THE MODERATING EFFECT OF GOVERNANCE ON THE RELATIONSHIP BETWEEN INVESTMENT OPPORTUNITIES, LEVERAGE AND OWNERSHIP IDENTITY WITH FIRM PERFORMANCE IN THE UAE

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By

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ABSTRACT

This study evaluates corporate governance practices of listed firms in the UAE and examines the hypothesized influence of investment opportunities, leverage, foreign and institutional ownership on firm performance. Corporate governance strength is also investigated as a moderator between investment opportunities, leverage, foreign, institutional ownership and firm performance. The moderating impact of corporate governance strength is also examined during the global financial crisis. After constructing an index to measure corporate governance strength, the fixed effects regression in panel data was used to analyze the data. The data included 101 firms with a total of 501 firm-year observations that spanned the period 2008 to 2012, of all the firms listed on the Abu Dhabi Stock Exchange and the Dubai Financial Market. The results show a significant influence of investment opportunities, leverage and institutional ownership on firm performance represented by Return on Assets (ROA) and Refined Economic Value Added (REVA). However, the results find no influence of foreign ownership on ROA, and a negative influence on REVA. The governance index shows a dramatic improvement in the corporate governance practices over time. In addition, corporate governance strength is found to significantly moderate the relationship between investment opportunities, leverage, foreign and institutional ownership with ROA, but only moderates the relationship between leverage and REVA. During the crisis, corporate governance strength appears to play a more efficient moderating role. The findings of this study provide some insights to the regulators and other related parties about the status of corporate governance practices in the UAE and show that good corporate governance is indirectly able to improve the performance of firms during different time periods.

Keywords: corporate governance, firm performance, the UAE, the financial crisis

ABSTRAK

Kajian ini menilai amalan tadbir urus korporat di dalam syarikat yang tersenarai di UAE dan mengkaji pengaruh hipotesis kepada peluang pelaburan, keumpilan (*leverage*), serta pemilikan asing dan institusi ke atas prestasi sesebuah firma. Kekuatan tadbir urus korporat juga diteliti dalam kajian ini sebagai penghubung di antara peluang pelaburan, keumpilan, pemilikan asing dan institusi dan prestasi firma. Kesan kekuatan tadbir urus korporat turut diuji semasa krisis kewangan global. Selepas pembinaan indeks untuk mengukur kekuatan tadbir urus korporat, kesan tetap regresi dalam panel data digunakan untuk menganalisis data. Kajian ini melibatkan 101 syarikat dengan pemerhatian kepada 501 tahun-firma yang menjangkau tempoh 2008-2012 bagi semua syarikat yang tersenarai dalam Bursa Saham Abu Dhabi dan Pasaran Kewangan Dubai. Dapatan menunjukkan pengaruh yang signifikan dalam peluang pelaburan, keumpilan dan pemilikan institusi ke atas prestasi firma yang dijelaskan oleh Pulangan Atas Aset (ROA) dan Nilai Tambah Ekonomi Bertapis (REVA). Walau bagaimanapun, hasil kajian menunjukkan tiada pengaruh pemilikan asing dalam ROA, dan terdapat pengaruh yang negatif terhadap REVA. Indeks tadbir urus pula memperlihatkan peningkatan secara ketara dalam amalan tadbir urus korporat dari semasa ke semasa. Di samping itu, kekuatan tadbir urus korporat didapati memainkan peranan signifiken dalam hubungan antara peluang pelaburan, keumpilan, pemilikan asing dan institusi dengan ROA, dan hanya keumpilan mempunyai hubungan dengan REVA. Tambahan lagi, kekuatan tadbir urus korporat nampaknya memainkan peranan yang lebih cekap semasa krisis kewangan global. Hasil kajian ini memberi sedikit input kepada pihak yang berkepentingan dan pihak-pihak lain yang berkaitan mengenai status amalan tadbir urus korporat di UAE dan menunjukkan bahawa tadbir urus korporat yang baik adalah secara tidak langsung dapat meningkatkan prestasi syarikat dalam tempoh masa yang berbeza.

Kata kunci: tadbir urus korporat, prestasi firma, UAE, krisis kewangan.

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LIST OF ABBREVIATIONS

ADIA	Abu Dhabi Investment Authority
ADX	Abu Dhabi Securities Exchange
AED	Arab Emirates Dirham
DFM	Dubai Financial Market
EVA	Economic Value Added
FCIC	Financial Crisis Inquiry Commission
GCC	Gulf Cooperation Council
GFC	Global Financial Crisis
IFRS	International Financial Reporting Standards
OECD	Organization for Economic Co-operation and Development
OLS	Ordinary Least Square
RBS	Royal Bank of Scotland
ROA	Return on Assets
ROE	Return on Equity
REVA	Refined Economic Value Added
SCA	Securities and Commodities Authority
USD	United State Dollar
UAE	The United Arab Emirates
UK	The United Kingdom
US	The United States of America
WACC	Weighted Average Cost of Capital

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

The issue of corporate governance has received great attention and has attracted the interest of many researchers and practitioners over the last few decades. This attention to and realization of the importance of corporate governance vary from country to country and from time to time. The financial crises are the most influential events that have brought to light the effectiveness of corporate governance practices. This is due to the failure of several corporations around the globe. Various corporate scandals, such as WorldCom, Vivendi, Adelphi, Swissair and Global Crossing shocked the world following the burst of the internet bubble, as well as the scandals of the more recent global financial crisis, such as Washington Mutual, Bear Stearns and Lehman Brothers.

Most Asian countries faced corporate governance issues after the Asian financial crisis from early 1997 to 1998. Negative records have been reported in the performance of East Asian economies, such as the large depreciation in currency exchange, the decline in stock exchanges and the low cash flows (WorldBank, 1998). The global financial crisis has rekindled interest in corporate governance and various parties are pushing for higher governance standards (Dong & Wen-jia, 2009).

After the economic crises, it was realized that weak corporate governance can have potential macroeconomic, long-term and distributional consequences. Companies are

incredibly exposed to each other and to the external environment of the market. Mistakes that have been made by some individuals can harm the entire economy of a country. The failure of one corporation can drag down several connected corporations. It can further be extended beyond that to the globalized world where the economy of one country can affect other countries. The global financial crisis is a best example, where mismanagement and poor corporate governance of the United States' (US) financial and real estate institutions affected almost the whole world.

In the United Arab Emirates (UAE), the Minister of Economy and the Chief Economist of the Dubai International Financial Centre, indicated that lack of corporate governance is the main factor that contributed to the UAE's financial crisis (AMEinfo, 2010). Many corporations in the UAE suffered from a liquidity crisis which ended with a bail-out by the federal government of the UAE. Therefore, the current study focuses on examining the influence of the factors most affected during the crisis (investment opportunities, leverage and foreign and institutional ownership) on firm performance and then assesses the moderating effect of corporate governance strength in the relationship during crisis and non-crisis times.

1.1.1 The Implications of the Global Financial Crisis

The global financial crisis started in the US subprime market as a result of the burst of the real estate bubble in 2007. The impact of the crisis spread rapidly and several countries were hit hard. During the crisis, many countries faced economic trouble and many stock markets reported huge declines (Luchtenberg & Vu, 2015). The more a country or company was involved in the US real estate or financial industries (which were the major core of the crisis), the more it was exposed to the crisis. It is

considered as the worst financial crisis since the Great Depression of the 1930s (Beltratti & Stulz, 2012; Erkens, Hung & Matos, 2012). Several symptoms were experienced in different countries around the world, including failure of big corporations, decline in stock markets and fluctuations in commodity value.

Besides the unprecedented bankruptcy of Lehman Brothers in the US, many other leading corporations were on the brink of bankruptcy, leading to loss of trust in the US economy, specifically and the corporate world, in general. Several governments chose to bail out the affected corporations, including the government of the UAE. For example, the US administration allocated a total capital of USD 700 billion as a bail-out to save the US economy (Muolo, 2008; Simon & Gaouette, 2008). Also, the British government announced rescue packages of £500 billion in 2008 and £50 billion in 2009 as a result of the failure of several leading corporations in the United Kingdom (UK), including the Royal Bank of Scotland (RBS) which was heavily involved in the UAE's real estate market. The UAE Central Bank also allocated around USD10 billion to bail-out the affected corporations and around AED 120 billion to stabilize the financial system. The global financial crisis affected many countries around the world with different impacts from country to country. Some other countries that were badly affected by the global crisis were Iceland, Ireland, Russia, Spain and Greece.

In 2011, the Financial Crisis Inquiry Commission in the US (which was appointed to investigate the causes of and possible solutions to the financial crisis) reported that failure of corporate governance practices was one of the key causes of the financial crisis (FCIC, 2011). This conclusion was drawn a little later when many countries

realized the risks and updated or revised their corporate governance code. In fact, about 49 countries developed or updated their governance code between 2007 - 2010 (Adams, 2012). Examples of the countries that took action and improved their corporate governance code included the UK (2010), the UAE (2010), Japan (2009), the Philippines (2009), South Africa (2009), Korea (2009) and Australia (2009).

The UAE and other Middle Eastern countries were also affected by the subprime mortgage crisis which raised the issue of lack of corporate governance in these countries. Negative consequences were recorded in the Arab countries, such as jumps in the inflation rates, large losses of sovereign funds, crash of stock markets, drop of property prices and decline of foreign investments (Brach & Loewe, 2010).

The UAE was one of the countries most affected by the global financial crisis. There are two main reasons for this. First, the UAE is the fourth largest exporter of oil and was affected by the sharp decline in oil prices as were most of the countries in the region. Second, as it is a front-runner in construction growth and real estate investment, it was the most hit country by the crisis in terms of its property slump (Alsukker, 2010).

