improving economy performance in developed and developing economies (ROSC, 2004). Corporate governance presented an important aspect that improves the achievement of economic and regulatory reforms presently being carried out in the context of globalization, i.e. opening economies to the other, global competition; in light of the circumstances and needs of international organizations to accept the membership of the state or to deal with the world and with the institutions of those markets and developing countries.

These guidelines framed by the Jordan Securities Commission are largely based on the international principles given by the OECD (Shanikat, 2011). The OECD (2004, p. 1) defines Corporate Governance as follows: “Corporate governance is the rules and practices that govern the relationship between the managers and shareholders of corporations, as well as stakeholders like employees and creditors. It contributes to growth and financial stability by reinforcement of market confidence, financial market integrity and economic efficiency”.

OECD has developed a report on the Principles of Corporate Governance (2004). The principles cover the following areas:

- I. Ensuring the basis for an effective corporate governance framework;
- II. The rights of shareholders and key ownership functions;
- III. The equitable treatment of shareholders;
- IV. The role of stakeholders;
- V. Disclosure and transparency; and
- VI. The responsibilities of the board.

In Jordan, legislation is the base for improving corporate governance practices (Shanikat, 2011). *Company Law*, *Banking Law* and *Securities Law* required firms to follow the accepted standards of auditing and accounting essential for good governance (Al-Amarneh, Al-Kilani, & Kaddumi, 2011). The company’s controller is responsible for the implementation of the provisions of corporate governance as stated by *Company Law*. The Board reviews, evaluates and advises management on the conduct of business activities (Elsayed, 2011) as well as appointing the Chief Executive Officer (CEO) as required by *Company Law*. The *Company Law* allows shareholders to redress violations of their rights (Rajagopalan & Zhang, 2008).

In 2005, the ASE issued a first version of the Jordanian corporate governance guidelines (ASE, 2005; Shanikat, 2011). The guidelines comprise five sections: descriptions of the main terms; outline of the responsibilities of the Board; General Meetings of the shareholders; rights of the shareholders; and the rules for the transparency and disclosures with the abstract frameworks for auditing and accountability. The guidelines explain the main issues relating to the structure of ownership and the capital market's characteristics (Demirag, Sudarsanam, & Wright, 2000). Most of the guidelines are built on binding legal texts contained in the legislation of the code of corporate governance. In general, these rules and information about their requirements and aspects are related to the regulation (Lam & Lee, 2008; Shanikat, 2011).

In Jordan, the practices of corporate governance are categorized into six dimensions, which have extensively been incorporated into *Company Law* since 1997 and became mandatory in 2002: protection of shareholders' interests; effectiveness of board structure; transparency and disclosure in statement of financial reports; privatisation, capital market; and legislative power (Khoury, 2003). These six dimensions are explained in the amendments to *Company Law* in 2002 while a few of them are also explained in the *Securities Law of 2002*.

2.2.5.1 Legislative Framework and Government Oversight

In Jordan, legislation is an important means for improving corporate governance processes (AL Basheer, 2003). The laws, as discussed above plus the *Investment Promotion Law*, the *Law on Privatization* (Shanikat, 2011) and the *Accounting Profession Law No. 73 2003* – which is specifically aimed at improving accounting and auditing practices – all have components to improve corporate governance practices. In addition, the Jordanian government has enhanced the role of the Jordanian Society of Certified Public Accountants (JACPA). However, a number of poor corporate governance practices remain, such as auditors not being independent and unethical practices (ROSC, 2004).

2.2.5.2 Institutional Framework

The *Securities Law* established three institutions: the ASE, the JSC and the SDC. These institutions have fiscal and managerial independence. The *Securities Law* aims to set up the framework for protecting shareholders and investors against management misconduct and for establishing an appropriate business environment, including developing and improving the capital market. The JSC plays an important role in enhancing best practice corporate governance through its supervision, such as providing listed companies' with licenses and

other regulatory processes relating to security market (Heugens et al., 2009). The *Securities Law* is the basis for market regulation, enabling the issue and trade of securities as well as determining the trading process. It also sets the basis for supervision and monitoring of the auditing and broking process, and protection of shareholders' interests, including through disclosure and transparency (Shanikat, 2011).

2.2.5.3 Disclosure and Accounting Standards

To improve accounting and auditing procedures, the Jordanian Government established the JACPA in 1987. The JACPA recommended that, to increase investors' confidence and provide reliable information to the market, all firms should follow the IAS and/or IFRS. This requires financial reporting and disclosure of companies to become more reliable and relevant to investors. The Jordanian Government also amended various laws, as discussed above, concerning company disclosure requirements to improve financial reporting through the adoption of IFRS (ASE, 2012; (Al-Akra et al., 2009).

2.2.5.4 Corporate Governance Practices in Jordan

The protection of shareholders' rights is a significant component of good corporate governance that leads to build confidence in the institutions (Klapper & Love, 2004). The *Jordanian Corporations and other Laws* provide protection of shareholders' rights through registering property and transferring shares; enabling access to appropriate information in a timely manner and on a regular basis; enabling contributions to strategic decisions by the firms; involvement in the election of board members and distribution of company dividends. Given these rights in place, Jordanian firms are generally owned and controlled by large shareholders or family owners who dominate the board of directors and majority voting power (Shanikat, 2011).

In practice, shareholders participate in most of the important decisions excepting major asset sales (Al-Akra et al., 2009; Shanikat, 2011). Again, since comprehensive disclosure is an important part of good governance (Campbell II & Keys, 2002), Jordanian law requires all financial reports to be sent to the JSC to ensure that disclosure details are appropriately reported that ultimately affect firm performance. Shareholders also have the right to obtain appropriate information from the companies in a timely manner. In addition, Jordanian laws also impose restrictions and fines/penalties on issues that may affect firm value, such as insider trading activity (Al-Akra et al., 2009; Shanikat, 2011). All companies must also provide forecasts of three to five years including all details relating to the operating plan of

the company. In practice, although all companies apply the IFRS in their financial reporting, the quality of disclosures is found to be far from satisfactory (Al-Akra et al., 2009; Hutchinson & Gul, 2004). Board structure and the sub-committees of the board are weak (Al-Akra et al., 2009), therefore, their monitoring role, which could be used to enhance performance of firms (Hutchinson & Gul, 2004) is compromised. This is in spite of Jordanian laws defining board positions, responsibility, functions, liabilities, accountability and autonomy.

2.3. Institutional Context in Australia

2.3.1. Overview of Australian Economy

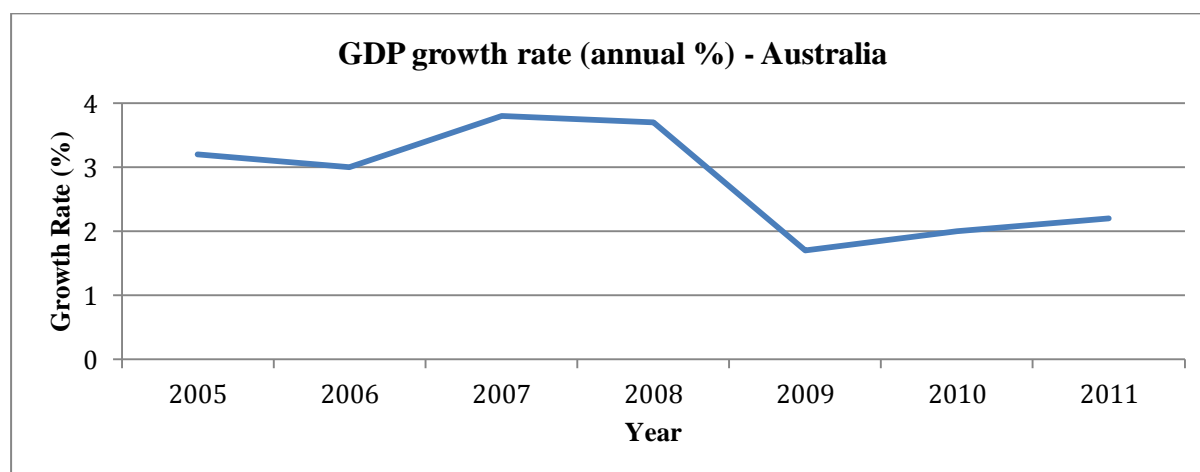
Australia, officially known as The Commonwealth of Australia, is one of the largest and strongest economies in the world. Australia is a developed nation and has the fifth highest per capita income. The key features of the economy include robust growth, low unemployment, contained inflation, strong public finances and huge investments in resources. Australia's comparative advantage is extensive natural resources for exporting primary products. The country has become a major regional financial centre in the global market. Table 2.9 provides key Economic indicators and Figure 2.4 gives the GDP growth rate in Australia for the period 2005-2011.

As shown in Table 2.9 and Figure 2.4, in recent years, though the Australian economy has shown rapid growth, since 2005, it has shown GDP growth rate declining. In 2005, Australia's GDP growth rate was 3.2 per cent, and in 2006 3.0 per cent. But GDP growth rate was increasing in 2006 to 2008 from 3.0 to 3.7 per cent. However, in 2009 the GDP growth rate in Australia has decreased due to GFC. In spite of strong economic growth, inflation has remained stable over the last decade at 3.14 per cent. The unemployment rate in Australia has averaged at 4.9 per cent from 2005 until 2011.

Table 2.9: Australia- selected economic indicators, 2005–2011

Indicators	2005	2006	2007	2008	2009	2010	2011
Total population (000s)	20,394	20,697	21,072	21,489	21,951	22,299	22,620
Population growth Rate (%)	1.32	1.48	1.52	2.00	2.09	1.57	1.43
GDP (current US \$) billions	692,301	744,836	850,325	1,052,817	921,971	1,139,200	1,379,382
GDP growth (annual %)	3.2	3.0	3.8	3.7	1.7	2.0	2.2
Inflation Rate (CPI)	3.8	3.5	2.3	4.4	1.8	2.8	3.4
Economic Structure							
Agriculture, value added (% of GDP)	3.27	3.09	2.37	2.44	2.37	2.28	3
Industry, value added (% of GDP)	26.77	28.00	20.28	19.98	21.26	19.81	20.1
Services, etc., value added (% of GDP)	69.96	68.90	77.59	77.59	76.37	77.91	77.1
Unemployment rate (%)	5.0	4.8	4.4	4.2	5.6	5.2	5.1

Source: Australian Bureau of Statistics, and Data World Bank Indicators 2005-2011.

Figure 2.4: GDP growth rate for Australia between 2005 and 2012

Source: Data World Bank Indicators 2005-2011.

In Australia, agriculture is considered as the main source of the economy, both in terms of financial impact and extent on using the natural resources. Agriculture is considered as an important contributor to regional, state and the national economy. The Australian economy is dominated by the services industry, which comprise 68 per cent of the GDP (Eslake, 2007). The Australian agricultural industry is export-oriented and accounts for 30 per cent of exports in merchandise and 20 per cent of the total exports trade (Roberts & Murray, 2002). The

mining and agriculture sectors have accounted for almost 8 per cent of the GDP. Australia possesses rich natural resources, therefore, the mining and agriculture sectors together account for almost 65 per cent of its export. The major agri-based industries in Australia include cotton, cattle, fisheries, dairy, forestry, horticulture, food, wine, grain, sugar, and wool.

The Australian economy aims to become a major competitor in the export and production of not just mineral and agriculture commodities but also a diverse mix with value adds to manufactured goods, technologies and products. Over recent decades, the services sector has expanded at the cost of the manufacturing sector. In 2011, Australia's GDP composition by sector was: agriculture, 3 per cent; industry, 20.1 per cent; and services sector, 77.1 per cent. Australia is a large exporter of iron ore, liquefied natural gas and coal (5% of GDP), bauxite, and crops, meat and dairy products (3% of GDP).

The 1850s is recognised as the beginning of the Gold Rush period in Australia, resulting in a big increase in the Australian population. In Victoria, the population increased from 80,000 in 1851 to 540,000 in 1861. In the post Second World War period, the mining industry again boosted economic activities in Australia. The biggest investor in mining activities was Great Britain, which not only invested considerable amounts of capital in mining activities but also supported allied activities, such as transport, communication and urban infrastructures (Department of Treasury and Finance, 2004).

Australia is a major exporter of wine which contributes an estimated US\$5.5 billion to the national economy. The United States of America, New Zealand, Japan, China and South Korea are the major buyers of Australian products. Increasingly the land and water resources are valued more than the capacity of productivity. Australians now value natural resources not just for forestry, grazing, cropping and the production of fish but also for its intrinsic aesthetic value, ecosystems and biodiversity, such as sinks for the greenhouse gases and the filtration of water (Proctor et al., 2002). As a result of the improved economy, unemployment rate was 5.6% in 2009 and fell to 5.1% in 2011.

Innovations in technology and changes to society have led to greater productivity and a fast pace of development of knowledge and information in all the industries. Australia has a strong knowledge-based economy; the industries that are based on knowledge contributed to half of the GDP of Australia. Telecommunication and the market of information technology in Australia are considered to be the 3rd largest in the Asia Pacific and the 10th largest around the world. The tourism industry in Australia accounts for almost 5.7 per cent of the total employment of the country, and accounts for almost 73 billion dollars to annual consumption.

For the rural areas in Australia, it is considered as a major sector of the economy. The number of tourists who visit Australia has increased by approximately 10 per cent since 2004 (Eslake, 2007).

2.3.2. Overview of Australian Capital Market

Australia has a well-developed and innovative capital market, which is ranked as the fifth in the world's most popular financial systems and capital market (Demirguc-Kunt & Maksimovic, 2001). The country boasts the biggest pool of funds under management in the Asia-Pacific region and has a healthy economic and a political position, and it is the home to most of the multinational providers for financial services. It is the one of the most attractive destination for investors from around the world. The development of capital markets in Australia dates back to 1861, when the first stock exchange, the ASX was established in the city of Melbourne. Stock Exchange activities grew strongly, supported, in 1885, with the listing of the Broken Hill Proprietary Company (BHP), a mining company that is now one of the biggest in the world. Between 1903 and 1936, stock exchanges operated at the state level. The Australian Associated Stock Exchanges (AASE) was established in Sydney 1937 with the aim of establishing a common platform for stock exchanges, companies, stock brokers and financial intermediaries and, most importantly, for investors. Exchanges operating in Sydney, Brisbane, Hobart and Adelaide initially joined the AASE, followed by those in Perth and Melbourne too. The ASSE established similar listing requirements, uniform brokerage and commissions and rules for intermediaries linked with the stock exchanges. As a result of these initiatives, the first price index was published for Australia in 1938. By 1972, national listing of companies was carried out. In 1987, ASX Limited was established, which regulates the Australian capital market today,

2.3.2.1 The Australian Stock Exchange (ASX)

The capital market in Australia comprises the ASX, a brand name for the market service activities undertaken by ASX Limited, which aims to provide the infrastructure for the economic activities of a highly competitive, vibrant and robust economy. The ASX was set up in 1987 with the merger of six stock exchanges that had operated independently throughout Australia. The ASX provides futures, equities, options, ETFs, warrants and REITs, among the other securities. The ASX is headquartered in Sydney, Australia. The ASX, in its current form, was created due to the merger of the ASX and the Futures Exchange in Sydney. The ASX is a market operator, payments facilitator, clearing house and provides educational

information to investors in the retail sector. It also oversees compliance with trading rules, promotes the standards and practices of corporate governance of companies listed in Australia, and helps to provide education to investors in the retail sector. ASX Limited offers multi-asset class market services in both Primary and Secondary Markets through three channels:

1. Australia Securities Exchange, which undertakes activities pertaining to raising, allocating, trading, hedging and price discovery.
2. ASX Clearing Corporation, which is a subsidiary of ASX Limited and centralises activities of counterparty risk transfer.
3. ASX Settlement Corporation, which is another subsidiary of ASX Limited and is responsible for settlement of securities, traded in both segments – Equity and Fixed Income.

In addition to its function as market operator, clearing house and payments system facilitator, ASX Limited also monitors compliance of operating rules by the listed companies through its subsidiary – ASX Compliance. This subsidiary regulates listed companies by seeking compliance with listing rules and adherence to best corporate governance practices as well as educating retail investor. The Australian Securities and Investments Commission (ASIC) reinforces investor confidence by regulating trading, clearing and settlement activities and supervision of market overall.

ASX is the eight largest equity markets in the world, with a market capitalisation of US\$1.198 trillion dollars in 2011. Table 2.10 and Figure 2.5 give key statistics and market capitalisation of the ASX respectively from 2005 to 2011 and 2004 to 2012. The number of companies listed on the ASX increased from 1643 companies in 2005 to 1922 in 2011. Further, the percentage of market capitalization to GDP increased from 116 per cent in 2005 to 127 per cent in 2010; however, the ratio dropped to 87 per cent in 2011 due to the GFC.

Table 2.10: Main indicators for ASX 2005–2011

Indicators	2005	2006	2007	2008	2009	2010	2011
Number of Listed Companies	1643	1751	1913	1924	1882	1913	1922
Market Capitalisation of listed companies (US\$ trillion)	804,703	1,095,857	1,298,429	675,618	1,258,455	1,454,546	1,198,163
Market Capitalisation of Listed companies (% of GDP)	116.15	147.13	152.70	64.17	36.50	127.68	86.86
Stock traded , total value (current US\$)	616,115	826,285	1,322,822	1,017,705	761,820	1,221,899	1,246,414
Stock traded, turnover ratio (%)	77.97	86.98	110.50	103.11	78.78	90.08	93.97
Stock traded, total value (% of GDP)	89	110.94	155.57	96.66	82.63	107.26	90.36

Source: Various Annual Reports of Australian Securities Exchange, 2005-2011

Figure 2.5: Market capitalisation of Australian listed companies at ASX (2004 to 2012)

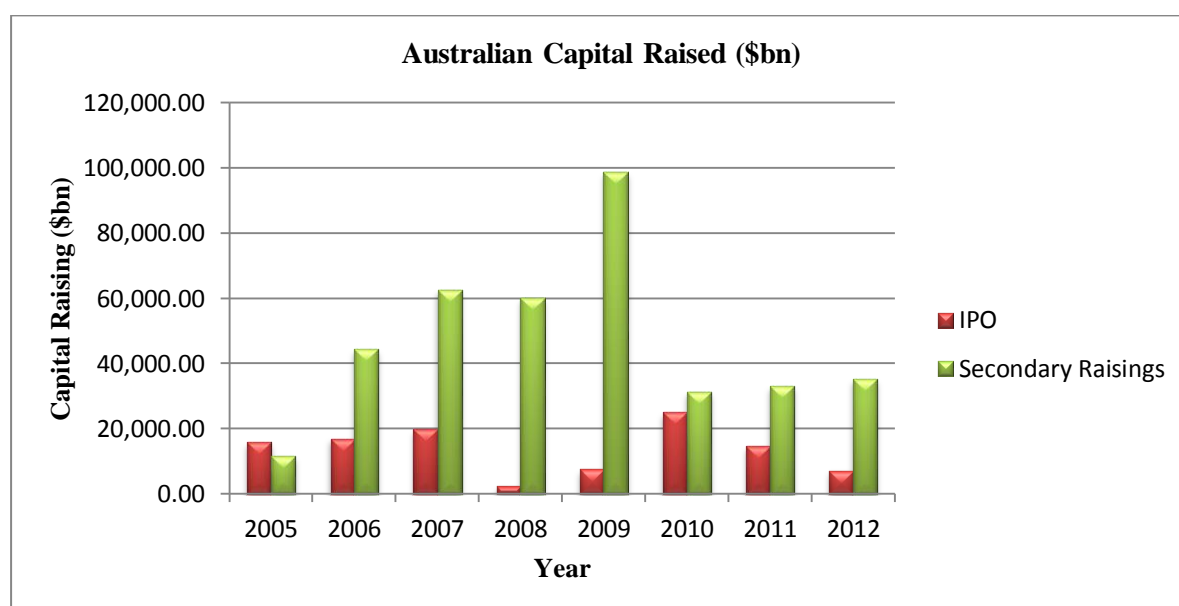
Source: Australia Securities Exchange, Various Annual Reports 2005-2011.

2.3.3. Market Structure in Australia

As with other market structures, Australia's capital market is divided into two parts: Primary Market for issuance of new securities through initial public offerings (IPOs); and Secondary Market as a platform providing for trading activities of already listed securities, for example, shares, stocks, bonds, futures and other derivatives. The following Figure 2.6 shows the capital raisings at Primary and Secondary Market in Australia. It shows that the initial public offerings (IPOs) virtually ground to a halt throughout the second half of 2008 and the first half of 2009 before picking up towards the end of 2010 as some confidence returned to markets and risk appetite started to recover. Secondary capital raisings continued until the

end of 2009 to help existing listed companies to reduce their debt exposures and repair their balance sheets, but it decreasing sharply in the end of 2010.

Figure 2.6: Australian capital raised (\$bn) 2005-2012



Source: ASX, Market Statistics 2005-2012.

2.3.4. Institutional Setting in Australian Capital Market

Table 2.11: Top 10 in overall index ranking, 2012 vs. 2011

Country	2012 Rank	2011 Rank	2012 Score (1-7)	Change in Score
Hong Kong SAR	1	1	5.31	+0.15
United States	2	2	5.27	+0.12
United Kingdom	3	3	5.21	+0.21
Singapore	4	4	5.8	+0.14
Australia	5	5	5.01	+0.08
Canada	6	6	5.00	+0.14
Japan	7	8	4.90	+0.19
Switzerland	8	9	4.78	+0.15
Netherlands	9	7	4.73	+0.02
Sweden	10	11	4.71	+0.20

Source: World Economic Forum, Financial Development Report 2012.

As already noted, the financial setting in Australia has developed rapidly. According to the Financial Sector Assessment Program (FSAP, 2006), Australia's financial system is strong, stable, well regulated and has a robust structure of supervision. The Monetary and Financial Sectors are strong and robust, despite the GFC effect. Australia is home to a significant financial services industry, and has a respected and highly innovative and sophisticated capital market, which is ranked fifth out of 57 in the world's leading financial systems and capital markets by the World Economic Forum (see Table 2.11). The Australian financial system has a similar structure to those of the UK and US; though, the financial system in

Australia has higher level of direct government intervention those of other countries. The following section provides an overview of the context for Australia's banking system, relevant parts of the companies and taxation laws in Australia.

2.3.4.1 Banking System in Australia

Australia owns a well-developed, regulated and strong banking system. The system is properly monitored and regulated under the *Banking Act, 1959*. The *Banking Act* provides for licensing requirements to carry out banking operations for domestic banks, foreign bank branches and domestic banks' foreign subsidiaries. The banking systems in Australia represent half of the total assets of the financial sector. In 2010, there were 58 banks but the banking system is dominated by those listed previously, in particular 4 major commercial banks (IMF, 2010). The first bank to be established in Australia was in 1817. This bank was established in Sydney as the Bank of New South Wales. Gradually, the bank opened branches in other parts of Australia: Brisbane, Victoria, New Zealand, South Australia, Western Australia, Fiji, Papua New Guinea and Tasmania. At present, the banking sector in Australia is serviced by five main banks: Commonwealth Bank of Australia (CBA), Westpac Banking Corporation (WBC), National Australia Bank (NAB), Australia and New Zealand Banking (ANZ), and St George Bank (Eslake, 2007).

The banking system in Australia has been under pressure during GFC because of the volatility of the market, associated with the drying up credit markets in the second half of 2011 because of debt problems in the EU. However, compared to previous periods of crises, the banks in Australia were in a better condition to cope with the disruptions and have been able to improve their funding and capital positions in recent years, with deposits increasing rapidly –faster than the credit – and reducing the bank's size of wholesale funding (RBA, 2012).

2.3.4.2 Companies and Securities Laws in Australia

Australia has enacted the first corporations' law in each state in 1961, but only succeeded federally a nation-wide regulation that consolidated to the Corporations Act 2001. Historically Australian corporations' law borrowed heavily from the English laws, however it has been diverging from its root through continuous updating the Act since mid-1990s. The Corporations Act 2001 is the primary legislation regulating companies in Australia. It is an Act of the Commonwealth of Australia that sets out the laws dealing with business entities. The constitutional history of Australia's company law is somewhat complex and tortuous. However, publicly listed companies are now federally regulated under the Corporations Act

2001. Moreover, Australian Securities and Investments Commission Act 2001 is another core Federal statutes to regulate financial market in Australia. The Australian Securities and Investments Commission (ASIC), a Commonwealth Constitutional corporation, is the primary corporate regulatory agency created by the Australian Securities and Investments Commission Act 2001, to carry out market overseeing responsibilities under the Corporations Act 2001. These two statutes have been contributed in enhancing Australia's economic reputation by ensuring that Australian financial market is more transparent and fairly treated. This leads to increasing the confidence of investors and consumers in the market. ASIC's functions generally include: registering companies; receiving, processing and making available to the public information about companies; investigating suspected contraventions of, and enforcing compliance with, the Act; and exercising discretion to relieve from compliance with regard to particular provisions of the Act. ASIC is also responsible for corporate governance, financial services, securities and derivatives, consumer protection in superannuation, insurance. For publicly listed companies, ASX is a co-regulator with ASIC in that it prescribed standards for listed companies. The standards are set out in the ASX Listing Rules. In addition to the ASX Listing Rules, the ASX Corporate Governance Council has produced Principles of Good Corporate Governance and Best Practice Recommendations. The Principles are guidelines and are not prescriptive; however, the ASX Listing Rules require that companies disclose in their annual report the extent to which they have followed these Principles. Where companies have not followed these Principles, reasons must be provided for not having followed them.

Over the past years, the Federal Government has started a comprehensive program of corporate law reform, known as the Corporate Law Economic Reform Program (CLERP). It has commenced in 1997 as a best tool for the continuing reforms of corporate and business regulation as well as to ensure that it promotes business activity. The program, which started under the Howard Government few years ago, has modernised business regulation and played a major role in building a strong and vibrant economy. Central to the whole program have been key principles of market freedom, investor protection and quality disclosure of relevant information to the market.

CLERP 9 builds on these reforms and adopts principles that provide for flexible law that takes account of the changing environment in which business operates, and ensures clear guidance on appropriate corporate behaviour and effective enforcement where breaches occur. Corporate Law Economic Reform Program (Audit Reform & Corporate Disclosure) Bill was

passed on 4 December 2003. The Bill proposes a number of reforms to the Corporations Act 2001, and is based on the reform proposals contained in the CLERP 9 discussion paper:

Corporate Disclosure - Strengthening the financial reporting framework which was released by the Government in September 2002. The Bill also contains a number of reforms flowing from the Federal Government's September response to the recommendations contained in the Report of the HIH Royal Commission released in April 2003.

Better disclosure – a measured approach, generally, the approach of the Government and the ASX is based on disclosure rather than prescriptive rules. However mandated requirements exist in respect of:

- The Bill's new CEO/CFO sign-off to directors (though not as broad as that in the Best Practice Recommendations); and
- Audit Committee requirements under the Listing Rules for listed entities in the S&P All Ordinaries Index.

The CLERP 9 discussion paper and Bill represent the Government's proposed legislative approach to the reform agenda for corporate governance which has included other significant initiatives, such as:

- The Ramsay Report on the independence of Australian company auditors;
- Developments in the US with changes to the New York Stock Exchange Listing Rules and the enactment of the Sarbanes-Oxley Act;
- Developments in the UK with the release of the Higgs Report on non-executive directors, the Smith Report on the audit function and proposed changes to the Combined Code;
- The ASX's Listing Rule amendments on Enhanced Disclosure and corporate governance; and
- The establishment of the ASX Corporate Governance Council and the release by the Council of its Principles of Good Corporate Governance and Best Practice Recommendations in March 2003. (*Source: Corporate Law Economic Reform Program, CLERP 9, Australia*).

2.3.5. Corporate Governance in Australia

In Australia, corporate governance has received significant policy and media attention over the last few years as the financial and social implication of the collapses of major corporations became evident. The investigations of irregularities in governance are considered as the most prominent in the domestic financial press.

In 2002, the ASX instituted a Corporate Governance Council (CGC). The Council aims to improve corporate governance practises, and establish best principles and best practices of corporate governance as stated by the ASX (Gibson & O'Donovan, 2007). According to CGC, corporate governance is “the system by which companies are directed and managed” (ASX, 2003, p. 3). In Australia, adoption by companies of the ASX corporate governance principles (see Appendix 1) and recommendations is optional (ASX, 2007).

In March 2003, the CGC published 10 principles as guideline to improve governance in Australia, along with the 28 recommendations. These are presented in (Appendix 1). However, as noted, the principles and recommendations are not mandatory for companies (ASX, 2003). The principles and recommendations establish the functions of management, the board structure and the sub-committees of board, emphasizing the need for board independence and experience. In addition, the principles promote ethical and responsible decision making (Principles 1, 2 and 3). The principles and recommendations also aim to safeguard integrity in financial reporting through the establishment of an audit committee comprising independent members. Moreover, to provide sufficient information to all shareholders and investors, companies should establish written policies designed to ensure compliance with ASX Listing Rule disclosure requirements. In addition, companies should design a communications policy for promoting effective communication with shareholders (Principles 4, 5 and 6). The board should require management to design and implement risk management and internal control systems to manage the company's material business risks and report to it on whether those risks are being managed effectively. Disclosure is an important factor for improving and enhancing performance (Principles 7 and 8). Fair remuneration should be established by the board and information regarding such remuneration be disclosed to shareholders, taking account of their interests (Principles 9 and 10).

Overall, the corporate governance framework in Australia is appreciated internationally. The World Economic Forum (WEF, 2008) ranks Australia in the top three economies for the effectiveness of its governance rules. According to analysis by Governance Metrics International, in 2008 Australian companies ranked fourth among 38 countries globally on various parameters, such as board responsibility, transparency and disclosure and protection of shareholder rights, effectiveness of sub-committee of board (GMI, 2008).

2.4. A Comparative Analysis of Institutional Settings in Both Countries

Several institutional differences between the corporate governance environment in Jordan and Australia may have an impact on the relationships examined in this thesis. The ASE is much smaller than the ASX in terms of the number of listed companies, market capitalisation and volume of trading. Institutional ownership in the ASE listed companies is also much smaller than the ASX. Al Najjar and Taylor (2008) estimate that average institutional ownership in Jordan is 15%. On the other hand, Hsu and Koh (2005) estimate that average institutional ownership in Australia is 48.1%. It is obvious from the literature that the managerial ownership is very low in developed countries. Managerial ownership in Australia is 9.78%, which has been characterized by a widely dispersed ownership, and institutions are the largest shareholders (Koh, 2003). Also managerial ownership in the USA is 18% and the UK is 11% (Seifert et al, 2005). However, in Jordan the managerial ownership is very high, which is 45.49%, as compared to Australia and other developed countries (Al Khouri, 2006). This may be due to the large family ownership which appears clearly in Jordanian companies. Aggarwal et al. (2009) have developed a corporate governance index based on 44 individual attributes and show the average values of governance index for different countries, such as Canada 68%, the United States 59%, United Kingdom 55% and Australia 48%. They find that the difference in governance between these countries (i.e. governance gap) is significantly negative, that is, governance level in Australia is significantly lower than the governance level in USA, UK and Canada. Similarly, overall corporate governance level in Australian firms appears to be stronger than those in Jordan. On the other hand, Jordan has a higher level of inflation and unemployment rate. It also has more firms with high ownership concentration. Moreover, board structure in Jordan is not well regulated as compared to Australian board structure. Most Jordanian firms have fewer independent board members. Jordanian boards also have fewer sub-committees, such as audit, remuneration and nomination committees. Similarly, block-holders in Jordan do not provide effective monitoring compared to Australian block-holders. Moreover, Jordanian companies are beset with problems of inadequate financial reporting and disclosure. Australia has a strong financial reporting and disclosure system, which competes at a global level and aims to maintain investor confidence both overseas and domestically. Australia is one of the earlier starters in terms of corporate governance and their current governance frameworks are stronger and effective as compared to many countries.

2.5. Conclusion

This chapter provides a summary of the institutional setting in Jordan and Australia together with a description of the main economic indicators. Australia has a strong financial system, which competes at a global level and aims to maintain investor confidence both domestically and internationally. Australia is one of the pioneer countries in the world practicing good corporate governance and their current governance frameworks are stronger and effective as compared with many countries. Compared to Australia, Jordan is a small emerging economy having a weak financial system. Jordan is also new in practicing good corporate governance and their governance frameworks are not yet stronger and effective, and not up to the international standard like Australia. It is thus evident that there are huge institutional differences between Australia (a developed economy) and Jordan (an emerging economy).

Chapter 3: Theoretical Framework, Literature Review and Hypotheses Development

3.1. Introduction

This chapter provides an overview of the main theories of the relationship between corporate governance mechanisms and firm performance, and corporate governance and dividend policy. The theories of how corporate governance mechanisms impact on company performance and on dividend policy, whether in developed or developing countries underpin this study, providing the framework for the development of hypotheses to be tested in this research.

This chapter is organized as follows: Section 3.2 outlines the main theory of corporate governance - agency theory. Section 3.3 discusses literature review and hypotheses development on corporate governance and firm performance relationship. Section 3.4 reviews main dividend policy theory - signalling theory. Section 3.5 provides the literature review and hypotheses development on corporate governance and dividend policy relationship. Finally, Section 3.6 concludes the discussion of the chapter.

3.2. Theory of Corporate Governance

Chambers (1996) contends that a theory describes what is possible and what is not possible in a particular context. Different theoretical frameworks have been applied to explain and analyse the relationship between corporate governance mechanisms and firm performance, and corporate governance mechanisms and dividend policy. A multi-theoretical approach to corporate governance is fundamental for incorporating several mechanisms and structures that might convincingly improve firm performance. Several theories have been proposed to explain the influence of a corporate governance, including, Information Asymmetry (Akerlof, 1970), Agency Theory (Alchian & Demsetz, 1972; Fama & Jensen, 1983a, 1983b; Jensen & Meckling, 1976), and Signalling Theory (Burkart, Gromb, & Panunzi, 1997; John & Williams, 1985; Miller & Rock, 1985; Ross, 1977; Spence, 1973). These theories propose that corporate governance mechanisms mitigate agency costs, provide signal about the corporation to investors and reduce information asymmetry between insiders and outsiders.

3.2.1. Agency Theory

Many studies of corporate governance are underpinned by Agency Theory, which was developed by Jensen and Meckling (1976). Agency Theory explains “the relationship

between the principals, such as shareholders and agents such as the company executives and managers” (Jensen & Meckling, 1976, p. 310). The theory highlights the problems that result from the development of conflicts of interest between shareholders, company executives and bond holders. It assumes that, due to separation of ownership and control, employees may not be more motivated by self-interest rather than shareholders’ interest in the welfare of the firm. Therefore, mechanisms need to be put in place to protect shareholders interest (Kiel & Nicholson, 2003).

The function of corporate governance is to deal with the agency problem, a concept derived from contractual view of the firm developed by Coase (1937), Jensen and Meckling (1976) and Fama and Jensen (1983a, b) (Shleifer & Vishny, 1997). Berle and Means (1932) argued that managers pursue objectives which may differ significantly from those pursued by the shareholders. The consequence of this divergence is lower performance of those companies with non-executive shareholders compared to those whose capital is concentrated in the hands of a sole proprietor. Recognizing this ‘agency problem’, shareholders seek control mechanisms that limit the scope of managerial power and encourage managers to manage the company in accordance with shareholders objectives. Coase (1937) discussed the agency problem in terms of transactions costs, noting its implications for the theory of the company. The work of Coase was extended by Alchian and Demstet (1972), Ross (1997), Jensen and Meckling (1976), and Fama and Jensen (1983a, b).

Agency Theory has been used by researchers and practitioners in accounting, finance and economic to describe the intrinsic conflicts of interest among the dissimilar stakeholders of a company (Jensen and Meckling, 1976; Fama and Jensen 1983b). Jensen and Meckling (1976, p. 310) stated “an agency relationship is 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”. Similarly, Bagley and Savage (2009, p. 157) point out: “In an agency relationship, one person – the agent – acts for or represents another person – the principal. The principal delegates a portion of his or her power to the agent, and the agent then manages the assigned task and exercises the discretion given to him or her by the principals, the agency relationship is created by an express or implied contract or by law”.

In an agency relationship, both the principal and agent benefit equally, but the principal may not believe that the agent will always act in their interest. The agent (managers) can receive the entire utilities from their opportunistic behaviour as well as self-serving decisions, which are detrimental to principal’s (shareholders) interest. In such circumstances, the principal is

responsible for the creation of appropriate incentives to encourage the agent to align their interests with principals. They will incur the cost of monitoring to reduce abnormal activities of agents (Fama, 1980; Jensen & Meckling, 1976). Brennan (1995) states that the agency problem emerged due to the impossibility of perfect contracting for every possible action of an agent whose decision affects both his own welfare and the welfare of the principal. Agency problems lead to agency costs, which relate to monitoring costs and other costs. Agency conflicts can occur between: managers and owners; shareholders and debt-holders (Jensen & Meckling, 1976); majority shareholders and minority shareholders (Shleifer & Vishny, 1997); and the owners of the firm themselves, who may have different goals (Dahya, Dimitrov, & McConnell, 2008). Where conflict exists there is likely to be a negative effect on corporate performance. Particularly where there are many shareholders in a firm, each one has little or no incentive to monitor the behaviour of executives (Hart, 1995). When conflict is between shareholders, Laidroo (2009) found that information asymmetry increases. Lins and Sevaes (2002) and Lins (2003) noted that information asymmetry leads to restrained economic growth in both developed and developing markets.

On the other hand, a growing body of literature has moved attention toward a different agency problem, specifically the expropriation of small investors by large controlling shareholders, which seems to be of greater concern in many countries (Shleifer and Vishny, 1986; Shleifer and Vishny, 1997; La Porta et al., 1999; Claessens et al., 2000; and Denis and McConnell, 2003). In countries where ownership is concentrated in the hands of large owners, agency conflicts do not only occur between managers and other investors but also between large shareholders and minority shareholders. Although controlling shareholders have an interest in protecting their wealth by making sure that firm is well managed, the existence of large shareholders is also associated with possible costs as they have incentives to extract private benefits from the firm at the expense of all other stakeholders (Shleifer and Vishny, 1997).

In Jordan, like other Middle Eastern countries, most companies are family owned listed firms where the controlling family members are involved in executive positions as well as membership in board of directors. World Bank report as well indicates the influence of the families on the appointment of directors, which mostly depends on friendship rather than the ability or education (ROSC, 2004). In such corporate environment, the main challenge is to ensure the alignment of interest between controlling large shareholders and non-controlling small shareholders. This implies that Jordanian firms are free from agency costs. The agency problem that seems to dominate emerging markets is not simply between managers and

owners. Rather, the major conflict of interest is between founding families as controlling shareholders and other shareholders.

Within the agency theory framework, for Jordan this study considers the principal as the minority shareholders and the agent the founding family ownership, who are normally expected to act in the best interests of all shareholders. Therefore, it is important to consider the implications of this type of agency problem on firm performance and consequently corporate financial decisions. To reduce agency cost and limit divergence of interest among principals and agents, agency theory suggests using of both internal mechanisms (i.e. board structure, ownership structure, audit committee) and external mechanisms (i.e external audits, block holders and legal and regulatory rules) of corporate governance (Haniffa & Hudaib, 2006).

3.3. Literature Review and Hypotheses Development on Corporate Governance and Firm Performance

There is extensive research on the effects of corporate governance mechanism on firm performance in different countries of the world. Caylor and Brown (2006) reveal that companies that have good governance are more profitable, have a higher value and pay more to their shareholders compared to companies that have not adopted corporate governance mechanisms. Bhagat and Bolton (2008) confirm that good governance practices lead to a positive relationship with operational performance in the US. In further support, Larcker et al. (2007) found that the future performance of a firm is linked to governance. Similar results were found by Bøhren and Ødegaard (2001) in Norway.

3.3.1. Boards Structure and Firm Performance

Board structure plays a significant role in corporate governance and is considered a major internal mechanism along with ownership structure to reduce agency costs between shareholders and managers, and between controlling and minority shareholders by protecting shareholder interests and monitoring firm performance (Bebchuk & Fried, 2003; Fiegener, 2005; Goobey, 2005; Van Den Heuvel, Van Gils, & Voordeckers, 2006). Although the existence of a board of directors is crucial, it is also important to consider the number of board members because the effectiveness of the board relies on the size of the board. However, studies do not provide clear evidence about the relationship between board size and the effectiveness of control.

3.3.1.1. Board Size

A number of researchers have studied the association between board size and firm performance. For instance, Jensen (1993) showed that the bigger the size of the board the less its effectiveness. This finding has been confirmed by Cheng et al. (2008) who used a sample study of 350 Forbes 500 firms over an eight-year period (1984-1991). The researchers found a significant relationship between small board and better firm performance. Their results also showed that CEO pay-performance had a negative relationship to board size. These findings provide evidence for the hypothesis that capture impedances increase the importance of board size in governance.

The finding of Eisenberg, Sundgren and Wells (1998), Jensen (1993) and Yermack (1996) revealed a significant negative relationship between a firm's market valuation and board size, indicating that reduced board size may improve corporate performance. These results are consistent with those of Hermalin and Weisbach (2001) that board size has a negative performance effect, but the researchers found that board composition has no influence on financial performance. However, Guest (2009), Drakos and Bekiris (2010) and Filbeck and Lee (2006) argue that board size has a negative performance effect.

Studies of the literature on performance and board size have been approached in different ways. Bhagat and Black (2002) used multiple regression analysis utilizing OLS and simultaneous equations to examine 928 publicly listed firms in the US from 1988 to 1990 and 1991 to 1993 to determine whether corporate governance variables (board independence and board size) affect firm performance. The results showed no significant impact of board size on firm performance. The findings for the Australian market by Bonn (2004), who analysed 104 manufacturing firms from 500 Australia firms listed on the ASX between 1999 and 2004 also found that board size had no significant relationship to firm performance.

On the other hand, Hermalin and Weisbach (2003) argue that the relationship between board structure and performance is endogenous. They use a sample of 452 large US industrial firms from 1984 to 1991. The results show that board size has a significant negative effect on firm performance. Other studies have found similar results (Cheng 2008; Coles, Daniel, and Naveen 2008).

Again, Florackis (2008) disagrees with the assertion that the bigger the size of the board the less its effectiveness. He argues that small sized boards are less efficient than big sized boards and, thus, large boards are essential for corporations. Similarly, Dalton, Daily, Johnson and Ellstrand (1999) note that a big sized board offers the benefits to the company through the

diversity of expertise of its members and their ability to deal with the environment better. Bonn, Yashikawa, and Phan (2004) showed that board size has a positive performance effect in listed Japanese companies. Elsayed (2011) found differing results to the findings of studies discussed above. He tested the relationship between board size and firm performance of Egyptian firms listed on the Cairo and Alexandria Stock Exchanges. The study sample comprised 92 Egyptian industrial companies for the period of 2000-2004 and tested the governance variables board size, the mediator variable board leadership structure and the dependent variable firm performance. The results of the study found a significant positive relationship between board size and corporate performance within CEO-chair non-duality. However, board size has a negative performance effect within CEO-chair duality. Uadiale (2010) and Kim, Cha, Cichy, Kim, and Tkach (2012), and Fauzi and Locke (2012) report a significant positive relationship between board size and firm performance. This result differs from that reported by O'Connell and Cramer (2010) who analysed 77 companies listed on Irish Stock Exchange. They found that board size has a negative performance effect. However, they also showed board independence has a positive performance effect.

Based on the empirical studies, board size plays a vital role in the protection of shareholder rights and firm performance (Jeon & Ryoo, 2013). Agency Theory suggests that large board size may be used to reduce the domination of the chief executive officer on the board as well as protecting shareholders' interests (Dahlquist & Robertsson, 2001). In addition, large board size has an impact on the effective functioning of the board to improve the firm's financial performance (Jeon, Lee, & Moffett, 2011).

Nevertheless, empirical studies on board size and performance show mixed evidence. Hermalin and Weisbach (2003), Mak and Kusnadi (2005), Guest (2009), Drakos and Bekiris (2010), and Christenaen et al. (2010) argue that the larger the size of the board of directors the less its effectiveness, while the smaller its size the more effective it is in improving firm performance. This view is supported by Cheng et al. (2008), Yermack (1996) and Eisenberg et al. (1998). They provide evidence that small boards have a significant, positive relationship with better firm performance. On the other hand, some researchers argue that small sized boards of directors are less effective than large sized ones, because large size boards have diversity of expertise and an ability to protect shareholder interests (Bonn et al., 2004; Florackis, 2008). Following the proposition from Agency theory, the hypothesis to be tested in this study relating to board size is:

H1a: *There is a significant positive relationship between firm performance and board size in Jordanian and Australian listed companies.*

3.3.1.2. Board Independence

Similar to board size, board independence potentially has a significant role in the process of reducing conflicts between shareholders' interest and management. It should act to enhance the supervisory and regulatory functions of the board. The agency relationship between the board and management of a company would suggest that the board ought to be independent of the management team to reduce the risk of moral hazard at the board level. Perhaps reflecting the influence of agency theory, the composition of boards has shifted in the US from the 1960s, when most directors were internal, to the current situation whereby conventional wisdom has it that most directors should be external (Bhagat & Black, 2002). Indeed, the New York, NASDAQ, and AMEX stock exchanges all require that boards of listed companies have a majority of independent directors (Caylor & Brown, 2006). However, studies provide mixed findings regarding the existence of a clear relationship between board independence and corporate performance.

Barkema and Gomez-Mejia (1998), in studying how monitoring affected managers' work efforts, found differences in impact based on the agency relationship between board structure and the executives. Where the principal was a parent company, managers' work effort was relatively strong compared to those circumstances where the principal was the CEO. Parent companies were found to monitor more than boards of directors, and boards were found to make greater use of monitoring than CEOs. The findings of Hermalin and Weisbach (1988) and Bhagat and Black (2002) show that firms performing poorly were more likely to increase the proportion of outside directors than better performing firms, suggesting a tightening of monitoring in order to mitigate agency problems. However, neither study found that improved performance resulted from these changes. In the agency relations between shareholders as principals and directors as agents, merely augmenting the proportion of independent directors does not necessarily result in an adequate reduction of agency problem, and a reduction of agency problem does not necessarily result in more effective management of the firm. Choi, Park and Yoo (2007) found that board independence has a positive effect on firm performance. This result is consistent with that of Schellenger, Wood and Tashakori (1989) showing a positive effect of board independence on firm performance.

Pass (2004) suggested that independent directors add value to an organization by increasing accountability, providing independent judgment, increasing the network of business connections for the board and executive and moderating the power of the chair and/or CEO who, in some organizations, may be overly powerful. Similarly, Roberts, McNulty and Stiles

(2005) noted that if an outside director is an active participant, the independence of mind such a director brings to the team can be a valuable contribution to the functioning of the board and organization. Supporting this observation, Caylor and Brown (2006) found that firms with a higher proportion of outside directors have higher profit margins, returns on equity, larger stock repurchases, and larger dividend yields. In fact, the most important governance factor for influencing firm performance in Brown's study was outside directors. Similarly, Hill & Snell (1988) found that the proportion of outsiders on the board of directors had a positive association with profitability.

After controlling for strategy, Uzun, Szewczyk, and Varma (2004) found that the likelihood of fraud was less with greater board independence. Westphal (1992) noted that friendship ties between directors and management were positively associated with the quality of interactions on strategic issues. In a subsequent study, Westphal and Khanna (2003) found that social ties and the risk of losing social status operated to inhibit directors from initiating governance changes that were threatening to management. In another study published in the same year, McDonald and Westphal (2003) found that social ties between directors and executives could have a negative effect on strategy formation and firm performance in response to economic adversity. Recently Armstrong, Core and Guay (2014) found that firms with higher proportion of independent directors have higher level of transparency.

Outside directors may not always add appropriate value to the governance of a firm, and not all outside directors are truly independent. Bhagat and Black (2002) suggested that many outside directors are personal friends of the CEO, or may be involved in business relationships with the firm. Even if outside directors are truly independent, they may not provide appropriate governance and guidance. Bhagat and Black noted that many directors are CEOs of other firms and may not have the time to devote to their directorships. In addition, the author suggested that the appointment of a high profile director (a so-called celebrity director) may be more for appearance than for substance. In reality, such high profile directors may not have the qualifications to be effective on a board. Pass (2003) suggested that outside directors lack knowledge of the firm and may not have the necessary industry knowledge to adequately support or guide the firm's strategy. Roberts et al. (1998) noted that reform of governance tends to follow failure and, consequently, the major reforms in governance have been focused on control, not on strategy. If the focus for appointing independent directors is to mitigate agency costs, then risks may indeed be reduced, but performance will not necessarily be improved (Kapopoulos & Lazaretou, 2007).

Hermalin and Weisbach (1991) found that the insider/outsider ratio on boards in their study had no significant impact on TQ and concluded that insiders and outsiders were more-or-less equivalent in affecting firm performance. Hill and Snell (1988), however, found that a higher proportion of insiders were associated with higher levels of innovation in the firm. This finding lends support to the importance of insiders' institutional knowledge and the strategic value of such knowledge. Agrawal and Knoeber (1996) found that a higher proportion of outsiders on a board was associated with higher levels of debt financing and lower levels of firm performance. They concluded that many of the outside directors may have been politicians, environmental activists, consumer representatives or other non-qualified persons. These findings tie back to the Bhagat and Black (2002) assertion that high-profile directors may add more image than substance.

If these research findings are considered in their totality, it is evident that the relationship among board independence, board size and firm performance are complex, and it would be naive to expect performance benefits by simply increasing the proportion of independent directors. Context, internal dynamics, and interplay among directors will substantially affect outcomes. Although it is important to look beyond the micro structure of the board (Petra, 2007), independent directors add benefits, such as reducing agency problems, linking the company to its environment, providing independent judgment, external expertise, and moderation of the control of the CEO and/or chair (Bertrand & Mullainathan, 2003). However, there are other studies which suggest that board structure has no significant relationship with performance. Paul and Polytechnic (2011) and Kiel and Nicholson (2003) confirm that no significant relationship exists between board structure and corporate performance. Studies by Agrawal and Knoeber (1996), Yermack (1996) and Klein (1998) also find a significant negative relationship between outside of directors and firm performance such as.

In addition to board size, the independence of directors seems to impact corporate performance. Empirical studies show that there is a strong relationship between board independence and corporate performance (Baysinger & Butler, 1985; Beasley, 1996; Byrd & Hickman, 1992; Hill & Snell, 1988; Hossain, Prevost, & Rao, 2001; Krivogorsky, 2006; Lefort & Urzúa, 2008; Pass, 2004; Weisbach, 1988; Zahra & Pearce, 1989). Firms with more board independence are more likely to have higher returns on equity and higher profit margins (Caylor & Brown, 2006), as predicted by Agency Theory (Fama & Jensen, 1983a, 1983b). The following hypothesis will be tested in the context of Jordan and Australia:

H1b: *There is a significant positive relationship between firm performance and board independence in Jordanian and Australian listed companies.*

3.3.1.3. Frequency of Board Meeting

Similar to board size and board independence, frequency of board meeting plays a role in enhancing the supervisory and regulatory functions of the board. Board meeting is also used as a measure of board activity and it is critical to firms' performance (Brick & Chidambaran, 2007; Vafeas, 1999a). However, previous studies indicate that the association between frequency of board meeting and corporate performance is complex. There are benefits to more frequent board meetings, which can support directors to make strategic decisions and monitor management. However, frequent board meetings have costs, including travel expenses and management time.

The association between frequency of board meetings and performance of the firm was reported to be positive by Khanchel (2007). When researching the association of the two factors in developing countries, Hasnah (2009) and Kang and Kim (2012) found that the same effect for firms operating in developing countries. However, other studies have found negative effect between frequency of board meeting and firm performance (Hasnah, 2009).

Research does show that frequency of board meetings provide effective oversight of managerial functions (Rosenstein & Wyatt, 1990). In a similar vein, Conger, Finegold, and Lawler (1998) provide evidence for the association between the frequency of board meetings and the effectiveness of board because the board meetings play a significant role in improving the effectiveness board of directors. Other studies found that there is no significant relationship between board meetings and firm performance (Mohd, 2011). Jensen (1993) and Vafeas (1999a) provide evidence that the frequency of board meetings is negatively associated with corporate performance. In sum, the relationship between board activity and firm performance is mixed.

Frequency of board meetings plays a primary role as a monitoring function on management. Empirical studies show that firms with more frequent board meetings are more effective in oversighting financial reports (Brick & Chidambaran, 2010; Al-Matar, Al-Swidi, & Fadzil 2014; Evans, Evans, and Loh, 2002; Khan, 2006; Vafeas, 1999a, 1999b; Yatim, Kent, & Clarkson, 2006). In a similar vein, Conger et al. (1998) provide evidence of the association between the frequency of board meetings and effectiveness of board. However, some studies have confirmed a negative relationship, such as those by Jensen (1993), Vafeas (1999a),

Rebeiz and Salameh (2006), Jackling and Johl (2009), and Taghizadeh and Saremi (2013). The following hypothesis will be tested in this thesis for the Australian and Jordanian context: **H1c:** *There is a significant positive relationship between firm performance and the frequency of board meetings in Jordanian and Australian listed companies.*

3.3.2. CEO-Chairman Duality and Firm Performance

The CEO is a part of the corporate governance mechanism. CEO duality exists when the chief executive of the company is also chairman of the board (Boyd, 1995). In order to avoid ambiguity in their roles, the chairman of the board and chief executive officer of a firm should not to be the same person (Jensen, 1993; Fama & Jensen, 1983b). Duality of roles occurs more frequently in Small and Medium Enterprises (SMEs) (Denis and McConnell, 2003) but regardless of size, a board with a chair who is also a CEO is likely to be less able to carry out a monitoring function, resulting in a negative effect on activity, independence and professionalism of the supervisory bodies. From the perspective of agency theory, one of the main tasks of the board is to evaluate the management team, especially the CEO, so if the person who manages the company is also chairing board meetings and controlling internal information provided to the board, it may reduce the board's ability to assess and, if necessary change, the CEO (Jackling & Johl, 2009). Along the same lines, Jensen (1993) believes that the concentration of power in one person may lead to decisions being made in their own interests rather to taking into account the interests of other stakeholders on the board. Some authors, however, defend the chair-CEO duality (Bradbury, 1990; Gendron & Bédard, 2006). They argue that if the global power of the company is in the hands of a single person there will be less conflict of interest, which facilitates the management of the board and, therefore, allows the company to attain better performance outcomes.

An examination of the literature on this issue shows contradictory results. Some researchers find a positive relationship between duality on the board and firm performance (Bhagat & Bolton; 2008; Bradbury, 1990; Willekens, Bauwhede, & Gaeremynck, 2004). Peng, Zhang, and Li (2007), for example found a positive association between corporate performance and dual role of chief executive officer, consistent with the stewardship theory. For example, Sanda, Mikailu, and Garba (2005) find a significant positive association between corporate performance and separation of the roles of chairman and chair executive officer. Rechner and Dalton (1991) reported that firms with a dual role of chair of the board and CEO have lack of board independence, which may leads to more agency problem and weaker performance of the company. Other researchers find a negative relationship (Akeel & Dennis, 2012). Others

again believe there is no optimal structure, but the mix depends on various factors (Elsayed, 2007; Vineeta, Vic, & Barry, 2009).