The UAE was also hit badly as a result of the stock market crash during the crisis. The total value of shares traded in the Emirates securities market decreased dramatically from AED 537.1 billion in 2008 to AED 243.4 billion in 2009 with a 70% decline in the Abu Dhabi Securities Exchange (ADX); and a 43.2% decline in the Dubai Financial Market (DFM) (ADX, 2009; DFM, 2009; SCA, 2008, 2009). Figure 1.1 shows the annual traded value for the years 2001-2009. In addition, the

UAE's sovereign funds had been invested largely into promising stocks and bonds; however, they subsequently faced large losses (Brach & Loewe, 2010).

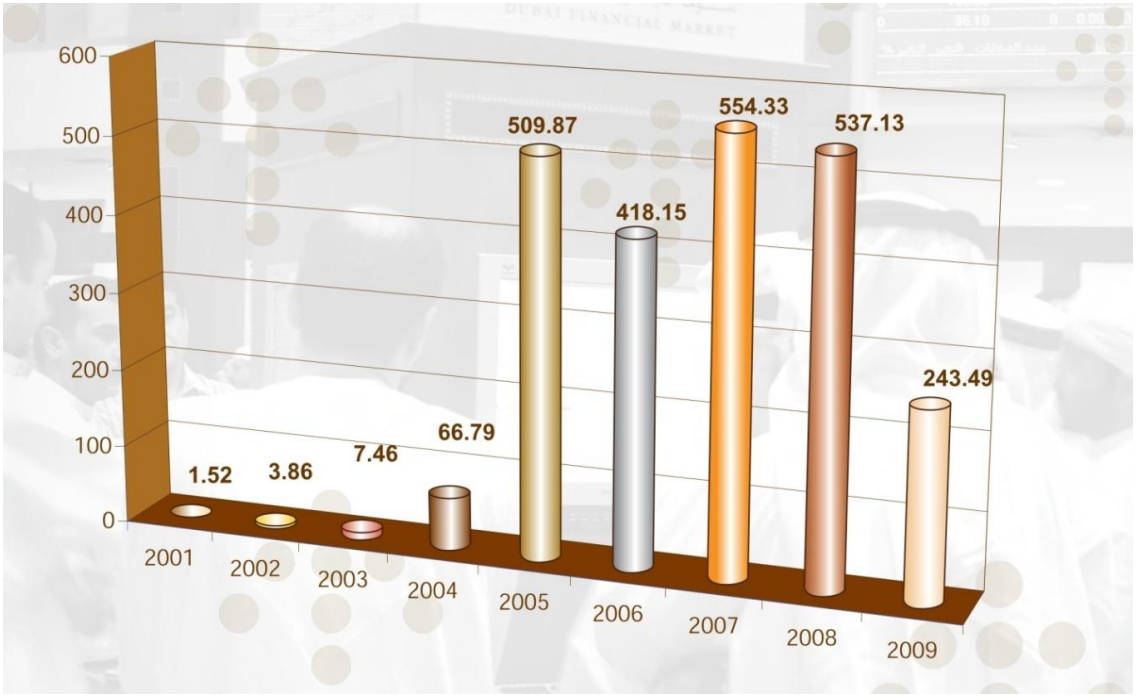

Figure 1.1
Annual Traded Values (2001-2009)
Source: Securities and Commodities Authority (SCA)

1.1.2 Investment Opportunities, Leverage and Firm Performance

Kabir and Roosenboom (2003) asserted that the decline in stock market valuation leads to poor firms' performance. Huang, Chan, Huang and Chang (2011) indicated that firm performance can be negatively affected by the financial crisis through the decline in stock values. Therefore, it is essential to check if firm performance is affected by the major factors associated with the crisis, namely investment opportunities, leverage and ownership identity (foreign and institutional). Each of these variables is discussed based on the theoretical and practical impact on the performance of firms and whether the relationship is moderated by corporate governance strength.

Corporations and the market in general in the UAE faced several serious implications as a result of the crisis. For example, the UAE had the highest investment opportunities in the real estate market globally. Dubai was ranked the first city in the world in terms of construction growth as illustrated in Table 1.1.

Table 1.1
World Construction 2007-2008

National and metropolitan construction markets

Country ranking

	Country	Fastest growing	Most profitable	Most open	Combined score
1	China	29	5	2	36
2	UAE	2	18	7	27
3	UK	0	0	11	11
4	India	5	2	3	10
5	USA	0	4	5	9
6	Russia	3	2	1	6
7	Nigeria	0	2	1	3
8	Iraq	0	2	1	3
9	South Africa	1	0	0	1
10	Germany	0	1	0	1

Note: Frequency counts

City ranking

	City	Fastest growing	Most profitable	Most open	Combined score
1	Dubai	8	15	12	35
2	London	1	6	10	17
3	Shanghai	11	2	1	14
4	Beijing	12	0	1	13
5	Moscow	3	2	0	5
6	Bangalore	1	1	0	2
7	Hong Kong	0	0	2	2
8	Abuja	0	1	1	2
9	Doha	0	2	0	2
10	Johannesburg	1	0	0	1

Note: Frequency counts

Source: Davis Langdon, 2008

The fact that the UAE is a pioneer of construction growth might be the reason behind the sharp fall in property values in the UAE during the crisis. It also could be due to the heavy investments of the UAE's corporations in the foreign real estate and financial markets. Corporations in the UAE Emirates have strong connections with the US and European financial and mortgage markets (Abdelal, 2009; Fitch, 2009; Hasan, 2010; Woertz, 2008). For example, Emaar, one of the leading real estate companies in the UAE, owned the American home builder, John Laing Homes, which filed for bankruptcy in 2009, with holding USD 1.3 billion in assets.

During the crisis, many Emirati companies suffered from liquidity problems where building and development projects worth USD 582 billion were put on hold. These

events have not only affected the parties directly related to these companies, such as directors and shareholders, but also the suppliers, customers, creditors and employees. The property market subsequently experienced a drop in demand for residential property as one-fifth of all foreign residents left the country (Brach & Loewe, 2010). These numbers demonstrate how severely investment opportunities were affected.

The Contracting Theory suggests a negative impact of investment opportunities on firm performance as firms with more investment opportunities tend to spend more to seize these opportunities. It is also argued that firms with high investment opportunities have more use of stock options and higher costs, including higher monitoring costs, higher compensation and additional costs of using alternative accounting performance measures (Anderson, Francis & Stokes, 1993; Bushman, Indjejikian & Smith, 1996; Gaver & Gaver, 1993; Skinner, 1993; Smith & Watts, 1992). Information asymmetry is also more for firms with higher investment opportunities as managers have more information about the value of future projects which is not available for shareholders. This information asymmetry can be reduced by strong corporate governance.

A decline in investment opportunities and the economic slowdown lower the demand for goods and services. Two of the larger and more prestigious Emirati corporations, Dubai World and Nakheel, had a lack of liquidity and asked investors for a six-month standstill of debt repayment (Alsukker, 2010; Chang, 2011; Salah, 2010). This announcement shook the investors and creditors' confidence and affected the UAE markets as well as the related global parties. At the time, the total debt of

Dubai World was USD 59 billion where USD 3.5 billion loan of the corporation had been forced to default (Thomas, 2009).

In general, Dubai's total debt was estimated to be around USD 150 billion (Bass, 2009). Debt can destroy companies in a time of financial distress and could lead to financial meltdown. Debt is considered a dangerous financial instrument unless it is well managed (McConnell & Servaes, 1995). Brunnermeier (2009) indicated that leverage affected the performance of firms significantly during the crisis period. Beltratti and Stulz (2012); and Fahlenbrach, Prilmeier and Stulz (2012) reported that firms with more debt performed worse during the crisis. The Pecking Order Theory suggests a negative influence of leverage on firm performance.

1.1.3 Ownership Identity, Corporate Governance Strength and Firm Performance

Several corporations and projects in the UAE were financed by foreign institutions that were affected by the crisis, such as RBS and Standard Chartered in the UK (Hasan, 2010). Besides that, some Emirati investment funds and government companies had been investing in the US and European financial markets and vice versa. The crisis in these countries constrained the flow of funds and many investors pulled out from the UAE to cover their losses elsewhere. A net withdrawal of foreign investment of AED 11.5 billion was recorded after the crisis in the UAE.

Further, as a result of the liquidity problem and the withdrawal of foreign investments, some other investors financed the affected companies or specific projects which could possibly restructure the firms and engage new ownership.

Several companies in Dubai were rescued from bankruptcy mainly due to the financial support from Abu Dhabi. The largest shares were bought by the UAE's Central Bank and Abu Dhabi-based banks (C.I.A, 2009). The bail-out rescued the affected corporations with USD 10 billion which is expected to change the way of business management (Bass, 2009).

Carney and Child (2013) found important changes in the ownership structure of domestic and foreign companies in 1996 and 2008 in nine Asian countries. Major restructurings in ownership were also found in Thai firms during the Asian financial crisis (Espenlaub, Khurshed & Sitthipongpanich, 2012). Highly concentrated ownership might exert an influence on firm directors to play a more efficient role; the new or existing owners and financiers may pressure the management or board of directors and affect the decision-making process. Therefore, the type of ownership, foreign or institutional, in particular, is chosen to be studied as an independent variable.

Corporate governance strength is expected to moderate the impact of concentrated ownership, investment opportunities and leverage on firm performance. Strong corporate governance creates effective monitoring and reduces agency costs which then improve performance (Jensen & Meckling, 1976). Johnson, Boone, Breach and Friedman (2000) found that corporate governance variables provided more information about the variation in stock market performance than any other economic variables during the Asian crisis. They concluded that countries with weak corporate governance are more likely to have this variation. Reinhart and Rogoff (2009) supported the need for stronger corporate governance, especially during

financial crises. They revealed that the global financial crisis had similar effects as the Asian crisis, with both reporting weak financial performance.

Poor corporate governance was identified as one of the several combined reasons responsible for the global financial crisis (FCIC, 2011; Kirkpatrick, 2009; Yeoh, 2010). A positive relationship was mostly found between corporate governance and firm performance in the non-crisis period. Surprisingly, several studies have found a negative or inconsistent relationship between corporate governance and firm performance during the short period of the global financial crisis (Aebi, Sabato & Schmid, 2011; Beltratti & Stulz, 2012; Erkens *et al.*, 2012; Fahlenbrach & Stulz, 2011; Minton, Taillard & Williamson, 2011; Peni & Vähämaa, 2012). Some studies have argued that the period of the study on the effectiveness of corporate governance does matter.

Therefore, this study examines the influence of investment opportunities, leverage and ownership identity on firm performance and the moderating effect of corporate governance strength in the relationship. The moderating effect of corporate governance strength is examined in two time periods: during crisis and non-crisis times. Further, this study evaluates the status of corporate governance practices in the UAE firms during the examined period as suggested by Adawi and Rwegasira (2010); and Hassan (2012).

1.2 Problem Statement

Some studies have reported that companies with good corporate governance were less affected in the time of the crisis (Suvankulov & Ogucu, 2012; Watkins, Spronk

& Dijk, 2009). For example, Suvankulov and Ogucu (2012) found that Russian firms with stronger governance practices had better performance in the time of crisis. Other studies have found that poor corporate governance was one of the main causes of the crisis (Haat, Mahenthiran, Rahman & Hamid, 2006; Khas, 2002; Kirkpatrick, 2009; Mülbert, 2010; Yeoh, 2010).

Beltratti and Stulz (2012) found that banks with good corporate governance were more affected in the time of the crisis and were not less risky. Aebi *et al.* (2011); Cornett, McNutt and Tehranian (2010); Erkens *et al.* (2012); and Minton *et al.* (2011) reported that corporate governance variables were negatively associated with performance during the period of the financial crisis. Peni and Vähämaa (2012) examined the relationship between corporate governance strength and firm performance during the crisis and reported inconsistent results in the same study. They found that banks with stronger governance had better profitability and conversely negative effects on market value in crisis time.

Two contradictory results can be noticed from the above recent studies on the usefulness of corporate governance during a crisis. The current study tries to solve the puzzle by examining the same firms in two time periods (during crisis and non-crisis times). In non-crisis time, positive results have been revealed by several previous studies that examined the direct relationship between corporate governance and firm performance (Bai, Liu, Lu, Song & Zhang, 2004; Balasubramanian, Black & Khanna, 2010; Bebchuk, Cohen & Ferrell, 2009; Black, 2001; Black, Love & Rachinsky, 2006a; Black, Jang & Kim, 2006b; Brown & Caylor, 2009; Brown & Caylor, 2006; Chen, Chen & Wei, 2009; Chong & López-de-Silanes, 2007; Garay &

González, 2008; Gompers, Ishii & Metrick, 2003; Klapper & Love, 2004; Larcker, Richardson & Tuna, 2007; Mohanty, 2003; Reddy, Locke, Scrimgeour & Gunasekarage, 2008; Renders, Gaeremynck & Sercu, 2010; Wahab, How & Verhoeven, 2007; Zheka, 2006).

However, other studies have found negative results (see for example, Chidambaran, Palia & Zheng, 2008; Core, Guay & Rusticus, 2006; Gillan, Hartzell & Starks, 2006; Lehn, Patro & Zhao, 2007; Yen, 2005). The inconsistency of the results has been explained from different perspectives. First, some studies have suggested that inconclusive findings might be a result of the different strength of corporate governance among firms (Cornett *et al.*, 2010; Erkens *et al.*, 2012; Peni & Vähämaa, 2012; Renders *et al.*, 2010). They implied that outputs could vary with different strength of corporate governance rather than the presence of some other mechanisms. Second, some studies have suggested that the indirect role of corporate governance can be more pronounced on the environment surrounding the firm that can influence firm performance (Chen, Chung, Hsu & Wu, 2010; Hutchinson & Gul, 2004; Muniandy, Hillier & Naidu, 2010). Aldamen, Duncan, Kelly, McNamara and Nagel (2011); and Essen, Engelen and Carney (2013) indicated that the examined time period plays a significant role and may lead to inconsistent results.

The impact of corporate governance can be better explained when it is examined as a moderating variable (Hutchinson & Gul, 2004; Muniandy *et al.*, 2010; Rabi, Zulkafli & Haat, 2010). Previous studies have examined the interaction of corporate governance variables separately and not the strength of corporate governance as a whole system which might affect companies differently. In fact, the interactions

between the individual corporate governance variables imply that these variables are not independently determined (Gillan, Hartzell & Starks, 2003). Empirical evidence has found that interdependence between several corporate governance variables can control agency problems better (Agrawal & Knoeber, 1996; Bekiris & Doukakis, 2011). Also, Lan and Li (2007) indicated that corporate governance can be examined more effectively as a whole system, as individual variables may affect each other. Peni and Vähämaa (2012) suggested corporate governance strength to have a moderating role on firm performance during the crisis.

Besides that, Chen *et al.* (2010); Hutchinson and Gul (2004); and Muniandy *et al.* (2010) suggested that mixed and weak results can be due to the fact that corporate governance strength has indirect influence on other related variables that influence firm performance. Gillan *et al.* (2003) explained that corporate governance may have a monitoring role on firms' related factors, such as investment opportunities and leverage.

Given the crisis environment, investment opportunities and debt greatly affected firms during the crisis. Investment opportunities significantly decreased during the global crisis (Duchin, Ozbas & Sensoy, 2010). In terms of real estate investment, the UAE had the most profitable investment opportunities globally in 2007. It was ranked the 22nd country attracting foreign investments in 2006. However, investment dropped dramatically during the crisis. In fact, there was a foreign investment withdrawal of AED 11.5 billion during the crisis.

High leverage was one of the main factors that contributed to the failure of several corporations, including Lehman Brothers in the US and Dubai World in the UAE. The crisis in the UAE is mainly a debt crisis. Debt can destroy companies and should be used with careful moderation (McConnell & Servaes, 1995). Debt is argued to have a significant impact on the performance of firms during the crisis period (Brunnermeier, 2009).

The type of ownership also plays a major role in the performance of firms (Liu, Uchida & Yang, 2012). The liquidity and financial problems in many firms during the crisis forced them to seek external financing parties. It has been found that firms with low liquidity tended to use external financing during the crisis (Flor & Hirth, 2013). Espenlaub *et al.* (2012) found major restructuring of firms' ownership during the Asian financial crisis. Borisova, Brockman, Salas and Zagorchev (2012) indicated that the global financial crisis has led to the greatest involvement of state ownership since the Great Depression. It is also believed that companies with specific ownership had better bail-out from governments during the crises. Bae, Baek, Kang and Liu (2012) found a kind of expropriation by the controlling shareholders during the crisis which deteriorate the performance of firms. They explained that performance may vary with different quality of corporate governance.

Based on the above discussion, the factors most affected by the global financial crisis, i.e., investment opportunities, leverage and ownership identity (foreign and institutional ownership) are interacted with the strength of corporate governance to assess the role of corporate governance strength in moderating their relationship with firm performance. Several studies have found inconsistent results during crisis as

explained earlier in the chapter. Therefore, this study examines the moderating effect of corporate governance strength during the crisis. Studying corporate governance as a moderator in the period of crisis and non-crisis can provide a better explanation about the effectiveness of corporate governance.

1.3 Research Questions

This study aims to answer the following questions:

1. What is the level of corporate governance practices in the UAE's listed firms?
2. How do investment opportunities and leverage influence the performance of the UAE's listed firms?
3. How does ownership identity, namely foreign and institutional ownership, influence the performance of the UAE's listed firms?
4. Is there a moderating effect of corporate governance strength on the relationship between investment opportunities and leverage with firm performance?
5. Is there a moderating effect of corporate governance strength on the relationship between ownership identity (foreign and institutional ownership) and firm performance?
6. Is there a moderating effect of corporate governance strength on the relationship between investment opportunities, leverage and ownership identity (foreign and institutional ownership) during the global financial crisis?

1.4 Research Objectives

The main objectives of this study are:

1. To evaluate the extent of corporate governance practices in the UAE's listed firms.
2. To examine the influence of investment opportunities and leverage on the performance of the UAE's listed firms.
3. To examine the influence of ownership identity (foreign and institutional) on the performance of the UAE's listed firms.
4. To examine the moderating effect of corporate governance strength on the relationship between investment opportunities and leverage with firm performance in the UAE's listed firms.
5. To examine the moderating effect of corporate governance strength on the relationship between ownership identity, namely foreign and institutional ownership, with firm performance in the UAE's listed firms.
6. To explain the extent of differences, if any, in the moderating effect of corporate governance strength during the global financial crisis.

1.5 Significance of the Study

The significance of the current study is discussed from the perspective of its contribution to the literature as well as methodological and practical significance.

1.5.1 Literature Significance

This study enriches the body of knowledge in the area of corporate governance by investigating the moderating effect of corporate governance strength in the

relationship between investment opportunities, leverage, ownership identity and firm performance. Most of the previous studies have examined the moderating effect of several individual variables of corporate governance, but not the strength of corporate governance. It is argued that interdependence between several corporate governance variables would control agency problems better (Agrawal & Knoeber, 1996; Bekiris & Doukakis, 2011). Lan and Li (2007) indicated that corporate governance can be examined more effectively as a whole system, as individual variables may affect each other.

Several previous studies have thrown doubts on the positive role of corporate governance during the crisis (Aebi *et al.*, 2011; Beltratti & Stulz, 2012). Their findings may have been influenced by their sample and not the period of the crisis. The best way to check whether their findings really reflect the period of the crisis and are not a result of their sample, is by examining the same sample in two time periods (i.e., the crisis and non-crisis periods), which is one of the aims of the current study.

Aldamen *et al.* (2011) mentioned that the role of corporate governance has been exaggerated in the time of crisis. They suggested future studies should examine different periods to understand when governance plays a superior role. Past studies have concentrated on developed countries; a few studies have been conducted in crisis times. To date, there is a lack of studies regarding corporate governance in developing markets and during the global financial crisis. Therefore, this study focuses on the UAE's listed firms, taking into consideration both the periods of the global financial crisis and non-crisis. This can enable us to understand how well

corporate governance can moderate the variables that were most affected by the crisis in the relationship with firm performance during crisis and non-crisis times. The study examines a five-year period from 2008-2012 and identifies 2009 as the year of the crisis.