As discussed above separation of chairman and chief executive officer (CEO) plays crucial role in affecting firm performance. CEO duality exists when a single person is the CEO as well as the chairman of the board (Boyd, 1995). Empirical studies show mixed evidence of CEO duality's impact on the performance. While Donaldson and Davis (1991), Boyd (1995), Peng et al. (2007), Kato, Kim, and Lee (2007), Yang and Zhao (2014) and Wang, Sun, Yu, and Zhang (2014) support that CEO duality and firm performance is positively related, Rechner and Dalton (1991), Daily and Dalton (1995), Westphal and Zajac (1995), Kiel and Nicholson (2003), Chen et al. (2005), and Akeel and Dennis (2012) find that CEO duality is negatively related with corporate performance. Other studies found no significant relationship, such as Beekes and Brown (2006), Daily and Dalton (1992), Baliga, Moyer, and Rao (1996), Elsayed (2007) and Farooque et al. (2007a). To examine the influence of CEO duality in the Jordanian and Australian contexts, the following hypothesis will be tested in this study:

H2: *There is a significant negative relationship between firm performance and CEO duality in Jordanian and Australian listed companies.*

3.3.3. Audit Committee and Firm Performance

The accounting scandals of the last decade have put the audit committee (AC) at the forefront of the battle against fraudulent financial reporting. Over the years, the audit committee has received considerable attention from academics and researchers (Green, 1994), especially after the failure of giant companies in the world. This is because audit committees play an important role as part of corporate governance mechanisms. Studies on audit committees have focused on their independence, composition, activities and diligence in different countries (Chen, Moroney, & Houghton, 2005; Scarbrough, Rama, & Raghunandan, 1998).

3.3.3.1. Independence of Audit Committee

The role audit committees are to ensure reliability of financial reporting. There are arguments that audit committee members should be non-executive members, because, board members' ability to monitor firm management is affected by their degree of independence (DeZoort, Houston, & Hermanson, 2003; McMullen & Raghunandan, 1996). Keung, Robin and Tessonni (2007) highlight that the audit committee's independence impact on companies by improving firm performance, therefore, contributes an important role in corporate governance. Collier and Zaman (2005) similarly note the importance of audit committee independence and

experience to judge firm performance. Audit committee characteristics can be classified into two types: along organization characteristic lines, including the number of members, number of meetings, and the ownership level; and along the lines of technical characteristics, include independence and financial expertise. But both organization and technical characteristics affect the practice of the audit process within the company.

Chen et al. (2005) tested the association between independence of the audit committee and audit quality. The sample study was top the 510 firms listed at ASX in 2000. Multiple regression analysis was employed using OLS. The results are that a positive relationship exists between audit firms with high quality and independence of audit committee. Similarly, Felo, Krishnamurthy and Solieri (2003) and McMullen and Raghunandan (1996) reported that audit committee independence has a significant positive relationship with reporting quality. In a subsequent study, Bronson, Carcello, Hollingsworth and Neal (2009) found that the independence of the audit committee has a significant positive relationship with a firm's audit quality. Carcello and Neal (2003) studied the association between independent audit committees and disclosure, showing that a positive relationship exists between audit committee independence and reporting quality. Supporting these studies, Chan and Li (2008) used the top 200 publicly listed Fortune 500 firms in 2000 to examine the effects of audit committee independence on firm performance. They affirmed a significant positive relationship between audit committee independence and firm performance. The study also found a significant positive relationship between audit committee independence and expert-independent director.

Klein (2002a) investigated how independence of audit committee and board structure are related to abnormal accruals. The study sample over the period 1992 to 1993 was 500 US firms. The author concludes a higher level of outside directors on audit committees was negatively related to abnormal accruals. Similarly, Bedard, Chtourou, and Courteau (2004) found that the proportion of outsiders on the audit committee has a negative association with aggressive earnings management.

A number of researches explain the association between audit committee characteristics and audit fees such as Abbott, Parker, Peters and Raghunandan (2003), Carcello, Hermanson, Neal and Riley (2002) and Beasley (2003). Abbott et al. (2003) found that independent audit committee has a positive association with audit fees. Carcello et al. (2002) studied Fortune 1000 companies in the period between 1992 and 1993 and found that audit committee independence appears to have a positive relationship with audit fees. Abbott, Park, and Parker (2000) suggested the mitigating effect of the proportion of outside directors on audit

committee on fraud. Agency Theory suggests that the oversight function of audit committees is more effective with the presence of the non-executive independent director (Fama & Jensen, 1983b). Abbott, Parker and Peters (2004) examined whether the audit committee independence affect the probability of financial restatement and found that the likelihood of financial restatement was less with greater audit committee independence.

Based on the review of the literature, a board's audit committee is an important factor in corporate governance to ensure the quality of financial reporting. In this study, audit committee includes independence of audit committee and frequency of audit meetings. The independence of the audit committee affects the board's ability to provide an effective monitoring function as well as improving corporate performance and value (Klein, 1998; McMullen & Raghunandan, 1996). Hoi, Robin and Tessori (2007) report the importance of audit committees' independence and its contribution in reducing agency costs and improving firm's performance. A number of empirical studies have found support for an agency relationship in the context of corporate governance. For example, Wild (1994), McDaniel, Martin and Maines (2002) and Aldamen, Duncan, Kely, McNamara and Nagel (2012) provide evidence of a positive association between audit committee independence and firm performance. Similarly, Chang and Li (2008) reported that audit committee independence is positively related to firm performance. The following hypothesis relating to audit committee independence in the Australian and Jordanian context will be tested in this study:

H3a: *There is a significant positive relationship between firm performance and independence of audit committee in Jordanian and Australian Listed companies.*

3.3.3.2. Audit Committee Activity

The role of the audit committee in corporate governance has been strengthened in the last decade through measures, such as the Blue Ribbon Committee (1999), and the Sarbanes-Oxley Act (2002). The purpose of the Blue Ribbon Committee was to develop recommendations for improving financial reporting quality and effectiveness of the Audit Committee as a monitoring tool. DeZoort, Hermanson, Archambeault, and Reed (2002) noted that one of the main functions of the audit committees is monitoring the impartiality of financial reports. Other responsibilities of the Audit Committee include overseeing internal controls and activities of the external auditor (Krishnan, 2005).

To gain the benefit of audit committee independence, it is imperative that the audit committee be effective and active in carrying out its duties and responsibility. The independence of audit committee is not the only factor influencing the committee's effectiveness; the activities of

the audit committee also influence the committee's effectiveness. Many characteristics of audit committee effectiveness have been examined. For example, Beasley (1996) tested the association between board structure and financial statements fraud over 1980-1991 for 150 US firms. The results are that audit committee independence is a significantly negatively associated with financial statements fraud. This finding is confirmed by Krishnan (2005) that the normal period of audit committee is negatively related with internal control problems.

Abbott et al. (2000) found that companies in which the audit committee meet twice a year have fewer problems related to financial reports. Similarly Beasley, Carcello, Hermanson and Lapides (2000) show that companies showing the existence of fraud in their financial reports had audit committees that met only once a year, while companies in which the audit committee met between two to three times in a year did not show the existence of fraud in their financial reporting. Anderson, Mansi and Reeb (2004) reported that firms with many members on their audit committees have more recourses and time to oversight financial statements processes than firms with fewer members of their audit committees. Similarly, Vafeas and Waagelein (2007) in their research found that a large number of audit committee members can build more confidence of the external auditor.

Global capital markets rely entirely on the quality of financial reporting. The economic crisis that began in 2008 has drawn attention to the role of audit committees and the information disclosed by the companies. At present, the role of audit committee to ensure accuracy and transparency in the disclosure of company information is more important than ever. Audit committees also have a more complex task related to the increased expectations of shareholders, regulators and other stakeholders for risk management and prevention of fraud. One major challenge facing companies is to distinguish clearly the level of risk between the board of directors and audit committee as a whole. While the system of internal control within the company aims to reduce the risks, the activity of the audit committee focuses primarily on control procedures relating to the preparation of financial reporting, prevention and detection of fraud and compliance legal requirements and standards (Jensen & Meckling, 1976).

Audit committee independence is not the only factor that influences an audit committee's effectiveness. The number of audit committee meetings has influence on the effective functioning of audit committees. Some empirical studies suggest that the number of audit committee meetings is a good measure of the audit committee activity (Beasley et al., 2000), including degree of diligence (Hoitash & Hoitash, 2009; Menon & Deahl Williams, 1994; Song & Windram, 2004), monitoring and oversight (DeZoort et al., 2002). Abbott, Park and

Parker (2000) find that firms with audit committees that have at least two meetings in a year have fewer financial reporting problems. Similarly, Beasley et al. (1996, 2000) and Abbott et al. 2000 find that firms with financial reporting fraud are more likely to have audit committee meetings only once in a year, while firms with audit committees that meet between two to three times in a year have a high quality of financial reporting. In prior literature, the number of audit committee meetings has been used as a good measure for audit committee activity. Based on the above studies, the number of audit committee meetings during the financial year is considered an important factor influencing audit committee effectiveness and plays a key role in improving corporate performance. Thus, this hypothesis is proposed for examination in this study:

H3b: *There is a significant positive relationship between firm performance and the frequency of audit committee meetings in Jordanian and Australian listed companies.*

3.3.4. Remuneration Committee and Firm Performance

The remuneration committee plays a critical role in alleviating agency problems. Klein (1998) documents that the remuneration committee helps to mitigate agency problems through designing and implementing motivation schemes and bonuses that serve to harmonize the objectives of managers and shareholders. Empirical evidence regarding the relationships between the remuneration committee and firm performance is mixed. Jensen and Murphy (1990) present support of a strong association among top executive pay and shareholder's wealth. They suggest that the remuneration committee plays an important role in alleviating agency problems. Kren and Kerr (1997) found a similar result when investigating the association among executive pay and firm performance of 268 listed Fortune 500 industrial firms between 1987 and 1989. They reported a positive relationship between compensation and corporate performance.

Studies in the UK showed different outcomes. Vafeas and Theodorou (1998) reveal that the remuneration committee has no impact on firm performance. Furthermore, Calleja (1999) shows that firms with remuneration committee had higher shareholders returns than firms without remuneration committee. Laing and Weir (1999) found the presence of a positive association among corporate performance and remuneration committee independence. In emerging markets, Klapper and Love (2004) test the association among corporate governance mechanisms, including sub-committees of the board, and operating performance of 374 firms in 14 countries. The authors report that better corporate governance is positively correlated to firm performance. A similar result was reported by Bozec (2005) in the Canadian market. In

Hong Kong, Chen et al. (2005), in their study covering 421 public firms between 1995 and 1998, found that board subcommittee has little influence on corporate performance. On the other hand, Carter, D'Souze, Simkins, and Simkins (2010) find no association between board committee and financial performance. Also, Weir, Laing and McKnight (2002) find no relationship between board committee and firm performance.

However, other research finds evidence, consistent with agency theory, which suggests that remuneration committees are positively correlated with the performance. Sun, Cahan, and Emanuel (2009) found that a positive relationship exists between compensation committee and future corporate performance. A similar result was found by Heenetigala and Armstrong (2011) in their analysis examining the association among corporate governance mechanisms and corporate performance of 37 companies listed at The Lanka Monthly Digest 50 over a four years period (2003-2007). Their results indicated that sub-committees have positive performance effects.

In the Australia context, Christensen, Kent, and Stewart (2010) examine whether good corporate governance is related to financial performance. The authors find that the presence of a remuneration committee is positively related to financial performance, consistent with agency theory expectations. These findings are confirmed by Benson, Hutchinson, and Sriram (2011). In their analysis, they find that a positive relationship exists between remuneration committee and performance. Malik (2012) studied 30 firms listed on the Karachi Stock Exchange for the period 2009 and 2010 to analyse the association between corporate governance mechanisms and share price. They found that the existence of a remuneration committee is positively related to share price. On the other hand, the findings of Lam and Lee (2012) show a significant negative relationship between remuneration committee and corporate performance, but a significant positive relationship between nomination committee and performance. So, it is important to review periodically the remuneration policies to ensure the adequacy of the amount and structure of responsibilities, risks and duties of directors (Hart, 1995). It is appropriate that the board provides the compensation committee with relevant information to allow it to evaluate its remuneration policies on an annual basis.

Previous studies document that the remuneration committee plays a significant role in alleviating agency problems (Jensen & Murphy, 1990; Klein, 1998). However, the association between remuneration committee independence and financial performance has been examined in several studies with mixed findings. Vafeas and Theodorou (1998) find no significant association between independence of the remuneration committee and financial

performance. Similarly, Carter et al. (2010) find no association between the existence of remuneration committees in firms and the performance of the firm. In fact, Abdullah (2006) found a negative relationship between remuneration committee and performance by. Other studies such as Kren and Kerr (1997), Laing and Weir (1999), Mehran (1995), Conyon and Peck (1998), and Yermack (2004), found that remuneration committee independence is positively related with firm performance. In line with Agency Theory, Christensen et al. (2010) report a positive association between remuneration committee independence and firm performance. These findings are also supported by Vafeas (2003), Benson et al. (2011), and Heenetigala and Armstrong (2011). To study the effect of remuneration committees in the Jordanian and Australian context, the hypothesis will be tested in this research:

H4: *There is a significant positive relationship between firm performance and remuneration committee independence in Jordanian and Australian listed companies.*

3.3.5. Ownership Structure and Firm Performance

The ownership structure of a firm has occupied an important place in discussion of corporate governance since the work of Berle and Means (1932). In the last three decades, Agency Theory and Signalling Theory have been used in debates on whether ownership structure is correlated with firm performance. Some researchers argue that, according to the entrepreneurial model there will be an association (Jensen & Meckling, 1976). Other researchers believe there is an association among board structure and corporate performance because of the managerial model (Fama & Jensen, 1983b). Some researchers argue that corporate governance variables have a strong effect on corporate performance, while other groups of researchers disagree with such relationship.

However, the association between ownership structure and corporate performance is mixed or inconclusive. At the empirical level, the evidence is that there are positive, negative or no relationships with possible endogenous effects. The impact of a high firm ownership can be unfavourable to minority shareholders because, for example, problems between minority shareholders and managerial agents (either professional managers or majority shareholders) are not resolved, information asymmetries between insiders and outsiders may be more pronounced and there is no clarity if more convenient high concentration or specialization and independence of directors (Petra, 2005).

Jensen and Meckling (1976) suggest that agency conflict between managers and shareholders could be mitigated through managerial ownership. This is because managers owning a larger portion of the shares have more incentive to maximize firm value to ensure the best

performance of the company. Ang, Cole, and Lin (2000), and Singh and Davidson (2003) confirmed that higher managerial ownership reduces the agency costs. Several studies also reveal a positive effect of ownership structure on the value of the firm (e.g. Admati, Pfleiderer, & Zechner, 1994; Claessens, Djankov, & Lang, 2000; Demsetz, 1983; Jensen, 1986; Demsetz & Villalonga, 2001; Farooque, Van Zijl, Dunstan and Karim, 2007a; Maug (1998), La Porta, Lopez-De-Silanes and Shleifer, 1999; Meckling & Jensen, 1976; Shleifer & Vishny, 1997).

Studies of the ownership structure of a company have been approached in different ways. Demsetz (1983, p. 384) argued: "The structure of ownership that emerges is an endogenous outcome of competitive selection in which various cost advantages and disadvantages are balanced to arrive at an equilibrium organization of the firm". He also proposes that such a structure, concentrated or dispersed, must be such that maximizes the value of a company. For this reason there should be no systematic relationship between change in ownership structure and change in the value of the company. This approach is confirmed by Demsetz and Lehn (1985) who argue that a company takes the ownership structure that maximizes its value, and there will be no statistically significant relationship between ownership structure and firm value because of endogenous factors.

Demsetz and Villalonga (2001) investigated the association between ownership structure variables and firm performance for 223 firms in US over a five-year period (1976-1980). Their model applied two equations and multiple regression analysis was employed, using OLS and 2SLS. Their results show that the ownership structure does not influence the firm value and confirms the endogeneity hypothesis put forward by Demsetz (1983). A similar result is reported by Welch (2003) for the Australian market. The endogeneity of ownership structure is also found in small firms. Dilling-Hansen (2005) report that, from a sample of 1564 Danish firms for the period between 1990 and 2002 a non-linear relationship exists between endogenous ownership structure and firm value. In addition, he states that small businesses are different from large ones in that the former have a higher ownership concentration and a worse performance.

In an emerging market, Farooque et al. (2007a), in their analyses, used a sample of 723 financial and non-finance companies listed at the Dhaka Stock Exchange from 1995 to 2002 to examine the association among corporate governance variables and firm performance through board ownership. The study involved regression analysis using OLS regression and then simultaneous regression models. OLS results indicated that board ownership is negatively related to financial performance, while the simultaneous regression analysis found

no linear relationship among board ownership and financial performance. These findings confirm results as found by Demsetz and Villalonga (2001). Similarly, Cho (1998), examining the relationship between ownership structure, firm performance and investment used cross-sectional data from a study sample comprising 230 firms from 1991 Fortune 500 industrial companies. The study used OLS regression and then simultaneous regression models. OLS results showed that there was no association between insider ownership and firm performance. For Brazil, Rogers, Dami, Ribeiro, and Sousa (2007) reported that ownership structure has no influence on financial performance.

Another group of studies on the association between ownership structure and firm performance did not consider the endogeneity of the ownership structure and provide evidence of a relationship with firm value. For example, Shleifer and Vishny (1986) reveal that ownership concentration has a positive performance effect. A similar result is found by Alonso-Bonis and Andrés-Alonso (2007) for the Spanish market. In that study, which did incorporate the endogeneity of the ownership structure, the authors studied 101 non-finance firms for the period between 1991 and 1997. They reported a positive relationship between systematic and significant concentration of ownership and value of the company; this relationship holds after controlling for sectoral affiliation and the nature of the shareholder. Thus, this result differs from that reported by Demsetz and Villalonga (2001). Grant and Kirchmaier (2004) also find evidence against the position of Demsetz and Lehn (1985) with respect to the ownership structure in Germany, UK, France, Italy and Spain. The authors show that these structures vary between the countries and have a significant effect on the performance of the firm. Following Demsetz (1983), Demsetz and Lehn (1985), Shleifer and Vishny (1986) there have been other researchers testing the effects of ownership structure on performance. Morck, Shleifer, and Vishny (1988) examined the relationship between inside ownership and market valuation measured by TQ for a sample of 371 Fortune 500 in 1980. The results of the study showed that there was a significant positive relationship between inside ownership and TQ in the 0 per cent to 5 per cent ownership range, a negative association in the range of 5 per cent to 25 per cent, and further a positive relationship in the range above 25 per cent. They also found a non-linear relationship between the concentration of ownership and firm performance. The non-linear relationship is explained according to the entrenchment hypothesis and convergence hypothesis. According to the convergence hypothesis, the market value can increase with large stakes by inside ownership. However, the entrenchment hypothesis predicts that the firm value decreases with increased managerial ownership (Morck et al., 1988). Morck et al. (1988) also conducted research on the

relationship between board ownership and corporate performance measured by profit rate. Their results indicate that the estimated coefficient was similar to TQ regressions; it was significant at the 5 per cent level, yet much lower and with a positive slope in the 0 per cent to 5 per cent range.

Other studies followed that of Morck et al. (1988). McConnell and Servaes (1990) examined the relationship between ownership structure (insider and block-holders), and firm performance measured by TQ for two samples of firms. Sample one was 1173 firms in 1976, and sample two was 1093 firms in 1986. The results showed a significant positive correlation between insider ownership and TQ. However, block-holders had an insignificant relationship with TQ. They also find a significant curvilinear relationship between TQ and insider ownership. The relationship between TQ and managerial ownership moves upward until insider ownership reaches approximately 40 per cent to 50 per cent, and then slopes slightly downward. They concluded that performance is a function of ownership structure.

Hermalin and Weisbach (1991) investigated the relationship between ownership structure, board composition and firm performance. Their results indicated that managerial ownership was significantly related (non-monotonic) to firm performance: a positive relationship when the level of ownership is lower than 1 per cent, a decreasing relationship when ownership is 1 to 5 per cent, an increasing relationship with 5 to 20 per cent of ownership, and a decreasing relationship with over 20 per cent of ownership. Wruck (1989) also found a nonlinear correlation between higher proportion of ownership by directors and firm performance. Gugler and Yurtoglu (2003) investigated the association between insider ownership and firm performance for 3,673 firms in the US over the ten years, 1989-1998. They measured insider ownership using per cent of shares held by directors and firm performance by return on investment. The study used OLS and 2SLS. Their results indicated a significant positive association between firm performance and insider ownership until insider ownership reaches approximately 21.5 per cent, negatively associated with insider ownership between 21.5 per cent and 63 per cent, and positive when insider ownership equal to 100 per cent. Chiang and Chia (2005) studied the association among corporate governance variables and operating performance. The study adopted the Standard & Poor's information transparency measurement criteria to measure the information transparency of 225 high-tech companies listed in Taiwan in 2001. Multiple regression analysis was employed to test the relationship among corporate governance mechanisms and operating performance using ROA and ROE. The results indicated a significant negative correlation between the proportion of ownership by directors and firm performance. However, the relationship between foreign ownership,

insider ownership, institutional ownership and firm performance was significantly positive. In European nations, Thomsen and Pedersen (2000) analysed the impact of ownership structure on firms' economic performance for 100 large firms in 12 European countries. Their results indicate a significant positive effect of ownership structure on shareholders' value in UK. Gurbuz and Aybars' (2010) study revealed that foreign ownership improves corporate performance in Turkey, while Bai, Liu, Lu, Song, and Zhang (2004) state that the issuance of shares to foreign investors and the high proportion of foreign investors have a significant positive impact on market value.

In the emerging markets context, Farooque, van Zijl, Dunstan, and Karim (2010) analysed a sample of 567 firms listed at the Dhaka Stock Exchange from 1995 to 2001 and examine the co-deterministic association between firm performance and ownership concentration. Using 2-SLS the results indicated that there is two-way positive significant association between corporate performance and ownership concentration. Again, in China, Wei, Xie and Zhang (2005) analysed 5,284 Chinese firms for the period from 1991 to 2001. They found that institutional ownership and state equity ownership had a significant negative impact on firm performance. In addition, share holdings by foreign investors had a strong and positive impact on firm performance. Ongore and K'Obonyo (2011) examined the relationship between governance mechanisms and firm performance over 2006-2008 for 54 firms listed at Nairobi Stock Exchange. The ownership identities at the Nairobi Stock Exchange are foreign ownership, institution ownership, government ownership and manager ownership. They measured firm performance using three different variables: ROA, return of equity (ROE) and DY. They found that foreign, institutional, manager ownership and diverse ownership forms were significantly associated with firm performance. State ownership and ownership concentration were found to have a negative correlation with firm performance. They also found that managerial ownership has a positive performance effect. Again, Erik and Jurgen (2001) found that a concentration of ownership has a significant negative effect on profitability. This is consistent with the findings of Ongore and K'Obonyo (2011), providing evidence that ownership concentration is negatively related to corporate performance. Similar results were also found by Pervan, Pervan, and Todoric (2012) indicating that firms with a higher degree of ownership concentration have a low corporate performance. However, the concentration of ownership, regardless of the ownership structure of shares, does not explain the performance of companies in China (Hovey, Li, & Naughton, 2003).

Based on the relevant empirical literature, the ownership structure (e.g., managerial ownership, institutional ownership, government ownership and foreign ownership) is

considered an important factor affecting financial performance. Managerial ownership can be used as to reduce agency costs (Coles, Lemmon, & Felix Meschke, 2012). Morck et al. (1988) examined the association between managerial ownership and firm performance and found a significant positive relationship between inside ownership and firm performance. Similarly, McConnell and Servaes (1990) found that managerial ownership had a significant positive correlation with financial performance of the firm. Studies with empirical evidence that further support this positive correlation include those by Gugler and Yurtoglu (2003), Kaserer and Moldenhauer (2008), McKnight and Weir (2009). In this research, the hypothesis relating to managerial ownership is:

H5a: *There is a significant positive relationship between firm performance and percentage of shares owned by board of directors in Jordanian and Australian listed companies.*

As argued in the finance literature, institutional ownership plays a key role in reducing agency conflicts and improving corporate performance (Admati et al., 1994; Maug, 1998). This leads to improved corporate performance through efficient monitoring ability (Shleifer & Vishny, 1986). As expected, studies have found a significant positive correlation between institutional shareholders and corporate performance (Hartzell & Starks, 2003; Henry, 2010; Mitton, 2002; Pound, 1988; Shleifer & Vishny, 1997). Other researchers that reports similar result, including McConnell and Servaes (1990), and Navissi and Naiker (2006), argue that if institutions hold shares there is a positive performance effect because such investors effectively monitor management. The hypothesis relating to institutional ownership to be tested in this research is:

H5b: *There is a significant positive relationship between firm performance and percentage of shares owned by institutions in Jordanian and Australian listed companies.*

The association between the shares held by government and firm performance has been examined in a few studies and findings are mixed. Boardman and Vining (1989) tested the relationship among state, mixed and private ownership, and firm performance for 500 of the largest firms outside the US. The results reveal that ownership by the state and mixed ownership have negative firm performance effects. This result is consistent with that found by Han and Suk (1998) who found a significant negative association between shares held by government and firm performance. Xu and Wang (1999) and Wei, Xie and Zhang (2005) also confirm a significant negative correlation among state ownership and performance. In Jordan, Zeitun and Tian (2007) find that government ownership has a significant negative relationship with corporate performance. The hypothesis relating to state ownership to be tested in this research is:

H5c: *There is a significant negative relationship between firm performance and percentage of shares owned by government in Jordanian and Australian listed companies.*

Foreign ownership plays a significant role in improving the effectiveness of corporate governance, and is considered a major mechanism to improve corporate performance. Moreover, firms with a higher percentage of foreign ownership may have excellent opportunities to access more advanced technology and managerial skills (Douma, George, & Kabir, 2006). Wei et al. (2005) find a positive and significant correlation between foreign ownership and corporate performance. Similar evidence is also provided by Lee (2008). Furthermore, Frydman, Gray, Hessel, and Rapaczynski (1999) find that companies with a higher percentage of shares held by foreign investors have higher performance. Evidence of a positive association between foreign ownership and corporate performance has also been provided in empirical studies by Chhibber and Majumdar (1999), Lizal and Svejnar (2002), Khanna and Palenu (2000), Chiang and Chia (2005), Ferreira and Matos (2008), and Gurbuz and Aybars (2010). Based on findings reported in the literature, the hypothesis relating to foreign ownership to be tested in this research is:

H5d: *There is a significant positive relationship between firm performance and percentage of shares owned by foreign investors in Jordanian and Australian listed companies.*

3.3.6. Executive Incentives and Firm Performance

Agency Theory suggests a positive relationship between executive incentives and corporate performance (Mahmoud & Steven, 2008). However, studies on the relationship between executive incentives and firm performance provide mixed results. Jensen and Meckling (1976) argue that ownership structure, executive compensation structure and board structure influence each other according to the nature of the work of the company. They suggest these variables impact corporate performance. Jensen and Murphy (1990) also report a significantly positive relationship between the level of remuneration and performance. Agency Theory suggests that remuneration can be used as a tool to reconcile managers' interests with the interests of shareholders, and that the incentives payment to CEO can assist with reducing agency costs (Berle & Means, 1932).

Empirical evidence is mostly consistent with the propositions of Agency Theory that executive pay is generally positively and significantly correlated with firm performance. Abowd (1990) studied more than 16,000 managers from 250 large companies between 1981 and 1986 to examine whether managerial compensation affects firm performance. The result shows a positive association among managerial compensation and firm performance.

Similarly, Conyon, Peck, and Sadler, (2000) found that managerial compensation has a positive association with firm performance. In addition, Indjeikian and Nanda (2002) analysed 397 firms for the period 1988 to 1995 and found a negative relationship between executives' target bonuses and the proxy for measurement noise in accounting-based performance metrics. However, they found a positive relationship between executives' target bonuses, and growth opportunities and size of the firm. These results are in the line with the predications of Agency Theory. Cordeiro and Veliyath (2003) studied 222 companies listed at the Fortune 1000 list from 1992 to 1995 to examine the relationship between CEO compensation and firm performance. They employed regression analysis using OLS. They report that CEO compensation has a significant positive relationship with performance. But this outcome differs from that found by Izan, Sidhu and Taylor (1998) who analysed 303 firms listed at the ASX between 1987 and 1992 to examine whether the Australian CEO pay is correlated with firm performance. They found no significant relationship between CEO pay and firm performance. However, Merhebi, Pattenden, Swan, & Zaman (2006), in their analysis, find that CEO remuneration does have a positive performance effect.

In emerging markets, Krauter, Ferreira, and de Sousa (2008) analysed 28 industrialized companies listed in magazine *Voce S/A – Exame As Melhores* in Brazil in 2006 to test the association between executives' remuneration and financial performance as measured by sales growth, ROE and return on sales. The Mann-Whitney test was used in this study to investigate whether the differences between variable averages when divided into two groups, high and low, are statistically significant. The results indicate that average salary has a positive relationship with financial performance. Further, Krauter et al. report that the benefit index is related to financial performance measures; sales growth, return on sales and ROE.

Studies on the association between executive incentives and financial performance have examined and documented mixed results. Jensen and Murphy (1990) show a negative relationship between executive compensation and performance. Similar results are reported by Core, Holthausen and Larcker (1999), and Chen and Jermias (2012). But this result differs from that reported by Leonard (1990), Gregg, Machin, and Szymanski (1993), Andjelkovic, Boyle, and McNoe (2002) and Banghøj, Gabrielsen, Petersen, and Plenborg (2010) who find a weak and insignificant relationship between performance and executive compensation. Although the studies listed above show a significant negative or no association between executive compensation and performance, other studies provide evidence in line with the the propositions of Agency Theory that compensation policies provide incentives for executives to exert action for the best interests of shareholders (Fama & Jensen, 1983b) and, therefore,

there will be a significant positive association between executive incentives and corporate performance (Jensen & Meckling, 1976). Indeed, studies that confirm the proposition have been conducted by Coughlan and Schmidt (1985), Abowd (1990), Lewellen, Loderer, Martin, and Blum (1992), Janakiraman, Lambert, and Larcker (1992), Mehran (1995), Main, Bruce and Buck (1996), Elston and Goldberg (2003), Elayan, Lau, and Meyer (2003), Sun et al. (2009), Ozkan (2011), and Farmer, Archbold, and Alexandrou (2013). In line with the Agency Theory proposition, the hypothesis to be tested in this research is as follows:

H6: *There is a significant positive relationship between firm performance and executive incentives in Jordanian and Australian listed companies.*

3.3.7. External Audit and Firm Performance

The recent scandals related to corporate governance practices, discussed above, have resulted in an investigation of what makes up good corporate governance. One result is the Sarbanes-Oxley development of corporate governance rules, which stipulate, among other factors – also already discussed above, an increased emphasis on the audit and external reputation. The intervention of the audit as an external independent oversight mechanism appears useful and ensures the credibility of the information disclosed. Indeed, very few studies have focused on exploring the relationship between the demand for the quality of the audit and other external mechanisms of corporate governance. In this context, Yeoh and Jubb (2001) examine the relationship between various governance structures and demand for a better quality of audit. They find that the governance mechanisms are related to more monitoring by the quality of external audit. Studies by Velury, Reisch, and O'Reilly (2003) and Kane & Velury (2004) examined the association between institutional ownership and demand for audit by the Big-4. The study was, therefore, apparently focused on understanding the interaction between the effectiveness of corporate governance (institutional ownership and board) and demand for quality of audit quality based on the reputation of the auditors. Thus, the study tests the effect of the mediating effect of the reputation of the external auditors and their role in mitigating agency conflicts on performance as an external mechanism (Petra, 2005).

The auditor plays an important role in monitoring as well as mitigating agency problems in firms. Moreover, it is one of the significant corporate governance mechanisms that can reduce information asymmetry between management and other stakeholders (Adeyemi & Fagbemi, 2010). External auditors evaluate financial statements and control of internal client companies to prevent managerial manipulation of earnings management. Audit quality can be measured by audit firm size (Boo & Sharma, 2008; Hay, Knechel, & Ling, 2008). Boo and

Sharma (2008) find a positive relationship between audit firm size and audit quality, where big size audit firms are more likely to discover irregularities in the financial statements when compared to smaller audit firms because big audit firms have the ability to attract qualified trained auditors. Hay et al. (2008) show that users of financial statements and investors believe that large audit firm provide a high level of audit quality.

Studies reported in the relevant literature show that the external auditor plays a vital role by improving transparency in financial statements and, thereby, increasing audit quality as well as corporate governance practices (Mitton, 2002). Audit quality, as an external corporate governance mechanism, could reduce agency costs and information asymmetry, thereby having a significant impact on corporate performance (Adeyemi & Fagbemi, 2010; Willenborg, 1999). A number of empirical studies argue that Big-4 audit firms around the world have a high audit quality, more industry expertise and are more likely to discover irregularities in financial statements (e.g. Francis and Krishnan (1999), Willenborg (1999), Lennox (1999), Krishnan and Schauer (2000), DeFond, Francis, and Wong (2000), Ferguson, Francis, and Stokes (2003), Weber and Willenborg (2003), Fan and Wong (2005), DeFond and Francis (2005), Francis, Reichelt, and Wang (2005), Hay et al. (2008), Wahab, Haron, Lok, and Yahya (2011), and Fooladi and Shukor (2012). The hypothesis to be tested in this research is:

H7: *There is a significant positive relationship between firm performance and audit quality in Jordanian and Australian listed companies.*

3.4. Theory of Dividend Policy

Literature review has shown that dividend policy has been bound up with the historical development of the corporation. A number of conflicting theoretical models define current attempts to explain corporate dividend behavior. This study focuses on signalling theory to examine the relationship between governance and dividend.

3.4.1. Signalling Theory

Miller and Modigliani (1961) first introduced the hypothesis of the information content of dividends (i.e. signalling theory) in perfect capital markets condition, arguing that when a firm follows a policy of dividends stabilisation, investors may interpret a change in the dividend pay-out ratio as a change of management's views of the firm's future profitability. Gordon (1959) demonstrated that the value of a firm can be derived using the dividend discount model. A major implication of the dividend discount model is that the wealth of shareholders can be increased or decreased by increasing or decreasing dividend policy.

However, in their seminal work on dividend policy, Miller and Modigliani (1961) demonstrate that, in an ideal world of perfect, frictionless and efficient capital markets, when a firm's investment policy is held constant, changing the proportion of dividends and retained earnings does not alter shareholder wealth. Larger dividends should result in lower retained earnings and lower stock prices, while lower dividends should lead to higher retained earnings and higher stock prices. Thus, shareholder wealth remains unaffected by the dividend policy of a firm.

This assertion by Miller and Modigliani's (M&M's) is known as the dividend irrelevance theorem. Since shareholder wealth or value of the firm is unaffected by dividend policy, dividend policy should not be a significant consideration to corporate policy makers. However, contrary to the implications of M&M, corporate dividend policies are established with a strategic, long-term view. Economists have observed that there are discernible patterns in dividend policy, and changing a dividend policy does affect the value of the firm – contrary to the assertion of M&M. Several researchers provided explanations, for example Clientele Effect, Signalling Theory, Bird-In-The-Hand, Agency Cost, Life Cycle, and Catering Theory. This study uses signalling theory to explain dividend policy.

Dividend Signalling Theory, developed by Miller and Rock (1985), relaxes the M&M assumption of the absence of information asymmetry. The theory is based on the assumption that managers know more about the long run economic perspective of their firms than outside traders do and can choose the manner in which the information is communicated. Therefore, a firm's improving financial results is considered as an indication to the industry that the managers are anticipating good financial results. On the other hand, poor financial results are an indication that the corporation is anticipating poor economic results. While the influential papers on Signalling Theory were written by Bhattacharya (1979), John and Williams (1985), and Miller and Rock (1985), the scientific evidence on the dividend-signalling speculation is mixed.

Many studies use signalling theory and information asymmetry to explain the relationship between insiders (managers) and outsiders (shareholders), and corporate dividends; for example, Miller and Modigliani (1961), Bhattacharya (1979), Kalay (1980), Eades (1982), Miller and Rock (1990), Morris (1987), John and Williams (1985), Frankfurter and Wood (1994), Black, Jang and Kim (2006). Miller and Modigliani (1961) supposed that insiders (managers) and outsiders (shareholders) have free access to the same information with regard to the firm's performance and predictions. However, the insiders (managers) usually possess superior information about the firm's current and future prospects that is not available to

outsiders (shareholders). For example, Koch and Shenoy (1999) argue that a firm that is able to predict higher earnings in future will be interested in sending signals to investors, while a firm that believes cash flows will shrink will not wish to communicate that information to investors. Information asymmetry between managers and shareholders may affect decisions making as well as firm performance. To close this gap managers' need to share their information with shareholders so they can make better decisions and improve firm performance (Connelly, Certo, Ireland, & Reutzel, 2011). In this context, dividend policy is a good instrument for a manager to use to reduce information asymmetry (Baker & Powell, 1999). Frankfurter and Wood (1994) similarly suggest that Signalling Theory can be used to explain dividend policy in an imperfect market with information asymmetry.

Kanagaretna, Lobo and Whalen (2007), and Koch and Shenoy (1999) found, in their studies, that, as predicted by Signalling Theory, high quality firms are not reluctant to inform the market about their quality and the markets responds positively to the good news. Dividend payout decreases might be considered as a sign that a firm has bad news and the market reacts negatively (Skinner, 1994). Dye (1985) points out that even if a firm has good news, it may choose to withhold information, and a firm with bad news may choose to disclose such news if the firm is worried about the competitors' reaction to this information. Hence, it would not be unusual to find that managers dislike advertising a decrease in dividends.

Again, Aharony and Swary (1980) indicated a positive association between announcement of earnings and share price. Kale and Noe's (1990) study suggests that dividends act as a signal relating to the stability of the firm's future cash flows. Benartzi, Michaely and Thaler (1997) find a strong association between dividend changes and prospect earnings. This means that dividends may send significant signal in relation to future earnings. These results are consistent with Dividend Signalling Theory. Other studies have extended Signalling Theory. For example, Zhang and Wiersema (2009) suggest that characteristics of the CEO may convey a signal to investors, and Certo (2003) reports that the attributes of the board may convey important signals. The present study uses Agency Theory and Signalling Theory to explain the relationship between corporate governance mechanisms, firm performance and dividend policy.

3.5. Literature Review and Hypotheses Development on Corporate Governance and Dividend Policy

Legally, the board of directors is the highest authority in the corporation. It is charged with the overall responsibility of a corporation, specifically the oversight of management and operations. The board of directors has a fiduciary duty to represent the shareholders' interests and to align the interests of the shareholders with those of managers. Much of this duty and responsibility is carried out through the monitoring and evaluating of the firm's leadership through mechanisms such as reporting, auditing, and policies. Epstein and Roy (2010, p. 32) state: "the three primary responsibilities of the board of directors include (a) corporate accountability, (b) senior level staffing and evaluation, and (c) strategic oversight". Under corporate accountability, it is the board's responsibility to ensure appropriate financial disclosures; to provide systems for getting better governance, disclosure and ethical behaviour; and review policies linked to board structure, risk management, compliance, and code of ethics. Senior level staffing and evaluation include executives' compensation, selecting performance goals, and succession planning. The board is also responsible for strategic oversight, which includes the formulation and implementation of corporate strategy, which is completed through by reviewing and approving of risk management policies, strategic plans and major investments.

Although empirical research findings are mixed in determining the effect of corporate governance on firm performance, researchers imply that good corporate governance pays. Epstein and Roy (2004) argue that governance practices inject a healthy measure of shareholder and investor confidence into the management decision-making process, therefore contributing to firm performance. Additionally, good governance improves the market's perception of better firm performance, positively impacting stock prices. Suggested best methods of interaction between the board and corporate leadership for good governance and firm performance are discussed in the following sections.

3.5.1. Board Structure and Dividend Policy

Williamson (1963) was among the first to find a relationship between board structure and the rate of dividend distribution. From a sample of 52 companies belonging to different sectors, Williamson found that the rate of dividend increases if the number of independent directors on the board increases. Sorensen (1974) distinguished between managerial firms whose property functions and decision-making are separated and entrepreneurial firms managed by a leader who holds the majority of shares in the firm. Sorensen contends that managerial

firms distribute more dividends than entrepreneurial firms, though the standard deviation between the dividends is not significantly different from zero. Most theories have shown that the majority shareholder monopolizes most of the voting rights in order to strengthen its control. This analysis by Sorensen leads to focus on conflicts of interest between "insiders" and "outsiders".

The ownership structure is not the only element influencing the dividend policy: the composition of the board of directors also influences a firm's dividend policy. A number of empirical studies have tested the relationship between board structure and dividend policy with mixed results. Bathala and Rao (1995) examined the relationship between indicators of corporate governance, such as board composition, and financial policies. The study sample comprised 261 US companies in 1986 and report that outside directors on the board have a significant negative relationship with dividend payout ratio. Their findings are consistent with the findings of Borokhovich et al. (2005) who examine the relationship between corporate governance characteristics, such as board independence and dividend policy over 1992-1999 for 192 firms in US. Their results suggest that firms with a higher proportion of independent directors have lower level of dividend payouts. In fact, the most important governance factor for influencing dividend payout in Borokhovich's study was the extent of the substitution hypothesis, which states that weak corporate governance results in higher level of dividends. The substitution model suggests that firms with weak minority interests try to establish a reputation by paying dividends (La Porta et al., 2000a). Identical finding were discovered by Al-Najjar and Hussainey (2009) among UK firms. In that analysis, which examined the relationship between number of independence directors on boards and dividend policy, the researchers analysed 400 non-finance organizations listed at the London Stock Market for the interval between 1991 and 2002. Their findings show that firms with higher proportions of independent directors prefer to pay lower levels of dividends. These results are consistent with the substitution model (La Porta et al., 2000a).

However, other empirical studies have found a positive relationship between board independence and dividend policy. Schellenger et al. (1989) examined the effect of board composition on the dividend payout of 526 US companies. The study concludes that there is a significant positive relationship between board composition and dividend policy. The study also finds a positive relationship between proportion of outside directors and firm performance, suggesting that, if a firm has outside directors, it will be reflected in enhanced performance. Kaplan and Reishus (1990), in their analysis covering 160 US firms during the period from 1980 to 1983, find, consistent with Schellenger et al. (1989) that outside

directors are less likely to reduce POUTs. In Australia, the outcomes are different, Cotter and Silvester (2003) analysed 109 large companies listed at the ASX in 1997 to examine whether board independence affects dividend policy. The results indicate board independence has no relationship with dividend policy.

In addition, Belden et al. (2005) investigated the relationship between outside directors and dividend payout for 524 large companies listed in the Forbes 500 over three years (1998-2000). They show that firms with higher proportion of outside directors prefer to pay higher levels of dividends. Abdelsalam, El-Masry, & Elsegini (2008) examine the relationship between board compositions, ownership structure and dividend payout of the top 50 firms on the Egyptian Stock Exchange over three years (2003 to 2005) to examine whether board composition affected dividend payout. Their findings reveal that institutional ownership has a significant positive effect on dividend policy, while executives' composition has no relationship with POUT. More recently, Asamoah (2011) shows a negative relationship of board independence and CEO duality with dividend policy. Al Shabibi and Ramesh (2011) also find board independence affected dividend policy decisions in UK firms. Their findings are consistent with those of Bathala and Rao (1995).

In the literature, board structure is an important factor that may influence a firm's payout policy. The board of directors is the primary factor enhancing shareholders' interests as well as influencing a firm's dividend payout. Board structure includes its size and proportions of directors who are independent. Studies reported in the relevant literature provide mixed results about the effect of board structure on dividend policy. Williamson (1963), Schellenger et al. (1989), and Belden et al. (2005) find a positive and significant relationship between outside directors and firm's payout policy. Adjaoud and Ben-Amar (2010) also confirm that board independence is significantly positively related with dividend policy. Alias, Rahim, Nor, and Yaacob (2012) find a significant positive impact of board independence on dividends. However, a significant negative correlation between outside directors and dividend policy is revealed by the studies of Bathala and Rao (1995), La Porta et al. (2000a) and Borokhovich et al. (2005).

Some empirical studies examined the association between board size and dividend policy, and revealed a significant positive effect of board size on dividend policy, Belden et al. (2005), Chen, Lin and Kim (2011), Bokpin (2011), and Gill and Obradovich (2012). But other studies in same area show inconclusive results. For example, La Porta et al. (2000a), Mitton (2004) and Kowalewski et al. (2008) show that companies with superior governance practices pay higher dividends. However, other studies such as Gugler and Yurtoglu (2003),

Gugler (2003), and Jiraporn and Ning (2006) showed that firms with poor governance pay higher dividends. The hypotheses relating to board independence and board size to be examined in this study is:

H1a: *There is a significant positive relationship between dividend policy and board size in Jordanian and Australian listed companies.*

H1b: *There is a significant positive relationship between dividend policy and board independence in Jordanian and Australian listed companies.*

H1c: *There is a significant positive relationship between dividend policy and board meetings in Jordanian and Australian listed companies.*

3.5.2. CEO Duality and Dividend policy

Agency Theory assumes that the separation of the functions of chairman of the board and CEO reduces agency costs and improves business performance. It supports the idea that the impartiality of surveillance is not guaranteed if there is a confusion of powers and responsibilities between the chair of the board and CEO in case of poor performance of the company. Unlike Agency Theory, Stewardship Theory argues that leaders are trustworthy, not opportunistic and acts in the interests of the company. Advocates of duality argue that duality of role would lead to superior performance because it allows for clear leadership. Separation of functions dilutes the power of the executive and increases the likelihood that the actions and expectations of the manager and the board contradictory. Stewardship theory adopts the hypothesis that firms who opt for a (combined functions) will record a better performance than those who choose the separation of the two functions.

The agency cost explanation of dividend policy is based on the assumption that there will be a conflict of interest between managers and outside shareholders arising from the separation of ownership and control (Jensen & Meckling, 1976). When managers own less than 100 per cent of the firm, agency cost arise because managers are prone to maximize their personal wealth instead of maximizing shareholder wealth. Managers could divert discretionary cash for personal benefits, invest in negative net present value projects, engage in outright theft, indulge in empire building, and the like, instead of utilizing the resources in the best interest of the shareholders. Easterbrook (1984) advances the view that dividend payments mitigate the agency cost of free cash flows. Dividend payments naturally reduce the cash on hand; hence, managers are forced to raise funds for new projects in the external markets, subjecting the firm to examination and monitoring by accountants, corporate lawyers, investment bankers, and others. Since such regular scrutiny of the managers by market professionals is

expected to reduce agency conflict, shareholders are likely to demand regular dividend payments in order to force the firm to return to the capital markets repeatedly to raise funds. Empirical evidence documented that dividend policy reduces agency cost of free cash flows (Harford, 1999; Officer, 2006; Rozeff, 1982).

A number of researchers have investigated the association between CEO duality and dividend policy. Farinha (2003) analyses over 600 firms in the UK from 1987-1991 and from 1992-1996, and examined whether corporate governance mechanisms affect dividend policy. The results indicate that the firms with good internal mechanisms of corporate governance prefer to pay dividends. Hu and Kumar (2004) developed a framework and examined the effects of internal governance mechanisms on dividend payout in 2,081 firms for the interval between 1992 and 2000 and revealed a significant positive association between CEO duality and dividend policy. An identical outcome was discovered by Ghosh and Sirmans (2006) for Real Estate Investment Trusts. In that analysis, the authors find a positive effect of CEO duality on POUT. Similarly, Feng, Ghosh, and Sirmans (2007) reported that CEO duality has a significant positive effect on POUT. These findings differ from that of Sharma's (2011) study, which showed a negative association between CEO duality and POUT.

The finance literature in corporate governance considers the CEO as one of the primary factors influencing a firm's POUT as well as its financial performance. Duality of CEO and board chair is one of the most controversial in the literature of governance issues. Iqbal (2013) argues that CEO duality is an important factor that may influence shareholders' interests and leads to increase agency cost. Baliiga, Moyer, and Rao (1996) and Dittmar, Mahrt-Smith, and Servaes (2003) find that firms with CEO duality are less effectiveness, hence CEO duality is negatively correlated with the effectiveness of corporate governance mechanisms, and weak corporate governance mechanisms lead to a higher of agency cost. D'Souza and Saxena (1999) found a negative correlation between agency costs and corporate dividend payout in their study. Such a negative association between the CEO duality and corporate dividend policy was also found in the studies by Asamoah (2011), Chen et al. (2011), Subramaniam and Devi (2011), Alias et al. (2012), Abor and Fiador (2013). The hypothesis to be tested in this research is as follows:

H2: *There is a significant negative relationship between dividend policy and the CEO duality in Jordanian and Australian listed companies.*

3.5.3. Audit Committee Independence and Dividend Policy

La Porta et al. (2000a) argue that the audit committee is a sub-committee that significantly affects firm decisions. Klein (2002b) indicates that audit committees with more outside directors are more effectiveness than audit committees with few independent of directors. Many studies have analysed the association between corporate governance mechanisms and POUT and reported mixed findings. For example, the association between ownership structure and POUT (Eckbo & Verma, 1994; Moh'd, Perry, & Rimbey, 1995; Rozeff, 1982; Short, Zhang, & Keasey, 2002), board structure and dividend policy (Belden et al., 2005; Chen, Lin, & Kim, 2011; Gill & Obradovich, 2012; Kaplan & Reishus, 1990). Other studies, such as that of Abbott et al. (2000), examined both the frequency of audit committee meetings and independence of the audit committee as a measure of the effectiveness of the audit committee in reducing financial fraud. They report that firms with audit committee independence and more audit committee meetings are less likely to face sanctions for deceptive or misleading reporting. Taking an Agency Theory perspective, Erickson et al. (2003) note that audit committee independence can reduce agency costs. Erickson et al.'s study shows a positive association between audit committee independence and firm performance. Audit committee independence, therefore, appears to be an important factor in reducing agency conflicts and improving governance practices.

However, empirical studies reveal contradictory evidence regarding the effect of audit committee independence on dividend policy. For example, La Porta et al. (2000a) argue that dividend policy has a significant negative relationship with governance mechanisms. This means that the dividend can be used as a substitute for governance mechanisms. Chen et al. (2005) found a weak significant negative association between audit committee independence and dividend payout. This result is consistent with the argument that the dividends are a substitute mechanism for governance. Consistent with this view, Sawicki (2009) found that dividends act as a substitute mechanism for other governance mechanisms in pre-crises contexts; however a positive association exists between dividend and corporate governance in post-crises situations. Turley and Zaman (2007) study the effectiveness of audit committees in UK companies and find that audit committee is not that important on internal control. In a recent study, Al-Najjar and Belghitar (2014) find no significant relationship between audit committee independence and cash dividends in UK.

The audit committee is a key governance instrument for performing financial responsibilities on behalf of shareholders (Abbott et al., 2004). Although studies that analysed the relationship between audit committee and dividend payout policy are rare, many studies have

tested the association between governance mechanisms and dividend policy, and reported mixed findings. For example, the effect of ownership compositions on dividend policy (Eckbo & Verma, 1994; Moh'd et al., 1995; Rozeff, 1982; Short et al., 2002), board structure and dividend policy (Belden et al., 2005; Chen et al., 2011; Gill & Obradovich, 2012; Kaplan & Reishus, 1990). This research tests the association between audit committee independence and dividend policy. The hypothesis is formulated as:

H3: *There is a significant positive relationship between dividend policy and audit committee independence in Jordanian and Australian listed companies.*

3.5.4. Ownership Structure and Dividend policy

In the corporate finance literature, dividend policy is considered an important decision making area for companies to explain a firm's prospects (Bhattacharya, 1979; Lintner, 1956, 1962; Miller & Rock, 1985). The relationship between ownership structure and dividend policy has been widely examined in empirical studies. La Porta et al. (2000a) examine firms from 33 countries and state that the legal system operating in each country is a main determinant of the ownership structure. They report that countries with a Common Law tradition have higher dividends than those countries with Civil Law tradition, which have less protection for shareholders, and this low protection determines the trend towards greater concentration of ownership. Thus, dividends may be used as a tool to protect investors from managers' expropriation. La porta et al. present two models that can help in explaining dividend policies: the outcome model and the substitute model. According to the outcome model, dividend payout is an outcome of effective system when minority shareholders pressure the firm to force managers to pay out profits. The higher dividends are the result of the good governance in this explanation because insiders are taking action in the interest of shareholders. The substitute model predicts that higher dividends are related to weak minority shareholders. This model predicts that managers may use dividends to create a reputation for treating minority shareholders fairly. In this context, and supporting the outcome model Adjaoud and Ben-Amar (2010) investigate the relationship between corporate governance variables and dividend policy for 714 firms in Canada over a four years (2002-2005). Their results show a positive relationship between corporate governance quality and dividend payout ratio. Their results also confirm that good corporate governance mechanisms alleviate conflicts of interests between managers and shareholders.

Jensen, Solberg, and Zorn (1992) examine the interdependence of elements of three policy options: level of inside ownership, leverage and dividend level, and show that inside

ownership is an important factor influencing the dividend policy of the company. In addition, growth rate and investments have negative impacts on dividend payouts, while profitability is found to have a positive impact on dividend payouts. They also observe that firms with large insider ownership firm prefer lower POUTs. This is consistent with Rozeff (1982) finding. He argues that the need to pay dividends is less for inside shareholders, explaining the negative relationship between inside shareholders and distribution of dividends. But there is a positive relationship between diverse shareholdings and dividends payout. This approach is confirmed by Agrawal and Jayaraman (1994) who find that firms with high managerial ownership choose lower POUTs. In short, Jensen (1986) argues that executives prefer to keep earnings rather than pay out dividends.

Moh'd et al. (1995) examine the association between Agency Theory propositions and POUTs. They find that high managerial shareholding is related to lower level of dividends payouts, whereas high institutional shareholding is related to high levels of dividend payouts. The situation in the UK market was studied by Short, Zhang and Keasey (2002) which report that the UK companies with high managerial ownership prefer lower level of POUTs, while those with large institutional ownership choose high levels of POUTs. Using Canadian companies, Eckbo and Verma (1994) in their study, using a sample of large firms listed on the Toronto Stock Exchange from 1976 to 1988, report that firms with power voting insider ownership have decreased dividend payouts, while dividends increase with power increasing institutional ownership. Similar results were found by Chen, Cheung, Stouraits, and Wong (2005) for the Hong Kong market. In that study, which analyses 412 publicly listed firms in Hong Kong from 1995 to 1998, Chen et al. found that small firms, have a significant negative relationship between family ownership and dividend payout up to 10 per cent ownership range, and a positive relationship in the range of 10 per cent to 35 per cent.. Chen et al. also found a non-linear relationship between ownership concentration and firm performance. Their findings are consistent with those Demsetz and Lehn (1985) and Himmelberg et al. (1999). Short et al. (2002) analysed 211 companies listed on the London Stock Exchange between 1988 and 1992 to examine the relationship between ownership structure and dividend policy. The results indicate a significant negative relationship between insider ownership and POUT, but institutional ownership has a positive and insignificant effect on POUT.

Furthermore, Farinha (2003), using a sample of large firms listed in UK, report that there is a negative relationship between insider ownership and POUT. However, after a crucial level the association changes from negative to positive. Along the same lines, Farinha and Lopez-

de-Foronda (2009) find evidence for a non-linear relationship between insider ownership and POUT in two samples of firms from different legal systems (Common and Civil Law). The association between managerial ownership and dividend policy is negative-positive-negative in firms following Common Law systems, while firms following Civil Law systems show a positive-negative-positive association.

In emerging markets, a negative relationship has also been found between institutional ownership and dividend policy. For example, Kouki and Guizani (2009) evaluated 29 companies listed at the Tunisian Stock Exchange between 1995 and 2001 to investigate the impact of ownership structure on dividend policy in Tunisia. A panel data regression analysis was used in that study. The results show that institutional ownership and state ownership have a negative and significant impact on POUT. In addition, they found that a higher level of dividend payout is related to higher ownership of the five largest shareholders. A similar result was found by Mehrani et al. (2011) for the Iranian market. In that study, they examined the possible relationship between ownership structure and dividend payout of all non-finance firms listed on the Tehran Stock Exchange for the period between 2000 and 2007, and reported a negative relationship between institutional ownership and dividend policy. However, they find that managerial ownership has a significant positive relationship with dividend policy. This result differs from that reported by Short et al. (2002).

Other studies also report a negative relationship between share ownership by large shareholders and POUT. Maury and Pajuste (2002) find a negative effect with large shareholders on POUT in Finnish companies. They report that the control structure (presence of shareholder) significantly influences dividend policy; the dividend policy has a significant negative relationship with controlling shareholders. In addition, Maury and Pajuste note that when the manager is the majority shareholder, firms pay lower dividends. The outcome is similar in Germany. Gugler and Yurtoglu (2003) found that the presence of large owners is linked to lower levels of dividends. Meanwhile, Thomsen and Pedersen (2000) analyse all the largest companies in EU countries, including Austria, Belgium, Denmark, Finland, Greece, Luxembourg, the Netherlands, Norway, Portugal, Spain and Sweden, and US from 1988 to 1998 to examine whether the block holders' ownership affect POUT as well as firm value. The results show that European countries have higher level of block holder ownership than firms in the US and UK, whereas the firm value is more likely to be lower. The writers note that the higher level of block holder is related to lower levels of dividend payouts in both systems. A similar outcome was discovered by Mancinelli and Ozkan (2006) for Italian companies. Mancinelli and Ozkan examined the association between ownership structure and

dividend payout ratio and found that higher levels of large shareholders is related to lower levels of POUT.

Family firms are generally characterized by a centralized decision processes (Daily & Dollinger, 1992). Owners can expand their control by expropriating the shares of minority shareholders. Therefore, the most significant agency problem in these firms is the conflict of interest between family members and non-family members. Specifically, significant opportunities for expropriation appear when the firm is a member of a group controlled by the same shareholder. There are different mechanisms of expropriation; dividend payments being one of them (Faccio et al., 2001). Profits can be used for internal personal uses or allocated to unprofitable projects that only benefit the family members. As a result, outside shareholders have a preference for dividends on retained profits (López de Silanes, La Porta, & Shleifer, 1999). Minority shareholders make their gains in the form of dividends or capital gains.

Gadhoun (2000) reveals, after a study of Canadian firms, that family firms do not pay dividends less than competing firms. This study proposes that the Canadian capital market expects the effects of expropriation and requires family firms to pay higher dividends to reduce this effect. However, there is evidence of frequent changes in dividend policy in family firms. Such firms use their discretion to pay dividends more or less according to personal needs or business and with no regard for minority shareholders. According to Gadhoun (2000), managerial ownership is negatively correlated to the POUT because the manager holds the largest portion of the share capital of the company. Profits are not distributed instead they are used to offset tax-claiming professional costs related to the operation of the company. Other studies also find a negative relationship between share ownership by insiders and dividend policy. Angeldorff and Noviko (1999) demonstrate through a study conducted in Finland and Sweden that firms controlled by private investors release a small amount of dividend, the remainder will be wasted in the form of benefits or through professional relationships with the firm for which they are beneficiaries. Rozeff (1982) has tested the effect of dividend payment on the agency relationship and found that the greater the share capital held by "insiders", the lower the agency costs and distribution rate. However, agency costs increase with the number of shareholders, so the dividend payout ratio should grow to reduce costs. Another study by Gugler and Yurtoglu (2003b), states that dividends drop with an increase in control of the majority shareholder. Again, Mehrani et al. (2011) show a significant negative effect of institutional ownership on dividend payout.

Despite the existence of several studies showing a negative relationship between ownership structure and dividend policy, a positive relationship is also found by others research. Short et al. (2002) used panel data in the UK to analyse 211 firms listed on the London Stock Exchange from 1988 to 1992 to examine the relationship between institutional ownership and dividend policy. They show that a higher proportion of institutional ownership is associated with higher levels of dividend payouts. In contrast, managerial ownership is negatively associated with dividend payout policy. In a subsequent study, Mitton (2004) reviewed the association between the corporate governance score and the dividend payout of 365 firms from emerging countries. Mitton shows that governance has a significant positive impact on POUT. A similar result was found by Kowalewski et al. (1995) in the Poland market. In that study, they examined the possible relationship between corporate governance and dividend payout ratio. The researchers studied 110 non-finance firms in Poland for the period between 1998 and 2004 and report a positive relationship between governance and dividend policy. In another study, Truong and Heaney (2007) analyse the relationship between large shareholders and dividend policy for a sample of 8,279 listed firms in 37 countries. They reveal that large shareholders have a positive relationship with POUT. The findings for the Swedish market are confirmed by Wiberg (2008), who reports that Swedish companies with large institutional ownership prefer higher level of POUT.

The association between ownership concentration and dividend policy has been examined in previous studies and they reported a positive or negative relationship. Mitton (2004), for example, found a positive association between ownership concentration and POUT. Firms with a high level of ownership concentration prefer to pay higher level of dividends. This finding is confirmed by Kouki and Guizani (2009) for the Tunisian Stock market. However, Maury and Pajuste (2002), and Gugler and Yurtoglu (2003) find a negative effect for ownership concentration on POUT. Mancinelli and Ozkan (2006) find a significant negative effect for large shareholders on firm's dividend payout. Moreover, Khan (2006) provides evidence that ownership concentration and institutional ownership are negatively associated with dividend. However, a positive relation is found between shareholders and dividend in insurance firms. In addition, Kumar (2006) analyses the relationship between corporate governance, ownership concentration and dividend payout, and reveals a strong non-linear relationship between ownership concentration and dividends. Furthermore, the study by Ben Naceur, Goaied and Belanes (2006) examine the determinants and dynamics of the dividend policy of 48 listed non-finance firms in Tunisia for 1996 to 2004. The results suggest that firms with high profitability have more stable earnings and free cash flow and,

therefore, pay more dividends. Moreover, fast-growth companies pay high dividends to attract investors.

In the emerging market context, Al-Malkawi (2007) reveals the significant positive impact of firm size, age and profitability on dividend policy in Jordan, while inside ownership and leverage are negatively related with dividends. Amidu and Abor (2006) also support the findings of research that profitability, cash flow position and investment opportunities affect dividend payout. Abdelsalam et al. (2008) analysed the impact of corporate governance mechanisms on dividends policy in Egyptian Stock Exchange and find that institutional ownership has a significant positive impact on dividend policy while board composition has no relationship with POUT. On the other hand, Sharif, Salehi and Bahadori (2010) examine the impact of ownership structure on dividends payout ratio on Iranian Stock Exchange and find that ownership concentration and institutional shareholding have a positive impact on POUT, but a negative association between institutional ownership and POUT. Asamoah's (2011) study shows a negative relationship among board independence and CEO duality, and dividend policy. Al Shabibi and Ramesh (2011) find board independence has no effect on dividend policy decisions in UK firms. Their findings are consistent with those of Bathala and Rao (1995) and Jiraporn, Kim and Kim (2011). The association between dividend policy and ownership concentration plays an essential role in formulating required corporate management. Harada and Nguyen (2011) affirm that companies with a higher proportion of ownership concentration pay fewer dividends. This is consistent with Gugler and Yurtoglu (2003) findings. Warrad et al. (2012) reveal a positive association between dividend payout and foreign ownership. Also, Moncef and Mondher (2012) investigate the link between ownership concentration and dividend policy and reveal that firms with a higher proportion of large block shareholders hold a degree of control to pay fewer dividends. However, firms with large diverse shareholders pay higher dividends.

In the relevant literature, researchers argue that board structure is not the only factor influencing a firm's payout policy. Ownership structure (e.g. managerial ownership, institutional ownership, government ownership and foreign ownership) may also affect dividend policy decisions. Dividend policy can be used to alleviate agency problem (Easterbrook, 1984; Rozeff, 1982). Several studies have analysed the association between managerial ownership and dividend policy. Their empirical findings show that managerial ownership is negatively related with dividend policy (Rozeff, 1982; Farinha, 2003). This is because managers tend to use free cash flow and minimize dividends in order to increase their personal benefits, such as executive compensations (e.g., Eckbo & Verma, 1994; Moh'd

et al., 1995; Short et al., 2002). Other studies, such as those by McConnell and Servaes (1990), Short et al. (2002), Manos (2003), Chen et al. (2005), provide evidence that managerial ownership is negatively related to POUT. In emerging markets, a significant negative association between the number of share owned by managers and dividend policy is found (Abdullah, Ahmad, & Roslan, 2012; Al-Gharaibeh, Zurigat, & Al-Harabsheh, 2013; Manos, 2003). In this study, the hypothesis to be tested is:

H4a: *There is a significant negative relationship between dividend policy and managerial ownership in Jordanian and Australian listed companies.*

Managerial ownership is not the only feature of ownership structure that influences dividend policy; institutional shareholders also contribute. Jensen's (1986) agency cost hypothesis of free cash flow indicates that the number of shares owned by institutional investors can support monitoring role effectively, thus forcing officials to distribute the free cash flow as dividends, or dividends can be used to compensate for institutional investors for monitoring activities of their own (Shleifer & Vishny, 1986). However, empirical studies show mixed results, such as those by: Alli, Khan, and Ramirez (1993), Moh'd et al. (1995), Short et al. (2002), Grinstein and Michaely (2005), Khan (2006), for the relationship between institutional ownership and dividend policy. In emerging market, Abdelsalam et al. (2008), Sharif, Salehi, and Bahadori (2010) and Al-Nawaiseh (2013) also found a significant positive relationship. On the other hand, other studies, such as those by Han, Lee, and Suk (1999), Thomsen and Pedersen (2000), Gugler and Yurtoglu (2003), Mancinelli and Ozkan (2006), Kouki and Guizani (2009), Mehrani et al. (2011) and Obradovich and Gill (2013) found a negative relationship. In addition, the results of other studies found no significant effect of institutional investors on dividend policy (Zeckhauser & Pound, 1990). Consistently, Al-Najjar (2010) study in Jordan also showed no significant association between institutional shareholders and dividend policy, finding that most of the institutional investors prefer investing in the service sector instead in the industry sector. This study will test the following hypothesis:

H4b: *There is a significant positive relationship between dividend policy and institutional ownership in Jordanian and Australian listed companies.*

Studies reported in the finance literature discuss the relationship between state ownership and dividend policy. For example the study by Gul (1999a) provides evidence that the number of shares owned by government is significantly positively associated with dividend policy. A similar finding is found by Al-Malkawi (2007) that companies with a higher level of shares held by the government are associated with higher levels of dividend payouts. Other studies

investigating the influence of state ownership on dividend policy, such as those by Wei, Zhang, & Xiao (2004), and Bradford, Chen and Zhu (2013) also show a significant positive association between the number of shares owned by government and dividend policy. Therefore, the hypothesis formulated for this research is as follows:

H4c: *There is a significant positive relationship between dividend policy and government ownership in Jordanian and Australian listed companies.*

Foreign investors are a factor that may influence the level of dividend payouts. Firms with higher proportions of shares held by foreign investors are more likely to pay higher dividends (Easterbrook, 1984; Jensen, 1986). Gedailovic, Yoshikawa and Hashimoto (2005) studies found that the number of shares owned by foreign investors has a significant positive relationship with level of dividends. Similarly, Jeon, Lee, and Moffett (2011) confirm a significant positive effect of foreign investors on dividend policy. The positive relationship between the number of shares owned by foreign ownership and dividend policy is also supported by Kang and Stulz (1997), Manos (2003), Chai (2010), Jeon et al. (2011), Warrad et al. (2012), and Chiang and Lai (2013). The hypothesis to be tested in this research is as follows:

H4d: *There is a significant positive relationship between dividend policy and foreign ownership in Jordanian and Australian listed companies.*

3.5.5. External Audit and Dividend Policy Hypotheses

Mitton (2004) find a significant positive relationship between audit quality, as measured by audits by the Big-4, and dividend policy. Similarly, Trang (2012) found that audit quality has a significant positive effect on dividend policy. Several empirical studies in the context of corporate governance considered the size of audit firm as a factor that improves audit quality because such firms have higher skills levels, more experiences and incentives to supply a higher level of audit quality (DeZoort et al., 2002; Fan & Wong, 2005; Kane & Velury, 2004; Piot, 2005). Deshmukh (2003) reported that companies with more asymmetric information have a weak audit quality on their financial reports as well as lower levels of dividend payouts. This means there should be a significant positive association between audit quality, as measured by involvement of Big-4 audits, and dividend policies. Therefore, the following hypothesis is proposed:

H5: *There is a significant positive relationship between dividend policy and audit quality in Jordanian and Australian Listed companies.*

3.6. Conclusion

This chapter presents the theoretical foundation of the study in explaining the expected links between corporate governance mechanisms, firm performance and dividend policy, such as agency theory and signalling theory. While many theories have been developed in the literature to understand corporate governance mechanisms and their effects on firm performance as well as dividend policy, this study mainly relies on the agency theory framework and signalling theory to provide theoretical insights into the nexus between certain corporate governance mechanisms, firm performance and dividend policy. In an agency relationship, the theory highlights the conflicts of interest between shareholders and managers, due to separation of ownership and control, where managers are more motivated by self-interest rather than shareholders' interest of the firm. Therefore, corporate governance mechanisms need to be put in place to protect shareholders' interest as well as to improve firm performance. Also, due to information asymmetry problem between shareholders and managers, the latter may need to signal their intentions in order to reduce the adverse selection and moral hazards problems of the firm. The signalling theory is based on the notion that managers know more about the long run economic well-being of the firm than outsiders do and can choose the manner in which the information is to be communicated.

This chapter also reviews empirical literature on the relationship between corporate governance mechanisms and firm performance as well as dividend policy, and shows that the results are mixed and inconclusive both in developed and developing countries contexts. Based on the theories and empirical findings in the literature, this study attempts to develop its own hypotheses, it develops the hypotheses predicting the relationship firstly, between corporate governance mechanisms (measured by board size, board independence, frequency of board meeting, CEO duality, audit committee independence, frequency of audit committee meeting, remuneration committee independence, managerial, institutional, government and foreign ownership, board salary and Big-4) and firm performance (measured by ROA, ROIC and Tobin's Q), and secondly, between corporate governance variables (measured by board size, board independence, frequency of board meeting, CEO duality, audit committee independence, , managerial, institutional, government and foreign ownership and Big-4) and dividend policy (measured by POUT and DY).

Chapter 4: Data and Research Methodology

4.1. Introduction

The previous chapters provided the background and framework for this study. Chapter one outlined the problem to be studied and its significance, and the motivation for the study and its objectives. Chapter two discussed the institutional contexts of Jordan and Australia. Chapter three outlined the theories to be used in this study and reviewed the literature on the empirical evidence and development hypotheses for the association between corporate governance mechanisms, firm performance and dividend policy. This chapter focuses on the data and research methodology, variables and their measurement and regression models.

The chapter is organized as follows: Section 4.2 explains sample selection and data sources. Section 4.3 shows measurements of the dependent variables, independent variables and control variables. Section 4.4 provides discussion on empirical methods applied, while Section 4.5 presents regression models. Finally, section 4.6 concludes the chapter.

4.2. Sample Selection and Data Sources

4.2.1. Sample Selection

The target population for this study is non-finance Jordanian and Australian listed at the AES and the ASX, over the period 2005 and 2011. This sample period is selected, because the governance codes in both Australia and Jordan were established, respectively, at the beginning of 2004 and 2005, and the time period examined allows assessment of governance regimes in both countries. Study sample companies were selected according using the following conditions:

- Date of incorporation and listing trading prior to the beginning of the study period.
- Did not change throughout the study period.
- No merger or liquidation of the company during the study period.
- The availability of the data necessary to calculate the variables of the study during the study period.

Following the above mentioned criteria, this study is used a winsorizing 1% level to control for outliers, respectively. After filtering, the sample consists of 70 Jordanian listed firms, and 206 Australian listed firms, i.e. all together the sample constitutes 464 firm-years observations in Jordan and 1,438 firm-year observations in Australia. However, financial institutional were excluded from the sample because of significant differences in the

application of accounting policies and derivation of accounting estimates, together with the different regulatory constraints faced by these firms compared to non-financial firms.

The non-finance sectors are important sectors in developed and developing countries. The classification of the non-finance sample of firms in Jordan according to their sector is shown in Table 4.1. As shown in Table 4.1, the sample is distributed in several sectors in the ASE; mining and extraction industries (21.42%), food and beverage and engineering and construction (17.14%), chemical industries (15.71%) and electrical industries (14.25%).

Table 4.1: Jordanian non-finance sector of the sample firms

Non-finance Sector	Number of firms	% of sample
Chemical Industries	11	15.71
Electrical industries	10	14.25
Engineering and Construction	12	17.14
Food and Beverages & Tobacco	12	17.14
Mining and Extraction Industries	15	21.42
Pharmaceuticals and Medical Industries	06	8.57
Textiles, Leathers and Clothing	04	5.71
Total	70	100.00

The classification of the non-finance sample firms in Australia according to their sector is shown in Table 4.2. As shown in Table 4.2, the sample is distributed in several sectors on the ASX. The industrial structure is concentrated in different sectors at the ASX; materials (33.98%), industrials (17.96%), energy (16.99%), and consumer discretionary (15.04%).

Table 4.2: Australian non-finance sector of global industry classification standard of the sample firms

Non-finance Sector	Number of firm	% of sample
Consumer Discretionary	31	15.04
Consumer Staples	08	3.88
Energy	35	16.99
Health Care Equipment	13	6.31
Industrials	37	17.96
Information Technology & Telecommunication	12	5.62
Materials	70	33.98
Total	206	100.00

4.2.2. Data Sources

The data of this study are taken from multiple secondary sources. The base data is collected from the annual reports published by Australian and Jordanian listed non-finance companies. The annual reports for Jordanian companies are published in the Public Shareholding

Companies Guides issued by the ASE. This guide contains data for all companies listed on the ASE in 2005, 2006, 2007, 2008, 2009, 2010 and 2011. Australia data is also obtained from the annual reports of the firms listed on the ASX between 2005 and 2011. This study also used DataStream and SIRCA secondary databases. To collect firm age information and financial data for the period 2005-2011, this study accessed the firms' websites for all the listed firms in the ASE and ASX. Moreover, this study used the JSC website to collect some corporate governance data for Jordanian listed firms.

4.3. Measurements of Variables

This study utilizes two regression models. The first model explains the relationship between corporate governance mechanisms and firm performance. To examine this association this thesis uses three firm performance measures: ROA, ROIC and TQ ratio as measures of financial performance. The second model investigates the association among corporate governance variables and dividend policy. To test this relationship the study uses two proxies: POUT and DY as measures of dividend policy.

In line with other studies reported in the relevant literature, this study uses the variables listed in Table 4.3 with their measurements and data sources. This research uses firm performance and dividend payout policy as dependent variables. Consistent with other studies (Bhagat and Bolton, 2008; Dalton, Daily, Ellstrand, & Johnson, 1998), this study measures firm performance using ROA, ROIC and TQ ratio. To measure dividend policy, the study uses POUT and DY. For independent variables, corporate governance variables are: board size, board independence, board meetings, CEO duality, audit committee independence, audit committee meetings, remuneration committee independence, managerial, institutional, government and foreign ownership, executive incentives, audit quality. Other control variables are log firm size, leverage ratio, growth ratio, firm risk, firm age, liquidity and industry and year dummies.

Table 4.3: Variables measurements and sources

Variables	Measurements	Symbols	Source
Dependent variables			
Return on Assets	Calculated as the earnings before taxes to book value of firm's total assts.	ROA	DataStream
Return on Invested Capital	Calculated as (Net Income before Preferred Dividends + ((Interest Expense on Debt – Interest Capitalized) * (1- Tax Rate)))) / Average of Last Year's and Current Year's (Total Capital + Last Year's Short Term Debt & Current Portion of Long Term Debt) * 100	ROIC	DataStream
Tobin's Q	Calculated as the natural logarithm of the market value of total equity plus book value of total debt relative to the book value of total assets	Log TQ	DataStream
Dividends payout Ratio	The percentage of earnings paid to shareholders in dividends. Calculated as the dividends per share divided by earnings per share.	POUT	DataStream & Annual Reports
Dividend yield	A ratio that shows how much a corporate pays out in dividends relative to its share price. Calculated as the dividends per share divided by close market price per share.	DY	DataStream & Annual Reports
Independent variables			
Board size	Board size for firm i in time t. Calculated as the numbers of board directors.	BSIZE	DataStream, Sirca & Annual Reports
Independent board of directors	The ratio of the number of non-executive directors to the total number of directors on the board.	BIND	DataStream, Sirca & Annual Reports
Frequency of board meetings	Calculated as the numbers of board directors meeting during the financial year.	BMEET	Annual Reports
CEO duality	A dummy variable taking the value 1 if the firm's CEO is the chairman of the board of directors, otherwise 0.	DUALITY	Annual Reports
Audit committee independence	The proportion of independent directors on the audit committee for firm i in time t.	ACIND	DataStream & Annual Reports
Frequency of audit committee	Audit committee activities for firm i in time t. Calculated as the number of audit committee meetings during the financial year.	ACMEET	Annual Reports
Remuneratio	The proportion of independent directors	RCIND	DataStream &

n committee independence	on the remuneration committee for firm i in time t.		Annual Reports
Managerial ownership	The total percentage of shares owned by board of directors for firm i in time t.	INSID	Annual Reports
Institutional ownership	The total percentage of shares owned by institutional investors for firm i in time t.	INS	Annual Reports
Government ownership	The total percentage of shares owned by government for firm i in time t.	STATE	Annual Reports
Foreign ownership	The total percentage of shares owned by foreign individuals and institutional investors for firm i in time t.	FORGN	Annual Reports
Executive incentives	Calculated as the natural logarithm of total board salaries and benefits expenses.	Log SALARY	DataStream & Annual Reports
Audit quality	Dummy variable taking the value 1 if the firm is audited by a big4 audit firms, otherwise 0.	BIG_4	Annual Reports
Control variables			
Firm size	Calculated as the natural logarithm of the total assets for firm i in time t.	Log FSIZE	DataStream
Leverage ratio	Calculated by total liabilities over total assets for firm i in time t.	LR	DataStream
Growth	Calculated as the natural logarithm of the ratio of a firm's market value per share to its book value per share.	Log MBVE	DataStream
Firm risk	Standard deviation of earnings (Beta). Calculated as the historical beta local index for firm i in time t.	FRISK	DataStream
Firm age	Calculated as the number of years elapsed since the firm was incorporated.	FAGE	Website for each firm
Liquidity	Calculated as the natural logarithm of the current assets scaled by current liabilities.	Log LQ	DataStream
Industry Dummy	Industry classification of Amman Stock Exchange (ASE) for Jordanian industries listed companies. Industry classification based on Global Industry Classification Standards (GICS) for Australian Industries listed company.	IND-DUM	Website for ASE & ASX
Year Dummy	7-years dummies	YEAR-DUM	Website for ASE & ASX

4.3.1. Dependent Variable (Firm Financial Performance)

In traditional finance research, financial performance is used as accounting-based, market-based performance measures and a hybrid measure. Accounting-based measures are, for example, ROA and ROIC. TQ is an example of a market-based measure. Accounting-based

measures are backward-looking. This means they focus on historical performance and do not attempt to predict future outcomes. Also, accounting-based measures are affected by legal system and applied accounting standards in each country. However, market-based measures are forward-looking and are based on comprehension of investors and affected by future markets' expectations. Empirical studies generally measure firm performance through ROA (Adner & Helfat, 2003; Mehran, 1995), ROE, ROIC (Bianco & Casavola, 1999; Gugler, Mueller, & Yurtoglu, 2004; Venkatraman & Ramanujam, 1986), TQ (Agrawal & Knoeber, 1996; Demsetz & Villalonga, 2001) and market return (MR) (Bhagat & Black, 2001; Core et al., 1999; Firth, Fung, & Rui, 2006; Pan, Tian, Ma, Jun, & Tang, 2009). Some empirical studies measure firm performance using hybrid measures (Bhagat & Bolton, 2008; Kiel & Nicholson, 2003; Klapper & Love, 2004).

In line with other studies, to test the association between corporate governance mechanisms (board size, board independence, number of board meetings conducted annually, CEO duality, independence of audit committees, number of audit committee meetings conducted annually, remuneration committee independence, managerial ownership, institutional ownership, state ownership, foreign ownership, ownership concentration, executive incentives and external audit) and performance, this study uses two accounting measures: ROA and ROI, and one market measure: TQ.

4.4.1.1 Return on Assets (ROA)

ROA is an accounting measure of performance. It is measured by earnings before interests and taxes to book value of the firm's total assets. ROA is a measure of current profitability and the simplest and most axiomatic measure of performance (Kumar, 2004). The advantage of such a profitability measure is its simplicity and the fact that it merges information about a multi-product firm into a single figure. A possible disadvantage of ROA is that it combines flow variables, such as profit, with stock variables, such as assets or equity. ROA is calculated as the earnings before interest and taxes (EBIT) divided by the book value of the firm's total assts.

4.4.1.2 Return on Invested Capital (ROIC)

While ROE measures the return on shareholders' equity, ROIC focuses on the return on all capital invested in assets. It measures the firm's efficiency at allocating the capital under its control to profitable investments (Gugler et al., 2004). Also ROIC used to show investors how well the firm's management is in using its money in generating earnings (Damodaran,

2007). ROIC is obtained by using Thomson Reuters' formula (DataStream) of Annual Times Series for 2005 to 2011.

ROIC = (Net Income before Preferred Dividends + ((Interest Expense on Debt – Interest Capitalized) * (1- Tax Rate))) / Average of Last Year's and Current Year's (Total Capital + Last Year's Short Term Debt & Current Portion of Long Term Debt) * 100

4.4.1.3 Tobin's Q (TQ)

TQ has been extensively employed as a primary indicator of the company's performance. "It is define as the ratio of the firm's market value to the replacement cost of its assets, and it is a measure of profitability opportunities" (Antonelli & Colombelli, 2011, p. 2). This study follows previous studies that have used TQ to measure firm's financial performance in the context of corporate governance (e.g. Bhagat & Bolton, 2008; Coles et al., 2012; Gompers, Ishii, & Metrick, 2003; Lang & Stulz, 1994; McConnell & Servaes, 1990; Morck et al., 1988). A high Q value of more than 1 is interpreted as evidence that management and shareholders' interests are aligned (Lindenberg & Ross, 1981). Thus, firms with high Q values have more effective governance and better performance. In practice, the replacement cost, in particular, can be difficult to observe. As a result, Tobin's Q value is generally based on ratio market-to-book value with certain modifications. The reliability of this ratio clearly bases on the degree of market efficiency (Agrawal & Knoeber, 1996). Consistent with Agrawal and Knoeber (1996), TQ is defined as the simple TQ measure. It is calculated as the market value of total equity plus book value of debt relative to the book value of total assets, which is defined as follows:

$$Q = V / BVA$$

Where:

$V = (MVE + BVD + BVPS + CV)$

MVE = Market value of equity,

BVD = Book value of debt,

BVPS = Book value of preferred stock,

CV = Book value of convertible debt and convertible preferred stock,

BVTA = Book value of total assets.

However, because BVPS and CV are rarely issued by Jordanian firms, they are omitted from the equation.

4.3.2. Dependent Variables (Dividend Policy)

A number of studies, such as those by Rozeff (1982), Schellenger et al. (1989), Farnha (2003), Belden et al. (2005), Al-Najjar and Hussainy (2009), and Abor and Fiador (2013), used

POUT and DY as measures of dividend policy. To test the association between corporate governance mechanisms (board size, board independence, CEO duality, independence of audit committees, managerial ownership, institutional ownership, state ownership, foreign ownership, ownership concentration and external audit) and dividend policy, this study also uses POUT and DY as measures for dividend policy.

4.4.2.1 Dividend Payout Ratio (POUT)

POUT is the proportion of earnings paid to shareholders and is measured by dividends per share to earnings per share:

$$\text{POUT} = \text{DPS} / \text{EPS}$$

Where, DPS is dividend per share and EPS is earnings per share.

4.4.2.1 Dividend Yield (DY)

DY represents to investors how much income they received in relation to the price per share (Schellenger et al., 1989). Various studies tested the impact of corporate governance mechanism on dividend policy as measured by DY (Jiraporn & Ning, 2006; Kim, Sul, & Kang, 2010). This study uses the same approach and measures dividend policy by dividend yield ratio. DY is calculated as:

$$\text{DY} = \text{DPS} / \text{PPS}$$

Where, DPS is dividend per share and PPS is price per share.

4.3.3. Independent Variables (Corporate Governance Variables)

The governance variables are: board size, board independence, number of board meetings conducted annually, CEO duality, independence of audit committees, and number of audit committee meetings conducted annually, remuneration committee independence, managerial ownership, institutional ownership, state ownership, foreign ownership, executive incentives and external audit.

4.4.3.1 Board Size (BSIZE)

Board size is the total number of directors on the board of directors of a firm. Board size is a widely used measure in the finance literature and is measured by total number of directors (Florackis, 2008; Hermalin & Weisbach, 1988; Larcker et al., 2007; Yermack, 1996). Following previous studies, this study uses the total number of directors as a measure for board size.

4.4.3.2 Board Independence (BIND)

Board independence is usually recognized as one of the primary factors of a good board because of its impact on the board's monitoring function. Consistent with the Hermalin and Weisbach (1991), Agrawal and Knoeber (1996), Beasley (1996), Bhagat and Black (2002), Caylor and Brown (2006), Pham, Suchard and Zein (2011) and Koerniadi and Tourani-Rad (2012), the board independence variable is defined as the proportion of independent directors, which is the ratio of the number of non-executive directors to the total number of directors on the board.

4.4.3.3 Board Meetings Frequency (BMEET)

Board meetings are considered as an indication of board activity (Vafeas, 1999a). To test its effects, several empirical studies, such as those by Conger et al. (1998), Vafeas (1999a), Carcello, Harmanson, Neal and Riley (2002), Brick and Chidambaran (2010) and Al-Najjar (2012), measured board activity by the frequency of board meetings held in a year. In line with those studies, this study also measures the board meetings variable (BMEET) by number of board meetings in a year.

4.4.3.4 CEO-Chairman Duality Dummy (CEO DUALITY)

CEO duality refers to the situation when the chair of the board and the CEO holds the same position. Consistent with prior studies, among them Rechner and Dalton (1991), Daily and Dalton (1992), Boyd (1995), Westphal and Zajac (1995) and Peng et al. (2007), this study will record the CEO duality variable using a dummy variable, which is equal to be one (1) if the chair of the board and CEO are the same person and hold the same position, and zero (0) otherwise.

4.4.3.5 Audit Committee Independence (ACIND)

Financial performance may also be affected by audit committee independence. Firms with independent audit committees have a higher quality of financial reporting (Hoi et al., 2007). Audit committee independence has been measured using several proxies. For example, studies by Klein (1998), Weir et al. (2002), Klein (2002b) and Chan and Li (2008) measured independence of audit committee by the proportion of outside directors on the audit committees. Other studies, such as those by Persons (2005) and Krishnan and Lee (2009), measured audit committee independence using a dummy variable which is equal to (1) for firms with audit committee comprising solely of independent members and (0) otherwise. Consistent with Aldamen et al. (2012) and others, the audit committee independence variable

(ACIND) in this study is measured as the proportion of outside of directors on the audit committees.

4.4.3.6 Frequency of Audit Committee Meetings (ACMEET)

The frequency of audit committee meetings is the number of meetings of audit committees reported yearly. Studies such as those by Menon and Deahl Williams (1994), Beasley (1996), Abbott et al. (2000), DeZoort et al. (2002), Song and Windram (2004), Larcker et al. (2007) and Hoitash and Hoitash (2009) used frequency of audit committee meetings in a year as a measure of the committee's activities. Similarly, Beasley, Carcello and Hermanson (2000) investigated the frequency of audit committee meetings as a measure of the audit committee activity. Consistent with such studies, the frequency of audit committee meetings variable (ACMEET) in this study is measured by the number of audit committee meetings in a year.

4.4.3.7 Remuneration Committee Independence (RCIND)

A board's remuneration committee helps to mitigate agency problem through implementing and monitoring the firm's incentives schemes (Vafeas & Theodorou, 1998). The more the independence of the remuneration committee the more likely it is to protect shareholder interests. Various studies, such as those by Conyon and Peck (1998), Vafeas and Theodorou (1998), Weir and Laing (2001), and Yermack (2004), measured remuneration committee independence by the percentage of independent of directors on the remuneration committees. This study uses the same measure for remuneration committee independence.

4.4.3.8 Ownership Variables

Ownership structure reflects the identity of the shareholders. This study classifies ownership structure into: managerial, institutional, government and foreign ownership. Consistent with Demsetz and Lehn (1985), Shleifer and Vishny (1986), McConnell and Servaes (1990), Hermalin and Weisbach (1991), Craswell, Taylor, and Saywell (1997), Loderer and Martin (1997), Himmelberg et al. (1999), Demstet and Villalonga (2001) and Welch (2003), this study defines managerial ownership as the proportion of shares held by all members of the board of directors; institutional ownership is considered to be the proportion of shares held by institutions; state ownership is the proportion of share held by government; and foreign ownership is the proportion of shares held by foreign individuals and institutional investors. Table 4.4 represents the ownership structure and ownership concentration measures.

Table 4.4: Ownership types variables definition

Variable	Symbols	Definition
Managerial Ownership	INSID	Total proportion of shares owned by directors.
Institutional Ownership	INS	Total proportion of shares owned by institutions.
Government Ownership	STATE	Total proportion of shares owned by government.
Foreign Ownership	FORGN	Total proportion of shares owned by individuals and institutional investors.

4.4.3.9 Executive Incentives (Log of Board Salary)

Executive compensation is measured as both cash and equity-based components of executive compensations. Studies by Gerhart and Milkovich (1990), Janakiraman et al. (1992), Core et al. (1999) and Gregg, Jewell and Tonks (2005) used cash compensation (salary and bonus) to measure executive incentives. Mehran (1995), Main et al. (1996) used both cash and equity elements of executive compensations. Consistent with the study by Janakiraman et al. (1992), the executive incentives variable in this study is measured by the cash components of executive compensations.

4.4.3.10 Audit Dummy for Big-4 Affiliated Audit Firms

Firm performance and dividend policy may be influenced by audit quality. The use of a large international audit firm is considered to be a primary factor strongly influencing firm performance as well as dividend policy. Big-4 audit firms are expected to provide a high quality auditing service, and thus improve the transparency of financial statements (Kane & Velury, 2004). Audit quality is used as an external mechanism of corporate governance. Big-4 auditing firms have higher audit quality than smaller audit firms. Consistent with the protocol used by Simunic (1980), Craswell, Francis, and Taylor (1995), Weber and Willenborg (2003), Fooladi and Shukor (2012), audit quality in this study is a dummy variable that equals (1) if the firms are audited by Big-4 audit firms, and (0) otherwise.

4.3.4. Measurements of Control Variables

In order to identify the effects of corporate governance mechanisms on financial performance as well as dividend policy, this study attempts to control variables that might influence the dependent variables. Control variables are: firm size, leverage ratio, growth, firm risk, firm age, liquidity and industry dummies.

4.4.4.1 Firm Size (Log of Total Assets)

Several studies in the context of corporate governance, such as those by Cubbin and Leech (1983), McConnell and Servaes (1990), Agrawal and Knoeber (1996), Majumdar (1997), Holder, Langrehr, and Hexter (1998), Xu and Wang (1999), Short and Keasey (1999), Kiel and Nicholson (2003), Mitton (2004), Bebczuk (2005), Cheung, Stouraitis, and Wong (2005), Farooque et al. (2007a), Kowalewski et al. (2008), Schultz, Tan, and Walsh (2010), Pham et al. (2011) and Wellalage and Locke (2012), used firm size as a control variable. Size of firms influences corporate performance because of access to more resources and thus, potentially, the ability to be more socially responsible (Short & Keasey, 1999). Moreover, they may have the resources to pursue strategic change important for improved firm performance (Majumdar, 1997). However, firms' small size also has capacity to enjoy lightness and entrepreneurial vitality (Storey, Keasey, Wynarczyk, & Watson, 1987). Consistent with studies by Cubbin and Leech (1983), Agrawal and Knoeber (1996), Gompers et al. (2003), Mitton (2004), Black et al. (2006) and Bozec et al. (2010), the logarithm of total assets is measured as the firm size. It would not be appropriate to include total assets in its absolute number as a proxy for firm size. Rather, the logarithm of the total assets would be a more meaningful coefficient for firm size in the regression analysis.

4.4.4.2 Leverage Ratio (Total Liabilities-to-Total Assets)

The second control variable is financial leverage or capital structure. Leverage ratio is considered to be an important element influencing financial performance as well as dividend policy. Several studies, such as those by McConnell and Servaes (1995), Rajan and Zingales (1995), Mehran (1995), Agrawal and Knoeber (1996), Aivazian, Booth, and Cleary (2003), Cheung et al. (2005), Bozec et al. (2010), Wintoki, Link, and Netter (2012) and Wellalage and Locke (2012), used the ratio of a firm's long-term debt to total assets as a measure of leverage ratio. Other studies, such as those by Vafeas and Theodorou (1998), Weir et al. (2002), Farooque et al. (2007a), Wellalage and Locke (2012) and Pham et al. (2011), used the ratio of total debt to total assets as the measure of leverage ratio. Consistent with Lemmon and Lins (2003), Drobetz, Schillhofer, and Zimmermann (2004), Xia and Zhu (2009) and Monem (2013), this study uses a control variable leverage ratio to identify the possible relationship between leverage ratio and firm performance as well as dividend policy. It is measured as the total liabilities divided by total assets.

4.4.4.3 Growth Rate (Log Market-to-Book value of Equity)

Research shows that the market-to-book value of equity may affect a firm's performance. Collins and Kothari (1989), Smith and Watts (1992), Gaver and Gaver (1993), Thomsen and Pedersen (2000), Florackis (2008), Adam and Goyal (2008), Al-Najjar (2010) used the market-to-book value of equity (MVBE) as a control variable. The measure has also been used in several studies as a factor that may affect dividend policy (Aivazian et al., 2003; Ho, 2003; Holder et al., 1998; Myers, 1984), and corporate performance (Morck et al., 1988; Short & Keasey, 1999). The log MVBE is considered to denote the effect of growth rate on performance as well as dividend policy.

4.4.4.4 Firm Risk (Beta)

The firm risk variable is a control variable that has been shown to have an impact on financial performance and dividend payout policy. It is used widely in the corporate governance literature. Consistent with the studies of Rozeff (1982), Demsetz and Lehn (1985), Han and Suk (1998), Himmelberg et al. (1999), Holderness, Kroszner, and Sheehan (1999), Demstet and Villalomga (2001), Ho (2003), Welch (2003), Al-Najjar and Hussainy (2009), Schultz et al. (2010), the firm risk variable is defined as the risk related to the particular circumstances of the firm because it might influence its share price; the possibility of loss or bad news inherent in the operations and activities of firms may affect its ability to provide investment returns of the firm. Firm risk is considered as a factor that may affect dividend policy (Al-Najjar & Hussainey, 2009; Chang & Rhee, 1990; Holder et al., 1998), and firm performance (Demsetz & Villalonga, 2001; Schultz et al., 2010). A variable of beta is considered to denote the effect of firm risk on both performance and dividend policy. It is calculated as the standard beta estimates.

4.4.4.5 Firm Age

Firm age is a variable from public sources and is defined as the number of years elapsed since the firm was incorporated. It may affect financial performance as well as dividend policy. Younger firms are usually likely to be less efficient than older firms (George, 2005). In line with other studies, this study used the number of years the firm has been listed on the stock exchange as firm age.

4.4.4.6 Liquidity Ratio (Log Liquidity Ratio)

Liquidity ratio has been found to be a variable that may influence firm performance and dividend policy. It is measured as current assets scaled by current liabilities. Liquidity ratio helps to capture firm-specific attributes, since the capability to manage working capital and

obtain a larger amount of cash balances relative to current liabilities reflects good management skills, which are likely to be reflected in a firm's ability to make relatively greater profits. Consistent with Majumdar (1997), Chhibber and Majumdar (1999), Ho (2003), Al-Najjar and Hussainey (2009), this study uses the liquidity as a control variable. Thus, it is calculated as the current assets scaled by current liabilities.

4.4.4.7 Industry Dummies (IND-DUM)

Due to differences in firm operations, corporate governance practices may vary between industries (Elsayed, 2007). The industry dummy (IND-DUM) variable is used in corporate governance studies to control for the possibility of spurious relations between dependent and independent variables. Corporate governance and performance relationship may be affected by the type of industries because some industry types have a positive impact on firm performance (Lim, Matolcsy, & Chow, 2007). This research adopts the industry type classification of ASE for Jordanian industries listed companies, and the industry classification is based on Global Industry Classification Standards (GICS) for Australian listed companies.

4.4. Empirical Methods

This research employs two main regression models in Section 4.5 below to test the effects of corporate governance mechanisms on financial performance and dividend policy in Jordanian and Australian listed companies. The first model examines the relationship between corporate governance mechanisms and firm performance while the second model the relationship between corporate governance and dividend policy. To estimate the association between corporate governance mechanisms, financial performance and dividend policy, this study employs three alternative empirical methods; first, pooled least squares (OLS) method; second, fixed effects (FE) or random effects (RE); finally, the generalized method of moments (GMM).

4.4.1. Pooled OLS Regression

Recent years have seen many important developments in the experimental literature on corporate governance. With greater awareness of the difficulties facing researchers in econometrics, there is a growing use of panel data, which is, however, rather complex to use. Nevertheless, the panel data method appears, currently, to be the best available. Regarding the relationship between mechanisms of corporate governance, corporate performance and dividend policy, most empirical studies, however, have used the OLS approach. The OLS model is a comprehensive model able to contain multiple independent variables. The model

with dependent variable (Y), and multiple explanatory variables ($X_{i1}, X_{i2}, \dots, X_{i\alpha}$) can be written as:

$$y_i = \beta_0 + \beta_1 X_{i1} + \varepsilon_i \quad (1)$$

Where, Y_i is the value of the dependent variables in observation i while $\beta_1, \beta_2, \dots, \beta_\alpha$ are parameters and $X_1, X_2, \dots, X_\alpha$ are the values of independent variables in observation i . ε_i is a random term having a zero mean and constant variance, so that it can express the error term as normally distributed in the following way $\varepsilon_i \sim N(0, \sigma^2 I)$.

However, with panel data, the OLS regression is problematic because it ignores the panel structure and only treats data as cross-sectional (Arellano & Honoré, 2001; Roodman, 2009). Also, use of the OLS model with panel data might have temporary and spatial problems. Especially, regression models using panel data regularly introduce temporarily and spatially associated errors as well as heterogeneity (Beck & Katz, 1995). So, results from an OLS regression using panel data could be biased, because the model has an unobservable heterogeneity issue. To solve this problem one would typically apply FE or RE models.

4.4.2. Panel Techniques (FE or RE Models)

Most prior studies that have discussed the effects of corporate governance practices on performance and dividend policy have used panel data analysis. Panel data consist of information on the same individual or cross-section, objects over time (Brooks, 2008). This means the data covers both time and space. This study employs a panel data framework for analysis because of its advantages over cross-section or time series data. There are advantages to using panel data estimation methods (Hsiao, 2003).

- Panel data have a large number of observations.
- Panel data reduces the collinearity between variables and have more variability.
- Panel data methods have more reliable and stable parameter estimates.
- It is better to study dynamics of change and complicated behavioural models.
- Panel data have more variability, less aggregation over firms and individuals

Panel data methods are more compact than cross-section data methods. Because each additional time period of data is not independent of previous periods in panel data, the standard error term might need to be adjusted. "Panel data requires the use of much richer models and estimation methods. Also different areas of applied statistics is an acronym for cross-section time series, cover many of these methods" (Cameron & Trivedi, 2009, p. 269). Regarding unobserved heterogeneity problem, the results of OLS regression are biased. So, there are two approaches used in studies: FE model or RE model. FE controls for the effects

of time-invariant variables with time-invariant effects, while RE assumes that time-invariant country characteristics α_i are neither correlated with the regressor X_i . Two statistical models that can be employ FE or RE models. This study will focus on two techniques are using to analyse panel data.

4.4.2.1 Fixed-Effects Model (FE)

The FE model may be used to analyse the impact of variables that vary over time. It reveals the relationship between predictor and outcome variables within an entity (country, company, etc.). Each company has individual characteristics that may affect the dependent variables. The FE model assumes that something within the individual may impact the dependent variables and this study needs to control for this. Under this assumption, the entity's error term and individual characteristics should be not be correlated. The FE model will remove the effects of those time-invariant characteristics. Another assumption of the FE model is that those time-invariant characteristics are unique to the individual. The equation for the fixed-effects model is:

$$y_i = \alpha_i + \beta_1 X_i + \mu_i \quad (2)$$

Where, y_i is the dependent variable with i entity and t time. X_i represents independent variables and α_i is the random individual-specific effects for each entity, β is the coefficient for explanatory variables, and μ is the error term (Gujarati, 2003).

4.4.2.2 Random-Effects Model (RE)

The RE model can be used to analyse the special features of panel data. It is also known as the error components model. According to the RE model, the intercepts are similar for all cross-sectional unit, plus, a random variable ε_i measures the random deviation of each entity's intercept term. The equation for the random-effects model is:

$$y_i = \alpha + \beta_1 X_i + \omega_i \quad \omega_i = \mu_i + \varepsilon_i \quad (3)$$

Where, $\omega_i = \mu_i + \varepsilon_i$, which is called the composite error, consists of two components: μ_i is the cross-section or firm-specific error component, and ε_i is the combined time-series and cross-section error component.

4.4.2.3 Hausman Test

In choosing whether to use the FE and RE models, authors often depend on test specifications, such as the Hausman Test (Hausman, 1978). It is designed to choose between the FE or RE models; RE assumes that independent variables are orthogonal to the effects of the unit. However, no association between the independent variables and the unit effects, after that β

in the FE model (β^{FE}) is similar to β in the RE model (β^{RE}). The test measures the estimations of different models:

$$H = (\beta^{FE} - \beta^{RE})' [\text{Var}(\beta^{FE}) - (\beta^{RE})]^{-1} (\beta^{FE} - \beta^{RE}) \quad (4)$$

Where, β^{FE} is the FE estimator with variance-covariance matrix $\text{Var}(\beta^{FE})$, and β^{RE} is the RE estimator with variance-covariance matrix of $\text{Var}(\beta^{RE})$.

The Hausman test is applied to test for FE model versus RE model (Cameron & Trivedi, 2009). It tests the null hypothesis that prefers the RE model and an alternative hypothesis that prefers the FE model: if the P-value is not significant then it is safe to use RE model, otherwise use the FE model. In other word, it tests the null hypothesis that the RE model estimates are the same as the FE model estimates, and the rejection of the null hypothesis indicates that the FE model is more appropriate than the RE model. As a result, this study is unable to control for the potential of dynamic endogeneity and the effects of simultaneity remains unaddressed in the FE regression. Consequently, this thesis employs the dynamic system GMM model for the dynamic endogeneity, simultaneity and unobservable heterogeneity.

4.4.3. Endogeneity Problems

Arguably, the most important and pervasive issue confronting empirical studies of corporate governance is endogeneity, which we can be loosely defined as a relationship between the independent variables and the error term in a regression. The results with the presence of endogeneity problems lead to biased and unobserved heterogeneity. The first step in addressing endogeneity is to identify the problem. More precisely, researchers must make clear which variables are endogenous and why they are endogenous. Empirical studies examining the relationship between corporate governance and firm performance have found that the relationships are complicated due to endogenous issues.

Endogeneity issues in regression model could be occurring through several reasons, such as omitted variable biase, measurement error and simultaneity/reverse causation. To determine whether the model has an endogeneity issue or no, most studies use the Hausman Test for endogeneity; the Hausman test principle provides a way to test whether a regression is endogenous. If there is little difference between OLS and IV estimation, then there is no need to instrument, and it is possible to conclude that the regressor was exogenous. If, instead, there is considerable difference, then there is a need to instrument and the regressor is endogenous.

In the literature, there are many empirical studies suggesting that certain governance structures drive improved firm performance. However, several authors, such as those by Himmelberg et al. (1999), Denis and Kruse (2000), Hermalin and Weisbach (2003), Wintoki, Linck, and Netter (2009), Schultz et al. (2010), Ammann, Oesch, and Schmid (2011), Pham et al. (2011), Wellalage and Locke (2012), and Wintoki et al. (2012), suggests that firm performance and other governance characteristics are endogenous issues. This study performs a regression using both the pooled model and panel models (FE). However, pooled OLS and panel models may suffer from causality or endogeneity problems between endogenous independent and dependent variables. Hence, this study examines the existence of endogeneity problems in corporate governance variables using the Durbin-Wu-Hausman (DWH) test for endogeneity (Durbin, 1954; Hausman, 1978; Wu, 1973).

Following the lead of other studies, this study examined, in each equation, whether board size, board independence and managerial ownership are determined endogenously. This study also used the DWH test as a diagnostic test for endogeneity of firm performance proxies and other variables. The results of the DWH confirm an endogeneity effect for board size, board independence and managerial ownership. These results confirm that OLS and FE estimations are unreliable and biased. The results of the DWH test for endogeneity issues suggest that the dynamic system GMM estimator is preferable.

4.4.4. Generalize Method of Moment (GMM)

To avoid the problems referred to in the above discussion, this study examines the relationship between corporate governance variables and firm performance using dynamic GMM panel specifications. This model was introduced and developed by several authors – Hansen (1982), Arellano and Bond (1991), Arellano and Bover (1995), and Blundell and Bond (1998), and since has become one of the most widely used methods of estimation for models in economics and finance.

In this section, this study briefly reviews the first-differenced GMM regression and dynamic system GMM regression. The following equation examines the effects of corporate governance mechanism on firm performance:

$$y_i = \alpha L.y_{i-1} + \beta_1 X_i + \beta_2 K_i + \mu_i \quad (5)$$

Where, y_i firm performance is measured by ROA, ROIC and TQ, and $L.y_{i-1}$ is its lagged performance. X_i is a matrix of the mechanisms of corporate governance. K_i is a matrix of the following control variables and μ is the error term.

The FE model controls the error term in equation (5), which includes the unobserved country-specific effects, v_i , and the observation-specific error, e_i

$$\mu_i = \eta_i + v_i \quad (6)$$

Why the Arellano-Bond GMM Estimator?

As implied by equation (5), there are many econometrics problems: the studies reviewed in literature determine the endogeneity problem through the governance mechanisms board size, board independence and managerial ownership in X_i , which are assumed to be endogenous. Relationship causation can exist in both directions; that is, governance variables affect firm performance and vice versa. This model links with the error term. Two other econometric problems are the fact that time invariant variables (as the industry dummies) when using fixed effects (country effects) might be associated with the independent variables, and the lagged of performance y_{i-1} , and autocorrelation problem may exist.

The first approach of GMM regression is the first-difference GMM, which was developed by Arellano and Bond (1991) and Fama and French (2001).

The first-difference GMM approach is:

$$y_i = \alpha L.y_{i-1} + \beta_1 X_i + \beta_2 K_i + \mu_i \quad |\alpha| < 1 \quad (7)$$

Where, Y is firm performance; α is a coefficient for lagged performance measure; β_1 is a $H \times 1$ vector of corporate governance mechanisms; β_2 is a $Q \times 1$ vector of control variables; Δy_i is a $(N-1) \times 1$ are differences of firm performance variable; $\Delta X_i'$ is a $(N-1) \times H$ matrix of the H differences of corporate governance mechanisms; ΔK_i is a $(N-1) \times Q$ matrix of the Q differences of control variables; and $\Delta \mu_i$ is a $(N-1) \times 1$ vector of error terms.

By applying the first-differences model, the equation can be rewritten as -

$$\Delta \mu_i = \Delta \eta_i + \Delta v_i \quad (8)$$

Assuming that v_i and η_i are error terms with expectation value equal zero:

$$E(\eta_i) = 0, \quad E(v_i) = 0, \quad E(\eta_i v_i) = 0 \quad (9)$$

Equation (7) could be rewrite as -

$$\Delta y_i = (\alpha - 1)y_{i-1} + \beta_1 \Delta X_i' + \beta_2 \Delta K_i + \Delta \mu_i \quad (10)$$

By employing the first-difference model, equation (7) will change to:

$$\Delta y_i = \alpha L. \Delta y_{i-1} + \beta_1 \Delta X_i' + \beta_2 \Delta K_i + \Delta \mu_i \quad (11)$$

The main problem identified in equation (11) is that the lagged performance measure is correlated with the error term. Again the results of OLS and FE regressions could be biased because equation (11) still suffers from autocorrelation as well as unobserved heterogeneity. In other word, the change of lagged dependent variables is correlated with the changes of the error term.

In the literature, Anderson and Hsiao (1982) suggested an approach to control for endogeneity issues. Similarity, Arellano and Bond (1991) developed an approach that involves all possible instruments, that is, lagged dependent and independent variables as instrumental variables. Furthermore, Arellano and Bond (1991) applied OLS, FE and GMM regressions. The results indicate that GMM findings are better than OLS and FE models.