1.5.2 Methodological Significance

This study investigates all the listed firms in both markets of the UAE: the ADX and the DFM. Using census rather than sample reduces the possibility of any sampling bias and makes for better generalization. In terms of measurement, several proxies have been used to measure performance, such as Return on Assets (ROA), Return on Equity (ROE), Return on Investment (ROI), Earning Per Share (EPS), Tobin's Q and others. However, this is one of the first studies that uses Refined Economic Value Added (REVA) as a measurement of firm performance and one of the very few that measures performance using accounting-based and value-based measurements simultaneously. This study provides a better view by comparing the results of the two different performance measurements, i.e., ROA and REVA, as suggested by Sharma and Kumar (2012).

The study shows a significant influence of investment opportunities, leverage and institutional ownership on firm performance, measured by ROA and REVA. Further, the strength of corporate governance significantly moderates the relationship between investment opportunities, leverage, ownership identity and ROA, but only moderates the relationship between leverage and REVA in normal times. Since the financial crisis was mainly a debt crisis in the UAE, REVA can provide more accurate results as it considers the cost of capital. Some studies have expected that

REVA might provide more accurate results as a performance measure (see for e.g., Bacidore, Boquist, Milbourn & Thakor, 1997; Ghaderzadeh, Sheykhi, Yari & Rostamzadeh, 2012; Kangarlouei, Azizi, Farahani & Motavassel, 2012; Lee & Kim, 2009).

As far as the researcher is aware, this study is the first that attempts to compare the role of corporate governance during crisis and non-crisis times in the UAE. The results indicate that corporate governance strength plays a similar role as a moderator between investment opportunities, leverage, ownership identity and ROA during crisis and non-crisis times. However, corporate governance strength shows a superior role during the crisis when firm performance is measured by REVA. While previous studies have examined individual corporate governance mechanisms as moderators, this study extends the research by studying the strength of corporate governance that is measured by a constructed index.

1.5.3 Practical Significance

To the best of the researcher's knowledge, this research is the first that examines corporate governance strength after the implementation of the Emirati corporate governance code in 2010. The results can be valuable to evaluate the usefulness of the governance system and its components and provide clear understanding of the governance reforms. Regulators can consider the outputs of this research to improve the governance factors that are more crucial to support the shareholders' interests, avoid bankruptcy and contribute to sustainable economic growth. The outputs of this study can also serve as an alarm to regulators to consider stricter enforcement tools for the governance code implementation as many firms have failed to comply.

Moreover, this study can be a guide to company managers who are concerned with the volume of investment opportunities, leverage or specific ownership type that may affect firm performance. This study highlights the possible role of governance in moderating such concerns with different period views and different performance measurements. For example, strong corporate governance mitigates the negative influence of investment opportunities and leverage on firm performance. Corporate governance might also play a less pronounced role in normal times, but it plays an efficient role during a crisis.

1.6 Scope of the Study

This study focuses on examining the influence of investment opportunities, leverage and ownership identity (foreign and institutional) on firm performance and the moderating effect of corporate governance strength in the relationship. This research examines all the listed firms on the ADX and the DFM over the period from 2008 to 2012. Secondary data is the main source of data mainly collected from companies' annual reports, stock exchanges and companies' websites, DataStream and World scope data providers.

1.7 Organization of the Thesis

This research is organized into six chapters. In Chapter One, the background of the study first discusses the issue of corporate governance and the key points that caused the global financial crisis. The Chapter then explains how the UAE's strong connection with the US and European markets exacerbated the problems in the UAE. After that, the direct effects on the UAE's markets are highlighted, including the

sharp decline in the stock markets and economic slowdown. The impact of the crisis on firms' performance is further reviewed, especially in terms of negative investment, high debt and the existing ownership. Then the problem statement is explained through the gap in the previous literature and the environment of the UAE. It highlights how the current study is expected to better explain the usefulness of corporate governance during the crisis and the rationality of using governance strength as a moderator. Next, the research questions and objectives are stated. Finally, the significance and scope of the study are discussed.

Chapter Two provides a background of the UAE, its economy, regulations and stock markets. It then highlights the corporate governance history in the UAE and explains the global financial crisis, its spread to the UAE and the subsequent consequences. Following that, Chapter Three reviews the literature of the previous studies related to firm performance. Literature on corporate governance and independent variables are then discussed. In Chapter Four, the research methodology is explained. Research framework and theories are first introduced and hypotheses are developed. Then, an explanation is given about the design of the research and definition of variables and measurements. Finally, techniques of panel data analysis are outlined with an explanation of fixed and random estimations and the research models.

Chapter Five describes the findings of the research based on the objectives of the study. Descriptive statistics are first illustrated followed by a detailed description of the corporate governance index. The results of the empirical analysis are then demonstrated and discussed for both direct and possible moderating effect of corporate governance strength in crisis and non-crisis times. In Chapter Six, an

overview of the study's objectives, hypotheses and results is covered. Then the theoretical, practical and academic implications of the results are outlined. Finally, limitations and recommendations for future research are highlighted.

CHAPTER TWO

CORPORATE GOVERNANCE AND THE CRISIS IN THE UAE

2.1 Overview of the Chapter

This chapter explains the environment and the related setting of the current study which contains six main sections. The next section provides an overview of the UAE and its economy. Then, corporate governance in the UAE and the related legislations are discussed. After that, a brief review of the stock markets in the UAE is presented, followed by the global financial crisis (GFC) and the crisis in the UAE. Finally, the last section concludes the chapter.

2.2 The United Arab Emirates (UAE)

The UAE is a country in the Middle East, made up of seven Emirates (i.e., Abu Dhabi, Dubai, Sharjah, Ajman, Umm al-Quwain, Ras al-Khaimah and Fujairah) and was established in 1971. The UAE has an open economy with a federal government system. Abu Dhabi and Dubai are the key drivers of the UAE's economy as they hold around 85% of the UAE's GDP. About 68% of the UAE's population is located in both emirates.

2.2.1 The UAE Economy:

The UAE is one of the largest oil producing countries, and is ranked as the eighth largest producer and the fourth exporter of oil globally. In terms of energy reserves, the UAE is one of the top 10 countries as it holds the seventh largest oil reserves and the seventh largest proven reserves of natural gas in the world, which is considered a

huge record compared to the small population and land area. Its economy is one of the most developed in the region of the Middle East. The UAE has an open economy with a high per capita GDP which is on the same level of the developed economies in Europe and is claimed to be the highest in the world (Alsukker, 2010). The reserves of foreign exchange and gold in the country are rated 30th in the world; the UAE is considered by the International Monitory Fund as a high income developing country (C.I.A, 2009).

The UAE is also a pioneer in construction growth and business opportunities. It is ranked the first in terms of construction profitability and among the fastest growing countries around the globe (Langdon, 2008, 2012). The UAE is considered the largest in the region that is dependent on real estate investments which increase the possibility of taking high risks. According to the UN Conference on Trade and Development (UNCTAD), the UAE was the third largest attraction for foreign direct investments in West Asia between 2003 and 2008. A total of 150 corporations of the Fortune 500 companies are represented in Dubai, including the top ten. In addition, the UAE has 23 free zones which attract several multinational and foreign firms from all over the world. Jabal Ali is one of the free zones and is considered as one of the largest zones in the world, hosting around 5,000 companies from over 100 countries globally (CRA, 2007). Dubai is considered the third re-exporter center after Hong Kong and Singapore and is an important center for international trade.

The UAE has also top rated institutions, both regionally and globally. The largest sovereign wealth fund in the world is in the UAE. The Abu Dhabi Investment Authority (ADIA), for example, holds an approximate wealth of USD750 to USD

900 billion (Abdelal, 2009). The Dubai International Financial Center (DIFC) is a financial hub for the Middle Eastern region. It aims to provide a total view of international standards regarding business rules and regulations that meet the local environment in creating sustainable growing economic development in the region. The Hawkama Institute for Corporate Governance (HICG) is also a unique institution in the region which was created in 2005. It was established to assist the UAE and all the countries and businesses in the region to form and adopt a well-integrated framework of corporate governance and good reforms for better performance.

2.3 The UAE Governance Legislation

The UAE has issued several acts and regulations to improve trade liberalization and the free market economy and to ensure sustainable economic growth (Aljifri & Khasharmeh, 2006). Three main regulatory frameworks incorporate corporate governance practices in the UAE: the UAE Corporate Governance Code of 2009; the UAE Commercial Companies' Act of 1984; and the UAE Securities and Commodities Authority (SCA) regulations of disclosure and transparency.

2.3.1 Corporate Governance Code in the UAE

The UAE has a growing economy and is being developed to be a financial and commercial hub of the region. The stock markets were only established in the year 2000. To build trust and gain investors' confidence, the government had to promote reliable legislation, including corporate governance regulations. Therefore, the SCA introduced the Corporate Governance Code in 2009, which applies to all listed firms

on the ADX and the DFM. The Corporate Governance Code was enforced in April, 2010.

The Corporate Governance Code is based on high international governance standards. The Code consists of 16 main articles that encompass all the aspects of corporate governance in a firm. The first article highlights the definitions of the Code, including clarification of the terms in the Code. The second article appoints the SCA as the regulator of corporate governance in the listed firms and determines the scope of application of the Code, including all listed firms, except the foreign and government-owned and financial companies. The third article sets the method for the appointment of the board of directors. For example, one third of the board members shall be independent and the chief executive officer (CEO) and the chairman of the board should be different individuals. Article four highlights the authority of the chairman of the board of directors.