By assuming that standard errors terms are uncorrelated:

$$E [\mu_{it} \mu_{is}] = 0 \quad \text{for } i = 1, \dots, N \text{ and } t \neq s \quad (12)$$

By assuming that dependent variable and standard error term are uncorrelated:

$$E [y_{it} \mu_{it}] = 0 \quad \text{for } i = 1, \dots, N \text{ and } t = 2, \dots, T \quad (13)$$

According to assumptions discussed above, the equation will be rewritten as -

$$E [y_i^{t-2} \Delta \mu_i] = 0 \quad \text{for } t = 3, \dots, T \quad (14)$$

Where $y_i^{t-2} = (y_{i1}, y_{i2}, \dots, y_{it-2})'$, and $\Delta \mu_i = \mu_{it} - \mu_{it-1} = \Delta y_i - \alpha \Delta y_{i-1}$

Where Z_i is the $(T-2) \times m$ matrix given by the instrument matrix for first-differences GMM can be written as -

$$Z_i d_i = \begin{bmatrix} y_{i1} & 0 & 0 & \dots & 0 & \dots & 0 \\ 0 & y_{i1} & y_{i2} & \dots & 0 & \dots & 0 \\ \vdots & \vdots & \vdots & \dots & \vdots & \dots & \vdots \\ 0 & 0 & 0 & \dots & y_{i1} & \dots & y_{it-2} \end{bmatrix}; \quad \Delta \mu_i = \begin{bmatrix} \Delta \mu_{i3} \\ \Delta \mu_{i4} \\ \vdots \\ \Delta \mu_{it} \end{bmatrix} \quad (15)$$

Moment conditions (14) can be more compactly written as -

$$E (Z_i' d_i \Delta \mu_i) = 0 \quad (16)$$

The lagged variable is weak when related with subsequent first-differences, hence the used instruments for first-differences regression might be weak (Blundell & Bond, 1998). Furthermore, in the presence of unobserved heterogeneity issues, the first-differences regression is inappropriate. This implies that the model needs another approach. Arellano and Bover (1995) and Blundell and Bond (1998) developed that other approach: system GMM regression for dynamic endogeneity, which combined moment conditions for first-differences

and levels restrictions. Blundell and Bond (1998) argued that the system GMM regression is better than the first-differences regression because of the instruments used (first-differences and level retractions), which could have good predictors for the endogenous variables. Again, Blundell and Bond (1998) assumed that:

$$E(\eta_i \Delta y_{i2}) = 0, \quad (17)$$

Where $\Delta y_{i-1} = (\Delta y_{i2}, \Delta y_{i3}, \dots, \Delta y_{i-1})$, the instrument matrix for this system GMM can be written as -

$$Z_i = \begin{bmatrix} \Delta y_{i2} & 0 & 0 & \dots & 0 & \dots & 0 \\ 0 & \Delta y_{i2} & \Delta y_{i3} & \dots & 0 & \dots & 0 \\ \vdots & \vdots & \vdots & \dots & \vdots & \dots & \vdots \\ 0 & 0 & 0 & \dots & \Delta y_{i2} & \dots & \Delta y_{it-1} \end{bmatrix}; \quad \mu_i = \begin{bmatrix} \mu_{i3} \\ \mu_{i4} \\ \vdots \\ \mu_{it} \end{bmatrix} \quad (18)$$

Moment conditions (19) can be written as -

$$E(Z_i' \mu_i) = 0 \quad (19)$$

In the first-difference model, lagged variables of dependent and independent variables are weak instruments. So, another approach that can be used is the system GMM regression. The system GMM approach includes two equations: first-differenced and level restrictions. The system GMM regression achieves instrument validation and it enables the validity of the model to be checked in both the serial correlation and the Sargan Tests (Arellano & Bond, 1991; Ika & Ghazali, 2012). Arellano and Bond (1991) suggested two tests for serial correlation AR (1) and AR (2). They note that the existence of autocorrelation issues in the model impacts on the validity of instruments. If μ_i is auto-correlated to the order 1, then y_{it-2} is endogenous of $\Delta \mu_i$ (by the presence of μ_{it-1} in the difference) and, therefore, y_{it-2} would be an invalid instrument. Arellano and Bond tested the autocorrelation in model using difference $\Delta \mu_i$, as an alternative of level μ_i . To test the autocorrelation of order 1 AR (1) its levels should be checked for difference to autocorrelation of order 2 AR (2). The null hypothesis is no autocorrelation. If the null hypothesis is accepted, it means that the instruments are valid. Another important test is the Sargan Test, which confirms the instruments are valid. The null hypothesis is that the instruments are uncorrelated with the residuals. If the null hypothesis is accepted, it implies and confirms that the instruments are valid (Ika & Ghazali, 2012). Therefore, this study adopted the system GMM estimator.

4.5. Regression Models

This study is conducted in two stages:

- 1- Examination of the relationship between corporate governance and firm performance.
- 2- Investigation of the relationship between corporate governance and dividend policy.

4.5.1. Relationship between Corporate Governance Variables and Firm Performance

The primary objective of this study is to investigate the possible relationship between corporate governance mechanisms and firm performance in Jordanian and Australian listed non-finance firms. Following Himmelberg et al. (1999) and Schultz et al. (2010), panel data analysis is applied in this study. Six nested OLS regressions were conducted in this study: model 1 includes corporate governance mechanisms; model 2 is comprised of corporate governance mechanisms with ownership variables; model 3 includes corporate governance, ownership and control variables; model 4 includes model 3 with only industry dummy variables; model 5 includes model 3 with only time dummy variables; model 6 includes model 3 with both industrial and year dummy variables.

Given that the present study uses a panel data set, the second step analysis between corporate governance mechanisms and firms' financial performance is FE models or RE models. The final step to causal relationships between governance variables and firm performance is the GMM. These analyses provide a comparison with results of previous studies, as well as determine the effects of adding other variables, such as ownership type and control variables. Studies of corporate governance mechanisms have been criticized for assuming a firm's governance standards are exogenous factors to firm performance (Klein, 1998; Mehran, 1995). Several researchers, such as Demsetz (1983), Demsetz and Lehn (1985), Himmelberg et al. (1999), Denis and Kruse (2000), Demsetz and Villalonga (2001), Farooque et al. (2007a) Wintoki et al. (2009), Schultz et al. (2010), argue that corporate governance and firm performance are determined endogenously, concluding that corporate governance may be an endogenous variable. Thus, this study performs regressions using OLS, FE and GMM.

Equation (1)

$$\begin{aligned} \text{Firm financial performance} = & \alpha + \beta 1 \text{ BSIZE} + \beta 2 \text{ BIND} \\ & + \beta 3 \text{ BMEET} + \beta 4 \text{ DUALITY} \\ & + \beta 5 \text{ ACIND} + \beta 6 \text{ ACMEET} \\ & + \beta 7 \text{ RCIND} + \beta 8 \text{ INSID} \\ & + \beta 9 \text{ INS} + \beta 10 \text{ SATATE} \\ & + \beta 11 \text{ FORGN} + \beta 12 \text{ SALARY} \end{aligned}$$

$$+ \beta 13 \text{ BIG-4} + \beta 14 \sum X + \mu$$

Where, firm financial performance is a dependent variable measured by ROA, ROIC, and TQ. The independent variables of corporate governance are board size, board independence, board meetings, CEO duality, audit committee independence, audit committee meetings, remuneration committee independence, managerial ownership, institutional ownership, government ownership, foreign ownership, board Salaries and Big-4, and $\sum X$ is a vector of other explanatory and control variables (firm size, leverage, growth prospect, firm risk, firm age and liquidity ratio), and μ is the error term.

4.5.2. Relationship between Corporate Governance Variables and Dividend Policy

Equation (2)

$$\begin{aligned} \text{Dividend policy} = & \alpha + \beta 1 \text{ BSIZE} + \beta 2 \text{ BIND} \\ & + \beta 3 \text{ BMEET} + \beta 4 \text{ DUALITY} \\ & + \beta 5 \text{ ACIND} + \beta 6 \text{ INSID} \\ & + \beta 7 \text{ INS} + \beta 8 \text{ STATE} \\ & + \beta 9 \text{ FRGN} + \beta 10 \text{ BIG-4} + \sum X + \mu \end{aligned}$$

Where, dividend policy is a dependent variable measured by POUT and DY. Corporate governance variables are independent variables (board size, board independence, board meetings, CEO duality, audit committee independence, managerial ownership, institutional ownership, government ownership, foreign ownership, Big-4) and $\sum X$ is a vector of other explanatory and control variables (firm size, leverage, growth prospect, firm risk, firm age and profitability), and μ is the error term.

With regard to the models and variables used in this research, Table 4.5 explains variables symbols and expected signs for governance – performance relationships, and Table 4.6 explains variables symbols and expected signs for governance - dividend policy relationship.

Table 4.5: Expected relationships between explanatory variables and firm performance

Variables	Symbols	Expected Sign
Corporate Governance Variables		
Board size	BSIZE	Positive/Negative
Independence of board of directors	BIND	Positive
Board committee activities	BMEET	Positive
CEO duality	DUALITY	Negative
Audit committee independence	ACIND	Positive
Audit committee activates	ACMEET	Positive
Remuneration committee independence	RCIND	Positive
Managerial ownership	INSID	Positive/Negative

Institutional ownership	INS	Positive
Government ownership	STATE	Negative
Foreign ownership	FRGN	Positive
Executive incentives	Log SALARY	Positive
Audit quality	BIG-4	Positive
Other Control Variables		
Firm size	Log FSIZE	Positive
Leverage ratio	LR	Negative
Growth	Log MBVE	Positive
Firm risk	FRISK	Negative
Firm age	FAGE	Positive/Negative
Liquidity	Log LQ	Positive
Industry Dummies	IND-DUM	Unclear

Table 4.6: Expected relationships between explanatory variables and dividend policy

Variables	Symbols	Expected Sign
Corporate Governance Variables		
Board size	BSIZE	Positive
Independence of board of directors	BIND	Positive
Frequency of board meetings	BMEET	Positive
CEO duality	DUALITY	Negative
Audit committee independence	ACIND	Unclear
Managerial ownership	INSID	Negative
Institutional ownership	INS	Positive
Government ownership	STATE	Positive
Foreign ownership	FRGN	Positive
Audit quality	BIG_4	Positive
Other Control Variables		
Firm size	Log FSIZE	Positive
Leverage ratio	LR	Negative
Growth	Log MBVE	Negative
Firm risk	FRISK	Negative
Firm age	FAGE	Positive/Negative
Profitability	ROA	Positive
Industry Dummies	INDUST	Unclear

4.6. Conclusion

This chapter has discussed the methodology used in the study in detail. The sample selection process, sources of data collection, measurements of variables for the dependent, independent and control variables, empirical methods including the statistical analysis used to test the hypotheses of the study, and the regression models. Chapter 5 examines the relationship between corporate governance mechanisms and financial performance variables on the basis of the statistical results obtained by applying the methods discussed in this chapter

Chapter 5: Relationship between Corporate Governance Mechanisms and Financial Performance: Results and Discussions

5.1. Introduction

Chapter 4 discussed the development of hypotheses for this study, how the sample of firms were selected, data obtained and variables measure, and the regression models used. This chapter presents descriptive statistics, correlation results and results of the analysis of the relationship between corporate governance mechanisms and firm performance for Jordanian and Australian non-finance firms.

This chapter is organized as follows: Section 5.2 presents descriptive statistics of Jordanian and Australian non-finance companies. Section 5.3 shows the correlation analysis of variables. Section 5.4 provides results and discussions of regressions for pooled and panel models as well as the dynamic system GMM model. Section 5.5 concludes the chapter.

5.2. Descriptive Statistics

The sample studies comprises 70 Jordanian non-finance firms listed on the Amman Stock Exchange (ASE), and 206 Australian non-finance firms listed on the Australian Securities Exchange (ASX) for the period 2005 to 2011 (464 firm-year observations in Jordan and 1438 firm-year observations in Australia).

5.2.1. Descriptive Statistics of Jordanian Firms

Table 5.1 presents descriptive statistics of all corporate governance, firm performance and control variables for Jordanian non-finance companies (i.e. Panel A for financial performance, Panel B for corporate governance and Panel C for control variables).

With regard to the firm performance variables, Panel A shows that Jordanian non-finance firms have mean (median) ROA of 2.7% (3.7%), the minimum value reported over the period is -58.7%, while the maximum is 43.9%. In addition, the mean (median) of ROIC is 3.2% (4.2%), and the mean (median) of TQ is 0.549 (0.521). These findings suggest that the majority of Jordanian non-finance listed firms have poorer accounting-based performance than Australian non-finance listed firms. Like other countries, Jordan has been affected by the GFC. The low growth rates and poor performance of Jordanian firms may be due to the negative effect on the Jordanian economy by the sharp increase of international oil prices combined with a drop of external grants since beginning of 2005. The impacts of these factors are aggravated, specifically for the period 2008-2009 because of the GFC. This explanation is supported by assessments by Al-Najjar et al. (2010) and Al-Qaisi (2013).

Panel B of Table 5.1 presents the descriptive statistics of corporate governance variables used in the study. The table shows that average board size (BSIZE) and board independence (BIND) of Jordanian firms are between 7 to 8 directors with 46% being independent members. The average number of board meetings is 5 to 6 times in a year. The table also shows that 28.6% of the Jordanian companies are characterized by CEO-Chairman duality. Descriptive statistics show that the mean (median) value of the proportion of audit committee independence (ACIND) is 44.5% (33%). The Jordanian data show that the minimum value of audit committee independence is 0, and the maximum value 1. The mean (median) number of Jordanian firms' audit committee meetings (ACMEET) in a year is two (2), with a maximum number of 5 times in a year. The table also shows that the mean (median) of the proportion of remuneration committee independence (RCIND) is 37.1% (33.3%) in Jordanian firms.

With regard to ownership structure variables, Table 5.1 shows that the mean (median) value of the proportion of insider's ownership (INSID) has reached 38.5% (36.8%), while the minimum value of insider ownership is 9%, the maximum value is 86%. This implies that Jordanian firms have a large family ownership. The mean (median) value of the proportion of shares held by institutional investors (INS) is 21.7% (19%), and the mean (median) for government ownership (STATE) is 10% (7%), while the mean (median) for foreign ownership (FORGN) is 26.6% (26%). The percentage of Jordanian firms audited by Big-4 audit firms is 26.9%, which is much lower than the percentage of firms in developed countries being audited by Big-4.

With respect to control variables, Panel C shows that Jordanian firms have mean (median) firm size (FSIZE), as measured by log of total assets, is \$10.476 (\$9.985). The mean (median) leverage ratio (LR) is 44.8% (30.4%) and the mean (median) log market to book value (MBVE) is 25.5% (21.5%). The mean (median) value of firm risk (FRISK) is 39.3% (34.1%) for Jordanian firms. The mean (median) firm age (FAGE) is 21.82 (16) years. The mean (median) liquidity ratio (LQ) is 130.4% (115.6%) of total assets for Jordanian companies.

5.2.2. Descriptive Statistics of Australian Firms

Table 5.2 shows descriptive statistics of corporate governance, firm performance and control variables for Australian non-finance companies. (I.e. Panel A for financial performance, Panel B for corporate governance, and Panel C for control variables).

With regard the firm performance variables, Panel A shows that Australian non-finance firms have mean (median) ROA is 5.3% (6.8%), the minimum reported over the period is -172%, while the maximum is 135%. In addition, the mean (median) ROIC is 6% (8.5%), while the

mean (median) TQ is 0.830 (0.862), suggesting that the majority of Australian non-finance listed firms have higher financial performance than Jordanian firms.

Panel B of Table 5.2 presents descriptive statistics for corporate governance variables used in the study. The table shows that average board size (BSIZE) and board independence (BIND) of Australian firms is between 7 to 8 directors with 59.7% independent members. The table also shows that average number of board meetings (BMEET) is 9 to 10 times in a year. The minimum number of board meetings is 0 in a year, and the maximum number is 37 times. Only 4.2% of the Australian firms are characterized by CEO-Chairman duality. This means that most Australian firms have separate positions for a chairman and chief executive officer (CEO). With regards to the audit committee independence (ACIND) and audit committee meetings (ACMEET), Table 5.2 shows that the mean (median) of the proportion of audit committee independence is 85.7% (100%). The Australian data also show that the minimum value of audit committee independence is 0 and maximum value 1. The mean (median) of Australian firms' audit committee meetings is 3.74 (4) times in a year, with a maximum number 14 times in a year. The table also shows that the mean (median) of the proportion of remuneration committee independence (RCIND) is 82.2% (100%) in Australian firms.

For the descriptive statistics of the ownership structure variables, Table 5.2 shows that the mean (median) value of the proportion of insider's ownership (INSID) has reached 15.2% (12%). The Australian data also show that the minimum value of managerial ownership is 0, and the maximum value 77%. The mean (median) value of the proportion of shares held by institutional investors (INS) is 25.2% (23.2%), and the mean (median) for government ownership (STATE) is 0.5% (0), while the mean (median) for foreign ownership (FORGN) is 28.1% (27%). The percentage of Australian firms audited by the Big-4 is 80.8%.

Regarding control variables, Panel C shows that Australian firms have mean (median) firm size (FSIZE), as measured by log of total assets, of \$13.101 (\$13.140). The mean (median) leverage ratio (LR) is 23.5% (21.3%), and the mean (median) growth rate log market to book value (MBVE) is 75.6% (73.2%), and the mean (median) value of firm risk (FRISK) is 124.5% (113%). For the firm age (FAGE), the mean (median) is 21.82 (16) years. The mean (median) liquidity ratio (log LQ) is 130.4% (115.6%) of total assets for Australian companies.

5.2.3. Comparison between Australian and Jordanian Firms

Table 5.3 shows comparative means and medians for Jordanian and Australian non-finance listed firms. Financial performance of Australian non-finance listed firms is better than that of Jordanian non-finance listed firms. More specifically, in Jordan, the mean (median) ROA is

2.7% (3.7%), while the mean (median) ROA is 5.35 (6.8) in Australian firms. The table also shows that the mean (median) ROIC is 3.2% (4.2%) in Jordanian firms, whereas in Australian firms 6% (8.5%). The mean (median) TQ is 2.53% (2.37%) in Australian firms, while in Jordanian firms it is 1.95% (1.68%). Overall, the firm performance indicators in the Australian non-finance firms are more mature than the Jordanian non-finance firms.

With respect to corporate governance variables, Table 5.3 shows that board size (BSIZE) is, on average, similar in size in both countries. However, Australian firms have more independent board members than Jordanian firms do. Australian firms also have less CEO duality than Jordanian firms and Australian firms have more non-executive audit committee members than Jordanian firms. Australian firms' audit committees are more activate than Jordanian firms' audit committees, and Australian firms have more non-executive remuneration committee independence (RCIND) than Jordanian firms.

Regarding ownership structure variables, Table 5.3 reveals that the mean (median) value of the proportion of insider's ownership (INSID) in Jordanian firms is 38.5% (36.8%), which is much higher than Australian firms mean (median) value as 15.2% (12%). This may be due to more family ownership in the Jordanian firms. Again, Australian firms have a higher proportion of institutional investors (INS) than Jordanian firms do. However, Jordanian firms have higher government ownership (STATE) than Australian firms do. The result of Table 5.3 show that foreign ownership (FORGN) is similar in both countries. Table 5.3 also shows that more Australian firms are audited by Big-4 firms than Jordanian firms.

Table 5.3 also shows that Jordanian non-finance companies belong to seven different industry types: 15.71% chemical Industries, 14.25% electrical industries, 17.14% food and beverages and engineering and construction, 21.42% mining and extraction industries, 8.57% pharmaceuticals and medical industries, and 5.71% textiles, leathers and clothing. The Australian non-finance companies belong to seven different industry types 15.04% consumer discretionary, 3.88% consumer staples, 16.99% energy, 6.31% health care equipment, 17.96% industrials, 5.62% Information Technology and 33.98% Materials.

Table 5.1: Summary statistics of firm performance, corporate governance and control variables (Jordanian non-finance firms)

Variables	Obs	Mean	Std	P25th percentile	P50th Percentile (Median)	P75th percentile	Min	Max	Skewness	Kurtosis
<i>Panel A: performance</i>										
Return on Assets (ROA)	464	0.027	0.100	-0.007	0.037	0.074	-0.587	0.439	-0.8915	8.6969
Return on Invested Capital (ROIC)	464	0.032	0.115	-0.008	0.042	0.085	-0.614	0.493	-0.8289	6.4972
Log Tobin's Q ratio	464	0.549	0.492	0.207	0.521	0.932	-0.891	1.738	0.0063	2.6594
<i>Panel B: Corporate Governance Variables</i>										
Board Size (BSIZE)	464	7.941	2.371	7.000	8.000	9.000	3.000	16.000	0.4297	3.2162
Board Independence (BIND)	464	0.462	0.194	0.333	0.429	0.600	0.100	1.000	0.5531	2.4688
Board Meetings in Year (BMEET)	464	5.726	1.867	5.000	6.000	7.000	2.000	12.000	0.8470	3.7993
CEO Duality (DUALITY)	464	0.286	0.452	0.000	0.000	1.000	0.000	1.000	0.9436	1.8905
Audit Committee Independence (ACIND)	464	0.445	0.258	0.250	0.333	0.667	0.000	1.000	0.4852	2.5213
Audit Committee Meetings (ACMEET)	464	2.129	1.028	2.000	2.000	3.000	0.000	5.000	-0.6651	3.1470
Remuneration Committee Independence (RCIND)	464	0.371	0.202	0.250	0.333	0.500	0.000	0.833	0.2596	2.5700
Insider Ownership (INSID)	464	0.385	0.160	0.265	0.368	0.480	0.090	0.860	0.6004	3.009
Institutional Ownership (INS)	464	0.217	0.114	0.100	0.190	0.325	0.010	0.789	0.8168	3.2702
Government Ownership (STATE)	464	0.100	0.105	0.020	0.070	0.120	0.000	0.521	1.6807	5.6587
Foreign Ownership (FORGN)	464	0.266	0.133	0.166	0.260	0.370	0.000	0.633	0.1943	2.4368
Log Salary (LNSALARY)	464	10.862	0.784	10.442	10.820	11.176	9.046	13.515	0.7632	4.6542
Audit Quality (BIG-4)	464	0.269	0.444	0.000	0.000	1.000	0.000	1.000	1.0395	2.0807
<i>Panel C: Control Variables</i>										
Log Firm Size (FSIZE)	464	10.476	2.141	9.375	9.985	11.035	6.530	19.640	2.0538	8.3224
Leverage (LR)	464	0.448	0.551	0.150	0.304	0.494	-0.303	3.888	3.3360	16.4968
Log Growth (MBVE)	464	0.255	0.629	-0.133	0.215	0.688	-1.771	2.124	0.119	3.0804
Firm Risk (FRISK)	464	0.393	0.545	0.090	0.341	0.600	-3.510	2.391	-0.2058	9.7764
Firm Age (FAGE)	464	21.821	15.734	11.000	16.000	31.000	1.000	60.000	0.7937	2.6144
Log Liquidity (LQ)	464	1.304	0.706	0.783	1.156	1.734	0.056	3.613	0.6536	2.9796

Table 5.2: Summary statistics of firm performance, corporate governance and control variables (Australian non-finance firms)

Variables	Obs	Mean	Std	P25th percentile	P50th percentile (Median)	P75th Percentile	Min	Max	Skewness	Kurtosis
<i>Panel A: performance</i>										
Return on Assets (ROA)	1438	0.053	0.241	0.006	0.068	0.145	-1.727	1.351	-1.6207	13.0263
Return on Invested Capital (ROIC)	1438	0.060	0.263	0.012	0.085	0.171	-1.958	1.353	-1.7257	12.3078
Log Tobin's Q ratio	1438	0.830	0.452	0.506	0.862	1.172	-1.021	2.188	-0.2672	2.788
<i>Panel B: Corporate Governance Variables</i>										
Board Size (BSIZE)	1438	7.640	2.706	6.000	7.000	9.000	2.000	23.000	0.7328	4.1862
Board Independence (BIND)	1438	0.597	0.196	0.500	0.625	0.750	0.000	1.000	-0.3483	2.3447
Board Meetings in Year (BMEET)	1438	9.579	4.840	6.000	9.000	12.000	0.000	37.000	0.9696	4.9990
CEO Duality (DUALITY)	1438	0.042	0.200	0.000	0.000	0.000	0.000	1.000	4.5837	22.0102
Audit Committee Independence (ACIND)	1438	0.857	0.206	0.750	1.000	1.000	0.000	1.000	-1.2698	3.7178
Audit Committee Meetings (ACMEET)	1438	3.745	1.882	2.000	4.000	5.000	0.000	14.000	0.7569	4.4939
Remuneration Committee Independence (RCIND)	1438	0.822	0.234	0.670	1.000	1.000	0.000	1.000	-1.0727	3.2002
Insider Ownership (INSID)	1438	0.152	0.112	0.070	0.120	0.210	0.000	0.770	1.2524	4.9040
Institutional Ownership (INS)	1438	0.252	0.126	0.159	0.232	0.332	0.029	0.872	1.0171	5.1582
Government Ownership (STATE)	1438	0.005	0.041	0.000	0.000	0.000	0.000	0.520	10.1012	112.9688
Foreign Ownership (FORGN)	1438	0.281	0.134	0.180	0.270	0.378	0.000	0.930	0.3716	2.9904
Log Salary (LOG SALARY)	1438	11.543	1.491	10.552	11.523	12.423	6.730	15.520	0.1251	3.3545
Audit Quality (BIG-4)	1438	0.808	0.394	1.000	1.000	1.000	0.000	1.000	-1.5645	3.4477
<i>Panel C: Control Variables</i>										
Log Firm Size (FSIZE)	1438	13.101	2.257	11.500	13.140	14.800	4.750	18.930	-0.1042	2.7421
Leverage (LR)	1438	0.235	0.204	0.089	0.213	0.332	-1.634	1.653	0.6768	14.6667
Log Growth (MBVE)	1438	0.758	0.786	0.223	0.732	1.255	-1.897	3.999	0.1674	3.4091
Firm Risk (FRISK)	1438	1.245	0.801	0.720	1.130	1.650	-2.570	5.640	0.8669	6.0653
Firm Age (FAGE)	1438	43.258	42.106	13.000	26.000	56.000	0.000	187.00	1.3925	3.9935
Log Liquidity (LQ)	1438	1.209	0.929	0.581	0.873	1.595	-1.439	4.348	1.2786	4.1312

Table 5.3: Comparisons of means/medians for Jordanian and Australian non-finance firms

Variables	Australian firms		Jordanian firms	
	Mean	P50th percentile (Median)	Mean	P50th percentile (Median)
Return on Assets (ROA)	0.053	0.068	0.027	0.037
Return on Invested Capital (ROIC)	0.060	0.085	0.032	0.042
Log Tobin's Q ratio	0.830	0.862	0.549	0.521
Board Size (BSIZE)	7.640	7.000	7.941	8.000
Board Independence (BIND)	0.597	0.625	0.461	0.429
Board Meetings in Year (BMEET)	9.579	9.000	5.726	6.000
CEO Duality (DUALITY)	0.042	0.000	0.286	0.000
Audit Committee Independence (ACIND)	0.857	1.000	0.445	0.333
Audit Committee Meetings (ACMEET)	3.745	4.000	2.129	2.000
Remuneration Committee Independence (RCIND)	0.822	1.000	0.371	0.333
Insider Ownership (INSID)	0.152	0.120	0.385	0.368
Institutional Ownership (INS)	0.252	0.232	0.217	0.190
Government Ownership (STATE)	0.005	0.000	0.100	0.070
Foreign Ownership (FORGN)	0.281	0.270	0.267	0.260
Log Salary (LNSALARY)	11.543	11.523	10.862	10.820
Audit Quality (BIG-4)	0.808	1.000	0.269	0.000
Log Firm Size (FSIZE)	13.101	13.140	10.476	9.985
Leverage (LR)	0.235	0.213	0.448	0.304
Log Growth (MBVE)	0.758	.732	0.255	0.215
Firm Risk (FRISK)	1.245	1.130	0.393	0.340
Firm Age (FAGE)	43.258	26.000	21.821	16.000
Log Liquidity (LQ)	1.209	0.873	1.304	1.156

5.3. Correlation Matrix of Variables

Table 5.4 presents a pair-wise correlation matrix among dependent, independent and control variables for Jordanian non-finance listed companies, and Table 5.5 shows the same information for Australian non-finance listed companies.

Correlation analysis is an important statistical test when using linear regression because one of the assumptions for such regressions is the non-existence of multi-collinearity problems between the independent variables. Multi-collinearity indicates the presence of perfect or exact linear relationship among some or all the test variables (Gujarati, 2003).

This study uses variance inflation factors (VIF) of variables of both countries to determine the multi-collinearity problem between independent variables and show that the VIF is smaller than 10, implying no multi-collinearity problems among the independent variables for the Jordanian and Australian sample companies. The results of (VIF) indicate that there is no multi-collinearity among the independent variables.

5.3.1. Correlation Matrix of Variables for Jordanian firms

Table 5.4 shows the correlations between corporate governance mechanisms and financial performance variables for Jordanian firms. The table shows the following important relationships.

Board size (BSIZE) and board meetings (BMEET) variables have a significant positive relation with the ROA, ROIC with (P value < 0.001), and log TQ ratio with (P value < 0.005) as measures of financial performance. However, there is no significant correlation of board independence with ROA and ROIC, but there is a significant positive correlation with the log TQ ratio with (P value < 0.005). CEO duality is significantly negatively correlated with ROA and ROIC with (P value < 0.005), but not with log TQ ratio. The proportion of independent directors on audit committee (ACIND) for Jordanian companies is positively correlated with ROA with (P value < 0.001) and ROIC with (P value < 0.005), but not with log TQ ratio. The table also shows that the number of audit committee meetings (ACMEET) is significantly positively associated with ROA with (P < 0.10), ROIC and log TQ with (P value < 0.005), and the proportion of independent directors on remuneration committee (RCIND) is significantly positively associated with ROA, ROIC with (P value < 0.005) and log TQ with (P value < 0.001). The number of shares owned by managers (INSID) is significantly negatively correlated with ROIC only at the level of 10%. The number of shares held by institutional investors (INS) is also significantly positively related to ROA and ROIC with (P

value < 0.005) for Jordanian companies. The table also show a positive association between the number of shares owned by foreign investors (FORGN) and performance measured by log T Q ratio with (P value < 0.001) for Jordanian companies. However, the number of shares owned by government (STATE) has a negative association with the log TQ ratio with (P value < 0.005). The log salary variable is significantly positively related with ROA, ROIC and log TQ ratio with (P value < 0.001). The table also shows that audits by the Big-4 has significant positive relationships with ROA and ROIC with (P value < 0.001) and with log TQ ratio with (P value < 0.005) in Jordanian companies.

5.3.2. Correlation Matrix of Variables for Australian firms

Table 5.5 shows the correlations between corporate governance mechanisms and financial performance for Australian firms. From this table the following important relationships are evident.

The board size (BSIZE) is positively significantly related with performance as measured by ROA, ROIC and log TQ ratio with (P value < 0.001). Board independence (BIND) and board meetings (BMEET) are also positively related with ROA and ROIC with (P value < 0.001), but not related with log TQ. CEO duality is negatively significantly related to ROA with (P value < 0.005) and ROIC with (P value < 0.001). The number of audit committee meetings (ACMEET) has positive associations with ROA and ROIC with (P value < 0.001). The number of shares owned by managers (INSID) is positively correlated with ROA with (P value < 0.10) and ROIC with (P value < 0.005). The number of shares held by institutional investors (INS) has no significant relationship with ROA and ROIC, but significant positive relationships with the log TQ ratio with (P value < 0.001). There is a significant positive association between the number of shares owned by foreign investors (FORGN) and performance measured by ROA and ROIC with (P value < 0.005). The log board salary (SALARY) has significant positive associations with all performance measures with (P value < 0.001). The table also shows that audits by the Big-4 has significant positive relationships with ROA and ROIC with (P value < 0.001).

Table 5.4: Pearson correlation for all variables in Jordanian non-finance listed companies (N=464)

	ROA	ROIC	LOG Tobin's Q	BSIZE	BIND	BMEET	CEO Duality	ACIND	ACMEET	RCIND
ROA	1.000									
ROIC	0.947***	1.000								
LOG Tobin's Q	0.156***	0.159***	1.000							
BSIZE	0.226***	0.217***	0.115**	1.000						
BIND	-0.057	-0.071	0.103**	0.058	1.000					
BMEET	0.165***	0.147***	0.111**	0.355***	0.180***	1.000				
CEO DUALITY	-0.118**	-0.131**	-0.047	-0.434***	-0.100**	-0.281***	1.000			
ACIND	0.147***	0.146**	0.053	0.325***	0.187***	0.198***	-0.296***	1.000		
ACMEET	0.079*	0.102**	0.096**	0.373***	0.123**	0.254***	-0.269***	0.293***	1.000	
RCIND	0.120**	0.128**	0.211***	0.342***	0.127**	0.207***	-0.311***	0.326***	0.265***	1.000
INSID	-0.041	-0.043*	-0.018	0.035	-0.069	-0.122**	-0.026	0.040	0.038	-0.057
INS	0.097**	0.098**	0.077*	0.090**	0.092**	0.086*	-0.126**	-0.019	0.005	0.132**
STATE	-0.063	-0.051	-0.124**	-0.049	0.044	0.088**	0.026	-0.029	-0.132**	-0.166***
FORGN	0.060	0.061	0.234***	0.157***	0.140**	0.099**	-0.202***	0.144***	0.201***	0.323***
LOG SALARY	0.258***	0.270***	0.127***	0.375***	0.269***	0.247***	-0.231***	0.231***	0.204***	0.181***
BIG-4	0.294***	0.287***	0.103**	0.249***	0.070	0.036	-0.030	0.162***	0.164***	0.114***
LOG FSIZE	0.082	0.062	0.005	0.035	0.196***	0.237***	-0.108**	0.174***	0.103**	0.184***
LR	0.091	0.083	0.163***	-0.062	0.032	0.054	-0.044	-0.026	0.031	-0.013
LOG MBVE	0.128***	0.114***	0.442***	0.121**	0.126**	-0.004	0.054	-0.025	0.036	0.076
FRISK	-0.062	-0.070	0.113**	0.046	0.012	-0.001	-0.025	0.068	0.030	0.034
FAGE	0.252***	0.229***	0.197***	0.173***	0.069	-0.132***	-0.044	0.115**	0.157***	0.175***
LOG LQ	0.005	-0.006	-0.218***	-0.033	-0.065	-0.029	0.043	-0.150***	-0.109**	-0.042

	INSID	INS	STATE	FORGN	LOG SALARY	BIG-4	LOG FSIZE	LR	LOG MBVE	FRISK	FAGE	LOG LQ
INSID	1.000											
INS	-0.106**	1.000										
STATE	-0.082*	-0.026	1.000									
FORGN	-0.064	0.173***	-0.188***	1.000								
LOG SALARY	0.026	0.041	0.110**	0.124**	1.000							
BIG-4	-0.143**	0.140**	0.080**	0.112**	0.242***	1.000						
LOG FSIZE	-0.020	0.071	0.110**	0.135**	0.081*	-0.049	1.000					
LR	-0.050	-0.006	-0.121***	0.062	0.024	0.014	-0.028	1.000				
LOG MBVE	-0.013	0.018	0.008	0.042	0.149***	0.168***	0.167***	0.014	1.000			
FRISK	0.008	0.030	0.058	-0.164***	0.038	-0.100**	0.098**	0.016	-0.073	1.000		
FAGE	0.098**	0.086*	-0.002	0.132**	0.363***	0.383***	0.132***	0.082*	0.289***	-0.014	1.000	
LOG LQ	-0.011	0.011	0.070	-0.191***	-0.099**	-0.008	-0.184***	-0.219***	0.006	-0.104**	-0.002	1.000

*** Denotes correlation is significant at the 0.01 level (2-tailed); ** Denotes correlation is significant at the 0.05 level (2-tailed); * Denotes correlation is significant at the level 0.10 level (2-tailed). All variables are as previously defined.

Table 5.5: Pearson correlation for all variables in Australian non-finance listed companies (N=1438)

	ROA	ROIC	LOG Tobin's Q	BSIZE	BIND	BMEET	CEO Duality	ACIND	ACMEET	RCIND
ROA	1.000									
ROIC	0.949***	1.000								
LOG Tobin's Q	0.039	0.036	1.000							
BSIZE	0.120***	0.113***	0.124***	1.000						
BIND	0.069***	0.085***	0.020	-0.012	1.000					
BMEET	0.129***	0.131***	-0.028	0.191***	0.107***	1.000				
CEO DUALITY	-0.077**	-0.085***	-0.002	-0.008	-0.085***	-0.088***	1.000			
ACIND	-0.009	-0.003	0.013	-0.053**	0.098***	0.007	0.006	1.000		
ACMEET	0.105***	0.121***	-0.003	0.275***	0.142***	0.383***	-0.169***	0.092***	1.000	
RCIND	0.007	0.012	0.026	-0.036	0.122***	0.020	-0.016	0.473***	0.103***	1.000
INSID	0.044*	0.056**	0.041	0.018	-0.114***	-0.018	0.193***	-0.001	-0.009	0.013
INS	0.001	0.003	0.308***	0.003	0.004	-0.080***	-0.023	-0.004	-0.018	-0.016
STATE	0.014	0.016	-0.001	-0.045*	0.032	0.072***	-0.027	-0.038	0.035	-0.011
FORGN	0.057**	0.058**	-0.037	0.020	-0.026	0.071***	-0.030	0.048**	0.080***	0.061*
LOG SALARY	0.101***	0.093***	0.053**	0.161***	0.22	0.177***	-0.113***	0.018	0.142***	0.040
BIG-4	0.178***	0.193***	-0.000	0.287***	0.153***	0.242***	-0.013	0.027	0.268***	0.054**
LOG FSIZE	0.282***	0.296***	-0.000	0.385***	0.205***	0.382***	-0.104***	0.078***	0.467***	0.038
LR	0.103***	0.109***	-0.018	0.065**	0.078***	0.175***	-0.072***	-0.016	0.153***	-0.039
LOG MBVE	0.105***	0.098***	0.205***	-0.012	-0.019	-0.111***	0.007	-0.032	0.044*	0.002
FRISK	-0.107***	-0.123***	-0.071***	-0.072***	-0.109***	-0.091***	0.081***	-0.067**	-0.159***	-0.041
FAGE	0.098***	0.093***	-0.009	0.218***	0.190***	0.090***	-0.030	0.010	0.244***	0.056**
LOG LQ	0.057**	0.058**	-0.018	-0.006	-0.003	-0.003	-0.002	-0.004	-0.015	-0.004

	INSID	INS	STATE	FORGN	LOG SALARY	BIG-4	LOG FSIZE	LR	LOG MBVE	FRISK	FAGE	LOG LQ
INSID	1.000											
INS	-0.008	1.000										
STATE	-0.072***	-0.024	1.000									
FORGN	0.033	-0.033	0.017	1.000								
LOG SALARY	-0.065**	-0.039	0.014	0.084***	1.000							
BIG-4	-0.012	0.002	0.035	0.121***	0.198***	1.000						
LOG FSIZE	-0.063**	-0.078***	0.112***	0.085***	0.126***	0.443***	1.000					
LR	0.067**	-0.016	0.011	-0.034	0.006	0.138***	0.300***	1.000				
LOG MBVE	0.047*	0.127***	0.017	0.001	-0.009	-0.007	-0.129***	-0.046*	1.000			
FRISK	0.003	-0.066**	-0.004	-0.034	-0.001	-0.155***	-0.225***	-0.140***	0.029	1.000		
FAGE	-0.139***	0.022	0.047*	-0.062**	0.112***	0.205***	0.396***	0.059**	-0.045*	0.210***	1.000	
LOG LQ	-0.055**	0.060**	-0.056**	-0.073***	0.040	-0.023	0.028	-0.027	-0.049*	0.062***	0.018	1.000

*** Denotes correlation is significant at the 0.01 level (2-tailed); ** Denotes correlation is significant at the 0.05 level (2-tailed); * Denotes correlation is significant at the level 0.10 level (2-tailed). All variables are as previously defined.

5.4. Evidence from Regression Models

To estimate the association between corporate governance mechanisms and firms' financial performance, this study uses three regression approaches: OLS, FE and RE, and GMM. The three measures used to examine the relationship between corporate governance and financial performance (measured by ROA, ROIC and TQ).

In the first step, six OLS regressions are conducted in this study: model 1 includes corporate governance mechanisms; model 2 comprises corporate governance mechanisms with ownership variables; model 3 includes corporate governance, ownership and control variables; model 4 includes model 3 with only industry dummy variables; model 5 includes model 3 with only year dummy variables; model 6 includes model 3 with both industrial and year dummy variables. Given that the present study uses a panel data set, the second step is the FE or RE models (see Appendices 1 and 2). The final step of analysis is of the causal relationship between governance variables and firm performance using GMM. These analyses provide a comparison with results from previous studies as well as determining the effects of additional variables, such as ownership and control variables.

5.4.1. OLS Regression Results for Jordanian Firms (Pooled Model)

Tables 5.6, 5.7 and 5.8 present the results of OLS estimations of the association between corporate governance variables and financial performance in Jordanian non-finance listed firms for each of the three performance proxy variables. Table 5.6 presents OLS regression results of the performance variable as measured by ROA on all corporate governance variables and control variables. Column 2 reports the results on corporate governance variables (board size (BSIZE), board independence (BIND), board meetings (BMEET), CEO duality (DUALITY), audit committee independence (ACIND), audit meetings (ACMEET) and remuneration committee independence (RCIND)). Column 3 presents the results on corporate governance with ownership variables. Column 4 shows the results of corporate governance, ownership and control variables. Columns 5 to 6 present regression results for all variables including industry and year dummy variables. Similarly, Tables 5.7 and 5.8 present the results of OLS estimation for ROIC and TQ ratios as measures of firm performance with corporate governance, control and dummy variables. All these Tables indicate that the F-value of each model is statistically significant at 1% level. This means that the coefficients of independent variables (corporate governance and control variables) can explain significant variations in the dependent variables.

Table 5.6: OLS regression results of the corporate governance mechanisms and financial performance measured by ROA for Jordanian non-finance listed firms

Independent Variables	Dependent Variable ROA					
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Const.	-0.053** (-2.27)	-0.050* (-1.65)	-0.267*** (-3.69)	-0.297*** (-3.74)	-0.276*** (-3.59)	-0.300*** (-3.64)
BSIZE	0.006** (3.15)	0.006*** (3.12)	0.002 (1.20)	0.003 (1.36)	0.002 (1.12)	0.002 (1.22)
BIND	-0.053** (-2.10)	-0.056** (-2.26)	-0.087*** (-3.57)	-0.083*** (-3.13)	-0.093*** (-3.85)	-0.090*** (-3.48)
BMEET	0.005** (2.37)	0.005** (2.32)	0.007** (2.60)	0.007*** (2.61)	0.007*** (2.76)	0.008** (2.87)
DUALITY	0.0004 (0.04)	0.002 (0.21)	-0.004 (-0.39)	-0.001 (-0.03)	-0.005 (-0.51)	-0.002 (-0.25)
ACIND	0.034** (1.91)	0.040** (2.19)	0.027 (1.48)	0.026 (1.44)	0.027 (1.46)	0.023 (1.20)
ACMEET	-0.003 (-0.75)	-0.003 (-0.77)	-0.007 (-1.80)	-0.006 (-1.50)	-0.007** (-1.98)	-0.007* (-1.81)
RCIND	0.016 (0.68)	0.004 (0.19)	-0.006 (-0.26)	-0.011 (-0.46)	-0.050* (-1.69)	-0.051* (-1.70)
INSID		-0.025 (-0.81)	-0.017 (-0.53)	-0.021 (-0.69)	-0.018 (-0.56)	-0.021 (-0.67)
INS		0.062* (1.80)	0.040 (1.16)	0.039 (1.13)	0.040 (1.18)	0.040 (1.19)
STATE		-0.057 (-1.26)	-0.108** (-2.38)	-0.112*** (2.47)	-0.075* (-1.63)	-0.078* (-1.67)
FORGN		0.001 (0.05)	-0.036** (-1.15)	-0.023 (-0.67)	-0.088*** (-2.49)	-0.087** (-2.14)
LOG SALARY			0.020** (2.60)	0.021*** (2.70)	0.020*** (2.58)	0.021** (2.69)
BIG-4			0.044*** (4.01)	0.047*** (4.24)	0.047*** (4.34)	0.048*** (4.49)
LOG FSIZE			0.003* (1.63)	0.003* (1.62)	0.004* (1.92)	0.004* (1.89)
LR			0.065* (1.73)	0.020** (2.07)	0.011 (1.51)	0.013* (1.63)
LOG MBVE			0.351*** (9.81)	0.002 (0.36)	0.010 (1.39)	0.008 (1.13)
FRISK			-0.010 (-1.00)	-0.010 (-0.99)	-0.013 (-1.30)	-0.013 (-1.22)
FAGE			0.0007** (2.12)	0.0006* (1.76)	0.0006** (2.13)	0.0007** (2.07)
LOG LQ			-0.128*** (-4.53)	0.006 (1.01)	0.005 (0.83)	0.005 (0.93)
INDS-DUM				Yes		Yes
YEAR-DUM					Yes	Yes
Observations	464	464	464	464	464	464
Adj-R ²	0.076	0.087	0.21	0.22	0.24	0.25
F-statistic	6.26***	4.51***	5.60***	4.50***	5.24***	4.23***

Note: ***, **, * represents statistical significance at 0.01, 0.05 and 0.10 levels, respectively. IND1 is a dummy variable taking the value 1 if the firm is under the electrical industries based on the Jordanian industry classification, otherwise, 0. IND2 is a dummy variable taking the value 1 if the firm is under the engineering and construction based on the Jordanian industry classification, otherwise, 0. IND3 is a dummy variable taking the value 1 if the firm is under the food and beverages & tobacco based on the Jordanian industry classification, otherwise, 0. IND4 is a dummy variable taking the value 1 if the firm is under the mining and extraction industries based on the Jordanian industry classification, otherwise, 0. IND5 is a dummy variable taking the value 1 if the firm is under the pharmaceuticals and medical industries based on the Jordanian industry classification, otherwise, 0. IND6 is a dummy variable taking the value 1 if the firm is under the textiles, leathers and clothing based on the Jordanian industry classification, otherwise, 0. YEAR2006, YEAR2007, YEAR2008, YEAR2009, YEAR2010 and YEAR2011 are dummy variables to control for year effect. All other variables are as previously defined.

Table 5.6 shows that, in model 1, board size (BSIZE), board meetings (BMEET) and audit committee independence (ACIND) have significant positive effects on ROA, but board independence (BIND) has a significant negative effect on ROA. In Jordanian listed non-finance firms, Board size (BSIZE) ranges from 3 to 16 directors, with 8 being the average, which appears to enhance performance. Board meeting (BMEET) is also significant and positively associated with ROA, consistent with many other studies that examine the effect of board meetings on firm performance (Brick & Chidambaran, 2010; Conger et al., 1998; Vafeas, 1999b). The positive affect of audit committee independence (ACIND), which is statistically significant at 5% level, suggests that audit committee independence increases ROA. The board independence (BIND) coefficient has a significant and negative relationship with ROA, indicating that the higher the board independence the lower the ROA. The significant negative effect of independent directors could be not performing their monitoring role properly for lack of time in their busy schedule. In addition, non-executive directors in some cases rely on executive directors for gathering detailed knowledge about the firm, and hence make decisions that could impact firm performance negatively. This result is consistent with findings by Agrawal and Knoeber (1996), Larmou and Vafeas (2010) and Stapledon and Lawrence (1996).

Model 2 in Table 5.6 shows institutional ownership (INS) has a significant positive effect on (ROA), suggesting that the higher the institutional ownership, the higher the firm performance measured by ROA. This result supports the Agency Theory proposition that institutional ownership plays a key role in reducing agency conflicts and improving corporate performance. This result is also similar to that found by McConnell and Servaes (1990) and Mitton (2002). Model 2 shows similar results for corporate governance variables as found in model 1. Model 3, where control variables are included, shows that board meetings (BMEET), board salaries (SALARY), firms audited by Big-4 firms (BIG-4), firm size (FSIZE), leverage ratio (LR), market to book value (MBVE) and firm age (FAGE) have significant positive effects on ROA, but board independence (BIND), government ownership (STATE), foreign ownership (FORGN) and liquidity ratio (LQ) have significant negative effect on ROA. Perhaps government ownership leads to bureaucracy and inefficiencies that negatively affect firm performance. A foreign ownership level in Jordanian firms is low, compared to those of other types of ownership, such as managerial ownership. Thus, foreign ownership cannot play a monitoring role in Jordanian firms. Big-4 affiliated audit firm has a significant positive performance effect on ROA; audit quality plays an important role in encouraging effective corporate governance, and is considered as a control mechanisms to improve corporate performance. Log total assets (FSIZE) is used as a size measure to control for differences in firm size, indicating that the high assets

volume may increase ROA. Financial leverage (LR) has a significant positive relationship with ROA. This result is contrary to the expectation of a negative relationship between leverage and performance. The positive relationship between financial leverage and ROA indicates that the assets which are financed by debt have greater returns. Firm's age (FAGE) has a significant positive effect on ROA. In general, these results for control variables are consistent with those reported in the relevant literature.

To control for the possibility of industry section and time variant effects in the pooled regression, this study estimates model 4, which includes industry dummies variables (INDS-DUM), and model 5, which includes year dummy variables, and model 6, which includes both industry and year dummy variables. Table 5.6 shows that the industry variables are insignificant at all levels, but the time dummy has a significant positive effect for 2009-2011. Overall, the results reported in Table 5.6 indicate that the corporate governance mechanisms analysed in model 6 have important relationships with performance as measured by ROA.

In summary, the results of the pooled OLS estimates reported in model 6 of Table 5.6 suggest a significant relationship between selected governance mechanisms and firm performance. More specifically, it indicates that board meetings (BMEET), board salaries (SALARY) and (BIG-4) have significant positive effects on firm performance. However, board independence (BIND), audit committee meetings (ACMEET), remuneration committee independence (RCIND), government ownership (STATE) and foreign ownership (FORGN) have significant negative effects on firm performance. Others governance variables are found to have no significant relationships with ROA as performance measures. Firm size (FSIZE), leverage ratio (LR) and firm age (FAGE) have significant positive effects on ROA.

Table 5.7: OLS regression results of corporate governance mechanisms and financial performance measures by ROIC for Jordanian non-finance listed firms

Independent Variables	Dependent Variable ROIC					
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Const.	-0.047* (-1.70)	-0.045 (-1.16)	-0.345*** (-4.29)	-0.358*** (-3.93)	-0.346*** (-4.11)	-0.371*** (-3.95)
BSIZE	0.006** (2.77)	0.006** (2.76)	0.001 (0.72)	0.02 (0.98)	0.001 (0.54)	0.002 (0.77)
BIND	-0.070** (-2.43)	-0.074** (-2.62)	-0.112*** (-3.93)	-0.105*** (-3.34)	-0.121*** (-4.33)	-0.116*** (-3.79)
BMEET	0.005** (1.89)	0.005* (1.78)	0.005* (1.86)	0.005* (1.84)	0.006** (2.08)	0.006** (2.16)
DUALITY	-0.004 (-0.37)	-0.002 (-0.19)	-0.008 (-0.68)	-0.005 (-0.45)	-0.011 (-0.93)	-0.008 (-0.70)
ACIND	0.037* (1.88)	0.043 (0.05)	0.028 (1.40)	0.028 (1.39)	0.027 (1.33)	0.020 (0.99)
ACMEET	0.001 (0.01)	0.013 (0.48)	-0.004 (-0.86)	-0.002 (-0.46)	-0.004 (-1.10)	-0.004 (-0.88)
RCIND	0.024 (0.93)	0.031 (0.87)	0.005 (0.19)	0.001 (0.01)	-0.055* (-1.67)	-0.055* (-1.67)
INSID		-0.031 (-0.87)	-0.022 (-0.59)	-0.027 (-0.75)	-0.023 (-0.63)	-0.029 (-0.80)
INS		0.074* (1.78)	0.053 (1.30)	0.053 (1.29)	0.047 (1.18)	0.046 (1.16)
STATE		-0.044 (-0.91)	-0.102** (-2.07)	-0.102** (-2.05)	-0.057 (-1.11)	-0.057 (-1.08)
FORGN		0.0001 (0.00)	-0.046 (-1.25)	-0.037 (-0.93)	-0.118*** (-2.75)	-0.123** (-2.61)
LOG SALARY			0.029*** (3.46)	0.029*** (3.25)	0.030*** (3.37)	0.029** (3.19)
BIG-4			0.050*** (4.11)	0.053*** (4.28)	0.054*** (4.53)	0.056*** (4.69)
LOG FSIZE			0.003 (1.30)	0.004 (1.32)	0.004 (1.59)	0.004 (1.57)
LR			0.015 (1.60)	0.022** (1.98)	0.011 (1.23)	0.014 (1.34)
LOG MBVE			0.006 (0.70)	0.004 (0.47)	0.11 (1.24)	0.011 (1.19)
FRISK			-0.015 (-1.25)	-0.014 (-1.19)	-0.018 (-1.49)	-0.017 (-1.41)
FAGE			0.001 (1.54)	0.001 (1.22)	0.001 (1.60)	0.001 (1.52)
LOG LQ			0.004 (0.58)	0.005 (0.77)	0.003 (0.42)	0.004 (0.69)
INDS-DUM				Yes		Yes
YEAR-DUM					Yes	Yes
Observations	464	464	464	464	464	464
Adj-R ²	0.069	0.082	0.20	0.21	0.23	0.24
F-statistic	6.86***	4.32***	5.59***	4.46***	5.37***	4.33***

Note: ***, **, * represents statistical significance at 0.01, 0.05 and 0.10 levels, respectively. All variables are as previously defined

Table 5.7 presents regression estimates of the relationship between corporate governance variables and performance as measured by ROIC, using each of the six regression models.

Model 1 regression results show that board size (BSIZE), board meetings (BMEET) and audit committee independence (ACIND) have significant positive effect on performance, but the board independence (BIND) has a significant negative effect. The results in Model 2 shows that board size (BSIZE), board meetings (BMEET) and institutional ownership (INS) have significant positive effects on performance, but board independence (BIND) remains significantly negative. Model 3 also shows that board meetings (BMEET) has a significant positive relationship with ROIC, but board independence (BIND) and government ownership (STATE) have significant negative effects. Only two out of eight control variables are associated with ROIC. Specifically, board salary (SALARY) has a significant positive effect. This suggests that firms with higher board salary have higher ROIC. Big-4 also has a significant positive relation with ROIC.

The regression results in model 4 include corporate governance mechanisms, control variables and industry dummies. Specifically, board meeting (BMEET) is found to have a significant positive effect on performance. This finding is in line with those found by Brick and Chidambaran (2010) and Vafeas (1999b). In addition, the control variables: board salary (SALARY), audit firms (BIG-4) and leverage ratio (LR), have significant positive effects on ROIC. However, board independence (BIND) and government ownership (STATE) have significant negative effects on ROIC. Model 5 shows similar results to those found in model 4, except that remuneration committee independence (RCIND) and foreign ownership (FORGN) having significant negative relationships with ROIC. Model 6 also has similar results to model 5. In general, the results of the pooled OLS estimates reported in model 6 suggest a significant relationship between selected governance mechanisms and firm performance. More specifically, board independence (BIND), board meeting (BMEET), remuneration committee independence (RCIND), foreign ownership (FORGN), board salary (SALARY) and audit firms (BIG-4) have shown similar results as reported in Table 5.6, and others governance mechanisms are found to have no significant relationship with ROIC.

Table 5.8: OLS regression results of the corporate governance mechanisms and financial performance measured by log TQ for Jordanian non-finance firms

Independent Variables	Dependent Variable log Tobin's Q					
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Const.	0.102 (0.90)	0.009 (0.07)	0.776*** (2.46)	0.969*** (2.76)	0.847*** (2.77)	0.971*** (2.86)
BSIZE	0.011 (0.84)	0.011 (0.86)	-0.013 (-1.38)	-0.012 (-1.17)	-0.013 (-1.44)	-0.013 (-1.33)
BIND	0.191* (2.06)	0.159 (1.40)	0.066 (0.70)	0.053 (0.52)	0.030 (0.32)	0.015 (0.16)
BMEET	0.015 (1.17)	0.019 (1.50)	0.041*** (3.63)	0.042*** (3.58)	0.045*** (4.08)	0.047*** (4.01)
DUALITY	0.058 (1.05)	0.076 (1.39)	0.010 (0.20)	0.014 (0.29)	0.003 (0.06)	0.006 (0.14)
ACIND	-0.086 (-0.93)	-0.075 (-0.83)	-0.037 (-0.44)	-0.018 (-0.22)	-0.060 (-0.74)	-0.043 (-0.53)
ACMEET	0.014 (0.61)	0.001 (0.03)	-0.004 (-0.22)	-0.004 (-0.23)	-0.011 (-0.57)	-0.012 (-0.61)
RCIND	0.497*** (3.84)	0.331*** (2.77)	0.347*** (3.14)	0.306*** (2.74)	0.041 (0.34)	0.029 (0.24)
INSID		0.019 (0.14)	0.040 (0.32)	0.064 (0.50)	0.025 (0.21)	0.051 (0.42)
INS		0.078 (0.42)	0.078 (0.50)	0.076 (0.49)	0.034 (0.22)	0.037 (0.24)
STATE		-0.365* (-1.82)	-0.243 (-1.40)	-0.278* (-1.64)	0.003 (0.02)	-0.042 (-0.26)
FORGN		0.627*** (3.33)	0.599*** (3.62)	0.736*** (4.06)	0.188 (1.08)	0.318* (1.64)
LOG SALARY			-0.022 (-0.83)	-0.032 (-1.11)	-0.025 (-1.00)	-0.029 (-1.06)
BIG-4			-0.012 (-0.29)	0.019 (0.40)	0.004 (0.10)	0.026 (0.54)
LOG FSIZE			-0.047*** (-4.04)	-0.053*** (-4.56)	-0.042*** (-3.94)	-0.048*** (-4.38)
LR			0.065* (1.73)	0.093*** (2.42)	0.044 (1.27)	0.059 (1.61)
LOG MBVE			0.351*** (9.81)	0.318*** (8.59)	0.384*** (10.49)	0.359*** (9.61)
FRISK			0.141*** (4.32)	0.114*** (3.21)	0.119*** (3.94)	0.104*** (3.13)
FAGE			0.003* (1.87)	0.002 (1.17)	0.003** (2.16)	0.002 (1.48)
LOG LQ			-0.128*** (-4.53)	-0.145*** (-5.55)	-0.137*** (-5.08)	-0.150*** (-5.73)
INDS-DUM				Yes		Yes
YEAR-DUM					Yes	Yes
Observations	464	464	464	464	464	464
Adj-R ²	0.059	0.094	0.37	0.39	0.42	0.44
F-statistic	4.40***	4.27***	15.15***	13.21***	14.83***	13.85***

Note: ***, **, * represents statistical significance at 0.01, 0.05 and 0.10 levels, respectively. All variables are as previously defined.

Table 5.8 shows the OLS regression results of the relationship between corporate governance variables and TQ as the measure of performance for Jordanian listed non-finance firms. Model 1

shows that board independence (BIND) and remuneration committee independence (RCIND) have significant positive effects on TQ. This implies that independent non-executives directors can contribute to enhancing performance. The results of model 2 are similar to the results of model 1, with the exception of board independence (BIND), which has a positive but insignificant coefficient. It also reveals significant positive effects for foreign ownership (FORGN) on TQ, indicating that foreign-owned firms have relatively higher TQ. As expected, state ownership has a negative performance effect. Model 3 presents the regression results when control variables are added. Board meeting (BMMET) has a significant positive coefficient, indicating that BMEET improves performance. Remuneration committee independence also has a significant positive relationship with TQ. With respect to ownership variables, foreign ownership (FORGN) only has significant positive relation with TQ at the 1% level, which suggests a strong relationship between foreign ownership and performance. In addition, market to book value (MBVE), firm risk (FRISK) and firm age (FAGE) have significant positive relationships with TQ. However, firm size (FSIZE) and liquidity ratio (LQ) have significant negative relationships with TQ. The results reported in model 4 are similar to the results reported in model 3, except government ownership (STATE), which shows a significant negative relationship with TQ. Model 5 also shows a significant positive effect of board meeting (BMEET) on Tobin's Q, signifying that firms with frequent board meetings tend to generate higher performance, consistent with Agency Theory that firms with board that meet more frequently effectively advise, monitor and discipline management, and thereby improve financial performance. With respect to control variables, the regression results reported in model 5 are similar to the results found in model 4. The results of model 6 show that only board meeting (BMEET) and foreign ownership (FORGN) have significant positive relationships with TQ. In addition, control variables market to book value (MBVE) and firm risk (FRISK) have significant positive effects on Tobin's Q. However, firm size (FSIZE) and liquidity ratio (LQ) have significant negative effects on Tobin's Q.

Overall, the results of the pooled OLS regression reported in model 6 reveals significant relationships between selected governance variables and firm performance. The findings show that board meeting (BMEET) has a significant positive effect on TQ. This result is similar to the result reported in Tables 5.6 and 5.7. Foreign ownership (FORGN) also has a positive and significant effect on Tobin's Q at the 10% level, suggesting that there is a weak relationship between foreign ownership and TQ, but this finding is different to the findings reported in Tables 5.6 and 5.7. Again others governance variables show no significant relation with TQ.

Market to book value (MBVE) and firm risk (FRISK) have positive and significant effect on TQ. However, firm size (FSIZE) and liquidity ratio (LQ) have significant negative effect on TQ.

5.4.2. OLS Regression Results for Australian Firms (Pooled Model)

Tables 5.9, 5.10 and 5.11 present the results of OLS estimations of the relationship between corporate governance variables and financial performance for Australian listed non-finance firms for each of the three performance proxy variables: ROA, ROIC and TQ. They follow the same structure as shown in Tables 5.6, 5.7 and 5.8. All these tables indicate that the F-value of each model is statistically significant at 1% level; that is, the coefficients of independent variables (corporate governance variables and control variables) can explain significant variations in dependent variable.

In Table 5.9, the results reported in model 1 show that board size (BSIZE), board independence (BIND) and board meetings (BMEET) have significant positive effects on ROA, while duality shows negative effects. Model 2 results show similar results to those found in model 1. In addition, managerial ownership (INSID) and foreign ownership (FORGN) have significant positive relationships with ROA. Both insider ownership (INSID) and audit committee meetings (ACMEET) appear to have significant positive effects on ROA in models 3, 4, 5 and 6. However, government ownership (STATE) has a significant negative effect on ROA in models 4, 5 and 6. Board salaries (SALARY) also show positive performance effects in model 5 and 6. With respect to control variables, the regression results show that firm size (FSIZE), market to book value (MBVE) and liquidity ratio (LQ) have a significant positive relationship with ROA, but firm risk (FRISK) has a significant negative relationship with ROA. Overall, the results of the pooled OLS estimates reported in Table 5.9 suggest a significant relationship between selected governance mechanisms and firm performance.

Table 5.9: OLS regression results of corporate governance mechanisms and financial performance measured by ROA for listed Australian non-finance firms

Independent Variables	Dependent Variable ROA					
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Const.	-0.092* (-1.83)	-0.140** (-2.55)	-0.502*** (-5.73)	-0.371*** (-4.49)	-0.511*** (-5.72)	-0.393*** (-4.58)
BSIZE	0.008*** (3.41)	0.008*** (3.41)	0.001 (0.50)	0.001 (0.28)	0.001 (0.12)	0.001 (0.09)
BIND	0.064** (1.90)	0.075** (2.18)	0.030 (0.90)	0.024 (0.71)	0.019 (0.53)	0.013 (0.38)
BMEET	0.004*** (3.32)	0.004*** (3.23)	0.001 (1.42)	0.002 (1.27)	0.002 (1.28)	0.002 (1.13)
DUALITY	-0.071* (-1.62)	-0.084* (-1.87)	-0.081* (-1.80)	-0.065 (-1.46)	-0.071 (-1.59)	-0.055 (-1.23)
ACIND	-0.018 (-0.46)	-0.018 (-0.46)	-0.037 (-0.97)	-0.042 (-1.13)	-0.032 (-0.83)	-0.037 (-0.97)
ACMEET	0.003 (0.87)	0.002 (0.70)	0.012*** (2.84)	0.011*** (2.52)	0.011*** (2.59)	0.010** (2.28)
RCIND	0.005 (0.21)	0.001 (0.06)	0.011 (0.42)	0.021 (0.82)	0.008 (0.28)	0.022 (0.83)
INSID		0.139** (2.28)	0.197*** (3.54)	0.163*** (2.99)	0.154*** (2.64)	0.121** (2.11)
INS		0.015 (0.33)	0.002 (0.06)	0.012 (0.28)	-0.009 (-0.20)	-0.007 (-0.15)
STATE		0.069 (0.91)	-0.089 (-1.57)	-0.119** (-1.97)	-0.099* (-1.77)	-0.130** (-2.11)
FORGN		0.082** (2.05)	0.036 (0.92)	0.051 (1.30)	0.045 (1.11)	0.067 (1.61)
LOG SALARY			0.008** (2.07)	0.006 (1.51)	0.009** (2.27)	0.008* (1.81)
BIG-4			0.020 (0.97)	0.002 (0.13)	0.027 (1.28)	0.005 (0.25)
LOG FSIZE			0.030*** (5.71)	0.032*** (6.34)	0.031*** (5.72)	0.032*** (6.40)
LR			-0.001 (-0.03)	-0.047 (-1.34)	0.013 (0.31)	-0.026 (-0.61)
LOG MBVE			0.046*** (4.99)	0.040*** (4.45)	0.047*** (5.01)	0.041*** (4.39)
FRISK			-0.013* (-1.74)	-0.005 (-0.51)	-0.016** (-1.96)	-0.007 (-0.79)
FAGE			-0.001 (-0.66)	-0.000 (-0.56)	-0.000 (-0.56)	-0.001 (-0.49)
LOG LQ			0.015*** (2.78)	0.014*** (2.53)	0.016*** (2.80)	0.014*** (2.56)
INDS-DUM				Yes		Yes
YEAR-DUM					Yes	Yes
Observations	1438	1438	1438	1438	1438	1438
Adj-R ²	0.034	0.041	0.12	0.16	0.13	0.17
F-statistic	5.22***	4.03***	8.30***	8.84***	7.05***	7.55***

Note: ***, **, * represents statistical significance at 0.01, 0.05 and 0.10 levels, respectively. IND1 is a dummy variable taking the value 1 if the firm is under the consumer staples based on the Global Industry Classification Standard, otherwise, 0. IND2 is a dummy variable taking the value 1 if the firm is under energy based on the Global Industry Classification Standard, otherwise, 0. IND3 is a dummy variable taking the value 1 if the firm is under the health care equipment based on the Global Industry Classification Standard, otherwise, 0. IND4 is a dummy variable taking the value 1 if the firm is under the industrials based on the Global Industry Classification Standard, otherwise, 0. IND5 is a dummy variable taking the value 1 if the firm is under the information technology & telecommunication based on the Global Industry Classification Standard, otherwise, 0. IND6 is a dummy variable taking the value 1 if the firm is under the materials based on the Global Industry Classification Standard, otherwise, 0. YEAR2006, YEAR2007, YEAR2008, YEAR2009, YEAR2010 and YEAR2011 are dummy variables to control for year effect. All other variables are as previously defined.

Table 5.10 presents the OLS regression results of the relationship between corporate governance variables and performance as measured by ROIC, using each of the six regression models. Model 1 regression results show that board size (BSIZE), board independence (BIND) and board meeting (BMEET) have significant positive effects on ROIC, but CEO duality (DUALITY) has a significant negative effect on ROIC. Model 2 shows similar findings to the results of Model 1. In addition, managerial ownership (INSID) and foreign ownership (FORGN) reveal significant positive effects on ROIC. Models 3 to 6 reveal that audit committee independence (ACIND), managerial ownership (INSID) and board salaries (SALARY) have a significant positive effect on ROIC, but CEO duality (DUALITY) has significant negative effect, of control variables, firm size (FSIZE), market to book value (MBVE) and liquidity ratio (LQ) have significant positive effects on ROIC.

In summary, the results of the pooled OLS estimates reported in Table 5.10 suggest a significant relationship between selected governance mechanisms and firm performance and these findings are similar to the results as found in Table 5.9.

Table 5.10: OLS regression results of the corporate governance mechanisms and financial performance measured by ROIC for listed Australian non-finance firms

Independent Variables	Dependent Variable ROIC					
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Const.	-0.111** (-1.98)	-0.169** (-2.77)	-0.545*** (-5.75)	-0.421*** (-7.67)	-0.560*** (-5.68)	-0.427*** (-4.68)
BSIZE	0.008** (3.07)	0.008** (3.09)	-0.008 (-0.32)	-0.002 (-0.75)	-0.001 (-0.39)	-0.002 (-0.52)
BIND	0.088** (2.46)	0.102** (2.80)	0.039 (1.07)	0.013 (0.38)	0.040 (1.08)	0.033 (0.88)
BMEET	0.006** (3.17)	0.004** (3.10)	0.001 (0.56)	0.002 (1.13)	0.001 (0.94)	0.001 (0.44)
DUALITY	-0.084* (-1.67)	-0.102** (-1.98)	-0.089* (-1.76)	-0.057 (-1.26)	-0.087* (-1.71)	-0.070 (-1.39)
ACIND	-0.016 (-0.39)	-0.016 (-0.38)	-0.040 (-0.98)	-0.041 (-1.09)	-0.033 (-0.81)	-0.044 (-1.07)
ACMEET	0.005 (1.44)	0.006 (1.26)	0.009** (1.94)	0.009** (2.21)	0.010** (2.27)	0.008* (1.77)
RCIND	0.006 (0.20)	0.001 (0.04)	0.012 (0.40)	0.019 (0.72)	0.008 (0.27)	0.024 (0.80)
INSID		0.188** (2.84)	0.204*** (3.23)	0.122** (2.14)	0.204*** (3.22)	0.164** (2.66)
INS		0.020 (0.37)	0.035 (0.69)	-0.010 (-0.23)	-0.007 (-0.14)	-0.005 (-0.10)
STATE		0.087 (1.02)	-0.082 (-1.30)	-0.126** (-2.08)	-0.102 (-1.55)	-0.131* (-1.79)
FORGN		0.089** (1.97)	0.043 (0.95)	0.064* (1.62)	0.049 (1.03)	0.067 (1.41)
LOG SALARY			0.009** (2.04)	0.007* (1.72)	0.009** (1.95)	0.008* (1.67)
BIG-4			0.038* (1.62)	0.006 (0.29)	0.037 (1.62)	0.012 (0.50)
LOG FSIZE			0.034*** (6.70)	0.032*** (6.40)	0.035*** (6.89)	0.037*** (7.37)
LR			0.008 (0.16)	-0.028 (-0.65)	0.010 (0.25)	-0.034 (-0.91)
LOG MBVE			0.047*** (4.44)	0.040*** (4.45)	0.050*** (4.53)	0.042*** (3.95)
FRISK			-0.020** (-2.18)	-0.005 (-0.67)	-0.021*** (-2.36)	-0.009 (-0.96)
FAGE			-0.001 (-0.93)	-0.000 (-0.51)	-0.000 (-1.09)	-0.001 (-0.86)
LOG LQ			0.018*** (3.00)	0.014*** (2.53)	0.018*** (3.04)	0.016*** (2.75)
INDS-DUM				Yes		Yes
YEAR-DUM					Yes	Yes
Observations	1438	1438	1438	1438	1438	1438
Adj-R ²	0.037	0.046	0.13	0.18	0.14	0.18
F-statistic	5.35***	4.23***	8.60***	8.86***	7.01***	7.48***

Note: ***, **, * represents statistical significance at 0.01, 0.05 and 0.10 levels, respectively. All variables are as previously defined.

Table 5.11: OLS regression results of the corporate governance mechanisms and financial performance measured by log TQ ratio for listed Australian non-finance firms

Independent Variables	Dependent Variable log Tobin's Q					
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Const.	0.618*** (8.67)	0.381*** (5.06)	0.110 (0.84)	0.019 (0.14)	0.072 (0.55)	-0.015 (-0.11)
BSIZE	0.024*** (5.36)	0.023*** (5.41)	0.024*** (5.22)	0.026*** (5.53)	0.023*** (5.11)	0.025*** (5.43)
BIND	0.063 (1.02)	0.062 (1.04)	0.077 (1.30)	0.076 (1.28)	0.088 (1.48)	0.087 (1.45)
BMEET	-0.004* (-1.66)	-0.002 (-0.72)	-0.000 (-0.34)	-0.001 (-0.65)	-0.001 (-0.34)	-0.001 (-0.66)
DUALITY	-0.019 (-0.33)	-0.020 (-0.34)	0.010 (0.17)	0.013 (0.22)	0.007 (0.12)	0.010 (0.17)
ACIND	0.020 (0.32)	0.22 (0.36)	0.024 (0.40)	0.015 (0.27)	0.032 (0.53)	0.024 (0.41)
ACMEET	-0.008 (-1.07)	-0.008 (-1.20)	-0.013* (-1.78)	-0.014* (-1.85)	-0.013* (-1.76)	-0.014* (-1.83)
RCIND	0.055 (0.91)	0.065 (1.11)	0.069 (1.21)	0.073 (1.29)	0.066 (1.15)	0.070 (1.23)
INSID		0.191** (1.95)	0.132 (1.33)	0.179* (1.77)	0.135 (1.36)	0.182* (1.80)
INS		0.957*** (12.82)	0.907*** (12.11)	0.908*** (12.27)	0.909*** (11.65)	0.909*** (11.79)
STATE		0.206 (0.94)	0.137 (0.61)	0.233 (1.01)	0.133 (0.56)	0.232 (0.97)
FORGN		-0.098 (-1.14)	-0.124 (-1.47)	-0.111 (-1.33)	-0.099 (-1.13)	-0.087 (-1.00)
LOG SALARY			0.021*** (2.73)	0.023*** (2.88)	0.021*** (2.76)	0.023*** (2.91)
BIG-4			-0.065** (-2.00)	-0.048 (-1.45)	-0.065** (-2.00)	-0.049 (-1.46)
LOG FSIZE			0.006 (0.96)	0.008 (1.14)	0.007 (1.11)	0.009 (1.28)
LR			0.040 (0.73)	0.060 (1.03)	0.030 (0.54)	0.050 (0.85)
LOG MBVE			0.101*** (6.58)	0.103*** (6.68)	0.104*** (6.41)	0.106*** (6.54)
FRISK			-0.033*** (2.40)	-0.046*** (-3.21)	-0.030** (-2.12)	-0.043*** (-2.92)
FAGE			-0.001** (-2.05)	-0.001*** (-2.56)	-0.001** (-2.04)	-0.001*** (-2.56)
LOG LQ			-0.013 (-1.08)	-0.012 (-1.02)	-0.012 (-1.02)	-0.012 (-0.97)
INDS-DUM				Yes		Yes
YEAR-DUM					Yes	Yes
Observations	1438	1438	1438	1438	1438	1438
Adj-R ²	0.021	0.12	0.15	0.17	0.16	0.17
F-statistic	4.40***	18.66***	14.59***	12.66***	12.08***	10.95***

Note: ***, **, * represents statistical significance at 0.01, 0.05 and 0.10 levels, respectively. All variables are as previously defined.

Table 5.11 shows the OLS regression results for the relationship between corporate governance variables and TQ. Board size (BSIZE) has a significant positive effect on TQ in all models, indicating that bigger board size leads to improved performance, as supported by Agency Theory.

However, audit committee meeting (ACMEET) has a significant negative relationship with TQ in models 3 to 6. With respect to ownership variables, managerial ownership (INSID) shows a weak positive relationship between managerial ownership and TQ in models 2, 4 and 6. This finding is consistent with that predicted by Agency Theory that firms with higher managerial ownership can alleviate agency problems and, thereby, improving financial performance. Institutional ownership (INS) also has a significant positive relationship with TQ at the 1% level for all models, which means that there is a strong relationship between institutional ownership and performance. Moreover, institutional ownership can be regarded as an important mechanism that increases monitoring, and hence improves performance. A board salary (SALARY) also reveals a positive performance effect.

Regarding control variables, the results show that market to book value (MBVE) has a significant positive effect on TQ in all models. However, the coefficients of firm risk (FRISK) and firm age (FAGE) have significant negative effects on TQ in all models. The coefficient of firm risk (FRISK) appears to show that higher business risk reduces performance measured by TQ. In summary, the results of the pooled OLS regression reported in Table 5.11 suggest a significant relationship between selected governance variables and firm performance. These findings are generally different to the results reported in Tables 5.9 and 5.10.

5.4.3. Lagrange Multiplier Test, Hausman Test and Panel Models

It has been recognised in other relevant studies that pooled OLS regression estimates may be inconsistent and biased if there exists unobserved heterogeneity across firms (Hsiao, 2003) because, pooled OLS regressions may lead to estimator bias with spurious results. Therefore, given the panel nature of the data this study ran FE and RE regressions to control for possible unobserved firm-level heterogeneities. The FE and RE models can take into account heterogeneity across firms by allowing variable intercepts. The choice between these two models is based on statistical tests, such as the Lagrange Multiplier test: if the probability for P-value is significant, the suggestion is that the panel model is better than the pooled model for heterogeneity across firms. Moreover, the Hausman test is applied to test for FE model versus RE model (Cameron & Trivedi, 2009). It tests the null hypothesis that prefers RE model while alternative hypothesis prefers FE. This means that if the P-value is insignificant then it is safe to use the RE model, otherwise use the FE model. The P-value and Hausman test are presented in the regression tables for all regression models for each dependent variable in both Jordanian and Australian listed non-finance firms, respectively, in Appendices 2 and 3.

5.4.3.1 Fixed Effects Regression Results for Jordanian Firms

For the Jordanian listed non-finance firms, Tables 5.12, 5.13 and 5.14 show that the Lagrange Multiplier Test are 69.70, 70.07 and 141.17, respectively, and P-values are significant at the 1% level. This means that the panel model is better than the pooled model. In addition, Hausman Test results for regression are 52.04, 47.38 and 78.26, respectively, and P-values are significant at the 1% level (see Appendix 2). Thus, the results from the Hausman test indicates that the FE model is more efficient than the RE model. The FE model is estimated to correct the unobservable heterogeneity that may exist in the relationship between corporate governance mechanisms and firm performance.

The FE results are provided in Table 5.12 (see Appendix 2) for the relationship between corporate governance mechanisms and return on assets (ROA). More specifically, board size (BSIZE) has a significant positive effect on ROA, indicating that large board size can improve corporate performance, consistent with the predictions of Agency Theory and Larcker et al. (2007). The remuneration committee independence (RCIND) has a significant negative relationship with ROA, meaning that RCIND is constraining ROA, which is in line with results found by Lam and Lee (2012). No other corporate governance mechanism has a significant effect on ROA.

Table 5.13 (see Appendix 2) provides FE regression results of the relationship between corporate governance mechanisms and ROIC. The findings show that remuneration committee independence (RCIND) has a significant negative influence on ROIC, similar to the results reported in Table 5.12. No other corporate governance mechanism has a significant influence on ROIC.

Table 5.14 (see Appendix 2) provides FE regression findings of the relationship between corporate governance mechanisms and TQ. The FE regression results show that no governance mechanisms have a significant influence on TQ except managerial ownership (INSID), which has a significant positive relationship with TQ. These findings are consistent with the findings reported by Schultz et al. (2010) and Pham et al. (2011).

5.4.3.2 Fixed- Effects Regression Results for Australian Firms

For the listed Australian non-finance firms, Tables 5.15, 5.16 and 5.17 (see Appendix 3) show both Lagrange Multiplier and Hausman Tests results. The results show that the Lagrange Multiplier Test (Chi-square statistic) are 434.57, 516.03 and 308.75 respectively, and P- values are statistically significant at the 1% level, that indicate panel models are more appropriate than pooled models. Similarly, the Hausman tests for regressions are 33.61, 27.61 and 47.02,

respectively, and P-values are significant. So these results from the Hausman test also confirms FE model.

The results of the FE regressions are reported in Table 5.15 (see Appendix 3) for the relationship between corporate governance variables and ROA. With respect to corporate governance variables, managerial ownership (INSID) has a significant positive effect on ROA, indicating that the higher the insider ownership, the higher is the performance. The result is in the line with that predicted by Agency Theory that higher insider ownership could reduce agency costs and improve performance. In contract, CEO duality (CEO DUALITY) and audit committee meeting (ACMEET) have significant negative effects on ROA.

Table 5.16 (see Appendix 3) provides FE regression results of the relationship between corporate governance mechanisms and ROIC. The findings show that managerial ownership (INSID) has a significant positive relationship with ROIC, and CEO duality (DUALITY) has a significant negative impact on ROIC. No other corporate governance mechanism has a significant impact on ROIC.

Table 5.17 (see Appendix 3) provides FE regression findings of the relationship between corporate governance mechanisms and Tobin's Q. It shows Board independence (BIND), institutional ownership (INS) and government ownership (STATE) have significant positive effect on TQ. However, CEO duality (DUALITY) has a significant negative effect on TQ.

5.4.4. Endogeneity Test and Dynamic System GMM Model

This study performs regressions using both the pooled model and panel models (FE). However, pooled OLS and panel models may suffer from causality or endogeneity problem between endogenous independent and dependent variables. Hence, this study examines the existence of endogeneity problem in corporate governance variables using the Durbin-Wu-Hausman test for endogeneity (Durbin, 1954; Hausman, 1978; Wu, 1973). Both Tables 5.18 and 5.19 (see Appendix 4) present the endogeneity test results when using performance as measured by ROA, ROIC and TQ in both Jordanian and Australian listed firms. The tests fail to accept the null hypothesis H_0 : regressors are exogenous. In other words, the results show that the null hypothesis should be rejected and there is no endogeneity. These results confirm that pooled OLS and FE models are unreliable and biased. The results of the DWH tests for endogeneity show that there are endogeneity problems (see Appendix 4). Therefore, this study proceeds with the GMM approach.

5.4.4.1 GMM Regression Results for Jordanian Firms

Tables 5.20, 5.21 and 5.22, present system GMM regression results of the relationship between corporate governance and firm financial performance as measured by ROA, ROIC and TQ ratio, respectively, for the listed Jordanian non-finance firms sample. For the purpose of comparison, pooled OLS regression results are also reproduced in these tables.

Several diagnostics tests are also reported in Table 5.20. The Sargan Test of over-identification (39.35) indicates that the hypothesis of the population moment conditions is not rejected with P-value (0.835). As such, this study cannot reject the hypothesis that the instruments used are valid. Furthermore, the findings of AR (1) and AR (2) tests in Table 5.20 of the null hypothesis show no first or second order serial correlation, respectively. AR (1) test should be correlated, but AR (2) should have no serial correlation. The findings of these tests confirm that there is no autocorrelation, (AR (1) test P-value is $0.002 < 0.05$ and AR (2) test p-value is 0.6781).

Using ROA as the performance measure, the findings of the dynamic system GMM model show that board independence (BIND) has a significant positive effect on ROA, which is opposite to the result found in the pooled OLS regression. This finding is similar to those found Hill and Snell (1988), Beasley (1996), Black et al. (2006) and Al-Najjar (2014) suggesting that firms with higher proportion of independent directors are more likely to have higher returns on assets and higher profit margins. The GMM results show negative performance effect of remuneration committee independence (RCIND). This finding is similar to pooled OLS result. That is, non-executives directors on remuneration committee may not play an important role in Jordanian non-finance firms.

With respect to ownership variables, the GMM results show a significant negative relationship between managerial ownership and ROA. The result also shows that past insider ownership has a negative influence on ROA. These results indicate that management ownership impairs the value of firms in Jordan and managers do not work in shareholders' interests. This finding is in the line with that of Wei et al. (2005), and is consistent with the findings of Topak (2011) in his study of emerging markets, which also found a significant negative relationship between insider ownership and firm value.

Table 5.20: Systems GMM regression results of the relationship between corporate governance mechanisms and financial performance as measured by ROA for listed Jordanian non-finance firms

Independent Variables	Dependent Variable ROA	
	Pooled OLS Model	Dynamic system GMM Model
Const.	-0.300*** (-3.64)	-0.170 (-1.15)
BSIZE	0.002 (1.22)	-0.001 (-0.17)
BIND	-0.090*** (-3.48)	0.080*** (2.57)
BMEET	0.008** (2.87)	-0.002 (-0.74)
DUALITY	-0.002 (-0.25)	-0.016 (-1.47)
ACIND	0.023 (1.20)	-0.007 (-0.63)
ACMEET	-0.007* (-1.81)	0.002 (0.51)
RCIND	-0.051* (-1.70)	-0.134*** (-7.40)
INSID	-0.021 (-0.67)	-0.133*** (-4.06)
INS	0.040 (1.19)	-0.022 (-1.59)
STATE	-0.078* (-1.67)	-0.124*** (3.22)
FORGN	-0.087** (-2.14)	0.136*** (3.38)
LOG SALARY	0.021** (2.69)	0.007 (0.89)
BIG-4	0.048*** (4.49)	0.021 (0.48)
LOG FSIZE	0.004* (1.89)	0.001 (0.06)
LR	0.013* (1.63)	-0.005 (-1.04)
LOG MBVE	0.008 (1.13)	-0.021*** (-2.60)
FRISK	-0.013 (-1.22)	-0.025*** (-4.28)
FAGE	0.0007** (2.07)	0.007*** (4.87)
LOG LQ	0.005 (0.93)	-0.015** (-2.10)
IND-DUM	Yes	Yes
YEAR-DUM	Yes	Yes
BSIZE (t-1)		-0.005 (-1.09)
BIND (t-1)		0.104*** (3.95)
INSID (t-1)		-0.051 (-1.36)
ROA (t-1)		0.111*** (5.21)
Observations	464	394
No. Instruments		79
Sargan Test of over-identification		39.35
Sargan test (P-value)		0.8351
AR (1) Test		-3.096***
AR (2) Test		-0.415

Note: ***, **, * represents statistical significance at 0.01, 0.05 and 0.10 levels, respectively. All variables are as previously defined. Sargan test of over-identification is under the null hypothesis that all instruments are valid. AR (1) and AR (2) are tests for first-order and second-order serial correlation in the first-differenced residuals, under the null hypothesis of no serial correlation.

Government ownership (STATE) has a significant negative effect on ROA, which suggests that firms with a high proportion of government ownership generally lack sufficient entrepreneurial drive and tend to be politically rather than commercially motivated, which leads to a weak financial performance. The GMM model also shows a significant positive relationship between foreign ownership (FORGN) and performance. This implies that more foreign ownership enhances firm performance.

For control variables, the results of system GMM show that the estimated coefficients for market to book value (MBVE), firm risk (FRISK) and liquidity ratio (LQ) have negative significant relationships with ROA, while firm age (FAGE) has a positive impact on ROA. Thus, the results of the system GMM model reported in column 3 of Table 5.20 suggest a significant relationship between selected corporate governance variables and ROA. More specifically, the results indicate that board independence (BIND) and foreign ownership (FORGN) have significant positive relationships with ROA. On the contrary, remuneration committee independence (RCIND), insider (INSID) and government ownership (STATE) have significant negative relationships with ROA. No other governance mechanism has a significant relationship with ROA. These findings are consistent with the results of other studies reported in the literature that have applied a dynamic GMM model, such as studies by Rosenstein and Wyatt (1990), Wintoki et al. (2009), Baysinger and Butler (1985), Pham et al. (2011), and Wintoki et al. (2012). Furthermore, the findings of the system GMM model test show that both lagged board independence (BIND_{t-1}) and lagged profitability (ROA_{t-1}) have positive significant effects on ROA. This indicates internal endogeneity in determining performance.

Thus, the OLS and GMM regressions have delivered similar results; that are corporate governance variables (remuneration committee independence and government ownership) have significant negative relationships with firm performance as measured by ROA. But, the results of the OLS and GMM regressions are different for the effects of frequency of board meeting, board salary and Big-4, which have significant positive performance effects in the OLS regression, but no significant effects in the GMM regression. However, board independence, audit committee independence and foreign ownership have significant negative performance effects in OLS, but GMM results of GMM regression show that board independence has a significant positive effect on ROA. Audit committee independence and foreign ownership have no significant performance effect.

Table 5.21: System GMM regression results of the relationship between corporate governance mechanisms and financial performance as measured by ROIC for listed Jordanian non-finance firms

Independent Variables	Dependent Variable ROIC	
	Pooled OLS Model	Dynamic system GMM Model
Const.	-0.371*** (-3.95)	-0.482*** (-3.16)
BSIZE	0.002 (0.77)	-0.006 (-0.82)
BIND	-0.116*** (-3.79)	-0.042 (-1.10)
BMEET	0.006** (2.16)	-0.003 (-0.86)
DUALITY	-0.008 (-0.70)	-0.016 (-1.60)
ACIND	0.020 (0.99)	0.024 (1.54)
ACMEET	-0.004 (-0.88)	0.004 (0.75)
RCIND	-0.055* (-1.67)	-0.121*** (-6.31)
INSID	-0.029 (-0.80)	-0.093*** (-2.54)
INS	0.046 (1.16)	-0.043** (-2.19)
STATE	-0.057 (-1.08)	-0.148** (-3.15)
FORGN	-0.123** (-2.61)	0.137* (1.71)
LOG SALARY	0.029** (3.19)	0.028*** (3.59)
BIG-4	0.056*** (4.69)	0.011 (0.37)
LOG FSIZE	0.004 (1.57)	0.020** (2.42)
LR	0.014 (1.34)	-0.011** (-1.93)
LOG MBVE	0.011 (1.19)	-0.013 (-1.10)
FRISK	-0.017 (-1.41)	-0.026*** (-3.72)
FAGE	0.001 (1.52)	0.007*** (4.07)
LOG LQ	0.004 (0.69)	-0.024*** (-3.18)
IND-DUM	Yes	Yes
YEAR-DUM	Yes	Yes
BSIZE (t-1)		-0.009 (-1.45)
BIND (t-1)		0.092 (0.65)
INSID (t-1)		-0.061 (-1.29)
ROIC (t-1)		0.035 (1.24)
Observations	464	394
No. Instruments		79
Sargan Test of over-identification		41.20
Sargan test (P-value)		0.7779
AR (1) Test		-3.460***
AR (2) Test		-0.040

Note: ***, **, * represents statistical significance at 0.01, 0.05 and 0.10 levels, respectively. All variables are as previously defined. Sargan test of over-identification is under the null hypothesis that all instruments are valid. AR (1) and AR (2) are tests for first-order and second-order serial correlation in the first-differenced residuals, under the null hypothesis of no serial correlation.

Table 5.21 shows the GMM regression results of the relationship between corporate governance mechanisms and ROIC. The Sargan Test of over-identification (41.20) indicates that the hypothesis of the population moment conditions is not rejected with P-value (0.777). As such, this study cannot reject the hypothesis that the instruments used are valid. Furthermore, the findings of AR (1) and AR (2) tests in Table 5.21 of the hypothesis show no first or second order serial correlations. The AR (1) test should be correlated, but the AR (2) test should have no

serial correlation. The findings of these tests confirm that there is no autocorrelation, (AR (1) test P-value is $0.0005 < 0.05$ and AR (2) test p-value is 0.9679).

In Table 5.21, using ROIC as the performance measure, the results of the system GMM regression are shown to be similar to those reported in Table 5.14. The results indicate that remuneration committee independence (RCIND), managerial (INSID) and government ownership (STATE) have significant negative relationships with ROIC, while foreign ownership (FORGN) has a positive relationship with ROIC. On the contrary, unlike the results shown in Table 5.20, institutional ownership (INS) has a negative and board salaries (SALARY) has a significant positive effect on ROIC, but board independence (BIND) has no effect. Other governance variables show no evidence of a relationship with ROIC. These results are consistent with the results reported by Wintoki et al. (2009), Baysinger and Butler (1985) and Pham et al. (2011). In addition, firm size (FSIZE) and firm age (FAGE) have positive relationships with ROIC, while leverage (LR), firm risk (FRISK) and liquidity ratio (LQ) have negative significant effects on ROIC. Furthermore, unlike Table 5.20, no lagged governance variables appear to have significant effects on current year's firm performance as measured by ROIC.

Finally, the OLS and GMM regression show similar results remuneration committee independence and board salary, which have significant positive relationships with firm performance as measured by ROIC. But frequencies of board meetings and Big-4 have significant positive performance effects in OLS regression and significant effects in the GMM regression. However, board independence and foreign ownership have significant negative performance effects in OLS, but the results of GMM regression show that foreign ownership has a significant positive effect on ROIC. The results also show that managerial, institutional and government ownerships have significant negative effect on ROIC, but no significant effects in the OLS regression.

Table 5.22: GMM regression results of the relationship between corporate governance mechanisms and financial performance as measured by log TQ for listed Jordanian non-finance firms

Independent Variables	Dependent Variable log Tobin's Q	
	Pooled OLS Model	Dynamic system GMM Model
Const.	0.971*** (2.86)	-0.571 (-1.06)
BSIZE	-0.013 (-1.33)	-0.007 (-0.27)
BIND	0.015 (0.16)	0.196 (1.49)
BMEET	0.047*** (4.01)	0.013 (1.43)
DUALITY	0.006 (0.14)	0.017 (0.42)
ACIND	-0.043 (-0.53)	-0.044 (-1.17)
ACMEET	-0.012 (-0.61)	-0.002 (-0.15)
RCIND	0.029 (0.24)	0.140** (2.11)
INSID	0.051 (0.42)	0.267** (2.09)
INS	0.037 (0.24)	0.027 (0.42)
STATE	-0.042 (-0.26)	0.258* (1.68)
FORGN	0.318* (1.64)	0.021 (0.06)
LOG SALARY	-0.029 (-1.06)	-0.015 (-0.63)
BIG-4	0.026 (0.54)	-0.259*** (-2.74)
LOG FSIZE	-0.048*** (-4.38)	0.018 (0.61)
LR	0.059 (1.61)	0.055*** (2.74)
LOG MBVE	0.359*** (9.61)	-0.032 (-1.11)
FRISK	0.104*** (3.13)	0.052*** (2.96)
FAGE	0.002 (1.48)	0.021* (1.70)
LOG LQ	-0.150*** (-5.73)	-0.085*** (-2.74)
IND-DUM	Yes	Yes
YEAR-DUM	Yes	Yes
BSIZE (t-1)		-0.017 (-0.60)
BIND (t-1)		0.059 (0.35)
INSID (t-1)		0.349** (2.32)
LOG Tobin's Q (t-1)		0.588*** (7.36)
Observations	464	394
No. Instruments		79
Sargan Test of over-identification		34.741
Sargan test (P-value)		0.9383
AR (1) Test		-2.017**
AR (2) Test		1.080

Note: ***, **, * represents statistical significance at 0.01, 0.05 and 0.10 levels, respectively. All variables are as previously defined. Sargan test of over-identification is under the null that all instruments are valid. AR (1) and AR (2) are tests for first-order and second-order serial correlation in the first-differenced residuals, under the null of no serial correlation.

Table 5.22 reports the GMM regression results of the relationship between corporate governance variables and TQ. The results of the system GMM regression show that the Sargan Test of over-identification (34.74) indicates that the hypothesis of the population moment conditions, with P-value (0.938), is not rejected. Therefore, this study cannot reject the hypothesis that the instruments used are valid. Furthermore, the findings of AR (1) and AR (2) Tests in Table 5.22 of the hypothesis show no first or second order serial correlations. The AR (1) Test should show

correlations, but AR (2) should not. The findings of these tests confirm that there is no autocorrelation, (AR (1) test P-value is $0.0436 < 0.05$ and the AR (2) test P-value is 0.2798).

Using TQ as the performance measure, the results of the dynamic system GMM model, see Table 5.22, are different to those results reported in Tables 5.20 and 5.21. Remuneration committee independence (RCIND) is significantly positively related to TQ, while other board and audit committee related variables have no effect on TQ. These findings are consistent with those found by Pham et al. (2011). In addition, the findings show that managerial ownership (INSID) and government ownership (STATE) have significant positive relationships with TQ. These findings are different from the results reported in Tables 5.20 and 5.21. The results of the Jordanian study conducted by Zeitun and Tian (2007) show different results for the effect of government ownership on TQ. With respect to control variables, the results indicate that the leverage ratio (LR) has a significant positive effect on TQ. Consistent with the results reported in Jordan by Al-Najjar (2012), firm risk (FRISK) has a significant positive effect on TQ, while liquidity (LQ) and Big-4 have negative effects on TQ. In addition, lagged managerial ownership (INSID t-1) and lagged TQ (Tobin's Q t-1) appears to have a significant positive effect on current year's Tobin's Q, as per expectation. This result also indicates internal endogeneity in determining performance.

Finally, the OLS and GMM regression show different effects. Frequency of board meeting and foreign ownership have significant positive performance effects in OLS regression, but the results of the GMM regression shows no significant relationship with TQ. However, remuneration committee independence, managerial, and government ownership have significant positive performance effect in GMM regression, but the results of OLS regression shows no significant effects for these variables.

In summary, system GMM regression results in Tables 5.20, 5.21 and 5.22 report that a few corporate governance and ownership variables, board independence (BIND), board salary (SALARY), remuneration committee independence (RCIND) and ownership structure variables etc., have significant relationships with ROA, ROIC and TQ as measures of firm performance. Other governance variables show no effect. In general, these results are in the line with literature that applied system GMM regression.

5.4.4.2 GMM Regression Results for Australian Firms

Tables 5.23, 5.24 and 5.25 show system GMM regression results of the relationship between corporate governance variables and financial performance as measured by ROA, ROIC and TQ,

respectively, for Australian non-finance firms. In all these tables, the pooled OLS regression results are also shown in order to enable comparison with the system GMM regression results.

Table 5.23 presents the GMM regression results of the relationship between corporate governance mechanisms and ROA. The Sargan Test of over-identification (53.39) indicates that the hypotheses of the population moment conditions are not rejected with P-value (0.309). As such, this study cannot reject the hypothesis that the instruments used are valid. Furthermore, the results of AR (1) and AR (2) tests in Table 5.23 confirm that there is no autocorrelation; the (AR (1) test P-value is $0.000 < 0.05$ and the AR (2) test P-value is 0.0803).

In Table 5.23, using ROA as the performance measure, the findings of the dynamic system GMM model show that there is no significant relationship between selected corporate governance variables and ROA. Similarly, ownership variables have no significant relationship with ROA except for foreign ownership (FORGN), showing a significant positive effect, which suggests that foreign ownership provides efficient monitoring of managers. This result is similar to the one reported by Lee (2008). Again, the results show that audit firms (BIG-4) has a significant positive relationship with ROA, indicating that audit quality of the Australian firms is one of the important factors for improving firm performance. As for control variables, firm size (FSIZE) and liquidity ratio (LQ) have significant positive relationships with ROA. However, leverage ratio (LR) has a significant negative relationship with ROA. Furthermore, lagged profitability (ROAt-1) has a significant impact on current performance, which is indicative of internal endogeneity in determining performance. This result is consistent with the results found by Baysinger and Butler (1985), Schultz et al. (2010) and Wintoki et al. (2012).

Finally, the OLS and GMM regression show different results: audit committee independence, managerial ownership and board salary show significant positive effects on ROA in OLS regression, but no significant relationship in the GMM regression; government ownership has a significant negative performance effect in the OLS regression, but no significant effect in the GMM regression; and the GMM model finds a positive relationship between foreign ownership, Big-4 and ROA, but there are no significant relationships identified among these relationships in the in OLS regression.

Table 5.23: System GMM regression results of the relationship between corporate governance mechanisms and financial performance as measured by ROA for listed Australian non-finance firms

Independent Variables	Dependent Variable ROA	
	Pooled OLS Model	Dynamic system GMM Model
Const.	-0.393*** (-4.58)	-0.064 (-0.35)
BSIZE	0.001 (0.09)	-0.001 (-0.02)
BIND	0.013 (0.38)	0.139 (1.17)
BMEET	0.002 (1.13)	0.003 (1.33)
DUALITY	-0.055 (-1.23)	-0.020 (-0.37)
ACIND	-0.037 (-0.97)	-0.018 (-0.51)
ACMEET	0.010** (2.28)	-0.004 (-0.86)
RCIND	0.022 (0.83)	0.036 (1.31)
INSID	0.121** (2.11)	0.170 (0.79)
INS	-0.007 (-0.15)	-0.046 (-1.61)
STATE	-0.130** (-2.11)	0.129 (0.39)
FORGN	0.067 (1.61)	0.084** (1.99)
LOG SALARY	0.008* (1.81)	-0.017 (-1.34)
BIG-4	0.005 (0.25)	0.088** (1.94)
LOG FSIZE	0.032*** (6.40)	0.025* (1.79)
LR	-0.026 (-0.61)	-0.169** (-2.04)
LOG MBVE	0.041*** (4.39)	0.009 (1.00)
FRISK	-0.007 (-0.79)	-0.003 (-0.23)
FAGE	-0.001 (-0.49)	0.001 (0.51)
LOG LQ	0.014*** (2.56)	0.026*** (2.91)
IND-DUM	Yes	Yes
YEAR-DUM	Yes	Yes
BSIZE (t-1)		0.005 (0.58)
BIND (t-1)		-0.073 (0.74)
INSID (t-1)		-0.147 (0.75)
ROA (t-1)		0.330*** (11.06)
Observations	1438	1232
No. Instruments		79
Sargan Test of over-identification		53.395
Sargan test (P-value)		0.3091
AR (1) Test		-5.209***
AR (2) Test		1.748

Note: ***, **, * represents statistical significance at 0.01, 0.05 and 0.10 levels, respectively. All variables are as previously defined. Sargan test of over-identification is under the null hypothesis that all instruments are valid. AR (1) and AR (2) are tests for first-order and second-order serial correlation in the first-differenced residuals, under the null hypothesis of no serial correlation.

Table 5.24: GMM regression results of the relationship between corporate governance mechanisms and financial performance as measured by ROIC for listed Australian non-finance firms

Independent Variables	Dependent Variable ROIC	
	Pooled OLS Model	Dynamic system GMM Model
Const.	-0.427*** (-4.68)	0.023 (0.10)
BSIZE	-0.002 (-0.52)	-0.001 (-0.01)
BIND	0.033 (0.88)	0.258** (2.02)
BMEET	0.001 (0.44)	0.006*** (2.50)
DUALITY	-0.070 (-1.39)	-0.018 (-0.37)
ACIND	-0.044 (-1.07)	0.030 (0.76)
ACMEET	0.008* (1.77)	0.011 (0.27)
RCIND	0.024 (0.80)	0.055** (1.93)
INSID	0.164** (2.66)	0.068 (0.28)
INS	-0.005 (-0.10)	-0.021 (-0.62)
STATE	-0.131* (-1.79)	0.384 (0.67)
FORGN	0.067 (1.41)	-0.004 (-0.08)
LOG SALARY	0.008* (1.67)	-0.021 (-1.45)
BIG-4	0.012 (0.50)	0.105** (2.14)
LOG FSIZE	0.037*** (7.37)	0.035*** (2.44)
LR	-0.034 (-0.91)	-0.217*** (-2.69)
LOG MBVE	0.042*** (3.95)	0.019** (2.12)
FRISK	-0.009 (-0.96)	0.010 (0.72)
FAGE	-0.001 (-0.86)	-0.001 (-0.10)
LOG LQ	0.016*** (2.75)	0.021*** (2.46)
IND-DUM	Yes	Yes
YEAR-DUM	Yes	Yes
BSIZE (t-1)		0.010 (1.16)
BIND (t-1)		0.037 (0.37)
INSID (t-1)		-0.139 (-0.67)
ROIC (t-1)		0.297*** (7.52)
Observations	1438	1232
No. Instruments		79
Sargan Test of over-identification		53.976
Sargan test (P-value)		0.2900
AR (1) Test		-5.504***
AR (2) Test		1.996

Note: ***, **, * represents statistical significance at 0.01, 0.05 and 0.10 levels, respectively. All variables are as previously defined. Sargan test of over-identification is under the null hypothesis that all instruments are valid. AR (1) and AR (2) are tests for first-order and second-order serial correlation in the first-differenced residuals, under the null hypothesis of no serial correlation.

Table 5.24 presents the GMM results for the relationship between corporate governance and ROIC. The Sargan Test of over-identification (53.97) indicates that the hypotheses of the population moment conditions are not rejected, with a P-value (0.290). As such, this study cannot reject the hypothesis that the instruments used are valid. In addition, the results of AR (1) and AR (2) tests, shown in Table 5.24, confirm that there is no autocorrelation (AR (1) test P-value is 0.000 < 0.05 and the AR (2) test P-value is 0.276).

In Table 5.24, using ROIC as the performance measure, the results of the system GMM show that board independence (BIND), board meetings (BMEET) and remuneration committee independence (RCIND) have significant positive relationships with ROIC. The positive performance effects of these variables suggest the importance of non-executives directors and board meetings for mitigating conflicts of interests and improving performance as predicted by agency theory. However, system GMM results find no significant relationships between others governance variables. Big-4 firm (BIG-4) shows positive performance effect with ROIC, similar to results reported in Table 5.23. With respect to ownership variables, no significant results are found, as in Table 5.23. Similarly, as for control variables, firm size (FSIZE), liquidity ratio (LQ) and firm growth (MBVE) have significant positive relationships with ROIC, while leverage (LR) has a negative relationship; these are similar to results shown in Table 5.23. In the same vein, lagged performance (ROIC t-1) shows an expected positive effect on current firm performance. This indicates internal endogeneity in determining performance.

Finally, the OLS and GMM regressions show different results. Frequency of audit committee independence, managerial ownership and board salary have significant positive effects on ROIC in the OLS regression, but the results of the GMM regression find no significant relationships. Government ownership has a significant negative performance effect in the OLS regression, but the result of the GMM regression has no significant effect. The result of the GMM model also shows that board independence, frequency of board meeting and remuneration committee independence have significant positive relationships with ROA, but no significant relationships in the OLS regression.

Table 5.25: GMM regression results of the relationship between corporate governance mechanisms and financial performance as measured by log TQ for listed Australian non-finance firms

Independent Variables	Dependent Variable log Tobin's Q	
	Pooled OLS Model	Dynamic system GMM Model
Const.	-0.015 (-0.11)	0.318 (0.68)
BSIZE	0.025*** (5.43)	0.082*** (3.58)
BIND	0.087 (1.45)	0.253 (0.76)
BMEET	-0.001 (-0.66)	-0.004 (-0.87)
DUALITY	0.010 (0.17)	0.139 (1.07)
ACIND	0.024 (0.41)	0.079 (1.06)
ACMEET	-0.014* (-1.83)	-0.013 (-1.02)
RCIND	0.070 (1.23)	-0.039 (-0.56)
INSID	0.182* (1.80)	0.986* (1.83)
INS	0.909*** (11.79)	0.684*** (7.51)
STATE	0.232 (0.97)	1.425*** (2.85)
FORGN	-0.087 (-1.00)	-0.022 (-0.18)
LOG SALARY	0.023*** (2.91)	0.078** (1.98)
BIG-4	0.049 (1.46)	0.180 (1.57)
LOG FSIZE	0.009 (1.28)	0.029 (0.99)
LR	0.050 (0.85)	0.040 (0.34)
LOG MBVE	0.106*** (6.54)	0.063*** (3.13)
FRISK	-0.043*** (-2.92)	-0.097*** (-2.95)
FAGE	-0.001*** (-2.56)	0.002 (0.69)
LOG LQ	-0.01 (-0.97)	0.041* (1.69)
IND-DUM	Yes	Yes
YEAR-DUM	Yes	Yes
BSIZE (t-1)		-0.020 (-0.98)
BIND (t-1)		0.164 (0.69)
INSID (t-1)		-0.338 (-0.65)
LOG Tobin's Q (t-1)		0.213*** (6.22)
Observations	1438	1232
No. Instruments		79
Sargan Test of over-identification		43.127
Sargan test (P-value)		0.7090
AR (1) Test		-6.504***
AR (2) Test		-1.601

Note: ***, **, * represents statistical significance at 0.01, 0.05 and 0.10 levels, respectively. All variables are as previously defined. Sargan test of over-identification is under the null hypothesis that all instruments are valid. AR (1) and AR (2) are tests for first-order and second-order serial correlation in the first-differenced residuals, under the null hypothesis of no serial correlation.

Table 5.25 reports the results of the system GMM regression using TQ as the performance measure. The Sargan Test of over-identification (43.12) suggests that the hypothesis of the population moment conditions is not rejected with P-value (0.709). So, this study cannot reject the hypothesis that the instrumentals used are valid. Moreover, the findings of AR (1) and AR (2) tests, shown in Table 5.25 indicate autocorrelation do not exist (AR (1) test P-value is 0.000 < 0.05 and the AR (2) test P-value is 0.109).

With respect to corporate governance mechanisms, the findings of the system GMM model show that board size (BSIZE) has a significant positive relationship with TQ. This result is consistent with the results obtained by Larcker et al. (2007) and Fauzi and Locke (2012). However, the results show no evidence of a relationship between any other governance variables and TQ, similar to the earlier findings reported in Table 5.23, except for board size (BSIZE).

With respect to ownership variables, managerial (INSID), institutional (INS) and government (STATE) ownership show significant positive relationships with TQ. These results are different from results shown in Tables 5.23 and 5.18. A significant positive relationship between (INSID) and TQ is consistent with the findings of Jensen and Meckling (1976) that agency conflict between managers and shareholders could be mitigated in cases of high managerial ownership because managers owning a larger portion of the shares are motivated to maximize firm value.

A positive performance effect for institutional ownership (INS) provides support for the proposition for the positive effect of the monitoring ability of institutional owners, which leads to improved firm performance. This result is similar to the finding reported by Shleifer and Vishny (1997) and Henry (2010). The positive effect of government ownership (STATE) on TQ is inconsistent with the findings of Xu and Wang (1999) and Wei et al. (2005). However, unlike the findings shown Tables 5.23 and 5.24, board salary has a significant positive relationship with TQ in Table 5.25. With respect to control variables, market to book value (MBVE) and liquidity ratio (LQ) have significant positive impacts on TQ. This significant positive relationship stays stable throughout the pooled OLS model and system GMM model, except for Liquidity ratio (LQ), which is significant only in system GMM results.

Results reported in Table 5.25 also show that firm risk (FRISK) has a significant negative effect on TQ. This negative sign stays stable throughout the pooled OLS model and system GMM model. In addition, lagged performance (Tobin's Q $t-1$) also shows a positive effect on current performance. As noted before, this indicates internal endogeneity in determining performance.