The fifth article lists the duties and responsibilities of the board of directors with the main aim of creating wealth and working in the shareholders' interests. Article six requires the board to form directly affiliated board committees and explains the role of these committees, such as the audit, remuneration and nomination committees and the methods for their establishment. The seventh article discusses the remuneration of the board. The article clarifies that the board members' remuneration should not exceed 10% of net profits. The eighth article sets the rules of the internal control system and explains the objectives and powers of the internal audit. The article states that the internal control system should be independent and report directly to the

board of directors. The article also explains the main elements that should be covered by the system and the importance of disclosures.

The ninth article talks about the audit committee and explains the process of forming the committee and its duties and responsibilities. The 10th article imposes the requirements for external audit and the procedures for the auditor's appointment. Article 11 discusses the rights of the board of directors in the delegation of authority. The article explains the power of the board of directors in delegating a board member or firm executives to handle some administrative issues. In the 12th article, the Code highlights shareholders' rights, such as the right of dividend distribution, attending and voting in the general assembly meetings, taking part in deliberations and granting access to the firm's financial report. Article 13 explains the code of conduct and urges firms to apply an environmental and social policy towards local society.

In article 14, the Code requires all listed firms to issue a corporate governance report that details the requirements by the SCA, including any violations of the application of the Code during the financial year. The 15th article states the administrative penalties that may be imposed on firms violating the Code, which includes a suspension/delisting of the security listing or a financial penalty. Finally, article 16 sets the 30th of April, 2010 as the compulsory date of the Code application by listed firms.

2.3.1.1 The Development of the Corporate Governance Code in the UAE

At the end of 2003, the ADX started the initial steps to prepare a review of the framework for corporate governance in the UAE. In the following year, the Abu Dhabi Securities Market organized corporate governance instructions and regulations, some compulsory and others voluntary, for both markets in the UAE. They considered the corporate governance codes, regulations and principles established in leading markets and examined the international principles of these markets as examples. Then, they developed their own guidelines and rules for the public companies to suit the UAE regulations and environment which could promote an investment climate in the UAE based on best international corporate governance standards (Frost, Gordon & Hayes, 2006).

Later in 2005, the ADX introduced the first draft code which had new voluntary requirements for disclosure and establishment of audit committees as they believed that audit committees can play an important role in monitoring and overseeing companies. The ADX then classified companies that voluntarily adopted the requirements as good compliance companies and those that adopted the extra requirements related to the procedures and disclosure of the composition and independence of the board as the best compliance companies. In the following year, comments and feedback about the corporate governance practices were initiated. The companies that had adopted the Code provided useful comments, pointed out some errors and clarified some definitions (DCCI, 2005).

The Central Bank of the UAE also released a draft of its Corporate Governance Guidelines in December 2005 related to financial institutions. These guidelines show

the significant role to be played by banks in the UAE's economy and the crucial role of good corporate governance in ensuring banks' sustainability and security.

In October 2006, the ADX issued the revised draft of the corporate governance code and several educational programs and conferences were conducted by Hawkama. On the 9th of April 2007, the SCA in the UAE finally issued a Decision of Corporate Governance (No. (R/32 of 2007) concerning the corporate governance code in the UAE markets. The code provides listed companies three years from the day it is published to reconcile their position with the standards of the code (CG Code, 2007).

The SCA and the Minister of Economy introduced the final corporate governance code called the Ministerial Resolution No. 518 of 2009. This code was issued on the 29th of October 2009 and enforced on 30th of April 2010 (CG Code, 2009). The Ministerial Degree (No. 84 of 2010) amended some articles of the code. For example, stricter conditions were put in place to ensure the independence of the board of directors and the nomination and remuneration committees were assigned more responsibilities to monitor these conditions. The code also excluded foreign listed firms as they adhered to different regulations. These amendments, however, are not expected to make any significant change since they were issued during the voluntary period of the code application.

In addition, the Central Bank also issued an updated draft of its Corporate Governance Guidelines in June 2009 which was originally released in December 2005. This revised code organizes the rules of financial institutions related to corporate governance which ensure good practices of corporate governance. Finally,

on the 7th of March 2010, the latest corporate governance code was issued with amendments to the previous code.

One of the major improvements in the corporate governance code in the UAE was the establishment of Hawkama. It was set up in 2005 by the DIFC with support of several global organizations, including the Organization for Economic Cooperation and Development (OECD), the Union of Arab Banks, International Finance Corporation (IFC), the UAE's Ministry of Finance and Industry, the Institute of Management Development, Young Arab Leaders, the Dubai School of Government and the Centre for International Private Enterprise. Hawkama was launched to address the gap in corporate governance and assist businesses in the region by establishing and adopting well-integrated frameworks of corporate governance and good reforms for better performance.

In 2006, the general director of the DIFC stated that Hawkama is going to be an international institute assisting the whole region from Morocco to Iran. The institute will be a provider of any technical assistance, research and analysis to enhance the state of corporate governance in the countries and their businesses (Hawkama, 2006). It is now considered as the first specialist center for corporate governance in the region. Since its establishment, Hawkama has been contributing positively to the corporate governance body, by ensuring well-integrated rules compatible with international standards, providing instructions and conducting research to widely promote good governance in the whole region. In addition, different memoranda of understanding have been signed by Hawkama and several authorities in the region.

After the global financial crisis, many seminars, workshops and conferences have been organized to help firms to effectively adopt the highest standards of corporate governance. Also, the Minister of Economy and the SCA have honoured public listed companies that have initiated the implementation of corporate governance standards. It is realized that corporate governance played a very important role in dealing with the crisis and that sound governance might make a difference.

Other improvements could be seen after the crisis with regards to corporate governance, such as the setting up of some other governance institutions, like the Abu Dhabi Center for Corporate Governance (ADCCG) which was launched by the Abu Dhabi Chamber of Commerce and Industry (ADCCI) in January 2009. The main objective of the center is to contribute to the growth and sustainability of the local economy. The center offers companies services, consultation and any other requirements to achieve the best international practices of corporate governance. The center has a research department which helps to examine the impact of corporate governance and its future goals.

2.3.2 The UAE Commercial Companies' Act of 1984

The UAE Commercial Companies' Act of 1984 requires all companies to present true and fair financial statements by reporting proper financial records of their operations. This act also includes articles that govern the processes of companies' management. For example, Articles 95-111 are related to the duties of management, board of directors and the selection and composition of boards of directors. The boards of directors are held accountable for any fraudulent activities, abuse of power or any violation of laws and regulations. Article 118 of the Act also requires clear

clarification of the determination of the remuneration of boards of directors. The remuneration should not exceed 10% of the net income after a 5% dividend distribution. The Act allows foreign investors to own less than 50% of corporation shares.

2.3.3 The SCA Regulations of Disclosure and Transparency

The role of the SCA is to enhance the accountability systems, including corporate governance and transparency. For instance, Decision No. 3, Article 36 of 2000 requires full disclosure of corporate governance information, which includes but not limited to: the names of board of directors and executives and a statement of shares ownership of their own or any of their first degree relatives as well as if they are members of any other public companies' boards; the names of any investors who own 5% or more of the shares of the company, whether individually or with his/her spouse or minor children; the percentage of ownership of any foreign individuals in the firm's capital; any approved amendments of the company's articles of association; and any change of the company's structure, whether in the management or board of directors.

The UAE's corporations are required by the SCA to prepare their annual reports with the guidance of International Financial Reporting Standards (IFRS). The annual report should include the income statement, the balance sheet, cash flow statement, audit report, board of directors' report, changes in equity statement and the related notes to the financial statements. The publication of these reports should be no later than 31st of March each year and be signed by the board of directors or any authorized individual on their behalf.

2.4 An Overview of the Stock Markets in the UAE

The UAE has two main stock markets: Abu Dhabi Securities Exchange (ADX) and Dubai Financial Market (DFM). They also have the Securities and Commodities Authority (SCA) which is the regulator for listed firms in both markets. Firms should be licensed first by the SCA and then apply for any of the UAE's two markets. The SCA is also the supervisory body for the enforcement of regulations, including the corporate governance code. It links both markets electronically through live market watch screens forming the Emirates Securities Market (ESM). In the following section, a brief overview about stock markets in the UAE is presented.

2.4.1 The Abu Dhabi Securities Exchange (ADX)

The ADX is the main stock market in the UAE which was established on November 12th, 2000 according to local laws of the UAE No. 3 of the year 2000. The market is financially independent, has a legal entity of autonomous status and an independent management, which enable the market to perform its duties and tasks freely. The ADX has several main objectives. It aims to achieve sustainable growth of the national economy by providing opportunities to the public for savings and investments. The ADX also seeks for better dealing principles for investors' protection.

In order to guarantee good conduct procedures, the ADX imposes strict control over securities transactions and tries to develop good investment knowledge through studies and provide proper recommendations. The ADX also tries to maintain good levels of supply and demand by organizing sound transactions. The market also

develops trading methods that can ensure price stability and availability of liquidity of securities listed on the market. As of the end of 2012, there were 66 listed companies on the ADX compared to 65 in 2008.

2.4.2 The Dubai Financial Market (DFM)

The DFM is the second stock market in the UAE which was launched by Resolution No.14 of the year 2000. The DFM provides good environment for trading stocks of public companies or any bonds issued by the local governments or the federal government or any other institutions. It also trades foreign or local units of investment funds or any other financial instruments.

On the 27th of December 2005, the Dubai Executive Council decided to change the autonomous status of the DFM to a public joint stock company with a capital of AED 8 billion as the first market in the region; they offered 20% of the capital for Initial Public Offering and the company was listed on the market on the 7th of March 2007. As of the end of 2012, there were 57 companies listed on the DFM compared to 65 in 2008.

2.4.3 The Securities and Commodities Authority (SCA)

The SCA was established in 2000 under law No.4 of the year 2000. The SCA administers and links the ADX and DFM and took initial steps to set up the ESM.

The SCA is the regulator of the UAE's markets and is responsible for enforcing the corporate governance code and other regulations by the listed firms in both markets. It also links the ADX and DFM electronically through live market watch screens.

The SCA provides daily reports of the performance and trading activities of both markets and companies. The SCA issues a daily index of the ESM (also called the SCA index) which is officially the index of both markets. The SCA also provides live market watch screens in different cities around the country. There is an annual report and several brochures issued by the SCA which contain the activities and other data of companies of both markets which is a rich source of information.

2.5 The Global Financial Crisis and the Crisis in the UAE

The 2007 subprime mortgage crisis, also known as the Global Financial Crisis (GFC) developed over time and really showed its tangible effects in mid-2007 through 2008 (Shah, 2010). It has been considered by many experts as the worst financial crisis since the Great Depression of the 1930s (Beltratti & Stulz, 2012; Erkens *et al.*, 2012). Globally, stock exchanges fell; large corporations were bought out or collapsed; and rescue packages were introduced by several governments in even the richest countries to bail-out their markets (Shah, 2010).

The failure of key businesses around the world was one of consequences of the GFC. Trillions of US dollars were estimated to be lost from the consumers' wealth. The slump in economic activities led to the Great Recession which affected all world economies with variation from one country to another. The crisis also contributed to the recent European sovereign-debt crisis (Baily & Elliott, 2009; Williams, 2012).

The crisis started when the US Federal Reserve reduced steadily the interest rates and facilitated the credit conditions which resulted in great inflows of foreign funds for several years before the crisis. That encouraged debt financing and caused the

housing construction boom (Bush, 2008). The easy credit and funds inflow combined to contribute to the housing bubble in the US. It was easy to obtain several types of loans and consumers experienced unprecedented debt load (Bernanke, 2009; Krugman, 2009).

Year after year, the companies of the Wall Street made huge profits, but this was too good to be true (Baily & Elliott, 2009). The prices of the houses were high due to the easy credit which then caused overvaluation of the real estate market in the US (Chang, 2011). The rise of interest rates from 2004 to 2006 forced many homeowners to default on their loans due to the adjustable mortgage rates. From the beginning of 2007, US home sales fell and the housing prices declined for the first time since 1991. As a result, foreclosures doubled compared to 2006 and the subprime businesses collapsed (Buckley, 2011). In February 2007, the HSBC announced losses related to subprime loans and by August 2007, companies, like New Century Financial and American Home, declared bankruptcy. From mid-2007, a liquidity crisis occurred and the liabilities of several financial institutions could not be evaluated with reasonable costs (Baily & Elliott, 2009).

By the end of 2007, the HSBC and Lehman Brothers started to close offices and other companies announced write-downs on bad debt or record losses which led to Standard and Poor's downgrading of investment ratings that were exposed to the subprime market. In the first quarter of 2008, losses increased in the financial market and spread to countries, such as France and Norway (Hausman & Johnston, 2014). Housing prices dropped even more during 2008 leaving the financial sector in deep trouble as investors became uncertain of the true value of real estate collateral. It was

a profitable market for financial assets, but when their prices fell, these assets were marked by the investment funds and some financial institutions had to make hard choices (Hausman & Johnston, 2014).

Several corporations were severely hit, where some of them declared bankruptcy and others had to be sold to other corporations or in the emergency government backed acquisitions. Lehman Brothers, Bear Stearns and Merrill Lynch are examples of the failed corporations in the US. Lehman Brothers which went bankrupt on September 15, 2008 is classified as the biggest corporate bankruptcy in American history. Bear Stearns was bought by JP Morgan Chase, with Federal government's support when it was on the edge of bankruptcy; while Merrill Lynch, the largest brokerage firm globally was sold to Bank of America in 2008 (Altman, 2009; Chang, 2011).

The crisis quickly spread and developed into a global recession and economic shock for many countries, resulting in the decline in various stock indices, failure of several European banks and decreases in equities and commodities' market value. It affected many countries, both developed or developing, such as Iceland, Russia, Hungary, South Korea, Latvia, Spain, Greece and the UAE (Chang, 2011; Fackler, 2008). In the Middle East, three trillion American dollars were estimated to have been lost in the Arab World due to the financial crisis; the decline in the oil price also led to much of the losses. Foreign investments in the Middle Eastern countries were also reported to have decreased as a result of the decrease in the demand for oil. Great losses of about four billion American dollars were also reported by the Arab banks since the start of the financial crisis (Chang, 2011; Elnaggar, 2009).

One of the most affected countries in the Middle East was the UAE. The UAE has global markets in nature and is one of the fastest growing centers of finance globally (Chang, 2011). Dubai, for example, is developing into a business hub similar to Hong Kong, Shanghai, London and New York. It has the well-known Dubai International Financial Center (DIFC) which is one of the world's leading financial institutions (Alsukker, 2010). In the year before the financial crisis, Dubai had the largest real estate growth in the world which could make it highly vulnerable to the GFC. Further, the UAE is a large producer and exporter of oil where a big share of the country's revenue depends on oil. Therefore, there were two main reasons for the crisis in the UAE. First, as most of the countries in the region, it was affected by the fall in oil prices from October 2008 and into 2009. Second, as the UAE was a frontrunner in construction growth and real estate investment, it was reported to be the country most hit by the GFC in the world in terms of the property slump (Alsukker, 2010).

In general, the inflation rates jumped up from 6% in 2006 to 10.8% in 2008. The UAE sovereign funds which had been invested largely in stocks and bonds, experienced large losses (Brach & Loewe, 2010). The total value of shares traded in the ESM decreased dramatically from AED 537.1 billion in 2008 to AED 243.4 billion in 2009 with 70% decline in the ADX and 43.2% decline in the DFM (ADX, 2009; DFM, 2009; SCA, 2008, 2009). The UAE was affected more than any other Middle Eastern country in terms of its property prices which fell by around 50% from 2008 to 2009 (Colliers International Report, 2010).

The GFC also led to large withdrawals of foreign investment as indicated by the negative net foreign investment of about AED 11.5 billion during 2008. Besides that, many firms suffered from liquidity problems and building projects worth USD 582 billion were put on hold. These events not only affected the parties directly related to these companies such as directors and shareholders, but also the external parties (Brach & Loewe, 2010; Chang, 2011). Although initially, Dubai appeared not to be affected by the crisis, it shocked the world when the creditors of Dubai World and Nakheel asked for a six-months debt delay of the repayments (Alsukker, 2010; Chang, 2011; Salah, 2010).

Dubai World is a state-owned corporate conglomerate which built the tallest building in the world; and Nakheel is responsible for the palm-shaped islands. The total recorded debt of Dubai World was USD 59 billion where USD 3.5 billion of the loan had been forced to default (Nasser, 2009; Thomas, 2009). Dubai World has also sold some of its properties around the world, such as W New York Union Square Hotel, that was taken over in a foreclosure auction by a property lender in December 2009 (Agovino, 2009).

2.6 Conclusion

This chapter reviews the economic structure of the UAE with focus on the main aspects related to the current study. It explains the history of corporate governance legislations and practices since initiating the first steps of voluntary practices of corporate governance until the issuance of the code of corporate governance to the point when it is enforced. The stock markets and the role of SCA in monitoring and organizing the securities in the country are also explained. The chapter also explains

how the subprime mortgage crisis started and how it spread to the whole world leading to the Great Recession. It then discusses how the UAE markets were exposed to the global crisis and in what ways it led to the UAE's debt crisis.

The next chapter discusses the literature review of the related variables. It starts with firm performance and its measurements. Corporate governance is then reviewed with some insights into its impact during the crisis. Investment opportunities, leverage and ownership identity are finally reviewed.

CHAPTER THREE

LITERATURE REVIEW

3.1 Introduction

This chapter reviews the previous empirical studies related to the current study. First, previous studies related to the examined variables are reviewed starting with the moderating variable, corporate governance strength. Then, the independent variables (investment opportunities, leverage, foreign and institutional ownership) are explained. After that, firm performance literature is discussed with a focus on the possible measurements of firm performance. Finally, a conclusion is drawn.

3.2 Corporate Governance Strength

Corporate governance mechanisms are introduced in order to ensure that investors are getting the right ROI (Shleifer & Vishny, 1997). Gillan and Starks (2000) defined corporate governance as the system of rules and regulations that controls the firms' operations. Others have defined governance as a set of mechanisms that control firm decisions as a result of the separation between management and ownership (Larcker *et al.*, 2007).

Corporate governance can address agency problems which are the unfavorable consequences of the conflicts between managers and shareholders or between the minority and majority shareholders. This means that investors can obtain their money back under good corporate governance practices and ensure that someone is responsible, whether the manager or agent, for making the appropriate decisions related to using the money after it has been invested (Love, 2011).

Under the Agency Theory, it is assumed that the agents or managers have more information than the principals (owners) as the agents have more control over the firm's operations which make it difficult for the principals to monitor the agents effectively (Jensen & Meckling, 1976). It is explained that agents have more information about the economic resources and they might consider maximizing their own interests over the principals' interest of maximizing wealth. Corporate governance mechanisms are applied in most of the organizations to handle any possible conflicts that might accrue between the agents and the principals due to the separation between ownership and management which can influence the agents' decisions. It is believed that managerial opportunism can be decreased by having strong corporate governance mechanisms (Rabi *et al.*, 2010).

Since it is implied that firms with good corporate governance have their money invested more productively, then well-governed firms are more likely to have better profitability. In short, greater efficiency and value-added to the firm may be influenced by better corporate governance practices. It is also argued that corporate governance influences the way wealth is distributed among various stakeholders by reducing firms' cost of capital, improving market value and mitigating financial distress (Bonna, 2012; Love, 2011).

Love (2011) mentioned several ways in which corporate governance mechanisms help to improve firm performance. For example, managers are more likely to boost profit and work more efficiently. Good corporate governance can reduce the frequency of tunnelling, asset stripping, transactions with other related parties and other ways of diverting firm assets or cash from shareholders. Investors are advised

to accept a lower ROI of their shares as investment would be less risky and better protected with low cost of capital. An increase in the positive growth opportunities can be improved with the accessibility of external finance which is the result of implementing good governance practices. All the consequences of better corporate governance are reflected positively in the firm's cash flows and the overall firm performance.