Finally, the OLS and GMM regressions find that certain corporate governance variables (board size, managerial ownership, institutional ownership and board salary) have significant positive relationships with firm performance as measured by TQ. But OLS and GMM regressions find that government ownership has a significant positive performance effect in the GMM regression, but no significant effect in OLS regression. However, frequency of audit committee meeting has a significant negative performance effect in the OLS regression, but the results of GMM regression show no significant effect on TQ.

5.4.5. Discussion of Regression Results for Jordanian Firms

This study examines whether corporate governance variables have significant impacts on the performance of listed Jordanian non-finance firms. The results of GMM regression show that, in general, board independence (BIND), remuneration committee independence (RCIND), managerial ownership (INSID), institutional ownership (INS), government ownership (STATE), foreign ownership (FORGN) and board salaries (SALARY) have significant relationships with firm performance measures used in this study. However, some of these variables reveal different signs on different performance measures.

Consistent with the evidence of prior studies (Black et al., 2006; Topak, 2011; Weisbach, 1988), this study supports the argument that higher independent board (BIND) is more effective in monitoring and enhancing firm performance. This significant result is also similar to results from other studies of Jordanian firms that find a significant positive relationship between board independence and ROA (Al-Najjar, 2014). The result of this study suggests that firms with a high proportion of independent directors (BIND) are more likely to have higher ROA and higher profit margins. This result clearly supports the proposition of Agency Theory, in the case of a developing economy such as Jordan, and indicates that non-executive directors play an efficient monitoring role in governance and thus enhance firm performance. This provides support to hypothesis H1b.

The GMM results show there is a significant negative relationship between remuneration committee independence (RCIND) and performance as measured by ROA and ROIC. In contrast, with TQ, RCIND has a significant positive effect. The different result is likely due to different measures: accounting-based measure and market-based measure. The negative effect implies that non-executive directors of remuneration committees do not significantly contribute to enhancing firm performance. The reverse is true for a positive effect with TQ. Therefore, hypothesis H4 is accepted.

The study also finds that there is a significant negative relationship between managerial ownership (INSID), and ROA and ROIC; there are significant positive relationships with TQ. The different result is consistent with the findings of other studies in the literature that have used accounting-based measures and market-based measures. Although contradictory outcomes, the findings have supported agency theory, which there is a relationship between ownership structure and corporate performance (Jensen & Meckling, 1976; Shleifer & Vishny, 1986). The negative relationship between managerial ownership and firm performance as measured by ROA and ROIC could be caused by high block-holders ownership concentration interfering with the effectiveness of corporate governance in Jordan. The result is consistent with those of Wei et al.

(2005) and Himmelberg et al. (1999) who find that managerial ownership has a significant negative relationship with firm performance. In emerging markets, Topak (2011) and Farooque et al. (2007b) also find a negative effect. The significant negative effect might also be caused by the nature of managerial ownership in Jordanian firms where dominating/majority owners as insiders are in management positions and exposed to potential agency problems leading to decreases of firm performance. On the other hand, positive performance effects provide support for the alignment of interest hypothesis as suggested by agency theorists (Fama & Jensen, 1983a). Therefore the H5a is accepted.

Results from this study also finds that institutional ownership (INS) has a significant negative effect on ROIC, indicating that INS is value destructive in Jordanian companies. This implies there is strategic alignment of institutional ownership with managerial ownership in Jordanian firm. This result is consistent with those found by Lee (2008), Wei et al. (2005), Lefort and Urzúa (2008) and Lanouar and Abdelaziz (2010) that there is a significant negative effect of INS on firm performance. The significant negative result is also similar to those found by Jordanian studies by Al-Najjar (2010) and Gurbuz and Aybars (2010). On the other hand, the INS has no significant effect on ROA and TQ as performance measures. The study by Rami and Gary Gang (2007) in Jordan also finds no significant relationship. Based on these results, hypothesis H5b is not supported.

Government ownership (STATE) has a significant negative relationship with ROA and ROIC. However, it has a significant positive relation with TQ. The different results are likely due to the different measures: the accounting-based measures and the market-based measure. The significant negative effect of government ownership upon firm performance may be due to rising political motivations and social objectives instead of commercial motivations in Jordanian firms. This result is similar to the evidence found by Boardman and Vining (1989) and Wei et al. (2005). Based on this result, hypothesis H5c is accepted.

Consistent with evidence from prior studies (Douma et al., 2006; Ferreira & Matos, 2008; Gurbuz & Aybars, 2010), this study supports the argument that more foreign ownership (FORGN) enhances corporate performance. The positive impact of FORGN on performance, as measured by ROA and ROIC, implies that foreign shareholders can play a monitoring role in the corporate governance system of the firms in Jordan. The significant positive result could be due to the possibility that most Jordanian companies with foreign shareholdings have strong business links, such as superior technical, organizational, and financial resources. This result is as expected. Therefore, hypothesis H5d is supported.

In summary (see Table 5.20), the significant effect of ownership structure variables in equations ROA and ROIC may be due to the fact that accounting-based measures are more popular measures used by investors in Jordan to assess firm performance rather than other measures of firm performance, such as Tobin's Q. The result also supports the proposition that board salary (SALARY) is positively related to firm performance in Jordanian firms, consistent with the literature. Based on the result, hypothesis H6 is supported.

On the other hand, the results of this study do not support the argument that board size (BSIZE) and board meeting (BMEET) would lead to higher performance. The result shows that there is no significant relationship between board size (BSIZE), board meeting (BMEET) and firm performance in Jordanian firms. Therefore, the evidence is not enough to accept hypotheses H1a and H1c. These results are consistent with those found by Kiel and Nicholson (2003) and Dalton et al. (1998) that no significant relationship exists between board size and firm performance. The non-significant findings are similar to those of other studies of emerging markets that do not find evidence supporting the proposition that board size enhances firm performance (Topak, 2011). As a board of directors has diversified responsibilities and, as research shows, good corporate governance practices lead to better performance, the existence of boards of directors in a company setting is crucial. This is because boards of directors play a significant role in the protection of shareholders' interests and performance improvements. Companies' law and the corporate governance code in Jordan recommend that board size must be not less than five and not more than 13 members, and at least one-third of board members should be independent members. Board size in Jordanian listed companies ranges from 3 to 16 directors, with 8 being average. This means that most Jordanian firms have a reasonable board size. The apparent ineffectiveness of boards in carrying out their monitoring function may be due to their lack of skills and knowledge in the industrial sector in Jordan.

Despite the argument that more frequent board meetings play an important role in corporate governance and corporate performance, this study finds no relation between the frequency of board meetings and firm performance. This finding implies that the frequency of board meetings is not a factor that significantly contributes to the effectiveness of boards of directors in enhancing high firm performance in Jordanian firms. The results show that there is no significant relationship between CEO duality and firm performance under any of the performance measures, and, therefore, hypothesis H2 is not supported.

Although the corporate governance codes in Jordan recommend that the chief executive officer and chairman positions should be separated, it does not provide further motivation to improve firm performance. Despite the argument that independence of audit committee (ACIND) and

frequency of audit committee meetings (ACMEET) affect a board's ability to providing more effective monitoring functions as well as improving corporate performance, the results show that there is no significant relationship between audit committee independence, audit committee meetings frequency and firm performance. This implies that audit committee independence and audit committee meetings frequency do not improve firm performance in Jordan. The findings do not support hypotheses H3a and H3b. These results are consistent with those found by Gurbuz and Aybars (2010) that no significant relationship exists between audit committee independence and firm performance. Similarly, Mak and Kusnadi (2005), and Lefort and Urzúa (2008) also find no significant relationship between audit committee independence, audit committee meetings frequency and firm performance.

This study uses three firm performance measures: ROA, ROIC and TQ. The results show that inclusion of one-year lag is sufficient to capture the dynamic aspects of the relationship between corporate governance and performance. The coefficients of one-period lagged ROA (ROA t-1) and board independence (BIND t-1) are positive and statistically significant at the 1% level. Therefore, for Jordanian listed firms, previous year's firm performance and previous year's board independence have a significant positive impact on current year's firm performance as measured by ROA. The results suggest that Jordanian firms that have done well in the past would have higher profitability in subsequent years, including in the current year and, as a result, will have more non-executive directors on the board. However, lagged ROIC has no impact on current years ROIC and no other lagged governance variables shows any impact on performance. In addition, the coefficients of one period lagged Q (Tobin's Q t-1) and managerial ownership (INSID t-1) show significant positive effects on current year's firm performance as measured by TQ. The results show that lagged TQ is positive and strongly significant. Lagged TQ therefore contains some information about the predictions of profitability. There appears to be some evidence that the ASE is more efficient than widely believed. This also indicates that Tobin's Q t-1 should not be ignored when analysing current year's performance even in emerging economies. Lagged managerial ownership (INSID t-1) also has a significant positive performance effect, consistent with findings in a study by Fahlenbrach and Stulz (2009). This implies that an increase in INSID t-1 leads to increases in current year's TQ, which is driven by managers' objective to maximize performance.

Table 5.26 summarizes the hypotheses and results for Jordian firms:

Table 5.26: Summary of hypotheses for listed Jordanian non-finance listed firms

Independent variables	Hypotheses	Dependent variables Expected Sign			Findings	Status
		ROA	ROIC	TQ		
Board Size (BSIZE)	H1a: There is a significant positive relationship between firm performance and board size in Jordanian Listed companies.	+/-	+/-	+/-	Neg. insignificant	Not supported
Board Independence (BIND)	H1b: There is a significant positive relationship between firm performance and board independence in Jordanian Listed companies.	+	+	+	Pos. significant with ROA	Supported
Board meeting (BMEET)	H1c: There is a significant positive relationship between firm performance and the frequency of board meetings in Jordanian Listed companies.	+	+	+	Neg./neg./pos. insignificant	Not supported
CEO duality	H2: There is a significant negative relationship between firm performance and CEO duality in Jordanian Listed companies.	-	-	-	Neg. insignificant	Not supported
Independent of audit committee (ACIND)	H3a: There is a significant positive relationship between firm performance and independence of audit committee in Jordanian Listed companies.	+	+	+	Neg./pos./neg. insignificant	Not supported
Frequency of audit committee meetings (ACMEET)	H3b: There is a significant positive relationship between firm performance and the frequency of audit committee meetings in Jordanian Listed companies.	+	+	+	Pos./pos./neg. insignificant	Not supported
Remuneration committee independence (RCIND)	H4: There is a significant positive relationship between firm performance and Remuneration committee Independence in Jordanian Listed companies.	+	+	+	pos. significant with TQ	Supported
Managerial ownership (INSID)	H5a: There is a significant positive relationship between firm performance and percentage of shares owned by board of directors in Jordanian Listed companies	+/-	+/-	+/-	pos. significant with TQ	Supported
Institutional ownership (INS)	H5b: There is a significant positive relationship between firm performance and percentage of shares owned by institutions in Jordanian Listed companies.	+	+	+	Neg./neg./pos. insignificant	Not supported
Government ownership (STATE)	H5c: There is a significant negative relationship between firm performance and percentage of shares owned by government in Jordanian Listed companies.	-	-	-	Neg. significant with ROIC	Supported
Foreign ownership (FORGN)	H5d: There is a significant positive relationship between firm performance and percentage of shares owned by foreign investors in Jordanian Listed companies.	+	+	+	Pos. significant with ROA and ROIC	Supported
Salaries of board (SALARY)	H6: There is a significant positive relationship between firm performance and executive Incentives in Jordanian Listed companies.	+	+	+	Pos. significant with ROIC	Supported
Audit quality (Big-4)	H7: There is a significant positive relationship between firm performance and audit quality in Jordanian Listed companies.	+	+	+	Pos. insignificant	Not supported

5.4.6. Discussion of Regression Results for Australian Firms

This study examines whether corporate governance variables have a significant impact on firm performance in Australian listed firms. This section discusses the results of the GMM regression on the relationship between corporate governance mechanisms and financial performance for listed Australian non-finance firms.

The results of GMM regression show that, in general, board size (BSIZE), board independence (BIND), board meetings (BMEET), remuneration committee independence (RCIND), managerial ownership (INSID), institutional ownership (INS), government ownership (STATE), foreign ownership (FORGN), board salaries (SALARY) and audit quality (Big-4) have significant relationships with firm performance. These results indicate that the effects of governance depend on the performance measures examined.

The GMM regression results indicate that board size (BSIZE) has a significant positive relationship with TQ. Similar to the findings from a number of other studies (Abidin, Kamal, & Jusoff, 2009; Cheng et al., 2008; Eisenberg et al., 1998; Larcker et al., 2007; Larmou & Vafeas, 2010; Yermack, 1996), this study provides evidence that board size could positively influence firm performance as measured by TQ. It is important to note that Australian companies have an average number of eight members, which indicates that board size in listed Australian non-finance firms tends to be sub-optimal. However, the results show that board size has no significant relationship with the firm performance measures ROA and ROIC. This result is consistent with that of a number of prior studies (Bhagat & Black, 2002; Bonn, 2004). Therefore, hypothesis H1a is accepted.

This study also finds that there is a significant positive relationship between board independence (BIND) and firm performance. The positive significant effect on ROIC indicates that Australian firms with higher proportions of independent directors are more likely to have higher ROI. This finding is similar to those found by Hill and Snell (1988), Beasley (1996), Black et al. (2006) and Al-Najjar (2014). However, as with ROA and TQ as performance measures, this relationship is insignificant. Therefore, hypothesis H1b is accepted.

Results from this study show that board meetings has a significant effect on ROIC, implying that increasing frequency of board meetings could significantly raise Australian firms' performance. By contrast, board meeting has no significant effect on ROA and TQ. So, hypothesis H1c is accepted.

The GMM results show there is a significant positive relationship between remuneration committee independence (RCIND) and performance as measured by ROIC. This significant

positive effect could be due to independent remuneration committees being more effective in monitoring and enhancing firm performance. However, the results show that there is no significant effect of remuneration committee independence on ROA and TQ. Based on these results, hypothesis H4 is accepted depending on the specific measure of performance.

In terms of ownership structure, the result of the GMM regression shows that managerial ownership (INSID) has a significant positive effect on TQ. Considering managerial ownership (INSID) as an endogenous explanatory variable, as justified by the DWH test, the result is consistent with alignment of interest effects. It has a weak significant positive effect on TQ at the 10% level, suggesting that Australian firms with higher insider ownership may reconcile managers and shareholders' interests and, consequently, enhance firm performance. However, the positive effect on ROA and ROIC is statistically insignificant. Based on this result, hypothesis H5a is accepted. This result is consistent with the results of other studies, such as those by Morck et al. (1988), McConnell and Servaes (1990), Eng and Mak (2003), Kaserer and Moldenhauer (2008), McKnight and Weir (2009) and Coles et al. (2012), who suggest that the higher proportion of shares held by management could alleviate conflicts between managers and shareholders' interests, and lead to improved firm performance. The result also shows that institutional ownership (INS) has a significant positive impact on TQ, consistent with the proposition of the monitoring effect of institutions; that is, institutional investors in Australia tend to invest in high firm performance, encouraging the aligned of firms toward long-term investments. The result is consistent with that found by Pound (1988), Mitton (2002) and Henry (2010). However, the result is statistically insignificant when using accounting-based measures. Based on these results, hypothesis H5b is accepted.

Similarly, the regression result shows strong evidence for a significant positive relationship between foreign ownership (FORGN) and ROA, indicating that foreign shareholders prefer to invest in Australian firms with high profitability. However, it is not statistically significant with ROIC and TQ. This positive effect could be due to the fact that foreign ownership provides excellent opportunities to access technology and managerial skills and more efficient monitoring of managers and, consequently, encouraging better firm performance. This result is similar to findings as reported by Lee (2008). Therefore, hypothesis H5d is supported, with ROA as the performance measure, but not with other proxies. The results also support the argument that the audit quality (Big-4) and board salary (salary) are positively related to firm performance. These results are consistent with those found by Core et al. (1999) and Qu, Percy, Hu, and Stewart (2014). Therefore, hypotheses H6 and H7 are supported.

On the other hand, the results of the GMM regression show that government ownership (STATE) has no significant effect on ROA and ROIC. These results are consistent with the findings by Morck et al. (1988), Demsetz and Villalonga (2001) and Welch (2003). However, there is a significant positive effect on TQ. Therefore, the hypothesis relating to government ownership (SATAE) H5c is not supported.

The results of GMM regression also do not find any significant relationship between CEO duality and firm performance. Although there is a negative relationship between CEO duality and ROA and ROIC as performance measures, they are not significant statistically. This is similar to the findings of other studies, which have not found evidence supporting the proposition that CEO duality negatively impacts firm performance (Chen, Lin, & Yi, 2008; Craswell et al., 1997). Therefore, hypothesis H2 is not supported.

Despite the debate that firms with completely independent of audit committee (ACIND) and frequent audit committees meetings (ACMEET) are best able to effectively monitor financial accounting reports, the results do not find a statistically significant relationship between ACIND, ACMEET and firm performance. This result is consistent with those of Lawrence and Stapledon (1999) who also find an insignificant relationship between audit committees' independence and firm performance in Hong Kong firms. This study also shows no evidence that active audit committees would have positive impacts on firm performance. Based on these results, hypotheses H3a and H3b are not supported.

Finally, the coefficients of one-period lagged performance variables (ROA t-1), (ROIC t-1) and (Tobin's Q t-1) are positive and statistically significant at the 1% level. Therefore, for Australian listed firms, the previous year's firm performance has a significant positive impact on the current year's firm performance measures. However, no other lagged governance variables appear to have any significant effect on the current year's firm performance. In addition, the significance and signs remain unchanged concerning the causal relationship between board size and Tobin's Q as a measure of performance. Wintoki et al. (2009) argue that dynamic endogeneity is likely to be a major source of bias in estimating the relationship between governance and performance. After controlling for it, they find that a significant relationship between board structure and firm performance disappears in the GMM regressions. Interestingly, contrary to their results, this study finds that the significant effect of board size on Tobin's Q in Australian firms continues to be valid even after taking into account dynamic endogeneity by using GMM.

Table 5.27 summarizes the hypotheses and results for Australian firms:

Table 5.27: Summary of hypotheses for Australian non-finance listed firms

Independent variables	Hypotheses	Dependent variables Expected Sign			Findings	Status
		ROA	ROIC	TQ		
Board Size (BSIZE)	H1a: There is a significant positive relationship between firm performance and board size in Australian Listed companies.	+/-	+/-	+/-	Pos. significant with Tobin's Q	Supported
Board Independence (BIND)	H1b: There is a significant positive relationship between firm performance and board independence in Australian Listed companies.	+	+	+	Pos. significant with ROIC	Supported
Board meeting (BMEET)	H1c: There is a significant positive relationship between firm performance and the frequency of board meetings in Australian Listed companies.	+	+	+	Pos. significant with ROIC	Supported
CEO duality	H2: There is a significant negative relationship between firm performance and CEO duality in Australian Listed companies.	-	-	-	Neg./neg. insignificant/pos. insignificant	Not Supported
Independent of audit committee (ACIND)	H3a: There is a significant positive relationship between firm performance and independence of audit committee in Australian Listed companies.	+	+	+	Neg. insignificant/ pos. insignificant/ pos. insignificant	Not Supported
Frequency of audit committee meetings (ACMEET)	H3b: There is a significant positive relationship between firm performance and the frequency of audit committee meetings in Australian Listed companies.	+	+	+	Neg. insignificant/ pos. insignificant/neg. insignificant	Not Supported
Remuneration committee independence (RCIND)	H4: There is a significant positive relationship between firm performance and Remuneration committee Independence in Australian Listed companies.	+	+	+	Pos. significant with ROIC	Supported
Managerial ownership (INSID)	H5a: There is a significant positive relationship between firm performance and percentage of shares owned by board of directors in Australian Listed companies	+/-	+/-	+/-	Pos. significant with Tobin's Q	Supported
Institutional ownership (INS)	H5b: There is a significant positive relationship between firm performance and percentage of shares owned by institutions in Australian Listed companies.	+	+	+	Pos. significant with Tobin's Q	Supported
Government ownership (STATE)	H5c: There is a significant negative relationship between firm performance and percentage of shares owned by government in Australian Listed companies.	-	-	-	Pos. insignificant/ Pos. insignificant/pos. significant	Not supported
Foreign ownership (FORGN)	H5d: There is a significant positive relationship between firm performance and percentage of shares owned by foreign investors in Australian Listed companies.	+	+	+	Pos. significant with ROA	Supported
Salaries of board (SALARY)	H6: There is a significant positive relationship between firm performance and executive Incentives in Australian Listed companies.	+	+	+	Pos. significant with Tobin's Q	Supported
Audit quality (Big-4)	H7: There is a significant positive relationship between firm performance and audit quality in Australian Listed companies.	+	+	+	Pos. significant with ROA and Tobin's Q	Supported

5.4.7. Comparison of Findings in the GMM between Jordanian and Australian Firms

Table 5.28 is a summary of the GMM regression estimates of the relationship between corporate governance and financial performance for both Jordanian and Australian firms.

The GMM regression results for both countries (Jordan and Australia) show that most corporate governance mechanisms have no significant relationships with firm performance, indicating that the significant relationship found in pooled OLS model is the result of estimation bias. Board size (BSIZE) and board meeting (BMEET) show a significant positive relationship with TQ for Australian firms only, while board independence (BIND) shows significant positive relationships with ROIC and ROA in both countries. In Jordanian firms, remuneration committee independence (RCIND) has a significant negative relationship with ROA and ROIC, but a significant positive with TQ, while in Australian firms it has a significant positive relationship with ROIC. Regarding the ownership variables, there is a significant positive association between managerial (INSID), government ownership (STATE) with TQ in both countries. Moreover, foreign ownership (FORGN) has a significant positive relationship with ROA in Jordanian and Australian firms. However, institutional ownership (INS) has a significant negative relationship with ROIC in Jordanian firms, but a significant positive relationship with TQ in Australian firms. Similarly, board salary (SALARY) has a significant positive relationship with ROIC in Jordanian firms, but a significant positive with TQ in Australian firms. In the Australia context, Big-4 has a significant positive effect, but a negative effect in the Jordanian context.

The differences in findings for the two countries could be due to their different social and economic conditions, culture, markets, institutions and regulatory frameworks (Dallas, 2004). A developing economy like Jordan has high ownership concentration and follows a hybrid system of corporate governance. This suggests that the block-holders play an important role in monitoring the activities of a firm as well as interfere in the operations of company boards. It also suggests that regulatory authorities are ineffective. By contrast, a developed economy like Australia has dispersed shareholdings in companies, and capital allocation takes place in an efficient manner. The regulatory authorities are efficient and there is good monitoring of firm activities (Wei, 2003). In Australian firms, the results show that board size (BSIZE) and board meeting (BMEET) have positive significant effects on performance. These same variables have no significant effect in Jordanian firms.

Table 5.28: Comparison of results in the GMM between listed Jordanian and Australian non-finance firms

Independent Variables	Jordanian non-finance firms			Australian non-finance firms		
	ROA	ROIC	Tobin's Q	ROA	ROIC	Tobin's Q
Const.	-0.170 (-1.15)	-0.482*** (-3.16)	-0.571 (-1.06)	-0.064 (-0.35)	0.023 (0.10)	0.318 (0.68)
BSIZE	-0.001 (-0.17)	-0.006 (-0.82)	-0.007 (-0.27)	-0.001 (-0.02)	-0.001 (-0.01)	0.082*** (3.58)
BIND	0.080*** (2.57)	-0.042 (-1.10)	0.196 (1.49)	0.139 (1.17)	0.258** (2.02)	0.253 (0.76)
BMEET	-0.002 (-0.74)	-0.003 (-0.86)	0.013 (1.43)	0.003 (1.33)	0.006*** (2.50)	-0.004 (-0.87)
DUALITY	-0.016 (-1.47)	-0.016 (-1.60)	0.017 (0.42)	-0.020 (-0.37)	-0.018 (-0.37)	0.139 (1.07)
ACIND	-0.007 (-0.63)	0.024 (1.54)	-0.044 (-1.17)	-0.018 (-0.51)	0.030 (-0.76)	0.079 (1.06)
ACMEET	0.002 (0.51)	0.004 (0.75)	-0.002 (-0.15)	-0.004 (-0.86)	0.011 (0.27)	-0.013 (-1.02)
RCIND	-0.134*** (-7.40)	-0.121*** (-6.31)	0.140** (2.11)	0.036 (1.31)	0.055** (1.93)	-0.03 (-0.56)
INSID	-0.133*** (-4.06)	-0.093*** (-2.54)	0.267** (2.09)	0.170 (0.79)	0.068 (0.28)	0.986* (1.83)
INS	-0.022 (-1.59)	-0.043** (-2.19)	0.027 (0.42)	-0.046 (-1.61)	-0.021 (-0.62)	0.684*** (7.51)
STATE	-0.124*** (3.22)	-0.148** (-3.15)	0.258* (1.68)	0.129 (0.39)	0.384 (0.67)	1.425*** (2.85)
FORGN	0.136*** (3.38)	0.137* (1.71)	0.021 (0.06)	0.084** (1.99)	-0.004 (-0.08)	-0.022 (-0.18)
LOG SALARY	0.007 (0.89)	0.028*** (3.59)	-0.015 (-0.63)	-0.017 (-1.34)	-0.021 (-1.45)	0.078** (1.98)
BIG-4	0.021 (0.48)	0.011 (0.37)	-0.259*** (-2.74)	0.088** (1.94)	0.105** (2.14)	0.180 (1.57)
LOG FSIZE	0.001 (0.06)	0.020** (2.42)	0.018 (0.61)	0.025* (1.79)	0.035*** (2.44)	0.029 (0.99)
LR	-0.005 (-1.04)	-0.011** (-1.93)	0.055*** (2.74)	-0.169** (-2.04)	-0.217*** (-2.69)	0.040 (0.34)
LOG MBVE	-0.021*** (-2.60)	-0.013 (-1.10)	-0.032 (-1.11)	0.009 (1.00)	0.019** (2.12)	0.063*** (3.13)
FRISK	-0.025*** (-4.28)	-0.026*** (-3.72)	0.052*** (2.96)	-0.003 (-0.23)	0.010 (0.72)	-0.097*** (-2.95)
FAGE	0.007*** (4.87)	0.007*** (4.07)	0.021* (1.70)	0.001 (0.51)	-0.001 (-0.10)	0.002 (0.69)
LOG LQ	-0.015** (-2.10)	-0.024*** (-3.18)	-0.085*** (-2.74)	0.026*** (2.91)	0.021*** (2.46)	0.041* (1.69)
IND-DUM	Yes	Yes	Yes	Yes	Yes	Yes
YEAR-DUM	Yes	Yes	Yes	Yes	Yes	Yes
BSIZE (t-1)	-0.005 (-1.09)	-0.009 (-1.45)	-0.017 (-0.60)	0.005 (0.58)	0.010 (1.16)	-0.020 (-0.98)
BIND (t-1)	0.104*** (3.95)	0.092 (0.65)	0.059 (0.35)	-0.073 (0.74)	0.037 (0.37)	0.164 (0.69)
INSID (t-1)	-0.051 (-1.36)	-0.061 (1.29)	0.349** (2.32)	-0.147 (0.75)	-0.139 (-0.67)	-0.338 (-0.65)
ROA (t-1)	0.111*** (5.21)			0.330*** (11.06)		
ROIC (t-1)		0.035 (1.24)			0.297*** (7.52)	
LOG Tobin's Q (t-1)			0.588*** (7.36)			0.213*** (6.22)
Observations	394	394	394	1232	1232	1232
No. Instruments	79	79	79	79	79	79
Sargan Test of over-identification	39.35	41.20	34.741	53.395	53.976	43.127
Sargan test (P-value)	0.8351	0.7779	0.9383	0.3091	0.2900	0.7090
AR (1) Test	-3.096***	-3.460***	-2.017**	-5.209***	-5.204***	-6.504***
AR (2) Test	-0.415	-0.040	1.080	1.748	1.896	-1.601

Note: ***, **, * represents statistical significance at 0.01, 0.05 and 0.10 levels, respectively. All variables are as previously defined. Sargan test of over-identification is under the null hypothesis that all instruments are valid. AR (1) and AR (2) are tests for first-order and second-order serial correlation in the first-differenced residuals, under the null hypothesis of no serial correlation.

The different findings for board size in the two countries could be due to the fact that board size (BSIZE) plays a fundamental role in disciplining the CEO and managers, hence improving the performance in Australian firms. Board meeting (BMEET) is also important in improving the effectiveness of the board in Australian firms. Similar to other corporate governance mechanisms in Australian firms, remuneration committee independence has a significant positive effect on ROIC, while in Jordanian firms it has a significant negative effect on ROA and ROIC. These different findings could be the reason that the Australian market has a more efficient and transparent financial information services compared to the Jordanian market, which is inefficient and less transparent.

Institutional ownership (INS) plays a key role in reducing the agency conflicts and improving corporate performance. In Australian firms, institutional ownership has a positive relationship with firm performance, while it has a negative relationship in Jordanian firms. As mentioned before, the different results could be due to differences in institutions and regulatory frameworks between these markets. In addition, audit quality (Big-4) plays an important role in improving firm performance. In Australian firms, Big-4 has a significant positive effect on performance and suggests that Australian firms audited by Big-4 firms have less information asymmetry and thus improving firm performance. However, in Jordanian firms, auditing by Big-4 does not improve their performance. The difference could be due to manipulations of financial reports of firms to serve the interests of majority shareholders and thus disadvantaging the minority shareholders in Jordanian firms.

5.5. Conclusion

This chapter presents and discusses the results of pooled OLS regression and GMM regression on the relationship between corporate governance mechanisms and financial performance in listed Jordanian and Australian non-finance firms for the period 2005 to 2011. The results of the relationship between corporate governance and firm performance (ROA) in Jordanian firms, when estimated by pooled OLS, show that there is a significant positive relationship between board meetings (BMEET), board salaries (SALARY), and quality audit (Big-4), and firm performance (ROA). However, a significant negative relationship is found between board independence (BIND), audit committee meetings (ACMEET), remuneration committee independence (RCIND), government ownership (STATE), foreign ownership (FORGN), and firm performance (ROA). When the relationship between governance variables and firm performance is estimated by GMM approach, the results show board independence (BIND) and foreign ownership (FORGN) have significant positive

performance effects. However, remuneration committee independence (RCIND), managerial ownership (INSID) and government ownership (STATE) have significant negative effects on firm performance. The difference between the OLS and GMM results is consistent with the results of other studies that have conducted GMM estimation, such as those by Schultz et al. (2010), Pham et al. (2011) and Wintoki et al. (2012).

The findings of the system GMM model show that lagged performance (ROAt-1) has the expected positive effect on current performance (ROA). Similarly, lagged board independence (BINDt-1) has a significant positive effect on ROA, while lagged managerial ownership (INSIDt-1) and board size (BSIZE) have no significant effect on ROA. This indicates that in internal endogeneity, board independence appears as a dominant endogenously related variable in determining performance (ROA) in Jordan.

The results of the relationship between corporate governance and firm performance as measured by (ROIC) in Jordanian firms, when estimated by pooled OLS, show that there is a significant positive relationship between board meetings (BMEET), board salaries (SALARY), quality audit (Big-4) and firm performance (ROIC). However, a significant negative relationship is found between board independence (BIND), remuneration committee independence (RCIND) and foreign ownership (FORGN) and firm performance (ROIC). When the relationship between governance variables and firm performance is estimated by the GMM approach, the results show foreign ownership (FORGN) and board salary (SALARY) have significant positive performance effects. However, remuneration committee independence (RCIND), managerial ownership (INSID), institutional ownership and government ownership (STATE) have significant negative effects on firm performance (ROIC). These results are consistent with results when using the ROA as the firm performance measure in Jordan. Finally, the findings of the system GMM model shows that lagged performance (ROICt-1), lagged board size (BSIZEt-1), lagged board independence (BINDt-1) and lagged managerial ownership (INSIDt-1) have no significant effects on current performance (ROIC).

Using TQ as the firm performance measure, the results of the relationship between corporate governance and firm performance in Jordanian firms, when estimated by pooled OLS, show that there are significant positive relationships between board meetings (BMEET), foreign ownership (FORGN) and firm performance (TQ). However, no significant relationship is found between other governance variables and TQ. When the relationship between governance variables and firm performance is estimated using the GMM approach, the results show that remuneration committee independence (RCIND), managerial ownership (INSID)

and government ownership (STATE) have significant positive effects on firm performance (TQ). Finally, the findings of the system GMM model show that lagged performance (Tobin's Q_{t-1}) and lagged managerial ownership (INSID $_{t-1}$) have significant positive effects on TQ, while lagged board size (BSIZE $_{t-1}$), lagged board independence (BIND $_{t-1}$) have no significant effect on TQ. This indicates that managerial ownership appears as a dominant endogenously related variable in determining performance (TQ) in Jordan.

For Australian listed firms, the results of the relationship between corporate governance and firm performance, when estimated by pooled OLS, show that there is a significant positive relationship between frequency of audit committee meeting (ACIND), managerial ownership (INSID) and board salaries (SALARY) with firm performance (ROA). However, a significant negative relationship is found between government ownership (STATE) and firm performance (ROA). When the relationship between governance variables and firm performance is estimated by system GMM approach, the results show that only foreign ownership and Big-4 (Big-4) have significant positive performance effects. No other corporate governance variables have significant effects on firm performance (ROA). The difference between the OLS and GMM results is consistent with results of other studies in the literature that have conducted GMM estimation. Finally, the coefficients of lagged performance (ROA $t-1$), (ROIC $t-1$) shows a significant positive effect on current performance (ROA), but not on other lagged governance variables, indicating no endogenous relationships between governance and performance variables.

The results of the relationship between corporate governance and firm performance as measured by (ROIC) in Australian firms, when estimated by pooled OLS, show that there is a significant positive relationship between audit committee meetings (ACMEET), managerial ownership (INSID), board salaries (SALARY) and firm performance (ROIC). However, a significant negative relationship is found only between government ownership (STATE) and firm performance (ROIC). When the relationship between governance variables and firm performance is estimated by the GMM approach, the results show that board independence (BIND), frequency of board meeting (BMEET), remuneration committee independence (RCIND), audit quality (Big-4) have significant positive performance effects. However, no other governance variables have significant relationships. The findings of system GMM model also show that lagged performance (ROIC $_{t-1}$) shows a significant positive effect on current performance (ROIC), but not on other lagged governance variables, indicating no endogenous relationships between governance and performance variables.

Using TQ as a firm performance measure, the results of the relationship between corporate governance and firm performance in Australian firms, when estimated by pooled OLS, show that there are significant positive relationships between board size (BSIZE), managerial ownership (INSID), institutional ownership (INS), board salary (SALARY), and firm performance (TQ). However, a significant negative relationship is found between frequency of audit committee meeting (ACMEET) and TQ. When the relationship between governance variables and firm performance is estimated by GMM approach, the results show that board size (BSIZE), managerial ownership (INSID), institutional ownership (INS), government ownership (STATE) and board salary (SALARY) have significant positive effects on firm performance (TQ). No other governance variables have significant relationships. The findings from the system GMM model show that lagged performance (Tobin's Q_{t-1}) has a significant positive effect on TQ, while lagged board size ($BSIZE_{t-1}$), lagged board independence ($BIND_{t-1}$) and lagged managerial ownership ($INSID_{t-1}$) have no significant effect on TQ. Chapter 6 examines the relationship between corporate governance variables and dividend policy variables.

Chapter 6: Relationship between Corporate Governance Mechanisms and Dividend Policy: Results and Discussions

6.1. Introduction

Chapter 4 development the hypotheses to be studied, how the sample for this study was selected, the variables to be measured and how data would be analysed. Chapter 5 reported the results and discussions of the relationship between governance and firm performance. This chapter presents descriptive statistics, correlations and results of the empirical analysis of the relationship between corporate governance and dividend policy in Jordan and Australia. The chapter is organized as follows: Section 6.2 presents descriptive statistics of listed Jordanian and Australian non-finance firms. Section 6.3 shows the correlation analysis of the variables. Section 6.4 provides the results and discussions of regression models, and Section 6.5 concludes the chapter.

6.2. Descriptive Statistics

The sample studied comprised of 70 Jordanian non-finance firms listed on the ASE, and 206 Australian non-finance firms listed on the Australian ASX over the period 2005 to 2011 (464 firm-year observations in Jordan and 1438 firm-year observations in Australia).

Table 6.1 repeats the descriptive statistics of corporate governance variables presented in Table 5.1 adding the dividend policy variables (Panel A). The results show that the mean (median) value of POUT is 39% (38%) and the mean (median) of DY is 1% (0.00). Table 6.2 repeats summary statistics for corporate governance and control variables for Australian non-finance companies as reported in Table 5.2 in addition to dividend policy variables (Panel A). The results show that the mean (median) values of POUT is 58% (60%) and the mean (median) of DY is 5% (4%). The descriptive statistics of corporate governance and control variables are discussed in Chapter 5 and will not be repeated here.

Table 6.3 shows the comparative means and medians for Jordanian and Australian non-finance firms. Average dividend policy in Australian firms is higher than that of in Jordanian firms. More specifically, the mean of the (POUT) is 39%, while the minimum and maximum values are -0.000 and 1.000, respectively, and standard deviation 38% in Jordan, but the mean of the POUT is 58% with standard deviation 27% in Australia. As reported in Tables 6.1, 6.2 and 6.3, the DY for Jordanian companies is 1% and 5% for Australian companies. In summary, Australian firms are more likely to pay dividends than Jordanian firms.

Table 6.1: Summary statistics of dividend policy, corporate governance and control variables (Jordanian non-finance firms)

Variables	Obs	Mean	Std	P25th	P50th (Median)	P75th	Min	Max	Skewness	Kurtosis
<i>Panel A: dividend policy</i>										
Dividend Payout Ratio (POUT)	464	0.395	0.386	0.000	0.385	0.780	0.000	1.000	0.1960	1.3608
Dividend Yield (DY)	464	0.011	0.022	0.000	0.000	0.010	0.000	0.160	3.2666	16.1684
<i>Panel B: Corporate Governance Variables</i>										
Board Size (BSIZE)	464	7.941	2.371	7.000	8.000	9.000	3.000	16.000	0.4297	3.2162
Board Independence (BIND)	464	0.462	0.194	0.333	0.429	0.600	0.100	1.000	0.5531	2.4688
Board Meetings (BMEET)	464	5.726	1.867	5.000	6.000	7.000	2.000	12.000	0.8470	3.7993
CEO Duality (DUALITY)	464	0.286	0.452	0.000	0.000	1.000	0.000	1.000	0.9436	1.8905
Audit Committee Independence (ACIND)	464	0.445	0.258	0.250	0.333	0.666	0.000	1.000	0.4853	2.5185
Insider Ownership (INSID)	464	0.385	0.160	0.265	0.368	0.480	0.090	0.860	0.6004	3.009
Institutional Ownership (INS)	464	0.217	0.114	0.100	0.190	0.325	0.010	0.789	0.8168	3.2702
Government Ownership (STATE)	464	0.100	0.105	0.020	0.070	0.120	0.000	0.521	1.6807	5.6587
Foreign Ownership (FORGN)	464	0.266	0.133	0.166	0.260	0.370	0.000	0.633	0.1943	2.4368
Audit Quality (BIG-4)	464	0.269	0.444	0.000	0.000	1.000	0.000	1.000	1.0395	2.0807
<i>Panel C: Control Variables</i>										
Log Firm Size (FSIZE)	464	10.476	2.141	9.375	9.985	11.035	6.530	19.640	2.0538	8.3224
Leverage (LR)	464	0.448	0.551	0.150	0.304	0.494	-0.303	3.888	3.3360	16.496
Log Growth (MBVE)	464	0.255	0.629	-0.133	0.215	0.688	-1.771	2.124	0.1191	3.0804
Firm Risk (FRISK)	464	0.393	0.545	0.090	0.341	0.600	-3.510	2.391	-0.2058	9.7764
Firm Age (FAGE)	464	21.821	15.734	11.000	16.000	31.000	1.000	60.000	0.7937	2.6144
Return on assets (ROA)	464	0.027	0.100	-0.010	0.040	0.070	-0.587	0.439	-0.8914	8.7221

All other variables are as previously defined

Table 6.2: Summary statistics of dividend policy, corporate governance and control variables (Australian non-finance firms)

Variables	Obs	Mean	Std	P25th percentile	P50th percentile (Median)	P75th Percentile	Min	Max	Skewness	Kurtosis
<i>Panel A: dividend policy</i>										
Dividend Payout Ratio (POUT)	1438	0.577	0.274	0.400	0.600	0.790	0.000	1.000	-0.4305	2.3917
Dividend Yield (DY)	1438	0.045	0.034	0.024	0.040	0.059	0.000	0.279	2.0136	10.4808
<i>Panel B: Corporate Governance Variables</i>										
Board Size (BSIZE)	1438	7.640	2.706	6.000	7.000	9.000	2.000	23.000	0.7328	4.1862
Board Independence (BIND)	1438	0.597	0.196	0.500	0.625	0.750	0.000	1.000	-0.3483	2.3447
Board Meetings (BMEET)	1438	9.578	4.839	6.000	9.000	12.000	0.000	37.000	0.9695	4.9990
CEO Duality (DUALITY)	1438	0.042	0.200	0.000	0.000	0.000	0.000	1.000	4.5837	22.0102
Audit Committee Independence (ACIND)	1438	0.857	0.205	0.750	1.000	1.000	0.000	1.000	-1.2698	3.7178
Insider Ownership (INSID)	1438	0.152	0.112	0.070	0.120	0.210	0.000	0.770	1.2524	4.9040
Institutional Ownership (INS)	1438	0.252	0.126	0.159	0.232	0.332	0.029	0.872	1.0171	5.1582
Government Ownership (STATE)	1438	0.005	0.041	0.000	0.000	0.000	0.000	0.520	10.1012	112.9688
Foreign Ownership (FORGN)	1438	0.281	0.134	0.180	0.270	0.378	0.000	0.930	0.3716	2.9904
Audit Quality (BIG-4)	1438	0.808	0.394	1.000	1.000	1.000	0.000	1.000	-1.5645	3.4477
<i>Panel C: Control Variables</i>										
Log Firm Size (FSIZE)	1438	13.101	2.257	11.500	13.140	14.800	4.750	18.930	-0.1042	2.7421
Leverage (LR)	1438	0.235	0.204	0.089	0.213	0.332	-1.634	1.653	0.6768	14.6667
Log Growth (MBVE)	1438	0.758	0.786	0.223	0.732	1.255	-1.897	3.999	0.1674	3.4091
Firm Risk (FRISK)	1438	1.245	0.801	0.720	1.130	1.650	-2.570	5.640	0.8669	6.0653
Firm Age (FAGE)	1438	43.258	42.106	13.000	26.000	56.000	0.000	187.00	1.3925	3.9935
Return on assets (ROA)	1438	0.053	0.240	0.006	0.068	0.145	-1.727	1.351	-1.6206	13.0262

All other variables are as previously defined

Table 6.3: Comparative mean and median for Jordanian and Australian non-finance firms

Variables	Australian firms		Jordanian firms	
	Mean	P50th percentile (Median)	Mean	P50th percentile (Median)
Dividend Payout Ratio (POUT)	0.577	0.600	0.395	0.385
Dividend Yield (DY)	0.045	0.040	0.011	0.000
Board Size (BSIZE)	7.640	7.000	7.941	8.000
Board Independence (BIND)	0.597	0.625	0.461	0.429
Board Meetings in Year (BMEET)	9.579	9.000	5.726	6.000
CEO Duality (DUALITY)	0.042	0.000	0.286	0.000
Audit Committee Independence (ACIND)	0.857	1.000	0.445	0.333
Insider Ownership (INSID)	0.152	0.120	0.385	0.368
Institutional Ownership (INS)	0.252	0.232	0.217	0.190
Government Ownership (STATE)	0.005	0.000	0.100	0.070
Foreign Ownership (FORGN)	0.281	0.270	0.267	0.260
Audit Quality (BIG-4)	0.808	1.000	0.269	0.000
Log Firm Size (FSIZE)	13.101	13.140	10.476	9.985
Leverage (LR)	0.235	0.213	0.448	0.304
Log Growth (MBVE)	0.758	.732	0.255	0.215
Firm Risk (FRISK)	1.245	1.130	0.393	0.340
Firm Age (FAGE)	43.258	26.000	21.821	16.000
Return on assets (ROA)	0.027	0.037	0.053	0.068

All other variables are as previously defined.

6.3. Correlation Matrix of Variables

The correlation results reported in Table 6.4 and Table 6.5 show that the degree of correlation between the independent variables is low, which indicates no multi-collinearity problems appears between independent variables. Coefficients of correlation are within an acceptable range of VIF results 1.05 – 1.70 for Jordanian listed firms, and 1.03 – 1.50 for Australian listed firms. This study uses the variance inflation factors (VIF) of variables in both countries to determine if the multi-collinearity problem exists between independent variables. The results of VIF support the Pearson's correlation coefficients and provide no indication of multi-collinearity problem in the regression models for Jordanian and Australian firms.

6.3.1. Correlation Matrix of Variables for Jordanian Firms

Table 6.4 shows the correlation between corporate governance mechanisms and dividend policy in Jordanian firms, revealing the following important relationships.

Board size (BSIZE) is significant positive relationships with dividend policy with (P value < 0.001), board meetings (BMEET) is significant positive relationships with POUT with (P value < 0.005), Big-4 is significant positive relationships with dividend policy with (P value < 0.001), and profitability (ROA) have significant positive relationships with POUT with (P value < 0.001). This indicates that the higher these variables, the higher the POUT. However, there is a significant negative correlation between the number of shares owned by foreign investors (FORGN) and POUT. This means that the higher the percentage of shares owned by foreign individuals, the lower is the POUT. There is no significant correlation between CEO duality (DUALITY), managerial (INSID), institutional (INS), government ownership (STATE), audit committee independence (ACIND) and POUT.

There is a significant positive correlation of board size (BSIZE), foreign ownership (FORGN), and Big-4 with DY. This means that the higher these variables, the higher the DY. However, there is a significant negative relationship for board independence and firm size (FSIZE) with DY. This indicates that the higher DY the lower the firm size (FSIZE) and (BIND). There is no significant correlation between managerial (INSID), institutional (INS), government ownership (STATE), audit committee independence (ACIND), CEO duality (DUALITY) and DY.

Table 6.4: Pearson correlation for all variables in the Jordanian non-finance companies (N=464)

	POUT	DY	BSIZE	BIND	BMEET	CEO Duality	ACIND	INSID	INS	STATE	FORGN	BIG-4	LOG FSIZE	LR
POUT	1.000													
DY	0.579***	1.000												
BSIZE	0.173***	0.129***	1.000											
BIND	-0.047	-0.110***	0.058	1.000										
BMEET	0.095**	0.022	0.355***	0.180***	1.000									
CEO DUALITY	0.015	0.053	-0.434***	-0.100**	-0.281***	1.000								
ACIND	0.034	-0.056	0.325***	0.187***	0.198***	-0.296***	1.000							
INSID	0.040	0.021	0.035	-0.069	-0.122***	-0.026	0.040	1.000						
INS	-0.012	0.044	0.090**	0.092**	0.086*	-0.126**	-0.019	0.106**	1.000					
STATE	0.006	-0.025	-0.049	0.044	0.087*	0.026	-0.029	-0.082*	-0.026	1.000				
FORGN	-0.075*	0.088*	0.157***	0.140**	0.099**	-0.202***	0.144***	-0.064	0.173***	-0.188***	1.000			
BIG-4	0.123***	0.180***	0.249***	0.070	0.036	-0.030	0.162***	-0.014***	0.140***	0.080*	0.112***	1.000		
LOG FSIZE	0.044	-0.001	0.035	0.196***	0.237***	-0.108**	0.174***	-0.020	0.071	0.110**	0.135***	-0.046	1.000	
LR	-0.036	-0.037	-0.062	0.032	0.054	-0.044	-0.026	-0.050	-0.006	-0.121***	0.062	0.014	-0.028	1.000
LOG MBVE	-0.035	-0.096**	0.121**	0.126**	0.008	0.054	-0.025	-0.013	0.018	0.008	0.042	0.168***	0.167***	0.014
FRISK	-0.053	-0.055	0.046	0.012	-0.001	-0.025	0.068	0.008	0.030	0.058	-0.164***	-0.100**	0.098**	0.016
FAGE	-0.001	-0.107**	0.173***	0.069	-0.132***	-0.044	0.115**	0.098	0.086*	-0.002	0.132***	0.383***	0.132***	0.082*
ROA	0.187***	0.034	0.226***	-0.057	0.164***	-0.118***	0.147***	-0.041	0.097**	-0.063	0.060	0.294***	0.082*	0.091**

	LOG MBVE	FRISK	FAGE	LOG LQ
LOG MBVE	1.000			
FRISK	-0.029	1.000		
FAGE	0.280***	-0.014	1.000	
ROA	0.128***	-0.062	0.252***	1.000

*** Denotes correlation is significant at the 0.01 level (2-tailed); ** Denotes correlation is significant at the 0.05 level (2-tailed); * Denotes correlation is significant at the level 0.10 level (2-tailed). All variables are as previously defined.

Table 6.5: Pearson correlation for all variables in the Australian non-finance companies (N=1438)

	POUT	DY	BSIZE	BIND	BMEET	CEO Duality	ACIND	INSID	INS	STATE	FORGN	BIG-4	LOG FSIZE	LR
POUT	1.000													
DY	0.495***	1.000												
BSIZE	0.042*	0.070***	1.000											
BIND	0.080***	0.002	-0.012	1.000										
BMEET	0.101***	0.074***	0.191***	0.108***	1.000									
CEO DUALITY	-0.025	-0.045*	-0.008	-0.085***	-0.088***	1.000								
ACIND	-0.010	0.018	-0.054**	0.098***	0.007	0.006	1.000							
INSID	-0.033	-0.009	0.018	-0.114***	-0.018	0.193***	-0.001	1.000						
INS	0.044*	-0.040	0.003	0.004	-0.080***	-0.023	-0.004	-0.008	1.000					
STATE	0.017	0.024	-0.045*	0.032	0.072***	-0.027	-0.038	-0.072***	-0.024	1.000				
FORGN	0.021	0.015	0.020	-0.026	0.071***	-0.030	0.048**	0.033	-0.033	0.017	1.000			
BIG-4	0.168***	0.076***	0.287***	0.153***	0.242***	-0.013	0.027	-0.012	0.002	0.035	0.121***	1.000		
LOG FSIZE	0.096***	0.041	0.385***	0.205***	0.382***	-0.104***	0.078***	-0.063**	-0.078***	0.112***	0.085***	0.443***	1.000	
LR	0.097***	0.085***	0.065**	0.078***	0.174***	-0.072***	-0.016	0.067**	-0.016	0.011	-0.034	0.138***	0.300***	1.000
LOG MBVE	0.044*	0.213***	-0.012	-0.019	-0.108***	0.008	-0.032	0.047*	0.127***	0.017	0.001	-0.007	-0.129***	-0.046*
FRISK	-0.104***	-0.047*	-0.072***	-0.109***	-0.091***	0.081***	-0.067**	0.003	-0.066**	-0.004	-0.034	-0.155***	-0.225***	-0.140***
FAGE	0.060**	-0.059**	0.218***	0.190***	0.090***	-0.030	0.010	-0.139***	0.022	0.047*	-0.062**	0.205***	0.396***	0.059**
ROA	0.004	-0.065***	0.120***	0.069***	0.129***	-0.077***	-0.009	0.044*	0.001	0.014	0.057**	0.178***	0.282***	0.103***

	LOG MBVE	FRISK	FAGE	LOG LQ
LOG MBVE	1.000			
FRISK	0.020	1.000		
FAGE	-0.019	-0.0210***	1.000	
ROA	0.108***	-0.107***	0.098***	1.000

*** Denotes correlation is significant at the 0.01 level (2-tailed); ** Denotes correlation is significant at the 0.05 level (2-tailed); * Denotes correlation is significant at the level 0.10 level (2-tailed). All variables are as previously defined.

6.3.2. Correlation Matrix of Variables for Australian Firms

Table 6.5 shows the correlation between corporate governance mechanisms and dividend policy for Australian firms. The table shows the following important relationships.

There is a significant positive correlations among board size (BSIZE) and DY with (P value < 0.001), board independence (BIND) is a significant correlations with POUT with (P value < 0.001), board meeting (BMEET) is significant positive relationships with dividend policy with (P value < 0.001), institutional ownership (INS) is significant positive relationships with POUT with (P value < 0.10), and Big-4 is significant positive relationships with dividend policy with (P value < 0.001). This indicates that the higher these variables, the higher the POUT. Regarding control variables, firm size (FSIZE), leverage ratio (LR), market to book value (MBVE) and firm age (FAGE) have positive significant relationships with POUT. However, there is a significant negative relationship between firm risk (FRISK) and POUT. There is no significant correlation between audit committee independence (ACIND), CEO duality (DUALITY), insider (INSID), foreign (FORGN), government ownership (STATE) and POUT.

There is significant positive correlation between board size (BSIZE), board meeting (BMEET), Big-4, leverage ratio (LR), market to book value (MBVE) and DY. This means that the higher these variables, the higher the DY. On the contrary, there is significant negative correlation between firm risk (FRISK), firm age (FAGE), profitability (ROA) and DY. There is no significant correlation between managerial (INSID), institutional (INS), government (STATE), foreign ownership (FORGN), audit committee independence (ACIND), CEO duality (DUALITY) and DY.

6.4. Evidence from Regression Models

To estimate the association between corporate governance mechanisms and dividend policy, this study uses firstly, pooled OLS and secondly, either FE models or RE models. Thus, two measures of dividend policy and six models of independent variables are applied. The two measures of dividend policy are POUT and DY, and the measures of independent variables are implemented in six regression models.

The first step to analysis the relationship between corporate governance and dividend policy is through the use of pooled OLS regressions. Pooled OLS regression analysis is conducted by dividing the regression models into the other models: model 1 includes corporate governance mechanisms; model 2 comprises corporate governance mechanisms with ownership variables; model 3 contains corporate governance variables, ownership variables and control variables;

model 4 includes model 3 with only industry dummy variables; model 5 includes model 3 with only time dummy variables; and model 6 includes model 3 with both industrial and year dummies variables. These analyses provide a comparison with previous literatures, as well as determining the effects of adding other variables, such as ownership types and control variables. Given that this study uses a panel data, it considers whether it is appropriate to use FE or RE models. Furthermore, the panel estimates permit control for unobserved heterogeneity through individual effect and, therefore, should present more reliable results compared to that found by the pooled OLS model. The null hypothesis of no systematic difference in coefficients estimated from FE and RE models is tested using the Hausman Test.

6.4.1. OLS Regression Results for Jordanian Firms (Pooled Model)

Tables 6.6 and 6.7 present the results of the OLS regression of the association between corporate governance variables and dividend policy in Jordanian firms for each dividend policy proxy variables.