It has been argued that weak corporate governance is one of the main reasons of the financial crisis and financial market scandals (Kirkpatrick, 2009; Yeoh, 2010). Several leading companies have failed as a result of the financial crisis in different countries which negatively affected the confidence of investors and financial markets in general. Such examples include companies such as Lehman Brothers, WorldCom, Adelphi and Merrill Lynch in the US; and others like Metallgesellshaft, Vivendi and Swissair in Europe.

The value of the firm in the market is related to its performance. Investors will be attracted to companies with better financial performance (De Nicolò, Laeven & Ueda, 2008; Julien & Rieger, 2003). However, a firm's performance is generally affected by several variables, including corporate governance. Therefore, attention has been directed to the issue of corporate governance which would never end after the several unexpected financial scandals, including the 2008 meltdown (Dong & Wen-jia, 2009; Julien & Rieger, 2003). Firms with better profits and higher cash flows are expected to have their stock prices increased. Several studies have looked into this assumption by examining the association between corporate governance and firm performance.

Most past studies have examined the direct association between corporate governance and firm performance. The direct relationship between corporate governance and firm performance has been well documented and has shown both mixed and weak results (Agrawal & Knoeber, 1996; Baliga, Moyer & Rao, 1996; Black *et al.*, 2006b; Bloom & Milkovich, 1998; Chhaochharia & Grinstein, 2007; Core, Holthausen & Larcker, 1999; Cremers & Nair, 2005; Dalton, Daily, Ellstrand & Johnson, 1998; Demsetz & Villalonga, 2001; Evans & Weir, 1995; Gompers *et al.*, 2003; Hermalin & Weisbach, 1991; Jensen & Murphy, 1990; Kohli & Saha, 2008; Kosnik & Bettenhausen, 1992; Kren & Kerr, 1997; Lehn *et al.*, 2007).

Besides that, corporate governance, as a system, affects other factors that indirectly influence firm performance, such as the board of directors having a monitoring role on the firm's operations and contributing in the decision-making process. Therefore, it is not fair to only draw a conclusion based on the direct influence of corporate governance on firm performance. For example, some studies have found that corporate governance negatively influences firm performance (Aebi *et al.*, 2011; Beltratti & Stulz, 2012), which means that having a corporate governance system is worthless. Therefore, it is useful to examine whether corporate governance strength affects other factors that influence firm performance.

Based on the belief that corporate governance can play a better role as a moderating variable with performance, some studies have examined the effect of some corporate governance mechanisms as moderating with performance. Goh, Rasli and Khan (2014); and Sulong and Nor (2010) examined the moderating role of CEO duality and board independence on a sample of Malaysian firms. Goh *et al.* (2014) found

insignificant moderation of both variables on the relationship between control contestability in the ownership structure and firm performance. Sulong and Nor (2010), on the other hand, indicated that board characteristics can have an important influence on the relationship between types of ownership and firm performance.

Chaganti and Damanpour (1991) found a moderating effect of family and insider ownership on the association between outsider institutional ownership and firm performance. Many studies have investigated the moderating role of some mechanisms of governance on the relationship between governance variables and firm performance. For example, a study by Combs, Ketchen Jr., Perryman and Donahue (2007) found a moderating role of CEO power on the relationship between board composition and firm performance. Also, a study by Hsu, Wang, Tsai and Lu (2012) investigated the moderating effect of independent directors on the relationship between CEO duality and firm performance, but found no moderating effect.

Other studies have examined the impact of external variables as independent variables. For example, Rabi *et al.* (2010) examined the moderating role of some corporate governance mechanisms on the relationship between R&D expenditure and firm performance. They only found board compensation and board meeting to have a moderating effect in the relationship. They concluded that other governance mechanisms might be missed which appears as a non-complete system of governance.

Some other studies have suggested an association with the firm's related variables. For example, Hutchinson and Gul (2004) examined the moderating role of the proportion of non-executive directors, managerial ownership and managers' remuneration on the relationship between investment opportunities and performance. Similarly, Muniandy *et al.* (2010) investigated the proportion of non-executive directors on the audit committee and a non-executive chairman as moderators in the relationship between investment opportunities and performance. They both found a moderating role of the examined governance variables in the relationship between investment opportunities and firm performance. However, these studies have only examined the effect of investment opportunities and none of them has taken into consideration how strong or how adequate these variables are.

The incomplete image of separate corporate governance variables is believed to produce the inconsistent results which means that these variables do not adequately represent the corporate governance system in the firm. Some studies have indicated that corporate governance mechanisms should not be studied individually as they are interconnected and can affect each other (Agrawal & Knoeber, 1996; Lan & Li, 2007). The interactions between the separate corporate governance variables also imply that these variables are not independently determined (Gillan *et al.*, 2003). Therefore, the strength of corporate governance is examined as a moderating rather than a separate mechanism. Also, the FCIC announced poor corporate governance as one of the causes of the crisis; not specific governance mechanisms.

Several studies have measured corporate governance using indices to rate the power of corporate governance rather than test corporate governance variables separately

(Bebchuk *et al.*, 2009; Brown & Caylor, 2009; Brown & Caylor, 2006; Gompers *et al.*, 2003). Some studies have considered firms with independent boards, strong rights of shareholders and less entrenchment of management, as firms having strong corporate governance (Bebchuk *et al.*, 2009; Gompers *et al.*, 2003). Subrahmanyam (2008) indicated that the efficiency of global financial markets is better with good practices of corporate governance. This indicates that equity and debt financing will more be likely attracted to firms with good practices of corporate governance to help and encourage growth which then could improve the financial markets (Cremers & Nair, 2005).

Several studies have measured the effect of corporate governance practices using indices and have reported a positive relationship between corporate governance and firm performance. For example, Klapper and Love (2004) examined the influence of corporate governance on firm performance and valuation in 14 emerging markets. They indicated that good corporate governance is strongly associated with firm performance and valuation. They also found that sample firms have various levels of corporate governance in different environments.

Other studies, such as Bebchuk *et al.* (2009); Brown and Caylor (2006); and Cremers and Nair (2005) have measured corporate governance with indices that consist of several governance provisions based on the Investor Responsibility Research Center (IRRC) and Institutional Shareholder Services (ISS) data in the US. They indicated that firms with better governance are likely to have better performance. They also revealed that only some of the governance provisions marketed by data providers are related to firm performance.

Some other studies have examined the impact of governance in developing countries. For example, Black and Kim (2012) in Korea; and Wahab *et al.* (2007) in Malaysia considered the governance code in the examined countries. Both studies found a positive influence of corporate governance on firm performance. Many studies have found a positive association between corporate governance and performance in other developing countries, such as Kohli and Saha (2008) in India; Zheka (2005) in Ukraine; and Black *et al.* (2006a) in Russia. There are many other studies that have found a positive impact of corporate governance strength on firm performance (see for example, Bebchuk *et al.*, 2009; Black, 2001; Black & Kim, 2012; Black *et al.*, 2006a; Black, Kim, Jang & Park, 2008; Chong & López-de-Silanes, 2007; Gompers *et al.*, 2003; Klapper & Love, 2004; Nenova, 2006; Reddy *et al.*, 2008; Wahab *et al.*, 2007; Zheka, 2005).

In spite of the positive results, some other studies have argued against this positive relationship. For example, Aman and Nguyen (2008) found that firms with poor corporate governance perform better than firms with good corporate governance, but have more risks. Ferreira and Laux (2007); and Lehn *et al.* (2007) indicated that poorly governed firms have better performance than firms with good corporate governance. There are several other studies that have found non-significant results (see for example, Chidambaran *et al.*, 2008; Core *et al.*, 2006; Firth, Fung & Rui, 2002; Gillan *et al.*, 2006; Lehn *et al.*, 2007; Yen, 2005).

In addition, other studies, such as Adjaoud, Zeghal and Andaleeb (2007); and Peni and Vähämaa (2012) found inconsistencies in their findings. For example, Adjaoud *et al.* (2007) examined the impact of board's quality on the performance of Canadian

firms measured by traditional and value-based measurements. They indicated no significant association between board's quality and firm performance measured by ROI, ROE, EPS and Market-to-book (MTB) ratio. On the other hand, they found a significant relationship when performance is measured by value-based indicators, such as economic value added indicators. Peni and Vähämaa (2012) found a positive relationship between firms with good corporate governance and profitability during the 2008 crisis, but they showed negative association with Tobin's Q.

The GFC created a new path of research related to corporate governance and firm performance during the period of the crisis. Some researchers have argued against the official conclusion that poor corporate governance is one of the main reasons behind the crisis (Beltratti & Stulz, 2012; Erkens *et al.*, 2012). Others support the argument that corporate governance failure did contribute to the crisis (Yeoh, 2010).

For example, Beltratti and Stulz (2012) compared firms with poor versus strong corporate governance and showed that firms with strong corporate governance performed worse during the crisis and have more risks. Erkens *et al.* (2012) also found that firms with more independent boards and higher institutional ownership had poor performance during the crisis. Another study examined some corporate governance variables on firm performance and found the tested variables were either insignificant or negatively related to firm performance during the crisis (Aebi *et al.*, 2011).

On the other hand, Peni and Vähämaa (2012); and Suvankulov and Ogucu (2012) showed that firms with better corporate governance suffered less during the crisis in

terms of their performance. Peni and Vähämaa (2012) suggested that a strong corporate governance system as a whole could moderate the effect of firm performance during a crisis. This is in line with Goh *et al.* (2014); and Rabi *et al.* (2010) who suggested that corporate governance can be better explained as a moderator and recommended future studies to examine the moderating role of corporate governance with firm performance. This motivated the current study to examine the moderating influence of corporate governance strength as a whole (measured by an extensive index) on the relationship between investment opportunities, leverage and ownership identity with firm performance.