Table 6.6 presents OLS regression results of the dividend policy variable as measured by POUT on all corporate governance variables and control variables. Model 1 reports the results on corporate governance variables board size (BSIZE), board independence (BIND), board meetings (BMEET), CEO duality (DUALITY), audit committee independence (ACIND), Model 2 presents the results for OLS estimation of corporate governance with ownership variables, and Model 3 shows the regression results of corporate governance, ownership and control variables, whilst Models 4 to 6 present the regression results for all variables including control variables, industrial and year dummies variables for Jordanian firms. Similarly, Table 6.7 presents the results of OLS estimation for DY as measures of the dividend policy with corporate governance variables, control variables and other dummy variables.

Both tables indicate that the F-value of each model is statistically significant at the 1% level. This means that the coefficients of independent variables (corporate governance and control variables) can explain significant variations in the dependent variable.

Table 6.6: OLS regression results of the corporate governance mechanisms and dividend policy measured by POUT for Jordanian non-finance firms

Dependent Variable POUT						
Independent Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Const.	0.075 (0.83)	0.098 (0.87)	0.040 (0.31)	0.094 (0.70)	0.025 (0.19)	0.077 (0.57)
BSIZE	0.033*** (4.03)	0.33*** (4.00)	0.032*** (3.63)	0.033*** (3.74)	0.032*** (3.59)	0.033*** (3.68)
BIND	-0.118 (-1.30)	-0.095 (-1.04)	-0.056 (-0.59)	0.074 (0.77)	-0.066 (-0.69)	0.060 (0.62)
BMEET	0.013 (1.31)	0.014 (1.37)	0.004 (0.42)	-0.002 (-0.24)	0.006 (0.55)	-0.001 (-0.11)
DUALITY	0.099** (2.24)	0.087** (1.96)	0.085* (1.93)	0.068 (1.59)	0.085* (1.91)	0.069* (1.67)
ACIND	0.001 (0.02)	0.005 (0.08)	-0.048 (-0.64)	-0.043 (-0.58)	-0.038 (-0.50)	-0.037 (-0.50)
INSID		0.071 (0.61)	0.127 (1.09)	0.064 (0.56)	0.139 (1.21)	0.077 (0.68)
INS		-0.005 (-0.04)	-0.062 (-0.43)	-0.065 (-0.46)	-0.008 (-0.06)	-0.021 (-0.14)
STATE		-0.012 (-0.08)	-0.038 (-0.24)	-0.042 (-0.27)	-0.026 (-0.16)	-0.012 (-0.08)
FORGN		-0.252* (-1.78)	-0.306** (-2.18)	-0.451*** (-3.13)	-0.295* (-1.89)	-0.467*** (-2.84)
BIG-4			0.090** (1.93)	0.055 (1.20)	0.090* (1.91)	0.055 (1.20)
LOG FSIZE			0.017** (2.14)	0.013* (1.69)	0.016** (2.10)	0.013* (1.67)
LR			-0.011 (-0.38)	0.035 (-0.90)	-0.014 (-0.45)	-0.039 (-1.00)
LOG MBVE			-0.055* (-1.89)	-0.054* (-1.77)	-0.045 (-1.48)	-0.041 (-1.28)
FRISK			-0.047 (-1.51)	-0.008 (-0.27)	-0.051 (-1.61)	-0.012 (-0.41)
FAGE			-0.001 (-1.37)	-0.001 (-0.53)	-0.001 (-1.44)	-0.001 (-0.57)
ROA			0.585*** (3.58)	0.596*** (3.66)	0.539*** (3.31)	0.545*** (3.34)
INSD-DUM				YES	NO	YES
YR-DU				NO	YES	YES
Observations	464	464	464	464	464	464
Adj-R ²	0.046	0.054	0.102	0.154	0.121	0.172
F-statistic	4.86***	3.14***	4.47***	4.47***	4.31***	4.49***

Note: ***, **, * represents statistical significance at 0.01, 0.05 and 0.10 levels, respectively. All variables are as previously defined.

Table 6.7: OLS regression results of the corporate governance mechanisms and dividend policy measured by DY for Jordanian non-finance firms

Dependent Variable DY						
Independent Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Const.	0.002 (1.21)	-0.004 (-0.68)	-0.008 (-1.14)	-0.006 (-0.98)	-0.009 (-1.30)	-0.008 (-1.19)
BSIZE	0.001*** (2.67)	0.002*** (2.55)	0.002*** (2.67)	0.001** (2.21)	0.002*** (2.58)	0.001** (2.07)
BIND	-0.011***	-0.012*** (-2.64)	-0.012*** (-2.49)	-0.011** (-2.14)	-0.012*** (-2.61)	-0.012** (-2.27)
BMEET	0.001 (0.28)	0.001 (0.27)	-0.001 (-0.71)	-0.001 (-0.86)	-0.001 (-0.67)	-0.001 (-0.81)
DUALITY	0.005** (2.32)	0.006*** (2.69)	0.005*** (2.45)	0.006*** (2.80)	0.005*** (2.35)	0.006*** (2.68)
ACIND	-0.006 (-1.49)	-0.006 (-1.57)	-0.009** (-2.21)	-0.010*** (2.80)	-0.009** (-2.21)	-0.010*** (-2.59)
INSID		0.002 (0.34)	0.009 (1.42)	0.009 (1.55)	0.010 (1.49)	0.010 (1.60)
INS		0.006 (0.74)	0.003 (0.42)	0.003 (0.33)	0.005 (0.59)	0.03 (0.42)
STATE		0.001 (0.14)	-0.004 (-0.53)	-0.005 (-0.64)	-0.003 (-0.40)	-0.002 (-0.33)
FORGN		0.017* (1.88)	0.016* (1.78)	0.016* (1.86)	0.015 (1.55)	0.012* (1.67)
BIG-4			0.013*** (3.92)	0.010*** (3.75)	0.014*** (3.93)	0.011*** (3.76)
LOG FSIZE			0.001*** (2.55)	0.001*** (2.58)	0.001*** (2.54)	0.01*** (2.63)
LR			-0.001 (-0.04)	-0.004* (-1.69)	-0.001 (-0.11)	-0.004* (1.77)
LOG MBVE			-0.004** (-2.31)	-0.003*** (-2.51)	-0.04** (-2.16)	-0.003** (-2.30)
FRISK			-0.001 (-0.93)	0.000 (0.07)	-0.001 (-0.96)	-0.000 (-0.01)
FAGE			-0.001*** (4.57)	-0.001*** (-3.20)	-0.001*** (4.61)	-0.001*** (-3.18)
ROA			-0.001 (-0.14)	0.004 (0.52)	-0.002 (-0.33)	0.002 (0.24)
INSD-DUM				YES	NO	YES
YR-DUM				NO	YES	YES
Observations	464	464	464	464	464	464
Adj-R ²	0.047	0.060	0.146	0.227	0.150	0.231
F-statistic	4.05***	2.52***	2.69***	3.21***	2.34***	2.76***

Note: ***, **, * represents statistical significance at 0.01, 0.05 and 0.10 levels, respectively. All variables are as previously defined.

Table 6.6 shows the results of the OLS regression for Jordanian non-finance firms. The F-tests (measure of the strength of the regression) reveal that all the dividend models are significant at 1% (P-value = 0.000). Therefore, it can be concluded that corporate governance mechanisms play a key role in influencing dividend policy. The adjusted R-square for each model is between 0.046 and 0.172, indicating that the proportion (0.046 – 0.172) of the total sample variation in dependent variables can be explained by the corporate governance and control variables.

Model 1 in Table 6.6 shows that board size (BSIZE) has a significant positive influence on dividend policy. It suggests that higher board size leads to higher POUT in Jordanian firms. This result supports Chen et al. (2011) and Gill and Obradovich (2012) arguments that board size may alleviate agency conflicts because large boards have the power to control managerial behaviour. CEO duality (DUALITY) has a significant positive impact on dividend policy, indicating that Jordanian firms, where CEO and chairman positions are held by same person, the possibility of paying a dividend is high. On the other hand, this study finds that board independence (BIND), board meeting (BMEET) and audit committee independence (ACIND) have no significant relationship with dividend policy.

Model 2 in Table 6.6 shows managerial (INSID), institutional (INS) and government ownership (STATE) have no significant effects on POUT. However, foreign ownership (FORGN) has a significant negative effect on dividend policy, suggesting that the presence of foreign ownership encourages lower dividends. This result is consistent with the proposition of Signalling theory on dividend policy. Thus, the existence of foreign ownership in firms attracts more investment opportunities.

Model 2 shows similar results for corporate governance variables as found in Model 1. Model 3, in which control variables are included, shows that board size (BSIZE), CEO duality, Big-4, firm size (FSIZE) and profitability (ROA) have significant positive effects on POUT, but foreign ownership (FORGN) and market to book value (MBVE) have significant negative effect on POUT. It appears that Big-4 plays an important role in improving effective governance. This positive relationship supports findings by Mansourinia, Emamgholipour, Rezaei, and Hozoori (2013) and Mitton (2004). The positive significant effect of firm size (FSIZE) on dividends policy supports the argument that firm size plays a vital role in dividend policy and suggests that large Jordanian firms are more able to distribute higher dividends than small firms. This finding is consistent with the finding by Aivazian et al. (2003).

Dividend policy in Jordanian firms is also affected by profitability (ROA), showing a positive relationship with dividend policy. This suggests that highly profitable Jordanian firms are more likely to pay higher dividends. This result is similar to the results found by Jensen et al. (1992)

and Al-Najjar (2009). On the other hand, market to book value (MBVE) has a significant negative influence on dividend policy, which indicates that firms having a higher growth rate tend to spend more income to finance their investments; hence they are likely to pay fewer dividends. This result is consistent with the proposition of Agency Theory on dividend policy. In addition, this result is consistent with the results reported by Cotter, Shivdasani, and Zenner (1997) and Chang and Rhee (1990).

To control for the possibility of industry sector and time variant effects in the OLS regression, this study estimates Model 4, which includes seven industry dummy variables (INDS_DUM) and Model 5, seven years dummy variables (YR-DUM), and Model 6, including both industrial and years dummy variables. Results of these models are mostly similar to those of model 3.

Overall, the findings from Table 6.6 indicate that corporate governance variables in Model 6 have important relationships with dividend policy as measured by POUT. Indeed, the findings of the OLS regression reported in Model 6 of Table 6.6 suggest a significant relationship between selected governance variables and dividend policy. More specifically, it indicates that the board size (BSIZE) and CEO duality have a significant positive effect. However, foreign ownership (FORGN) has a negative effect. Other governance variables are found to have no significant relationship with POUT. Firm size (FSIZE) and profitability (ROA) have significant positive effect.

Table 6.7 presents the results of the relationship between corporate governance variables and dividend policy as measured by DY, using each of the six regression models. The F-tests (measure of the strength of the regression) reveal that all the dividend models are significant at 1% (P-value = 0.000). Therefore, it can be concluded that corporate governance mechanisms play a key role in influencing dividend policy. The adjusted R-square for each model is between 0.047 and 0.231, indicating that the proportion (0.047 – 0.231) of the total sample variation in dependent variables can be explained by the corporate governance and control variables.

Model 1 regression results show that board size (BSIZE) and CEO duality have positive significant influences on dividends policy. These findings are similar to the findings as reported in Table 6.6, and suggests that there is strong evidence that board size has positive significant impact on dividends policy. However, the results show that board independence (BIND) has a significant negative effect on DY. This means that non-executive directors' roles in the code of corporate governance in Jordan may not be clearly defined. Thus, non-executive directors are incapable of influencing a firm's strategy; that is, board independence shows a significant negative relationship with dividends policy.

The findings in Model 2 shows that board size (BSIZE) and CEO duality (DUALITY) and foreign ownership (FORGN) have significant positive effects on dividend policy, but board independence (BIND) continues to show significant negative effects on dividend policy. Model 3 also shows that board size (BSIZE), CEO duality (DUALITY) and foreign ownership (FOREIGN) have a positive relationship with dividends policy, but board independence (BIND) and audit committee independence (ACIND) have significant negative effects. In addition, Big-4 has significant positive effects on dividend policy.

Regarding control variables, the results show that firm size (FSIZE) has a significant positive influence on dividends policy, which indicates that large Jordanian firms may have better access to external financing than small firms, thus large firms are more likely to pay higher dividends. However, market to book value (MBVE) and firm age (FAGE) have significant negative effects on dividend policy. The significant negative relationship between firm age (FAGE) and dividend policy suggests that older firms tend to pay low dividends. This result is different with the finding of Koch and Shenoy (1999) who found that mature firms are more likely to pay higher dividends.

The regression results in Model 4 with industry dummy variables shows similar findings to those found in Model 3, except that leverage ratio (LR) has a significant negative effect on DY. This result is consistent with the proposition of Agency Theory on dividend policy that firms with higher debt ratio are more likely to pay lower levels of dividends. This result is consistent with the conclusion of Wan-Hussin (2009) that a firm's industry type influences dividend policy. Model 5 with year dummies shows similar findings to those of Model 4 except that foreign ownership (FORGN) and leverage ratio (LR) having no significant effect. Similarly, Model 6 reveals similar results to those in Model 3 and Model 4.

Overall, the results of pooled OLS regression reported in model 6 of Table 6.7 suggest a significant relationship between selected governance mechanisms and dividend policy. More specifically, board size (BSIZE), CEO duality (DUALITY), foreign ownership (FOREIGN) and audit firms (Big-4) have significant positive influences on dividend policy. However, board independence (BIND) and audit committee independence (ACIND) have significant negative influences on dividend policy. No other governance variables have significant relationship with DY. The results also show that firm size (FSIZE) has a significant positive influence on dividend policy. However, leverage ratio (LR), market to book value (MBVE) and firm age (FAGE) have significant negative influences on dividends policy.

6.4.2. OLS Regression Results for Australian Firms (Pooled Model)

Tables 6.8 and 6.9 present the results of the pooled OLS regression of the relationship between corporate governance, control variables and dividend policy in Australian non-finance firms for each of the two dividend policy variables: POUT and DY. All Tables indicate that the F-value of each model is statistically significant at 1% level; that is, the coefficients of independent variables (governance and control variables) can explain significant variation in dependent variables.

Table 6.8 shows OLS regression results for Australian non-finance firms. It indicates that F-tests is a measure of the strength of the regression, which reveal that all the dividend models are significant at 1% (P-value = 0.000). Therefore, it can be concluded that corporate governance mechanisms play a key role in influencing dividend policy. The adjusted R-square for each model is between 0.016 and 0.114, indicating that the proportion (0.016 – 0.114) of the total sample variation in dependent variable can be explained by the corporate governance variables and control variables.

In Table 6.8, the findings reported in Model 1 show that board independence (BIND) and board meeting (BMEET) have significant positive effect on POUT, while other governance variables have no significant effect on POUT. The positive significant relationship between BIND, BMEET and dividend policy suggests that Australian firms with more independent board members and frequent board meetings promote greater board efficiency in the boards' monitoring functions, and are more likely to distribute dividends. Model 2 shows similar results for corporate governance variables as found in Model 1. Moreover, institutional ownership (INS) has a significant positive relation with POUT.

Table 6.8: OLS regression results of the corporate governance mechanisms and dividend policy measured by POUT for Australian non-finance firms

Dependent Variable POUT						
Independent Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Const.	0.468*** (10.43)	0.445*** (9.03)	0.461*** (7.13)	0.578*** (9.15)	0.468*** (7.10)	0.583*** (9.06)
BSIZE	0.002 (0.95)	0.003 (0.3)	0.001 (0.36)	0.003* (1.67)	0.001 (0.35)	0.004* (1.82)
BIND	0.100*** (2.67)	0.097*** (2.54)	0.059 (1.52)	0.046* (1.69)	0.046 (1.19)	0.035** (1.97)
BMEET	0.004*** (3.03)	0.005*** (3.10)	0.003** (2.15)	0.03** (2.26)	0.003** (2.13)	0.004** (2.25)
DUALITY	-0.015 (-0.44)	-0.006 (-0.19)	-0.003 (-0.10)	-0.004* (-1.71)	-0.001 (-0.04)	-0.005* (-1.68)
ACIND	-0.021 (-0.61)	-0.022 (-0.62)	-0.027 (-0.76)	-0.037 (-1.05)	-0.034 (-0.98)	-0.043 (-1.25)
INSID		-0.055 (-0.93)	-0.070 (-1.16)	-0.142*** (-2.37)	-0.070 (-1.16)	-0.143*** (-2.39)
INS		0.098** (1.97)	0.072 (1.44)	0.061 (1.26)	0.096* (1.87)	0.081* (1.63)
STATE		0.055 (0.26)	0.022 (0.11)	-0.133 (-0.83)	0.035 (0.17)	-0.123 (-0.74)
FORGN		0.040 (0.71)	0.017 (0.32)	0.003 (0.07)	-0.019 (-0.33)	-0.028 (-0.49)
BIG-4			0.098*** (4.62)	0.059*** (2.75)	0.100*** (4.74)	0.061*** (2.88)
LOG FSIZE			-0.001 (-0.34)	0.002 (0.51)	-0.003 (-0.79)	0.001 (0.08)
LR			0.091*** (2.76)	0.040 (1.23)	0.098*** (2.94)	0.046 (1.42)
LOG MBVE			0.019** (1.95)	0.014 (1.46)	0.018* (1.75)	0.011 (1.14)
FRISK			-0.023** (-2.31)	-0.002 (-0.24)	-0.027*** (-2.64)	-0.005 (-0.54)
FAGE			0.001 (0.27)	0.001* (1.78)	0.001 (0.28)	0.001* (1.80)
ROA			0.055* (1.75)	0.100*** (3.08)	0.056* (1.75)	0.099*** (3.05)
INDS-DM				YES	NO	YES
YR-DUM				NO	YES	YES
Observations	1438	1438	1438	1438	1438	1438
Adj-R ²	0.016	0.019	0.051	0.108	0.057	0.114
F-statistic	4.24***	2.98***	5.35***	8.36***	4.31***	6.71***

Note: ***, **, * represents statistical significance at 0.01, 0.05 and 0.10 levels, respectively. All variables are as previously defined.

Table 6.9: OLS regression results of the corporate governance mechanisms and dividend policy measured by DY for Australian non-finance firms

Independent Variables	Dependent Variable DY					
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Const.	0.048*** (9.44)	0.049*** (8.76)	0.055*** (7.26)	0.062*** (8.34)	0.048*** (6.66)	0.054*** (7.68)
BSIZE	0.001*** (3.57)	0.001*** (3.48)	0.001*** (3.48)	0.001*** (3.59)	0.001*** (3.65)	0.001*** (3.75)
BIND	-0.002 (-0.51)	-0.002 (-0.49)	-0.004 (-0.73)	-0.005 (-1.15)	-0.006 (-1.18)	-0.007 (-1.58)
BMEET	0.001*** (2.84)	0.001*** (2.67)	0.001 (1.29)	0.001 (1.50)	0.001 (1.25)	0.001** (1.94)
DUALITY	-0.007** (-1.91)	-0.006** (-1.92)	-0.007** (-2.00)	-0.007** (-1.91)	-0.007** (-1.91)	-0.007* (-1.87)
ACIND	0.002 (0.48)	0.002 (0.48)	-0.001 (0.09)	0.001 (0.10)	0.001 (0.08)	0.001 (0.14)
INSID		-0.001 (-0.01)	-0.001 (-0.10)	-0.006 (-0.83)	0.002 (0.24)	-0.03 (-0.47)
INS		-0.007 (-1.21)	-0.002 (-0.37)	-0.004 (-0.63)	0.007 (1.17)	0.005 (0.93)
STATE		0.010 (0.51)	-0.015 (0.70)	-0.006 (-0.33)	0.019 (0.79)	-0.002 (-0.11)
FORGN		0.002 (0.24)	-0.001 (-0.05)	-0.001 (-0.13)	-0.007 (-0.87)	-0.007 (-0.92)
BIG-4			0.009*** (3.50)	0.006** (2.23)	0.009*** (3.64)	0.006*** (2.42)
LOG FSIZE			0.001 (0.20)	0.000 (0.69)	-0.001 (-0.42)	0.0001 (0.03)
LR			0.011*** (2.72)	0.007 (1.88)	0.11*** (2.87)	0.008** (2.12)
LOG MBVE			-0.008*** (-7.13)	-0.009*** (-7.53)	-0.006*** (-5.11)	-0.006*** (-5.60)
FRISK			-0.001 (-1.52)	-0.001 (-0.71)	-0.03** (-2.33)	-0.002* (-1.67)
FAGE			-0.0001*** (-2.62)	-0.0001 (-1.53)	-0.001*** (-2.70)	-0.0001 (1.58)
ROA			0.008** (2.28)	0.012*** (3.15)	0.008** (2.25)	0.012*** (3.05)
INDS-DUM				YES	NO	YES
YR-DUM				NO	YES	YES
Observations	1438	1438	1438	1438	1438	1438
Adj-R ²	0.014	0.015	0.079	0.105	0.141	0.163
F-statistic	4.47***	2.79***	7.32***	7.39***	8.57***	7.98***

Note: ***, **, * represents statistical significance at 0.01, 0.05 and 0.10 levels, respectively. All variables are as previously defined.

Model 3, in which control variables are included, shows that board meetings (BMEET) and audit firms (Big-4) have significant positive effects on POUT, but no other governance variables have significant effects. The significant positive effect of audit firms (Big-4) on POUT indicates that Australian firms that are audited by the Big-4 pay higher dividends. This result is in the line with studies, such as that by Mansourinia et al. (2013). In addition, in terms of control variables, leverage (LR), growth (log MBVE) and profitability (ROA) have positive impacts on POUT, but firm risk (FRISK) has a negative impact.

The positive significant relationship between ROA and POUT indicates that Australian firms with higher profits are more likely to pay higher dividends than less profitable firms. The significant positive association between leverage ratio and dividend policy suggests that firms with a high leverage ratio are likely to pay higher dividends. This result is different to those obtained by Jensen et al. (1992).

The positive coefficient of market to book value (MBVE) indicates that more opportunities for growth lead to higher dividend payments. The finding is consistent with results as found by Gul (1999b). Other studies, however, have found the opposite result such as Rozeff (1982), Chang and Rhee (1990) and Fama and French (2002) found a significant negative relationship between market to book value and dividend policy.

Firm risk (FRISK) has a significant negative relationship with POUT. The negative result of firm risk is consistent with the results were found by Rozeff (1982), Holder et al. (1998) and Simerly and Bass (1998).

Model 4 includes governance, control and industry dummy variables and show that board size (BSIZE), board independence (BIND), board meeting (BMEET) and audit firms (Big-4) have significant positive effects on POUT. However, CEO duality (DUALITY) and managerial ownership (INSID) have significant negative effects. The significant negative association between insider ownership and dividend policy is supported by Short et al. (2002). In addition, control variables, such as firm age (FAGE) and profitability (ROA) have significant effects on POUT. No significant relationship is found between other governance variables and dividend policy. The results of Model 5 show that board meeting (BMEET), institutional ownership (INS) and audit firms (Big-4) have significant positive effects on POUT. There is strong evidence that supports the view that institutional ownership (INS) has a significant positive influence on dividend policy in Australian firms. Other studies have reported similar results, for example, studies by Eckbo and Verma (1994), Moh'd et al. (1995) and Short et al. (2002).

Control variables, such as profitability (ROA), leverage ratio (LR) and market to book value (MBVE) have significant positive effect on POUT. Model 6 reflects similar results as found in

Model 4. More specifically, it indicates that the board size (BSIZE), board independence (BIND), board meeting (BMEET), institutional ownership (INS) and audit firms (Big-4) have a significant positive effect on POUT. However, CEO duality and managerial ownership (INSID) have negative effects. Other governance variables are found to have no significant relationship with POUT. In addition, firm age (FAGE) and profitability (ROA) have significant positive effect.

Table 6.9 presents the results of the relationship between corporate governance variables and dividend policy as measured by DY using each of the six regression models. Model 1 and Model 2 regressions results show similar results: board size (BSIZE) and board meetings (BEET) have positive significant influences on DY, while CEO duality has a significant negative effect on DY. The positive significant relation between BSIZE and DY indicates that there is strong evidence to support the view that board size has a significant positive influence on dividend policy in Australian firms. This result is consistent with the findings of Schellenger et al. (1989), Chen et al. (2011) and Alias et al. (2012).

The board meeting (BMEET) coefficient also has a significant positive influence on dividend policy in models 1 and 2. On the other hand, the negative significant impact of CEO duality on DY indicates that those Australian firms in which the CEO and chairman are the same person are more likely to pay low dividends. The result provides evidence that supports the view that CEO duality has a significant negative relationship to dividend policy in Australian firms. This result is in the line with those of other studies.

Model 3, which includes control variables, also shows that board size (BSIZE) and audit firms (Big-4) have positive significant effects on dividends policy, but CEO duality (DUALITY) has a significant negative effect. With respect to control variables, leverage ratio (LR) and profitability (ROA) have positive significant relationships with dividends policy. This indicates the importance of leverage ratio in determining dividend policy, which is in line with the results found by Gaver and Gaver (1993) and Smith and Watts (1992). It can be argued that firms with high leverage ratio are more likely to pay higher dividends.

Profitability (ROA) also has positive significant relationship with dividend policy, indicating that profitable Australian firms are more able to pay higher dividends. This is in the line with the findings of Rozeff (1982) and Mitton (2004) who report that firms with high profits are more likely to pay dividends than firms with less profit. However, market to book value (MBVE) and firm age (FAGE) have negative significant effects on dividend policy, suggesting that Australian firms with high market to book value are more likely to retain cash for expansions and growth. This result is consistent with the proposition of Agency Theory regarding dividend policy. Other

studies have found similar findings, for example, those by Jensen (1986), Alli et al. (1993), Moh'd et al. (1995), Holder et al. (1998) and Sawicki (2009). The negative significant relationship between firm age (FAGE) and dividend policy indicates that older Australian firms tend to pay fewer dividends.

The regression results in Model 4 include governance, control variables and industry dummy variables, and show that board size (BSIZE) and audit firms (Big-4) have significant positive effect on dividends policy. However, CEO duality (DUALITY) has a significant negative effect. These results are similar to the findings in Model 3. For control variables, profitability (ROA) has a significant positive effect, but market to book value (MBVE) has a significant negative effect. Model 5 shows similar findings as found in Model 4 except leverage ratio (LR) shows a significant positive relationship with DY and firm risk (FRISK) a negative relationship. The significant negative relation between FRISK and dividend policy indicates that firms with higher risk are more likely to pay lower dividends. This result is consistent with result as found by Rozeff (1982).

Finally, Model 6 reflects mostly similar results as found in Model 5. Board size (BSIZE), board meeting (BMEET) and audit firms (Big-4) have significant positive influence on dividend policy. However CEO duality has a significant negative influence on dividend policy. No other governance variables have significant relationships with DY. In addition, the results show that profitability (ROA) and leverage ratio (LR) have significant positive influences on dividend policy. By contrast, market to book value (MBVE) and firm risk (FRISK) have significant negative influences on dividends policy.

6.4.3. Heterogeneity Test and Panel Models

It has been recognised in the literature that pooled OLS regression may be inconsistent and meaningless if there exists heterogeneity across firms (Hsiao, 2003) because, pooled OLS regressions may lead to estimator bias with spurious results. Therefore, given the panel nature of the data and in line with prior studies (Baysinger & Butler, 1985; Wintoki et al., 2012), this study applies FE and RE regressions to control for possible unobserved firm-level heterogeneities. The FE and RE models can take into account the heterogeneity across firms by allowing variable intercepts. The choice between these two models is based on some statistical tests, such as Lagrange Multiplier test: if the probability P-value is significant it indicates that the panel model is better than the pooled model for heterogeneity across firms. Moreover, the Hausman test is applied to test for FE model versus RE model (Cameron & Trivedi, 2009). It tests the null hypothesis that prefers RE model while the alternative hypothesis prefers FE. This means that if P-value is insignificant then it is safe to use the RE model, otherwise fixed effects

model. In other word, it tests the null hypothesis that the RE model estimates are the same as the FE model estimates; rejection of the null hypothesis indicates that the EF model is more appropriate than RE model. The P-value and Hausman tests are presented in the regression tables for all regression models for each dependent variable in both Jordanian and Australian listed non-finance firms.

6.4.4. Panel Regression Results for Jordanian Firms (FE or RE Models)

Tables 6.10 and 6.11 present panel regression results of the relationship between corporate governance and dividend policy as measured by dividend POUT and DY, respectively, for Jordanian non-finance firms sample. For the purpose of comparison, pooled OLS and FE regression results are also reproduced in these tables.

Table 6.10 presents the panel regression results of the relationship between corporate governance and POUT. The second column shows the pooled OLS model results, the third and fourth columns report the panel models results: FE model and RE model, respectively. The choice between these three models is based on some statistical tests, such as Lagrange Multiplier Test (LM), a statistics test with the null hypothesis that the cross-sectional variance components are zero, if the Lagrange Multiplier Test is significant, this suggests that the hypothesis that no firm-specific effects exist is rejected. In other word, the individual effect is not equal to zero and that the pooled OLS model estimates are not consistent. The Lagrange Multiplier Test Chi-square statistic is 83.93 and statistically significant at 1% level. This result reaffirms the importance of corporate governance variables in determining dividend policy of Jordanian non-finance listed firms, and indicates that the panel models are more appropriate for the data than pooled OLS model. However, this is not the final determinant because the Hausman Test for regression is 11.97 and (P- value=0.957) insignificant at any level, so this result suggests that under panel models the RE model is more efficient than the FE model.

The results of the RE regression in column 4 shows that board size (BSZIE) has a significant positive effect on POUT, which is similar to the pooled OLS result and indicates that there is strong evidence that supports a positive and significant relationship between board size and POUT in Jordan. Unlike pooled OLS, the result of the RE model shows no significant effect of CEO duality and foreign ownership. As for control variables, the results of RE regression show that the estimated coefficients for firm size (FSIZE) and profitability (ROA) have significant positive relationships with POUT, similar to the pooled OLS results. Compared with the FE model, it shows no significant effect of any variables on dividends.

Table 6.10: Panel regression results of the corporate governance mechanisms and dividend policy measured by POUT for Jordanian non-finance firms

Independent Variables	Dependent Variable POUT		
	Pooled OLS Model	Fixed Effects Model	Random Effects Model
Const.	0.077 (0.57)		0.059 (0.99)
BSIZE	0.033*** (3.68)	0.022 (1.26)	0.030*** (2.51)
BIND	0.060 (0.62)	0.091 (0.83)	0.071 (0.71)
BMEET	-0.001 (-0.11)	0.011 (0.57)	0.004 (0.26)
DUALITY	0.069* (1.67)	0.055 (0.80)	0.058 (1.07)
ACIND	-0.037 (-0.50)	-0.122 (-1.57)	-0.092 (-1.26)
INSID	0.077 (0.68)	0.057 (0.46)	0.073 (0.65)
INS	-0.021 (-0.14)	-0.086 (-0.61)	-0.065 (-0.49)
STATE	-0.012 (-0.08)	-0.057 (-0.32)	-0.047 (-0.28)
FORGN	-0.467*** (-2.84)	-0.072 (-0.22)	-0.339 (-1.49)
BIG-4	0.055 (1.20)	0.020 (0.11)	0.074 (1.00)
LOG FSIZE	0.013* (1.67)	0.031 (0.55)	0.013* (1.69)
LR	-0.039 (-1.00)	-0.026 (-0.65)	-0.032 (-0.89)
LOG MBVE	-0.041 (-1.28)	-0.022 (-0.55)	-0.028 (-0.83)
FRISK	-0.012 (-0.41)	-0.005 (-0.12)	-0.005 (-0.15)
FAGE	-0.001 (-0.57)	-0.006 (-0.39)	-0.001 (-0.16)
ROA	0.545*** (3.34)	0.060 (0.29)	0.238*** (2.02)
INDS-DUM	Yes	No	Yes
YR-DUM	Yes	Yes	Yes
Observations	464	464	464
R-square	0.172	0.033	0.160
Lagrange Multiplier test			83.93***
Lagrange Multiplier test (P-value)			(0.000)
Hausman test			11.97
Hausman test (P-value)			(0.957)

Note: ***, **, * represents statistical significance at 0.01, 0.05 and 0.10 levels, respectively. All variables are as previously defined.

Table 6.11: Panel regression results of the corporate governance mechanisms and dividend policy measured by DY for Jordanian non-finance firms

Independent Variables	Dependent Variable DY		
	Pooled OLS Model	Fixed Effects Model	Random Effects Model
Const.	-0.008 (-1.19)		-0.019 (-1.50)
BSIZE	0.001** (2.07)	0.001** (1.96)	0.001** (2.16)
BIND	-0.012** (-2.27)	0.001 (0.23)	-0.001 (-0.15)
BMEET	-0.001 (-0.81)	0.001 (0.64)	-0.0001 (-0.08)
DUALITY	0.006*** (2.68)	0.004 (1.53)	0.005** (1.91)
ACIND	-0.010*** (-2.59)	-0.004 (-1.40)	-0.004 (-1.55)
INSID	0.010 (1.60)	0.003 (0.82)	0.004 (0.97)
INS	0.03 (0.42)	-0.002 (-0.47)	-0.001 (-0.26)
STATE	-0.002 (-0.33)	-0.003 (-0.50)	-0.004 (-0.62)
FORGN	0.012* (1.67)	0.013 (1.05)	0.012 (1.09)
BIG-4	0.011*** (3.76)	0.005 (0.78)	0.008* (1.73)
LOG FSIZE	0.01*** (2.63)	0.005*** (2.44)	0.002*** (2.67)
LR	-0.004* (-1.77)	-0.002 (-1.02)	-0.002 (-1.30)
LOG MBVE	-0.003** (-2.30)	-0.002 (-1.58)	-0.002* (-1.73)
FRISK	-0.000 (-0.01)	-0.001 (-0.17)	-0.001 (-0.45)
FAGE	-0.001*** (-3.18)	-0.001 (-0.51)	-0.001 (-1.17)
ROA	0.002 (0.24)	0.008 (0.99)	0.007 (0.94)
INDS-DUM	Yes	No	Yes
YR-DUM	Yes	Yes	Yes
Observations	464	464	464
R-square	0.231	0.026	0.198
Lagrange Multiplier test			464.48***
Lagrange Multiplier test (P-value)			(0.000)
Hausman test			12.16
Hausman test (P-value)			(0.791)

Note: ***, **, * represents statistical significance at 0.01, 0.05 and 0.10 levels, respectively. All variables are as previously defined.

Table 6.11 presents the RE results of the relationship between corporate governance mechanisms and DY. The first test is Lagrange Multiplier Test of 464.48 and is statistically significant at 1% level, indicating that the panel models are more appropriate for the data than the pooled OLS model. However, this is not the final determinant here, because the Hausman Test is 12.16, with P-value=0.791 and not significant at any levels, so, again, this result suggests that the RE model is found to be the preferred specification over FE.

In Table 6.11, using DY as the dividend policy measure, the results of RE regression in column 4 are similar to those results as found in pooled OLS. The board size (BSIZE) and CEO duality and audit firms (Big-4) are significantly positively related to DY. However, board and audit committee independence and foreign ownership have no significant effects on DY, unlike results from the pooled OLS. With respect to control variables, alike pooled OLS, the result of RE models show that log firm size (FSIZE) has a significant positive impact on DY. This result is similar to the result as found in Table 6.10. Similarly, the RE models show that market-to-book ratio (MBVE) has a significant negative impact on DY, suggesting that those firms with better

investment opportunities are more likely to finance expansion than pay dividends, needing to retain earnings. This leads to low payouts of dividends. This result is in the line with the proposition of Agency Theory. This result is also consistent with the results of other studies, such as those by Chang and Rhee (1990), Holder et al. (1998) and Sawicki (2009). However, unlike the results of the pooled OLS, leverage ratio (LR) and firm age (FAGE) show no significant negative influence on DY in the RE model. As for comparison, the FE model shows significant effects of board size and firm size on dividend payout.

6.4.5. Panel Regression Results for Australian Firms (FE or RE Models)

Tables 6.12 and 6.13 present panel regression results of the relationship between corporate governance and dividend policy as measured by POUT and DY for Australian non-finance firms. In these Tables, the pooled OLS and fixed (random) effects regression results are also shown to enable comparisons with the panel regression results.

Table 6.12: Panel regression results of the corporate governance mechanisms and dividend policy measured by POUT for Australian non-finance firms

Independent Variables	Dependent Variable POUT		
	Pooled OLS Model	Fixed Effects Model	Random Effects Model
Const.	0.583*** (9.06)		0.512*** (5.72)
BSIZE	0.004* (1.82)	0.005* (1.66)	0.002* (1.67)
BIND	0.035** (1.97)	0.007 (0.19)	0.017** (2.02)
BMEET	0.004** (2.25)	0.001 (0.07)	0.001 (0.69)
DUALITY	-0.005* (-1.68)	-0.015 (-0.37)	-0.011* (-1.71)
ACIND	-0.043 (-1.25)	-0.007 (-0.27)	-0.014 (-0.51)
INSID	-0.143*** (-2.39)	-0.090 (-1.13)	-0.007** (-2.11)
INS	0.081* (1.63)	0.014 (0.36)	0.026* (1.79)
STATE	-0.123 (-0.74)	-0.597 (-1.47)	-0.271 (-1.01)
FORGN	-0.028 (-0.49)	-0.056 (-1.07)	-0.050 (-1.01)
BIG-4	0.061*** (2.88)	-0.020 (-0.56)	0.016*** (2.97)
LOG FSIZE	0.001 (0.08)	0.010 (1.10)	0.004 (0.66)
LR	0.046 (1.42)	0.020 (0.42)	0.031 (0.75)
LOG MBVE	0.011 (1.14)	0.012 (1.12)	0.009 (0.97)
FRISK	-0.005 (-0.54)	0.010 (1.08)	0.005 (0.59)
FAGE	0.001* (1.80)	-0.031 (-0.30)	0.001 (1.02)
ROA	0.099*** (3.05)	0.011 (0.40)	0.027 (1.00)
INDS-DUM	Yes	No	Yes
YR-DUM	Yes	Yes	Yes
Observations	1438	1438	1438
R-square	0.114	0.022	0.140
Lagrange Multiplier test			971.26***
Lagrange Multiplier test (P-value)			(0.000)
Hausman test			22.83
Hausman test (P-value)			(0.411)

Note: ***, **, * represents statistical significance at 0.01, 0.05 and 0.10 levels, respectively. All variables are as previously defined.

Table 6.12 presents the RE regression results of the relationship between corporate governance variables and POUT. The first test Lagrange Multiplier Test is 971.26 with P- value = 0.000 significant at 1% level. This means that the panel model is better than the pooled model. In

addition, in Table 6.12 Hausman Test for regression is 22.83 with P- value=0.4111 and is insignificant at any level. So, this result from the Hausman test supports that the RE model is more efficient than the FE model.

In Table 6.12, using POUT as a dividend policy measure, the results of the RE model mostly confirms the findings of the OLS regression. Board size (BSIZE) and board independence (BIND) have significant positive effects on dividend policy. The positive relationship between board size (BSIZE) and dividend policy indicates that firms with large board size pay higher dividends. A positive relationship between board independence (BIND) and dividend policy suggests that firms with more independent boards are more likely to pay dividends.

The result of board meeting (BMEET) in the RE model is different to the finding in the OLS regression. It is positive but not statistically significant at any levels. Again, the results of RE model are similar to the findings in OLS regression showing significant negative relationships between CEO duality and dividend policy. The negative significant relationship between CEO duality is consistent with the findings of Baliga et al. (1996) and Dittmar et al. (2003).

With respect to the ownership variables, the results of RE regression reported in Table 6.12 suggest that institutional ownership (INS) has a significant positive relationship with POUT. This finding is consistent with the findings of Short et al. (2002), but is different from Signalling Theory propositions that institutional investors and dividends may be viewed as substitute signalling devices (Zeckhauser & Pound, 1990). However, the results of the RE model shows that managerial ownership (INSID) has a significant negative effect on POUT, indicating that the greater managerial ownership, the lower the dividend policy. This result is consistent with the results of other studies, such as those by Rozeff (1982), Jensen et al. (1992) and Short et al. (2002). In addition, the results of RE model show that an audit firm (BIG-4) has a significant positive effect on dividend, this result being similar to the pooled OLS results. However, unlike the pooled OLS results, firm age (FAGE) and profitability (ROA) have no effect on dividends. As for comparison with the FE model, only board size (BSIZE) shows a significant positive effect on dividends.

Table 6.13: Panel regression results of the corporate governance mechanisms and dividend policy measured by DY for Australian non-finance firms

Independent Variables	Dependent Variable DY		
	Pooled OLS Model	Fixed Effects Model	Random Effects Model
Const.	0.054*** (7.68)		0.050*** (4.82)
BSIZE	0.001*** (3.75)	-0.0001 (-0.52)	-0.001* (-1.79)
BIND	-0.007 (-1.58)	-0.004 (-0.81)	-0.005 (-1.01)
BMEET	0.001** (1.94)	0.001 (0.41)	0.001 (0.90)
DUALITY	-0.007* (-1.87)	-0.002 (-0.44)	-0.004 (-0.91)
ACIND	0.001 (0.14)	0.002 (0.58)	0.002 (0.39)
INSID	-0.03 (-0.47)	0.032*** (2.89)	0.014 (1.56)
INS	0.005 (0.93)	0.001 (0.31)	0.003 (0.54)
STATE	-0.002 (-0.11)	0.026 (0.46)	0.010 (0.34)
FORGN	-0.007 (-0.92)	-0.012* (-1.65)	-0.011 (-1.53)
BIG-4	0.006*** (2.42)	-0.004 (-0.67)	0.003 (0.92)
LOG FSIZE	0.0001 (0.03)	0.0001 (0.28)	-0.0001 (-0.06)
LR	0.008** (2.12)	-0.002 (-0.30)	0.003 (0.59)
LOG MBVE	-0.006*** (-5.60)	-0.004*** (-2.55)	-0.005*** (-4.10)
FRISK	-0.002* (-1.67)	-0.002* (-1.70)	-0.002* (-1.91)
FAGE	-0.0001 (1.58)	-0.004 (-0.26)	-0.001 (-1.03)
ROA	0.012*** (3.05)	0.003 (0.78)	0.002 (0.60)
INDS-DUM	Yes	No	Yes
YR-DUM	Yes	Yes	Yes
Observations	1438	1438	1438
R-square	0.163	0.164	0.157
Lagrange Multiplier test			345.55***
Lagrange Multiplier test (P-value)			(0.000)
Hausman test			36.98**
Hausman test (P-value)			(0.023)

Note: ***, **, * represents statistical significance at 0.01, 0.05 and 0.10 levels, respectively. All variables are as previously defined.

Table 6.13 presents the panel regression results of the association between governance mechanisms and dividend policy as measured by DY. The Lagrange Multiplier Test is 345.55 at statistically significant at the 1% level, indicating that the panel models are more appropriate for the data than the pooled OLS model. However, this is not the final determinants, because the Hausman Test is 36.98 with P-value significant at 5%, so this result supports that the FE model is preferred over the RE model.

In Table 6.13, using DY as the dividend policy measure, the results of FE regression show that board size (BSIZE), board meeting (BMEET) have no significant positive influence on DY, unlike results from the pooled OLS model. Similarly, CEO duality has no significant effect in the FE model. However, unlike pooled OLS the result of FE model shows that insider ownership (INSID) has a significant positive influence on DY. Similarly, foreign ownership (FORGN) has a significant negative influence on DY, but Big-4 shows no effect in FE model.

With respect to control variables, both OLS and FE regressions show that market to book value (MBVE) has a significant negative effect on DY. This result is consistent with evidence from the

prior studies such as those by Chang and Rhee (1990), Holder et al. (1998) and Ho (2003). Consistent with the Agency Theory proposition on dividend policy, the results of OLS and FE regressions show that there is a significant negative relationship between firm risk (FRISK) and dividend policy (DY), indicating that firms with unstable profitability may be have more fluctuations in firm's stock price and hence are more likely to pay lower dividends. This finding of the study is consistent with those of Chang and Rhee (1990) and Holder et al. (1998). Finally, unlike pooled OLS estimates, leverage ratio (LR) and profitability (ROA) have no significant effect in FE results. As for comparison, with the RE model, it shows board size (BSIZE) has a significant negative effect on dividend, while both firm risk (FRISK) and market to book value of equity (MBVE) show negative effect on DY.

6.4.6. Discussion on Regression Findings for Jordanian Firms

This study examines whether the corporate governance variables impact dividend policy in Jordanian listed firms. The regression results of the RE model show that only board size (BSIZE) has a significant positive influence on POUT. This result is similar to pooled OLS results and provides strong evidence that supports the view that board size has a significant positive influence on dividend policy compared to other corporate governance variables in Jordan. This result could be because Jordanian firms with the numerical strength on the board are more likely to pay higher dividends, and because the board size of Jordanian firms appears to be consistent with international best practices, which suggests that the size of board is about eight. The board is found to be one of the mechanisms for aligning managers and shareholders' interests.

This result is consistent with La Porta et al. (2000a) study conclusions that improved corporate governance leads to enhanced dividends payout ratio. Chen et al. (2011), Bokpin (2011) and Gill and Obradovich (2012) provide similar evidence that supports theories and studies on the relationship between board size and dividend policy. Based on this result the hypothesis H1a is supported.

The result also supports the argument that the audit quality (BIG-4) is positively related to dividend policy in Jordanian firms. The result shows that there is positive significant relationship between audit quality (BIG-4) and dividend policy. This result is consistent with those of Allen, Bernardo, and Welch (2000), Deshmukh (2003) and Mitton (2004). Based on the result, the hypothesis H5 is supported.

On the other hand, the findings of this study do not support the argument that firms with a higher percentage of board independence (BIND) are more likely to pay higher dividends. The result shows that board independence does not appear to be significantly related to the dividend policy.

However, this finding is different to the findings of other studies of a positive relationship between board independence and dividend policy, such as studies Schellenger et al. (1989), Kaplan and Reishus (1990), Tosi, Katz, and Gomez-Mejia (1997) and Adjaoud and Ben-Amar (2010). Nevertheless, this result is similar to the finding in emerging market as found by Bokpin (2011) and Ajanthan (2013), Abdelsalam et al. (2008) in Egypt and Subramaniam and Devi.S (2011) in Malaysia, which show no significant relationship between board independence and dividend policy. The insignificant relationship is observed between board independence and dividend policy indicates that their existence in the board with executive and unbound managers of Jordanian companies has no effect on the cash or non-cash dividend payments to shareholders. Also it could be lack of their supervisory expertise and knowledge about Jordanian non-finance firms. Therefore, there is no evidence to support the hypothesis H1b.

Despite the arguments that frequent board meetings support the effectiveness of the board monitoring function, this study does not find a significant relationship between board meetings (BMEET) and dividend policy. Although most of Jordanian corporate governance codes recommend the board should meet regularly to perform its roles and responsibilities, the finding shows that board meetings has a positive, but statistically no significant relationship with POUT and therefore the hypothesis H1c relating to board meetings is not supported.

Again, the study finds a significant positive relationship between CEO duality and dividend policy. A significant positive effect of CEO duality indicates that in the Jordanian firms where CEO and chairman positions are held by same person, the possibility of POUT is high. This means that most of Jordanian non-finance firms are family owned and one person is the chairman as well as CEO. However, the result of the RE models show a positive but statistically non-significant association with dividend policy. Therefore, hypothesis H2 is not supported. The result also shows that there is no significant impact of audit committee independence (ACIND) on dividend policy. This result is similar to the evidence found by Nimer, Warrad, and Khuraisat (2012) in Jordan, and Chen et al. (2005) in Hong Kong, who find no significant relationship between audit committee and the dividend payout ratio. Therefore, the hypothesis H3 is not supported.

Despite the argument that ownership structure has a significant effect on dividend policy, this study fails to find any significant association between ownership structures, such as managerial (INSID), intuitional (INS), government (STATAE), foreign ownership (FORGN) and dividend policy. It implies that ownership structure in Jordanian firms does not influence dividend policy. These results are consistent with the results of other studies, such as those by Schooley and Barney (1994) who find a non-linear relationship between managerial ownership and dividend

policy. In emerging market, the study by Mancinelli and Ozkan (2006) in Tunisia and the study by Mehrani et al. (2011) in Iran found no significant effect of ownership structure on dividends. In the context of Jordan, Al-Najjar's (2010) study in Jordan also found no significant relationship between institutional investors and dividend policy. The insignificant relationship between government ownership (STATE) and dividend policy is also similar to the findings of Warrad et al. (2012) in Jordan. However, these results are different to the findings of other studies, such as those by Rozeff (1982) and Short et al. (2002), which provide evidence that managerial ownership is negatively related to dividend policy. Other studies find mixed results for institutional ownership, such as a negative relationship found by Han et al. (1999), and Gugler and Yurtoglu (2003) and a positive relationship found by Jensen (1986), Moh'd et al. (1995) and Short et al. (2002). Wei et al. (2004) and Al-Malkawi (2007) found that the proportion of shares held by government has a significant effect on dividend policy. In addition, there is limited evidence on the relationship between foreign ownership (FORGN) and dividend policy.

In this study the results of the pooled OLS estimates show that foreign investors have significant influence on dividend policy, but the RE model shows no significant relationship between them. The insignificant results are similar to those found in other studies of Jordanian firms that did not find evidence supporting a positive relationship between foreign ownership and dividend policy (Al-Nawaiseh, 2013; Warrad et al., 2012). Therefore, hypotheses H4a, H4b, H4c and H4d are not supported. The insignificant results could be due to several reasons. Jordan is characterized as a country with low shareholder protection and the ownership structure in Jordan is highly concentrated, most companies being controlled by a small number of related shareholders compared to Australia where most companies have dispersed ownership. In addition, Jordanian firms are mostly owned by families and individuals. Table 6.14 summarizes the hypotheses and results for Jordanian firms:

Table 6.14: Summary of hypotheses of Jordanian firms

Independent variables	Hypotheses	Dependent variables Expected Sign		Findings	Status
		POUT	DY		
Board Size (BSIZE)	H1a: There is a significant positive relationship between dividend policy and board size in Jordanian Listed companies.	+	+	Positive significant with POUT and DY	Supported
Board Independence (BIND)	H1b: There is a significant positive relationship between dividend policy and board independence in Jordanian Listed companies.	+	+	Positive insignificant	Not supported
Board meeting (BMEET)	H1c: There is a significant positive relationship between dividend policy and the frequency of board meetings in Jordanian Listed companies.	+	+	Positive insignificant	Not supported
CEO duality	H2: There is a significant negative relationship between dividend policy and CEO duality in Jordanian Listed companies.	-	-	Positive significant with DY	Not supported
Independent of audit committee (ACIND)	H3: There is a positive relationship between dividend policy and independence of audit committee in Jordanian Listed companies.	Unclear	Unclear	Negative insignificant	Not supported
Managerial ownership (INSID)	H4a: There is a significant negative relationship between dividend policy and percentage of shares owned by board of directors in Jordanian Listed companies	-	-	positive insignificant	Not supported
Institutional ownership (INS)	H4b: There is a significant positive relationship between dividend policy and percentage of shares owned by institutions in Jordanian Listed companies.	+	+	Negative insignificant	Not supported
Government ownership (STATE)	H4c: There is a significant positive relationship between dividend policy and percentage of shares owned by government in Jordanian Listed companies.	+	+	Negative insignificant	Not supported
Foreign ownership (FORGN)	H4d: There is a significant positive relationship between dividend policy and percentage of shares owned by foreign investors in Jordanian Listed companies.	+	+	Negative insignificant	Not supported
Audit quality (Big-4)	H5: There is a positive relationship between dividend policy and audit quality in Jordanian Listed companies.	+	+	Positive significant with DY	Supported

6.4.7. Discussion on Regression Findings for Australian Firms

This study examines whether the corporate governance variables impact dividend policy in Australian listed firms. The regression results of RE model show that board size (BSIZE), board independence (BIND), CEO duality, managerial ownership (INSID), institutional ownership (INS), foreign ownership (FORGN) and audit firms (Big-4) have significant relationships with dividend policy.

Consistent with the argument that board size can influence a firm's dividend policy; this study finds a significant positive relationship between board size (BSIZE) and dividend policy. This finding suggests that increasing the board size could be sufficient to add significantly to shareholders wealth. This result could also be due to the fact that Australian large firms tend to have higher degrees of agency costs because widespread shareholdings need additional monitoring and control; higher dividends may provide this complementary governance role. This result of the study is consistent with the findings of La Porta et al. (2000a) who predicted that a large board would provide a better governance environment and thus ensure higher dividends. The significant positive effect of board size indicates that the larger the number of board members in Australian firms, the higher the payout policies. The obtained results are consistent with findings of studies by Bokpin (2011), Chen et al. (2011), and Gill and Obradovich (2012). Based on the results, this study supports the hypothesis H1a.

Similarly, board independence (BIND) has a significant positive influence on dividend policy. The significant positive result could be due to the possibility that the higher proportion of board independence in Australian firms can encourage a higher dividend policy. This result supports the argument that more participation of outside directors would leads to greater protection of shareholders' interests and result in higher dividends. A significant positive relationship could be because board independence and dividend policy play a complementary role in Australian firms. The result is consistent with the evidence found by Easterbrook (1984), Schellenger et al. (1989), Setia-Atmaja, Tanewski, and Skully (2007) and Setia-Atmaja (2010), who found strong evidence that the board independence impacts dividend policy. This means that Australian firms with a higher number of independent directors on the board tend to pay higher POUT. Therefore, this study supports hypothesis H1b.

The study finds a significant negative relationship between CEO duality (DUALITY) and dividend policy, suggesting that Australian firms with CEO duality also tend to pay lower dividends compared to firms with separated roles of CEO and chairman of board of directors. In other words, firms with roles separation of CEO and chairman of board of directors are more

likely to protect shareholders interests and, hence, pay more dividends. Therefore, the hypothesis H2 is supported.

With respect to ownership variables, the finding of this study is consistent with the argument that managerial ownership and dividends could act as a substitute monitoring devices, indicated by the negative relationship. The result shows that managerial ownership (INSID) has a significant negative relationship with dividend policy. It suggests that the greater the managerial ownership, the lower the POUT. The significant negative effect of managerial ownership could be due to the possibility of opportunistic behaviour for managers on shareholders and, especially, with regard to dividend policy. This finding is consistent with expectations and findings of the prior studies, such as those by Rozeff (1982), Jensen (1986), Eckbo and Verma (1994), Moh'd et al. (1995), Short et al. (2002) and Chen et al. (2005), and Mehrani et al. (2011). This study supports the argument that Australian companies with high managerial ownership prefer lower levels of POUT; therefore the hypothesis H4a is supported.

This study finds a significant positive relationship between institutional ownership (INS) and dividend policy. This result implies that firm with higher percentage of shares held by institutional investors are more likely to pay higher dividends. The positive relationship also suggests that institutional ownership and dividend policy are not substitute monitoring mechanisms but, rather, perform complementary governance roles in Australia. This result is consistent with those found by Zeckhauser and Pound (1990), Moh'd et al. (1995), Short et al. (2002). Therefore, hypothesis H4b is supported.

The findings of this study show that Big-4 affiliated audit firm have a significant positive influence on dividend policy, suggesting that high audit quality may restrict discretionary behaviour of boards of directors, increase information asymmetry and hence support the confidence of investors. This result is consistent with those found by Mitton (2002), and Lee, Cox, & Roden (2007). Therefore, the hypothesis H5 is supported.

On the other hand, the results show that there is no significant relationship between board meetings (BMEET) and dividend policy in Australian firms. Therefore, hypothesis H1c is rejected.

The results of the RE model also show that audit committee independence (ACIND) does not have a significant effect on dividends. Thus, the good practice of the audit committee has no effect on dividend policy. The finding is consistent with the results of other studies, such as those by Beasley and Salterio (2001), Cotter and Silvester (2003), Turley and Zaman (2007), and Al-Najjar and Belghitar (2014), who do not find evidence to support a significant effect for audit committee. This result suggests that looking only at audit committee independence may be not

be sufficient to assess the effectiveness of the audit committee; there might be a need to look at other factors, such as audit committee financial expertise and education of audit committee. Therefore, hypothesis H3 is not supported.

The results of this study did not find any significant relationship between government (STATE) and dividend policy but finds a negative relation for foreign ownership (FORGN). Therefore the hypotheses H4c and H4d are rejected. Table 6.15 summarizes the hypotheses and results for Australian firms:

Table 6.15: Summary of hypotheses of Australian firms

Independent variables	Hypotheses	Dependent variables Expected Sign		Findings	Status
		POUT	DY		
Board Size (BSIZE)	H1a: There is a significant positive relationship between dividend policy and board size in Australian Listed companies.	+	+	Positive significant with POUT and DY	Supported
Board Independence (BIND)	H1b: There is a significant positive relationship between dividend policy and board independence in Australian Listed companies.	+	+	Positive significant with POUT	Supported
Board meeting (BMEET)	H1c: There is a significant positive relationship between dividend policy and the frequency of board meetings in Australian Listed companies.	+	+	Positive insignificant	Not supported
CEO duality	H2: There is a significant negative relationship between dividend policy and CEO duality in Australian Listed companies.	-	-	Negative significant with POUT	Supported
Independent of audit committee (ACIND)	H3: There is a positive relationship between dividend policy and independence of audit committee in Australian Listed companies.	?	?	Negative/positive insignificant	Not supported
Managerial ownership (INSID)	H4a: There is a significant negative relationship between dividend policy and percentage of shares owned by board of directors in Australian Listed companies	-	-	Negative significant	Supported
Institutional ownership (INS)	H4b: There is a significant positive relationship between dividend policy and percentage of shares owned by institutions in Australian Listed companies.	+	+	Positive significant	Supported
Government ownership (STATE)	H4c: There is a significant positive relationship between dividend policy and percentage of shares owned by government in Australian Listed companies.	+	+	Negative insignificant	Not supported
Foreign ownership (FORGN)	H4d: There is a significant positive relationship between dividend policy and percentage of shares owned by foreign investors in Australian Listed companies.	+	+	Negative insignificant	Not supported
Audit quality (Big-4)	H5: There is a positive relationship between dividend policy and audit quality in Australian Listed companies.	+	+	Positive significant with POUT	Supported

6.4.8. Comparison of Findings in the Random-Effects Model between Jordanian and Australian Firms

Table 6.16 presents the RE regression estimates of the relationship between corporate governance and dividend policy for Jordanian and Australian firms as measured by POUT, showing that some selected corporate governance mechanisms have a significant relationship with dividend policy, indicating that the significant relationship found by pooled OLS model is the result of estimation bias.

There is a significant positive effect of board size (BSIZE) on POUT in both countries. This finding is in the line with findings reported in the corporate finance literature and in line with expectations. This result implies that board structure in listed Jordanian and Australian non-finance firms have effective monitoring and control mechanism. However, board independence (BIND) has a more significant positive relationship with POUT in Australian firms than in Jordanian firms. This could be because non-executive board members in Jordanian firms do not play a role, compared to the role they play in Australian firms. CEO duality (DUALITY) has a significant negative effect on POUT in Australian firms, while it has a positive but insignificant effect in Jordanian firms.

There is a significant positive association between institutional ownership (INS) and POUT for Australian firms, indicating that Australian firms with more institutional investments pay more dividends. Australian firms with a high proportion of shares held by managers (INSID) pay fewer dividends. None of these variables have significant relation with POUT in Jordanian firms. In the Australia context, audit firm (BIG-4) has a significant positive effect, but not in Jordanian context.

Table 6.16: Comparison of results in the RE/FE between listed Jordanian and Australian non-finance firms

Independent Variables	Jordanian non-finance firms		Australian non-finance firms	
	POUT	DY	POUT	DY
	Random-effect	Random-effect	Random-effect	Fixed-effect
Const.	0.057 (0.27)	-0.019 (-1.50)	0.512*** (5.72)	
BSIZE	0.029*** (2.41)	0.001** (2.16)	0.002* (1.67)	-0.0001 (-0.52)
BIND	0.074 (0.74)	-0.001 (-0.15)	0.017** (2.02)	-0.004 (-0.81)
BMEET	0.004 (0.31)	-0.0001 (-0.08)	0.001 (0.69)	0.001 (0.41)
DUALITY	0.056 (1.71)	0.005** (1.91)	-0.011* (-1.71)	-0.002 (-0.44)
ACIND	-0.092 (-1.26)	-0.004 (-1.55)	-0.014 (-0.51)	0.002 (0.58)
INSID	0.073 (0.65)	0.004 (0.97)	-0.007** (-2.11)	0.032*** (2.89)
INS	-0.065 (-0.49)	-0.001 (-0.26)	0.026* (1.79)	0.001 (0.31)
STATE	-0.047 (-0.28)	-0.004 (-0.62)	-0.271 (-1.01)	0.026 (0.46)
FORGN	-0.339 (-1.49)	0.012 (1.09)	-0.050 (-1.01)	-0.012* (-1.65)
BIG-4	0.074 (1.00)	0.008* (1.73)	0.016*** (2.97)	-0.004 (-0.67)
LOG FSIZE	0.013* (1.69)	0.002*** (2.67)	0.004 (0.66)	0.0001 (0.28)
LR	-0.032 (-0.89)	-0.002 (-1.30)	0.031 (0.75)	-0.002 (-0.30)
LOG MBVE	-0.028 (-0.83)	-0.002* (-1.73)	0.009 (0.97)	-0.004*** (-2.55)
FRISK	-0.005 (-0.15)	-0.001 (-0.45)	0.005 (0.59)	-0.002* (-1.70)
FAGE	-0.001 (-0.16)	-0.001 (-1.17)	0.001 (1.02)	-0.004 (-0.26)
ROA	0.238*** (2.02)	0.007 (0.94)	0.027 (1.00)	0.003 (0.78)
INDS-DUM	Yes	Yes	Yes	No
TIME-DUM	Yes	Yes	Yes	Yes
Observations	464	464	1438	1438
R-square	0.160	0.198	0.140	0.157
Lagrange Multiplier test	85.02***	464.48**	971.26***	345.55***
Hausman test	8.72	12.16	22.83	36.98**
Hausman test (P-value)	0.991	(0.791)	0.411	(0.023)

Note: ***, **, * represents statistical significance at 0.01, 0.05 and 0.10 levels, respectively. All variables are as previously defined.

Again, using DY as the measure for dividend policy, the results for both countries (Jordan and Australia) show that most corporate governance variables have no significant relationship with DY. In Jordan, the results of the RE model show that board size (BSIZE), CEO duality (DUALITY) and audit quality (Big-4) have significant positive effects on DY. In the Australian context, the results of the FE model show that managerial ownership (INSID) has a significant positive relationship with DY. However, foreign ownership has a significant negative relationship with DY. These differences could be due to differences in methods, which employed RE model in Jordan and FE model in Australia, as well as differences in economic and institutional conditions, rules, laws and culture, and political differences between the two markets.

6.5. Conclusion

This chapter presents and discusses the results of pooled OLS regression and panel models on the relationships between corporate governance mechanisms and dividend policy in Jordanian and Australian non-finance firms for the period 2005 to 2011.

The results of the relationship between corporate governance and dividend policy in Jordanian firms, when estimated by pooled OLS, show that there is a significant positive relationship between board size (BSIZE) and CEO duality (DUALITY) and POUT. However, a significant negative relationship is found between foreign ownership and POUT. No other governance variable has a significant relationship with POUT. When the relationship between governance variables and POUT is estimated by the RE model, the result confirms the OLS result that board size has a significant positive relation with POUT in Jordanian firms. However, no other governance variables (board independence (BIND), frequency of board meeting (BMEET), CEO duality (DUALITY), audit committee independence (ACIND), managerial (INSID), institutional (INS), government (STATE), foreign (FORGN) ownership and audit quality (Big-4)) have significant relationships with POUT.

The results of the relationship between governance variables and DY estimated by OLS regression show that the board sizes (BSIZE), CEO duality (DUALITY), foreign ownership (FORGN) and audit quality (Big-4) have significant positive influences on DY. However, board independence (BIND) and audit committee independence (ACIND) have significant negative effects on DY. When the relationship between governance variables and DY is estimated by the RE model, the results confirm the OLS results that board size (BSIZE), CEO duality (DUALITY) and audit quality (Big-4) have a significant positive effect on DY.

For Australian listed firms, the results of the relationship between corporate governance mechanisms and POUT as the measure of dividend policy, when estimated by pooled OLS, show that board size (BSIZE) and board independence (BIND), frequency of board meeting (BMEET), institutional ownership (INS) and audit quality (Big-4) have significant positive influences on POUT. This positive relationship implies that board structure and institutional investors use dividends as a complementary mechanism to control agency problems in Australian non-finance listed firms. However, the results of OLS regression show a significant negative effect of CEO duality (DUALITY) and managerial ownership (INSID) on POUT. No other governance variable has a significant relationship with POUT. When the relationship between governance variables and POUT is estimated by the RE model, the results confirm the OLS results that board size (BSIZE), board independence (BIND), institutional ownership (INS) and audit quality (Big-4) have significant positive relationships with POUT. However, the results of the RE model show that CEO duality (DUALITY) and managerial ownership (INSID) have significant negative relationships with POUT. In addition, no other governance variable has significant relationships with POUT.

By using DY as the measure of dividend policy, the results of the pooled OLS regression show that board size (BSIZE), frequency of board meeting (BMEET) and audit quality (Big-4) have significant relationships with DY. However, CEO duality (DAULITY) has a significant negative relation with DY. No other governance variable has a significant effect. When the relationship between governance variables and DY is estimated by the FE model, the results do not confirm the OLS results. Instead, the FE model reveals managerial ownership (INSID) and foreign ownership (FORGN) have positive and negative significant effects, respectively, on DY.

Chapter 7: Conclusions and Implications

7.1. Introduction

This study examines the relationship between corporate governance mechanisms and firm performance as well as the relationship between corporate governance mechanisms and dividend policy in a developing economy (Jordan) and a developed economy (Australia) for the period 2005 to 2011. Chapter 5 presented the analysis and results of the relationship between corporate governance mechanisms and firm performance. Chapter 6 presented the analysis and results of the relationship between corporate governance mechanisms and dividend policy. This chapter summarises the findings of the two sets of empirical analyses. The chapter also outlines the contributions of the study, implications and limitations of the research, and suggested directions for future research.

This chapter is organized as follows: Section 7.2 provides key empirical findings of the study; Section 7.3 discusses the contributions of the study; Section 7.4 extends the policy implications; Section 7.5 notes the limitations of the study; Section 7.6 outlines future research directions based on the results from this study.

7.2. Key Empirical Findings

This study explores the relationship between corporate governance mechanisms, and firm performance and dividend policy in a developed (Australia) and developing (Jordan) economy. Firstly, it examines the impact of corporate governance mechanisms (board size, board independence, board meetings, CEO duality, audit committee independence, audit committee meetings, remuneration committee independence, managerial, institutional, government and foreign ownership, board salaries and Big-4) on firm performance in both countries using ROA, ROIC and log Tobin's Q as measures of performance. Secondly, it investigates the effects of corporate governance on dividend policy in both countries using dividend payout ratio (POUT) and dividend yield (DY) as measures of dividend policy.

To understand the role of governance, this research relies mainly on the framework provided by Agency Theory and Signalling Theory and findings from a literature review to develop a set of hypotheses for testing. The data of this study are taken from Australian and Jordanian firms listed on the Australian Securities Exchange (ASX) and the Amman Stock Exchange (ASE) for the period 2005 to 2011. The sample consisted of 70 Jordanian non-finance firms and 206 Australian firms, which provide data for 464 firm-year observations in Jordan and 1438 firm-year observations in Australia. The statistical methods used to test the relationship between

governance and firm performance are pooled OLS, fixed-effects model (FE) and the generalized method of moment (GMM). Pooled OLS and fixed-effects estimates of the parameters may be inconsistent and biased if there is endogeneity and unobserved heterogeneity across firms and, therefore, the results of system GMM should, in general, be preferred to test the hypotheses. To ensure the robustness of the findings, this study performs several sensitivity analyses including using industry and year dummies to control for industry and year fixed effects. Pooled OLS and panel models (fixed-effects or random-effects models) are used to test the relationship between corporate governance and dividend policy.

7.2.1. Corporate Governance Mechanisms and Firm Performance in Developed (Australia) and Developing (Jordan) Countries

The first empirical study, discussed in Chapter 5, investigates the relationship between corporate governance variables and firm performance in the Jordanian and Australian companies. The results show that, in general, there is a significant relationship between corporate governance variables and firm performance, which confirms that corporate governance is important, not only for developed economies but also for developing economies.

The results of the relationship between corporate governance and firm performance for Jordanian firms, when estimated by pooled OLS, show a significant positive relationship between board meetings, board salaries, Big-4 and firm performance. However, a significant negative relationship was found between board independence, audit committee meetings, remuneration committee independence, government ownership, foreign ownership, and firm performance. No other governance variables have a significant relationship with firm performance.

The results of the relationship between governance variables and firm performance estimated by GMM approach show that board independence, remuneration committee independence, managerial ownership, foreign ownership and board salary have significant positive performance effect. However, government ownership has a significant negative effect on firm performance. No other corporate governance variables (board size, frequency of board meeting, CEO duality, audit committee independence, frequency of audit committee meeting, institutional ownership and Big-4) is found to have significant influence on performance. The findings provide strong evidence that board independence is important and relevant for an emerging market like Jordan. A significant positive effect is expected according to Agency Theory and consistent with results found in studies by Belden et al. (2005) and Bhagat and Black (2002). The significant positive effect of remuneration committee independence could be because Jordanian firms with more

independent remuneration committees are more effective in monitoring and enhancing firm performance. This result is consistent with the managerial power approach and is consistent with results found by Yermack (2004).

This study also finds statistically significant effects for managerial and foreign ownership variables on performance. Importantly, the results provide that managerial ownership has a significant effect on Tobin's Q is used as the performance measure in an emerging market. The positive performance effect provides support for the convergence of interest hypothesis, as suggested by Jensen and Meckling (1976). This finding is also consistent with those of Ang et al. (2000), Bøhren and Ødegaard (2001), Singh and Davidson (2003), Bhabra (2007), and Wellalage and Locke (2012).

However, managerial ownership has a significant negative effect on ROA and ROIC, when these variables are used as performance measures, indicating that higher managerial ownership increases management entrenchment and leads to a decrease in performance. The coefficient of board salaries has a significant positive effect on firm performance. This implies that explicit and implicit executive compensation contracts contribute to aligning the interests of shareholders and management in Jordanian firms. This result is in line with the proposition of Agency Theory and consistent with Kato et al. (2007). The significant negative effect of government ownership upon firm performance may be due to rising political motivations and social objectives instead of commercial motivations in Jordanian firms. This result is similar to the evidence found by Wei et al. (2005).

The results of the relationship between corporate governance and firm performance for Australian firms, when estimated by pooled OLS, show a significant positive relationship between board size, audit committee independence, managerial ownership, institutional ownership, board salaries and firm performance. However, a significant negative relationship between government ownership and firm performance is found. No other governance variables have a significant relationship with firm performance.

The results of the relationship between governance variables and firm performance for Australian firms estimated by the GMM approach show that board size, board independence, board meeting, remuneration committee independence, managerial ownership, institutional ownership, foreign ownership, board salary and Big-4 have significant positive effects on firm performance. The results once again suggest a positive relationship both before and after controlling for endogeneity/casuality problems. In particular, a significant positive relationship is found between board size, managerial ownership and firm performance in pooled OLS followed by a significant positive relationship between board size, managerial ownership and firm

performance in GMM regression. The results provide strong evidence that board size and managerial ownership are important mechanisms in Australian firms. The positive effect of board size indicates that board size in Australian listed non-finance firms is reasonable. This result is in line with those found by Larcker et al. (2007). The positive performance effect of managerial ownership provides support for alignment of interest effects. This finding is also consistent with results from studies by Morck et al. (1988) and Coles et al. (2012).

Board independence has a significant positive relationship with firm performance. This result is consistent with result found by Beasley (1996). Again, board meetings has a significant effect on performance, implying that increasing the number of board meetings could enhance Australian firms' performance, which is in line with results found by Brick and Chidambaran (2010). The result also points to a significant positive relationship between remuneration committee independence and firm performance, which indicates firms with high levels of independence for remuneration committees have better performance.

Regarding to the institutional ownership effect, the result reveals that institutional ownership is a positively related with Tobin's Q, thus having a positive monitoring effect. Similarly, the GMM result reveals strong evidence for a significant positive relationship between foreign ownership and performance. This result is consistent with the findings of Chiang and Chia (2005). The results also support the argument that audit quality and board salaries are positively related to firm performance. These results are consistent with the findings of others studies, such as those by Core et al. (1999) and Qu et al. (2014).

Overall, the results of system GMM analysis provide evidence on the relationship between corporate governance and financial performance from an emerging market context (Jordan), showing some similarities as well as differences in results with developed market (Australia). The results show that board independence, renumeration committee independence, managerial and foreign ownership and board salaries have positive performance effect in both markets. However, board size, board meeting, institutional ownership and Big-4 have positive performance effect in Australia. From system GMM results it can be deduced that corporate governance mechanisms in Australian firms are more effective, and have more complementary effects, than corporate governance mechanisms in Jordanian firms.

7.2.2. Corporate Governance Variables and Dividend Policy in Developed (Australia) and Developing (Jordan) Countries

The second empirical study, reported in Chapter 6, investigates the relationship between corporate governance variables and dividend policy in Jordanian and Australian non-finance

listed firms. This study examines the relationship between corporate governance variables and dividend policy using two regression techniques: pooled OLS regression and panel models random effects or fixed effects model (RE/FE). However, to overcome the drawbacks of the OLS, the study adopts panel models (random effects and fixed effects) as the best approach to test the hypotheses.

The results of the relationship between corporate governance and dividend policy for Jordanian firms, when estimated by pooled OLS, show a significant positive relationship between board size, CEO duality, Big-4 and dividend policy. However, a significant negative effect of audit committee independence is found. The results of the relationship between governance variables and dividend policy for Jordanian firms estimated by random effects model (RE) show that board size, CEO duality and Big-4 have significant positive relationships with dividend policy. This implies that board size in Jordanian firms plays an important role in mitigating agency conflicts. This finding confirms the pooled OLS result of board size effect.

This study also finds that CEO duality is significantly positively related with dividend policy. This suggests that in Jordanian firms, where the CEO and chairman position is held by the same person, the possibility to pay dividends is high. The results of this study also support the argument that audit quality (BIG-4) is positively related to dividend policy in Jordanian firms. This result is consistent with that found by Deshmukh (2003). No other corporate governance variable is significantly related with dividend policy.

The results of the relationship between corporate governance and dividend policy for Australian firms, when estimated by pooled OLS, show a significant positive relationship between board size, board independence, frequency of board meeting, Big-4 and dividend policy. However, a significant negative effect of CEO duality and managerial ownership on dividend policy is found. The results of relationship between governance variables and dividend policy for Australian firms estimated by the random effects (RE)/fixed effect (FE) model show that board size, board independence, institutional ownership and Big-4 have significant positive effects on dividend policy. The panel models estimations confirm the pooled OLS results of the relationship between board size, board independence and dividend policy. This confirms the importance of board structure in Australian firms to mitigate agency conflicts. However, the results of RE show that CEO duality and managerial ownership have significant negative effects on dividend policy. Other corporate governance variables have no effects on dividend policy.

Overall, the results of the random effects model provide evidence on the relationship between corporate governance and dividend policy from an emerging market context (Jordan), showing some similarities as well as differences in results with developed market (Australia). The results

show that Board size and Big-4 have significant positive effect on dividend policy in both countries. However, board independence and institutional ownership have significant positive effects related with dividend policy, but CEO duality and managerial ownership have significant negative effect on dividend policy in Australia. From the results it can be inferred that board size in both markets is considered to be a strong and effective for monitoring management performance as well as enhancing the role governance overall.

7.3. Contribution of the Study

This study makes several contributions. First of all, this study has highlighted the effectiveness of corporate governance in improving firm performance in both developed (Australia) and developing (Jordan) economies. In addition, the effective role of board structure in governance through board size, independence, meetings, audit committee independence, frequency of audit committee meetings and remuneration committee independence becomes important in enhancing firm value in these economies.

Secondly, the study contributes to an understanding of corporate governance in Australia, a developed economy, and Jordan, a developing economy. The results of this study contribute to the body of knowledge in the area of corporate governance by showing that, although there are vast differences between institutional settings in Australia and Jordan, corporate governance mechanisms – board independence, remuneration committee independence, managerial and foreign ownership and board salaries – have similar impacts on firm performance in both economies. However, some governance variables have different performance effect: board size, frequency of board meeting, institutional ownership and Big-4.

Thirdly, this study has employed the system GMM approach for analysing data from developed and developing countries and reports that, after controlling for endogeneity, board independence and managerial ownership in both countries have a significant positive effect on firm performance, indicating the presence of dynamic endogeneity. This result is a new finding, especially for the Jordanian context. Also, the system GMM approach is more robust and performs well for both analysis data from both developed and developing economies. It also reveals dynamic endogeneity of board size in Australia. This study is believed to be the first to examine the relationship between corporate governance variables and firm performance in the Middle East region by using the GMM approach, and compares the findings with that of a developed economy, such as Australia.

Fourthly, this study contributes further evidence to the observation that dividend payout is a function of corporate governance and ownership structure in Jordan as an emerging market.

Previous studies have focused only on the relationship between ownership structure and dividend policy in Jordanian firms and have overlooked the impact of corporate governance variables on a firm's dividend policy. For instance, Warrad et al. (2012) find a significant positive relationship between foreign ownership and dividend payout ratio, but only examines how dividend payout ratio of Jordanian firms is affected by internal and external corporate governance mechanisms: board size and Big-4.

Finally, this study analyses the relationship between corporate governance and dividend policy in Jordan and Australia. The model includes the main factors identified by the main underpinning theories, Signalling and Agency Theories of dividend policy. Although, there is differences like economy conditions, institutional, ownership structure and rules and laws between Jordan and Australia, the results reveal that the dividend policy in Jordan is influenced by the same factors (i.e. board size and Big-4) affecting dividend policy in Australia.

7.4. Implications of Study

Based on the findings presented in this study, some implications can be drawn about corporate governance, firm performance and dividend policy in both developed (Australia) and developing (Jordan) economies.

7.4.1. Implications for Policy

The findings on the relationship between corporate governance and performance, and dividend policy imply that the same governance policies would not be appropriate for Jordanian and Australian firms, since some mechanisms operate in the same way and others do not. Another implication of the study is that it is comprehensive in its consideration of good corporate governance practices and their impacts on performance and dividend policy in Jordan and other countries in the Middle East region. Accordingly, an appropriate corporate governance system can be re-designed to improve future value of the firms and economic well-being of all associated parties. This study evaluates the existing corporate governance and help in developing and implementing policies that support and improve the performance as well as dividend policy. It provides some lessons for how good corporate governance mechanisms can be tailored in the corporate sector and ultimate economic well-being can be achieved. This study also brings to the attention of the policy makers in Jordan the importance of providing reliable protection for investors by facilitating the application of a sound corporate governance system for the Jordanian market.

7.4.2. Implications for Theory

This study examines the relationship between corporate governance, and firm performance and dividend policy in developing and developed countries. Most of the literature on these topics is comprised of studies conducted in developed markets, where developed markets are more effective and attractive for investors than developing markets. This study examines the context of an emerging market, Jordan, and compares it with the context of a developed economy, Australia. The results have relevance to Agency Theory for the establishment of a set of internal mechanisms – board structure, ownership structure, audit committee, and external mechanisms – external audit, legal and regulatory rules, and block holders. These governance mechanisms have emerged to mitigate agency conflicts as well as to reduce information asymmetry among managers and shareholders. The results of this study find that the propositions of Agency Theory hold for both countries, and show that board independence, remuneration committee independence, managerial ownership, foreign ownership and board salary have positive effects of firm performance, even though some differences are evident in the two markets.

Furthermore, this study extends and tests the relationship between governance mechanisms and dividend policy. This study provides supports to the argument that appropriate dividend policy can play a complementary governance role in both countries. The results are consistent with those found in previous studies showing a positive relation between corporate governance and dividend payouts. The results relating to dividend policy have relevance to Signalling Theory also; indicating that an optimal governance structure supports a firms' performance and dividend decisions as well as providing positive signals to the market about the firm.

7.4.3. Implications for Practices

The findings on the relationship between corporate governance and firm performance for Jordanian firms have implications for companies as well as investors. First, Jordanian firms need to consider the number of non-executive directors on company boards because the firms with higher board independence have better firm performance. The results show that board independence has a positive performance effect. Moreover, shareholders and investors could benefit from this governance mechanism in building confidence for their investments decisions. Second, Jordanian firms need to consider remuneration committee independence, which reflects the effectiveness of the board. The results suggest that firms with high remuneration committee independence have higher levels of firm performance. Again, shareholders and investors may give attention to firms that have higher remuneration committee independence, because this supports the hypothesis regarding the alignment of interests between shareholders and management.

Third, investors have to consider the importance of management and foreign ownership. The results show that these mechanisms have positive performance effects and provide support for the alignment of interest hypothesis as suggested by Agency Theory. Fourth, shareholders and managers need to consider the importance of executive compensation, especially board salaries as an incentive mechanism for ensuring alignment with shareholders' interests in Jordanian firms. Fifth, the results on the relationship between corporate governance and firm performance in Jordanian firms shows an insignificant monitoring role for board size, board meetings, CEO duality, independence of audit committee, frequency of audit committee meetings, institutional ownership and Big-4. These results imply that internal corporate governance mechanisms can play a poor role in the context of powerful block-holders in improving firm performance. The results of this study indicate that audit committee with only 44% independent members are unable to undertake their duties. This could be taken as strong evidence that Jordanian regulations do not go far enough to ensure audit committee effectiveness. Thus, increasing the presence of independent audit committee members can enhance audit committee effectiveness, and then improve firm performance in Jordan. The results also indicate that relatively few firms are audited by (Big-4), which is alarming for meeting accounting audit quality and transparent financial reporting system and warrants attention from policy makers.

These results have important policy implications since the Jordanian government encourages the application of corporate governance codes in order to protect minority shareholders and encourage institutional investors to provide effective monitoring of management as well as to ensure alignment of management and shareholders' interests in Jordanian firms.

A final observation is the meaning to be derived from the insignificant effect of institutional ownership on firm performance in Jordan. It suggests that although the Jordanian government began the process of implementing a privatisation program, Jordanian firms have few shares owned by institutional investors and the monitoring role of such investors is poor. The lack of other shareholder activity in Jordan may be attributed to a number of reasons: ownership concentration and management position held by the major shareholders of the company along with restrictions on the rights of shareholders along with high percentage of threshold required. In this regard, establishing the Shareholders Association (SA) in Jordan would be a good idea to raise shareholder awareness of corporate governance, where such a notion is still largely absent. This will also lead to increasing shareholder knowledge about corporate governance that will, in turn, achieve the goals of properly protecting shareholders and sustaining development of the company's business.

Turning to Australian listed non-finance firms, the findings of the relationship between corporate governance and firm performance suggests that Australian firms need to consider the importance of board size, board independence and frequency of board meetings, because they have positive performance effect. Shareholders and investors may use these indicators in making their investment decisions. Australian firms with higher board size, board independence and frequency of board meeting have a higher quality of corporate governance, and have higher firm performance. Also, the results show that Australian firms with higher proportion of remuneration committee independence have better performance. This result may help shareholders and investors to be attracted to such firms.

The results also show that management, institutional and foreign ownership have positive performance effects in Australian firms. Again, shareholders and investors might consider the importance of managerial, institutional and foreign ownership. These results provide support for the alignment of interest hypothesis as suggested by Agency Theory.

In addition, the results report that board salary and Big-4 have positive performance effects in Australian firms. Shareholders and managers need to consider the importance of executive incentives, especially board salaries and Big-4 as external mechanisms in ensuring alignment with shareholders' interests in Australian firms. Finally, CEO duality, independent audit committee and frequency of audit committee meeting have no significant relation with firm performance. Australian firms should consider audit committee effectiveness in monitoring financial reports as independence of audit committee and frequency of audit committees meeting tend to lead to improve the firm performance.

In the same way, the findings on the relationship between corporate governance and dividend policy for Jordanian firms suggest implications for companies and investors. First, Jordanian firms need to consider the importance of board size, because firms with higher board size are more likely to pay higher dividends. Shareholders and investors could get benefit from this indicator in deciding upon their investments. Second, the results report that Big-4 has a positive effect on dividend policy in Jordanian firms. Again, shareholders and managers may need to consider the importance of Big-4 as a significant mechanism for ensuring alignment with shareholders' interests. Third, the results show insignificant effects for the monitoring role of board independence, board meetings, CEO duality, audit committee independence, managerial ownership, institutional ownership, government ownership and Big-4. These results imply that internal and external corporate governance mechanisms play a poor part within the context of a higher proportion of ownership concentration. These results have important implications for Jordanian institutional investors, and shareholders and managers may need to consider the

importance of board structure and ownership structure when they make their investment decisions.

Turning to Australian listed non-finance firms, the findings of the relationship between corporate governance and dividend policy has implications for companies as well as investors. First, Australian firms need to consider board size, because firms with higher board size are more likely to pay higher dividends. The results show that board size has a positive effect on dividend policy. Moreover, shareholders and investors could get more benefits from this indicator in building their investments decisions. Second, the results reveal that board independence has a positive effect on dividend policy in Australian firms. Again, shareholders and managers should consider the importance of non-executives directors as effective internal mechanisms for ensuring alignment of management with shareholders' interests. Third, investors have to consider the importance of institutional ownership. The findings reveal that firms with a higher proportion of institutional ownership are more likely to pay higher dividends. Fourth, the results show that Big-4 audit has a positive effect on dividend policy in Australian firms. Again, shareholders and managers may need to consider the importance of Big-4 as effective mechanisms for ensuring the requirements of accounting audit quality and transparent financial reporting.

In summary, these results imply that board size, board independence, institutional ownership, Big-4 firms, and dividend policy play complementary governance roles. CEO duality and managerial ownership have significant negative impacts on dividend policy. This implies that Australian firms with roles separation of CEO and chairman of board of directors are more likely to protect shareholders interests and hence pay more dividends. Australian firms need to consider the CEO duality because they have negative effects on the dividend payout ratio. Managerial ownership has a significant negative effect, which could be due to the possibility of opportunistic behaviour of managers, especially with regard to dividend policy. It suggests that although fewer Australian firms have managerial ownership structures than Jordanian firms do, shareholders and investors should be cautious about the level of managerial ownership.

7.5. Limitations of the Study

This study has limitations that need to be noted. First, this study disregards the impact of the Global Financial Crisis (GFC) on the findings reported in Chapters 5 and 6. Both Jordan and Australia have not been severely affected by the GFC, though there is some evidence of low growth rates in the period 2008- 2009 for Jordan.

Second, the most important limitation of the study is that other governance variables could have been included (such as, qualification of board of directors, expertise and other personal characteristics of board of directors), since Jordanian non-finance listed firms are characterized by the existence of block shareholders in major companies. The lack of data relating to these variables, especially in 2005 to 2008 annual reports in Jordanian listed non-finance firms, has led to their exclusion.

Third, the time period that the research covered was limited to 2005-2011 because the Jordanian corporate governance code only applied from 2005. Thus, pre-2005 period could not be used.

Fourth, this study used a sample of Jordanian and Australian non-finance listed firms. The Australian economy has well-developed mining and agriculture sectors. The major industries in Australia include cotton, cattle, fisheries, dairy, forestry, horticulture, food, wine, grain, sugar and wool. On the other hand, the Jordanian economy mainly depends on the services sector. Thus, these sectoral differences may be reflected on the results.

Finally, this study examines the relationship between corporate governance mechanisms and firm performance in Jordanian and Australian contexts. Recognising weak external mechanisms in Jordanian corporate governance, this research focuses on the internal mechanisms rather than external mechanisms. Also, Jordanian corporate governance places more attention on internal mechanisms. However, several empirical studies reported in the literature provided evidence that corporate governance mechanisms are integrative and not independent of each other. Hence, such limitation may be reflected in the results of the relationship between corporate governance mechanisms and firm performance discussed in Chapter 5.

7.6. Suggestions for Future Research

There are several potential directions for future research. Firstly, this study examines the effect of corporate governance mechanisms on firm performance as well as dividend policy in Jordan and Australia. Future research can investigate interactions between internal and external corporate governance and ownership structure and their joint impact on firm performance as well as dividend policy in developed and developing countries. Hence, future research can combine these variables in the relationship between governance, performance and dividend policy in Jordan and other developing countries.

Secondly, since the GFC, many countries, particularly in the Middle Eastern region, have improved their performance by adopting a code of corporate governance. Future research can conduct comparative studies to examine how governance practices in this region have adapted to changes in capital markets environments. Moreover, an extension of this study may include

other developed and developing countries that adopted codes of corporate governance, to test the validity of corporate governance practices and uncover the similarities and differences in their governance practise on corporate performance.

Thirdly, this study has mainly examined the relationship between corporate governance mechanisms on firm performance and dividend policy in developed and developing economies, and focused on internal mechanisms of governance. Further research may examine the relationship between corporate governance mechanisms and firm performance as well as dividend policy focusing on both internal and external mechanisms of corporate governance.

Fourthly, future research can examine the impact of corporate governance variables on firm performance and dividend policy in both developed and developing economies, and compare the effects for pre-GFC and post-GFC. Also, future research can examine the relationship between governance variables, firm performance and dividend policy for both developed and developing markets using more data as well as sample period.

Finally, future research can examine whether board interlocking is affecting firm performance as well as dividend policy in both developed and developing economies. Managerial ownership and ownership concentration is higher in emerging markets than in developed markets. In emerging economies, there is a heavy concentration of ownership and boards are dominated by controlling shareholders representing the interlocking directors. Thus, there is a lack of directors' independence with a high rate of interlocking directors.

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Appendix 1: Table 2.12: Principles and recommendations of corporate governance followed in Australia

No	PRINCIPLE	RECOMMENDATIONS
1	Lay solid foundations for management and oversight	<p>1.1 Companies should the respective roles and responsibilities of its board and management; and</p> <p>1.2 Companies should disclose the process for evaluating the performance of senior executives.</p> <p>1.3 Companies should have a written agreement with each director and senior executive setting out the terms of their appointment.</p>
2	Structure the board to add value	<p>2.1 The board of listed firm should be having a nomination committee.</p> <p>2.2 A listed firm should have and disclose a board skills matrix setting out the mix of skills and diversity that the board currently has or is looking to achieve in its membership.</p> <p>2.3 the names of the directors considered by the board to be independent directors;</p> <p>2.4 A majority of the board should be independent directors.</p> <p>2.5 The chair of the board of a listed entity should be an independent director and, in particular, should not be the same person as the CEO of the entity.</p>
3	Promote ethical and responsible decision-making	<p>3.1 Firms should have a code of conduct for its directors, senior executives and employees; and disclose that code or a summary of it.</p> <ul style="list-style-type: none"> • respecting the human rights of its employees (for instance, by not employing forced or compulsory labour or young children even where that may be legally permitted); • creating a safe and non-discriminatory workplace; • dealing honestly and fairly with suppliers and customers; • acting responsibly towards the environment; and • Only dealing with business partners who demonstrate similar ethical and responsible business practices.
4	Safeguard integrity in financial reporting	<p>4.1 The board of listed firms should have an audit committee which: (1) has at least three members, all of whom are non-executive directors and a majority of whom are independent directors; and (2) is chaired by an independent director, who is not the chair of the board, and disclose: (3) the charter of the committee; (4) the relevant qualifications and experience of the members of the committee; and (5) in relation to each reporting period, the number of times the committee met throughout the period and the individual attendances of the members at those meetings; or</p> <p>4.2 The board of a listed entity should, before it approves the entity's financial statements for a financial period, receive from its CEO and CFO a declaration that, in their opinion, the financial records of the entity have been properly maintained and that the financial statements comply with the appropriate accounting standards and give a true and fair view of the financial position and performance of the entity and that the opinion has been formed on the basis of a sound system of risk management and internal control which is operating effectively.</p>

		4.3 A listed entity that has an AGM should ensure that its external auditor attends its AGM and is available to answer questions from security holders relevant to the audit.
5	Make timely and balanced disclosure	5.1 Companies should have a written policy for complying with its continuous disclosure obligations under the Listing Rules; and disclose that policy or a summary of it.
6	Respect the rights of shareholders	6.1 Companies listed should provide information about itself and its governance to investors via its website. 6.2 A listed firm should design and implement an investor relations program to facilitate effective two-way communication with investors. 6.3 A listed entity should disclose the policies and processes it has in place to facilitate and encourage participation at meetings of security holders.
7	Recognize and manage risk	7.1 have a committee or committees to oversee risk, ³⁶ each of which: (1) has at least three members, a majority of whom are independent directors; and (2) is chaired by an independent director, and disclose: (3) the charter of the committee; (4) the members of the committee; and (5) as at the end of each reporting period, the number of times the committee met throughout the period and the individual attendances of the members at those meetings; 7.2 The board or a committee of the board should: (a) review the entity's risk management framework at least annually to satisfy it that it continues to be sound; and (b) Disclose, in relation to each reporting period, whether such a review has taken place. 7.3 A listed entity should disclose: (a) If it has an internal audit function, how the function is structured and what role it performs; or (b) if it does not have an internal audit function, that fact and the processes it employs for evaluating and continually improving the effectiveness of its risk management and internal control processes. 7.4 A listed entity should disclose whether it has any material exposure to economic, environmental and social sustainability risks and, if it does, how it manages or intends to manage those risks.
8	Encourage enhanced performance	8.1 Disclose the process for performance evaluation of the board, its committees and individual directors, and key executives.
9	Remunerate fairly and responsibly	9.1 Provide disclosure in relation to the company's remuneration policy to enable investors to understand (i) the cost and benefits of those policies and (ii) the link between remuneration paid to directors and key executives' and corporate performance. 9.2 The board should establish a remuneration committee. 9.3 Clearly distinguish the structure of non-executive directors' remuneration from that of executive directors.
10	Recognize the legitimate interests of shareholders	10.1 Establish and disclose a code of conduct to guide compliance with legal and other obligations to legitimate stakeholders.

Source: ASX (2003 & 2007), Principles of Good Corporate Governance and Best Practice Recommendation

Appendix 2: Panel Regression Results for Jordanian Firms (Fixed Effects or Random Effects Models)

Tables 5.12, 5.13 and 5.14 present the results of OLS estimations and panel models for each performance variable with corporate governance variables in Jordanian non-finance firms.

Table 5.12 Fixed effects regression results of the corporate governance mechanisms and financial performance measured by ROA for Jordanian non-finance firms

Independent Variables	Dependent Variable ROA		
	Pooled Model	Fixed Effects Model	Random Effects Model
Const.	-0.300*** (-3.64)		-0.243*** (-2.37)
BSIZE	0.002 (1.22)	0.008** (2.03)	0.004* (1.63)
BIND	-0.090*** (-3.48)	-0.036 (-1.36)	-0.052** (-2.14)
BMEET	0.008** (2.87)	0.002 (0.51)	0.004 (1.36)
DUALITY	-0.002 (-0.25)	-0.022 (-1.34)	-0.017 (1.29)
ACIND	0.023 (1.20)	0.012 (0.63)	0.016 (0.93)
ACMEET	-0.007* (-1.81)	-0.002 (-0.51)	-0.004 (-0.91)
RCIND	-0.051* (-1.70)	-0.076*** (-2.54)	-0.023 (-0.95)
INSID	-0.021 (-0.67)	-0.039 (-1.32)	-0.028 (-1.00)
INS	0.040 (1.19)	-0.002 (-0.06)	0.014 (0.45)
STATE	-0.078* (-1.67)	-0.017 (-0.40)	-0.060 (-1.44)
FORGN	-0.087** (-2.14)	0.023 (0.30)	0.035 (0.76)
LOG SALARY	0.021** (2.69)	0.018 (1.27)	0.017** (1.90)
BIG-4	0.048*** (4.49)	-0.061 (-1.40)	0.029* (1.67)
LOG FSIZE	0.004* (1.89)	-0.013 (-1.02)	0.002 (0.72)
LR	0.013* (1.63)	0.017 (1.72)	0.016* (1.85)
LOG MBVE	0.008 (1.13)	-0.014* (-1.63)	-0.008 (-1.00)
FRISK	-0.013 (-1.22)	-0.015 (-1.49)	-0.011 (-1.30)
FAGE	0.0007** (2.07)	0.008** (2.11)	0.001** (2.00)
LOG LQ	0.005 (0.93)	-0.007 (-0.81)	0.001 (0.06)
INDS-DUM	Yes	No	Yes
Observations	464	464	464
R-square	0.25	0.12	0.09
F-statistic	4.23***		
Wald Chi2		2.77***	
Lagrange Multiplier test	69.70***		59.03***
Hausman test	52.04***		

Note: ***, **, * represents statistical significance at 0.01, 0.05 and 0.10 levels, respectively. All variables are as previously defined.

Table 5.13 Fixed effects regression results of the corporate governance mechanisms and financial performance measured by ROIC for Jordanian non-finance firms

Independent Variables	Dependent Variable ROIC		
	Pooled Model	Fixed Effects Model	Random Effects Model
Const.	-0.371*** (-3.95)		-0.281*** (-2.38)
BSIZE	0.002 (0.77)	0.006 (1.27)	0.004 (1.22)
BIND	-0.116*** (-3.79)	-0.044 (-1.43)	-0.065** (-2.29)
BMEET	0.006** (2.16)	-0.001 (-0.27)	0.002 (0.72)
DUALITY	-0.008 (-0.70)	-0.014 (-0.70)	-0.017 (-1.10)
ACIND	0.020 (0.99)	0.015 (0.68)	0.024 (1.16)
ACMEET	-0.004 (-0.88)	0.001 (0.20)	-0.001 (-0.10)
RCIND	-0.055* (-1.67)	-0.083*** (-2.35)	-0.009 (-0.33)
INSID	-0.029 (-0.80)	-0.029 (-0.84)	-0.022 (-0.68)
INS	0.046 (1.16)	-0.002 (-0.07)	0.024 (0.64)
STATE	-0.057 (-1.08)	-0.005 (-0.11)	-0.055 (-1.14)
FORGN	-0.123** (-2.61)	-0.020 (-0.22)	0.036 (0.68)
LOG SALARY	0.029** (3.19)	0.013 (0.79)	0.022** (2.08)
BIG-4	0.056*** (4.69)	-0.052 (-1.03)	0.036* (1.79)
LOG FSIZE	0.004 (1.57)	-0.004 (-0.29)	0.002 (0.66)
LR	0.014 (1.34)	0.016 (1.40)	0.016* (1.62)
LOG MBVE	0.011 (1.19)	-0.016 (-1.51)	-0.009 (-0.99)
FRISK	-0.017 (-1.41)	-0.019 (-1.60)	-0.015 (-1.52)
FAGE	0.001 (1.52)	0.013*** (2.86)	0.001 (1.57)
LOG LQ	0.004 (0.69)	-0.013 (-1.24)	-0.003 (-0.35)
INDS-DUM	Yes	No	Yes
Observations	464	464	464
R-square	0.24	0.12	0.08
F-statistic	4.33***		
Wald Chi2		2.65***	
Lagrange Multiplier test	70.07***		54.56***
Hausman test	47.38***		

Note: ***, **, * represents statistical significance at 0.01, 0.05 and 0.10 levels, respectively. All variables are as previously defined.

Table 5.14 Fixed effects regression results of the corporate governance mechanisms and financial performance measured by Tobin's Q (Log Tobin's Q) for Jordanian non-finance firms

Independent Variables	Dependent Variable log Tobin's Q		
	Pooled Model	Fixed Effects Model	Random Effects Model
Const.	0.971*** (2.86)		-0.240 (-0.53)
BSIZE	-0.013 (-1.33)	0.005 (0.36)	0.004 (0.35)
BIND	0.015 (0.16)	-0.048 (-0.53)	-0.002 (-0.03)
BMEET	0.047*** (4.01)	0.023 (1.48)	0.032** (2.28)
DUALITY	0.006 (0.14)	0.012 (0.22)	-0.005 (-0.09)
ACIND	-0.043 (-0.53)	0.031 (0.48)	0.067 (0.98)
ACMEET	-0.012 (-0.61)	0.020 (1.09)	0.019 (1.02)
RCIND	0.029 (0.24)	-0.002 (-0.03)	0.286*** (2.96)
INSID	0.051 (0.42)	0.182* (1.76)	0.154 (1.42)
INS	0.037 (0.24)	0.064 (0.57)	0.161 (1.33)
STATE	-0.042 (-0.26)	0.164 (1.09)	-0.087 (-0.55)
FORGN	0.318* (1.64)	-0.273 (-1.01)	0.793*** (4.13)
LOG SALARY	-0.029 (-1.06)	0.043 (0.88)	0.027 (0.69)
BIG-4	0.026 (0.54)	-0.030 (-0.20)	-0.053 (-0.63)
LOG FSIZE	-0.048*** (-4.38)	-0.016 (-0.36)	-0.028* (-1.62)
LR	0.059 (1.61)	0.030 (0.89)	0.058* (1.69)
LOG MBVE	0.359*** (9.61)	0.028 (0.90)	0.090*** (2.85)
FRISK	0.104*** (3.13)	-0.008 (-0.24)	0.034 (0.97)
FAGE	0.002 (1.48)	0.094*** (6.63)	0.006*** (2.44)
LOG LQ	-0.150*** (-5.73)	-0.052 (-1.59)	-0.077*** (-2.47)
INDS-DUM	Yes	No	Yes
Observations	464	464	464
R-square	0.44	0.39	0.30
F-statistic	13.85***		
Wald Chi2		12.78***	
Lagrange Multiplier test	141.17***		167.54***
Hausman test	78.26***		

Note: ***, **, * represents statistical significance at 0.01, 0.05 and 0.10 levels, respectively. All variables are as previously defined.

Appendix 3: Panel Regression Results for Australian Firms (Fixed Effects or Random Effects Models)

Tables 5.15, 5.16 and 5.17 present the results of OLS estimations and panel models of the relationship between corporate governance variables and financial performance measured by (ROA, ROIC and TQ ratio) in Australian non-finance firms.

Table 5.15: Fixed effects regression results of the corporate governance mechanisms and financial performance measured by ROA for Australian non-finance firms

Independent Variables	Dependent Variable ROA		
	Pooled Model	Fixed Effects Model	Random Effects Model
Const.	-0.393*** (-4.58)		-0.542*** (-5.66)
BSIZE	0.001 (0.09)	0.001 (0.50)	0.001 (0.23)
BIND	0.013 (0.38)	0.008 (0.23)	0.006 (0.19)
BMEET	0.002 (1.13)	-0.001 (-0.80)	-0.001 (-0.31)
DUALITY	-0.055 (-1.23)	-0.082** (-1.97)	-0.078** (-2.20)
ACIND	-0.037 (-0.97)	-0.027 (-0.86)	-0.035 (-1.17)
ACMEET	0.010** (2.28)	-0.010** (-2.03)	-0.011*** (-2.58)
RCIND	0.022 (0.83)	-0.001 (-0.01)	-0.002 (-0.09)
INSID	0.121** (2.11)	0.162** (2.06)	0.145** (2.23)
INS	-0.007 (-0.15)	-0.009 (-0.23)	0.001 (0.01)
STATE	-0.130** (-2.11)	-0.272 (-0.69)	-0.117 (-0.52)
FORGN	0.067 (1.61)	0.033 (0.63)	0.025 (0.53)
LOG SALARY	0.008* (1.81)	0.001 (0.08)	0.007 (1.12)
BIG-4	0.005 (0.25)	0.111*** (3.04)	0.056** (2.30)
LOG FSIZE	0.032*** (6.40)	0.070*** (7.42)	0.039*** (7.50)
LR	-0.026 (-0.61)	-0.138*** (-2.92)	-0.061* (-1.62)
LOG MBVE	0.041*** (4.39)	0.026*** (2.80)	0.034*** (4.12)
FRISK	-0.007 (-0.79)	-0.014 (-1.48)	-0.014* (-1.74)
FAGE	-0.001 (-0.49)	-0.010*** (-2.68)	-0.001 (-1.03)
LOG LQ	0.014*** (2.56)	0.013 (1.34)	0.013* (1.74)
INDS-DUM	Yes	No	Yes
Observations	1438	1438	1438
R-square	0.17	0.08	0.07
F-statistic	7.55***		
Wald Chi2		5.74***	129.51***
Lagrange Multiplier test	434.57***		
Hausman test	33.61**		

Table 5.16: Fixed effects egression results of the corporate governance mechanisms and financial performance measured by ROIC for Australian non-finance firms

Independent Variables	Dependent Variable ROIC		
	Pooled Model	Fixed Effects Model	Random Effects Model
Const.	-0.427*** (-4.68)		-0.535*** (-5.10)
BSIZE	-0.002 (-0.52)	0.002 (0.50)	0.001 (0.11)
BIND	0.033 (0.88)	0.006 (0.15)	0.010 (0.29)
BMEET	0.001 (0.44)	-0.002 (-1.00)	-0.001 (-0.59)
DUALITY	-0.070 (-1.39)	-0.097** (-2.18)	-0.095*** (-2.47)
ACIND	-0.044 (-1.07)	-0.038 (-1.13)	-0.044 (-1.35)
ACMEET	0.008* (1.77)	-0.005 (-1.00)	-0.007* (-1.62)
RCIND	0.024 (0.80)	0.004 (0.14)	0.002 (0.07)
INSID	0.164** (2.66)	0.190** (2.28)	0.183*** (2.61)
INS	-0.005 (-0.10)	0.001 (0.03)	0.009 (0.23)
STATE	-0.131* (-1.79)	-0.071 (-0.17)	-0.056 (-0.23)
FORGN	0.067 (1.41)	0.030 (0.54)	0.020 (0.42)
LOG SALARY	0.008* (1.67)	-0.007 (-0.46)	0.005 (0.65)
BIG-4	0.012 (0.50)	0.128*** (3.32)	0.073*** (2.75)
LOG FSIZE	0.037*** (7.37)	0.065*** (6.48)	0.40*** (7.13)
LR	-0.034 (-0.91)	-0.120*** (-2.40)	-0.058 (-1.44)
LOG MBVE	0.042*** (3.95)	0.019* (1.92)	0.030*** (3.31)
FRISK	-0.009 (-0.96)	-0.019* (-1.90)	-0.019** (-2.18)
FAGE	-0.001 (-0.86)	-0.008** (-2.12)	-0.001 (-1.19)
LOG LQ	0.016*** (2.75)	0.013 (1.28)	0.015* (1.75)
INDS-DUM	Yes	No	Yes
Observations	1438	1438	1438
R-square	0.18	0.07	0.06
F-statistic	7.48***		
Wald Chi2		4.81***	
Lagrange Multiplier test	516.03***		124.35***
Hausman test	27.61*		

Note: ***, **, * represents statistical significance at 0.01, 0.05 and 0.10 levels, respectively. All variables are as previously defined.

Table 5.17 Fixed effects regression results of the corporate governance mechanisms and financial performance measured by log Tobin's Q (Log Tobin's Q) for Australian non-finance firms

Independent Variables	Dependent Variable log Tobin's Q		
	Pooled Model	Fixed Effects Model	Random Effects Model
Const.	-0.015 (-0.11)		0.251 (1.45)
BSIZE	0.025*** (5.43)	0.008 (1.38)	0.017*** (3.22)
BIND	0.087 (1.45)	0.112* (1.63)	0.089 (1.45)
BMEET	-0.001 (-0.66)	-0.04 (-1.20)	-0.003 (-0.94)
DUALITY	0.010 (0.17)	0.185** (2.31)	0.085 (1.28)
ACIND	0.024 (0.41)	0.072 (1.19)	0.050 (0.87)
ACMEET	-0.014* (-1.83)	-0.005 (-0.51)	-0.008 (-1.06)
RCIND	0.070 (1.23)	-0.025 (-0.48)	0.002 (0.04)
INSID	0.182* (1.80)	-0.077 (-0.52)	0.027 (0.22)
INS	0.909*** (11.79)	0.742*** (9.69)	0.824*** (11.36)
STATE	0.232 (0.97)	1.707** (2.28)	0.384 (0.95)
FORGN	-0.087 (-1.00)	-0.104 (-1.04)	-0.133 (-1.52)
LOG SALARY	0.023*** (2.91)	-0.078*** (-2.59)	0.011 (1.00)
BIG-4	-0.049 (-1.46)	-0.208*** (-2.98)	-0.097** (-2.18)
LOG FSIZE	0.009 (1.28)	0.062*** (3.44)	0.016* (1.76)
LR	0.050 (0.85)	0.024 (0.28)	0.042 (0.60)
LOG MBVE	0.106*** (6.54)	0.101*** (5.53)	0.106*** (6.70)
FRISK	-0.043*** (-2.92)	-0.035** (-1.94)	0.035** (-2.24)
FAGE	-0.001*** (-2.56)	-0.009 (-1.35)	-0.001 (-1.53)
LOG LQ	-0.012 (-0.97)	-0.028 (-1.50)	-0.019 (-1.34)
INDS-DUM	Yes	No	Yes
Observations	1438	1438	1438
R-square	0.17	0.15	0.13
F-statistic	10.95***		
Wald Chi2		11.44***	
Lagrange Multiplier test	308.75***		229.65***
Hausman test	47.07***		

Note: ***, **, * represents statistical significance at 0.01, 0.05 and 0.10 levels, respectively. All variables are as previously defined.

Appendix 4: Endogeneity Test

Table 5.18: The Durbin-Wu-Hausman test for endogeneity of regression of Jordanian non-finance firms

	ROA	ROIC	Tobin's
DWH Test Statistic	35.49***	25.32***	80.75***
P-Value	0.0000	0.0000	0.0000

Note: ***, **, * represents statistical significance at 0.01, 0.05 and 0.10 levels, respectively.

Table 5.19: The Durbin-Wu-Hausman test for endogeneity of regression of Australian non-finance firms

	ROA	ROIC	Tobin's
DWH Test Statistic	60.33***	61.17***	156.07***
P-Value	0.0000	0.0000	0.0000

Note: ***, **, * represents statistical significance at 0.01, 0.05 and 0.10 levels, respectively.