With regards to the UAE, only a few studies have been conducted in the area of corporate governance and firm performance. Moustafa's (2005) was the first study to investigate the impact of ownership structure of Emirati firms on firm performance. He found that manager-controlled firms perform worse than owner-controlled firms. A later study examined seven corporate governance variables on 2004 data sample and found that only three of the examined variables have a significant influence on firm performance (Aljifri & Moustafa, 2007).

Adawi and Rwegasira (2010); and Hassan and Halbouni (2013) used a sample of Emirati firms to examine some corporate governance variables, such as board process, board characteristics and institutional ownership. Adawi and Rwegasira (2010) found that board process and institutional ownership are key factors in influencing firm performance. Hassan and Halbouni (2013) showed that board size, CEO duality and voluntary disclosure are associated with the accounting-based measurements but not with the market-based measures.

Two studies have used indices to partly assess the level of corporate governance in the Emirati firms. Hassan (2012) assessed the disclosure of corporate governance reported by the listed firms in the UAE. Another recent study by Al-Malkawi, Pillai and Bhatti (2014) evaluated the corporate governance practices of firms listed in six Gulf Cooperation Council (GCC) countries, including the UAE. They used a sample of 38 firms listed either on the ADX or the DFM and found that UAE's firms have the best corporate governance practices compared to other GCC firms.

3.3 Investment Opportunities

Morgenson and Harvey (2002) defined investment opportunties as the 'universe of choices' in terms of investments available to an individual or corporation. Zakamulin (2011) defined investment opportunities as all risk-return combinations available to the investors. Another definition states that investment opportunities depict expected rates of return between risky and risk-free assets.

It is believed that firms with more investment opportunities have higher incidence of information asymmetry due to the possibility of having more issues to deal with than firms with lower opportunities which need more monitoring costs (Hutchinson & Gul, 2004). It is also argued that firms with good corporate governance practices can be better monitored and mitigate the shareholders-managers' conflict of interests and in turn, reduce the agency costs (Dittmar & Mahrt-Smith, 2007; Masulis, Wang & Xie, 2007).

The Contracting Theory anticipates a negative relationship between the investment opportunities of the firm and its performance. It is believed that firms with more

investment opportunities tend to spend more to employ these opportunities which reflect negatively on firm performance. However, corporate governance is argued by the Agency Theory as moderating the negative relationship as monitoring and incentives are significant governance functions to lower agency costs and information asymmetry. Previous studies have indicated that firms with more investment opportunities have higher monitoring costs, higher compensations, additional costs of using alternative accounting performance measures and more use of stock options (Anderson *et al.*, 1993; Bushman *et al.*, 1996; Gaver & Gaver, 1993; Skinner, 1993; Smith & Watts, 1992). Also, firms with higher investment opportunities have more information asymmetry as managers have more information about the value of future projects which is not available to shareholders.

Investment opportunities were affected by the exogenous shocks of the GFC. Some studies have suggested that corporate governance can better explain the variation in firm performance indirectly through other related variables. Three of these studies have suggested investment opportunities to be one of these variables (Chen *et al.*, 2010; Hutchinson & Gul, 2004; Muniandy *et al.*, 2010). It is posited that the negative relationship between investment opportunities and firm performance is moderated by corporate governance variables (Baker, 1993; Gul, 1999).

Hutchinson and Gul (2004); and Muniandy *et al.* (2010) suggested some corporate governance variables moderate the negative association between investment opportunities and firm performance. Hutchinson and Gul (2004) indicated that the negative relationship between investment opportunities and firm performance is moderated by the proportion of non-executive directors, managerial ownership and

managers' remuneration. Muniandy *et al.* (2010) also found some internal corporate governance variables to moderate the negative relationship between investment opportunities and firm performance, namely the proportion of non-executive directors on the audit committee and a non-executive chairman.

The relationship between corporate governance and firm performance is open to criticism (Bhagat & Black, 2002; Bhagat & Bolton, 2008). The theoretical model of Hutchinson and Gul (2004); and Muniandy *et al.* (2010) suggests a negative relationship between investment opportunities and firm performance and that corporate governance acts as a moderator. This assumption posits that the negative impact of growth options on performance is attenuated when there is stronger corporate governance. Hutchinson and Gul (2004) anticipated that the negative relationship weakens when the tested corporate governance variables have more effect on firms with higher investment opportunities which are difficult to monitor. Hutchinson and Gul (2004) also indicated that the role played by corporate governance mechanisms in firm performance should be assessed in the context of other related variables of the firm. Their results show the importance of corporate governance for firms with high investment opportunities.

Other studies that have considered other related variables are those of Chen *et al.* (2010); and Hutchinson and Gul (2006). Hutchinson and Gul (2006) examined Australian firms and demonstrated that it is the combination of option plans and the opportunities for investment that are associated with increasing financial performance. Their results show a positive relationship between firm opportunities of investment and performance, only in the presence of the option plans; otherwise,

the association is negatively related. Chen *et al.* (2010) also investigated other variables, such as external financing needs and opportunities for investment. They reported a positive effect of external financing needs on the influence of corporate governance on firm value.

3.4 Leverage

Leverage is the proportion of capital that is financed by borrowing besides equities (Ward & Price, 2008). Debt is one of the components that forms a firm's capital structure which can be utilized to finance a firm's operational activities (Ross, Westerfield & Jordan, 2008). Ward and Price (2008) explained that ROE increases with the increase of debt which can be profitable if the earning rates exceed the interest rates. After all, a firm has a limit on its leverage financing and should consider the accompanying obligations (Wet, 2006).

Researchers and practitioners have considered the positive and negative attributes of leverage as a corporate financing instrument. After the Great Depression of the 1930s, debt is believed to be a dangerous tool when used as a financing instrument, but it is necessary on some occasions and should be employed by well-managed firms carefully (McConnell & Servaes, 1995).

Since the current study is conducted in the time of the Great Recession[1], negative influence of leverage is expected on firm performance. The Pecking Order Theory posits that firms with good performance or profitability are likely to have less debt or

[1] For more information about the Great Recession, please see (Geewax, 2012).

leverage (Morck, Shleifer & Vishny, 1988). This theory suggests that well-managed firms first use their available cash to finance their investments and operations and then turn to external financing (Myers, 1984). On the other hand, a positive association between debt and firm performance is suggested by the Agency Theory as it is believed that high leverage can create stronger monitoring from the creditors which can improve firm performance.

Tsai and Gu (2007b) showed a positive and significant relationship between leverage and firm performance and demonstrated that institutional investors are more attracted to big firms with less debt. Another study by Haat *et al.* (2008) investigated Malaysian firms and found a significant relationship between leverage and firm performance and pointed that the monitoring of creditors really increases confidence of firms with higher debt. Their results support the Agency Theory that creditors' monitoring for high debt holders can result in better performance. Martani and Saputra (2009); and Reddy *et al.* (2008) also reported a positive relationship between debt ratio and performance of firms.

On the other hand, Bonna (2012) investigated the relationship between leverage and performance as well as leverage and the financial crisis. He found a significantly negative relationship between leverage and both firm performance and the financial crisis. Tan (2012) also examined the relationship between leverage and performance during the Asian crisis. He concluded that firms with low leverage have better firm performance and that leverage exaggerated the impact of the crisis.

Switzer and Tang (2009) also reported a negative relationship between leverage and firm performance. Some other studies showed a negative sign of debt ratio and ownership of institutions in the casino industry and suggested that they can be used as substitutes to mitigate the agency problem (Bathala, Moon & Rao, 1994; Crutchley, Jensen, Jahera Jr. & Raymond, 1999).

The possibility of a positive and a negative effect of debt on firm performance influenced by investment decisions has been suggested by earlier theoretical works (Jensen, 1986; McConnell & Servaes, 1990; Morck *et al.*, 1988; Myers, 1977; Shleifer & Vishny, 1986; Stulz, 1990). McConnell and Servaes (1995); and Jayati Sarkar and Sarkar (2008) mentioned that the positive or negative effect between leverage and firm performance depends on other variables. McConnell and Servaes (1995) found a positive relationship between leverage and firm performance for firms with low investment opportunities and negative association for firms with high investment opportunities.

Jayati Sarkar and Sarkar (2008) also evaluated the effect of group affiliated or stand-alone firms on the listed firms in India for the years 1996, 2000 and 2003. They found differences among results in each of the examined years when investment opportunities are included. They did not find any significant association between leverage and performance in 1996. Meanwhile, a positive effect with firm performance was found in the year 2000 for firms with low investment opportunities, which is argued to be indicative of the disciplinary role of debt in mitigating the agency costs associated with over-investments. In addition, Jayati Sarkar and Sarkar

(2008) revealed that agency problems can be mitigated by using firms' debt as a tool in different markets.

Ownership Identity

Jensen and Meckling (1976) illustrated the distribution of shares between owners and how this allocation can affect firm performance. Special attention has been drawn to the relationship between ownership and performance since then. Concentration of ownership has been considered theoretically and empirically as the major corporate mechanisms that could influence firm performance. However, it is believed that the results of the relationship between ownership structure and performance are inconsistent (Sanchez-Ballesta & Garcia-Meca, 2007).

Despite the wealth of research, it is still being debated whether major owners contribute to solve the agency problems or exacerbate them. Many of the previous empirical results have indicated a positive correlation between performance and concentration of ownership as the quality of managerial decisions is enhanced by owners' monitoring when there are no other effects of ownership concentration (Shleifer & Vishny, 1986). The Agency Theory explains that the owner-managers will watch over the firm's possessions diligently, whereas the independent managers will make less effort.

It is argued that firm owners intend to maximize profits while managers or agents might not have the interests or any incentive to do the same (Berle & Means, 1932). As a result, share ownership is anticipated to have a direct influence on firm

performance which is mainly because of the positive influence of incentives to improve profits. This supports the idea that large shareholders are active monitors in firms which help to improve firm profitability (Sanchez-Ballesta & Garcia-Meca, 2007). However, as suggested by the Agency Theory, decisions of value maximizing might be ineffective for firms with high ownership concentration. This research analyzes two types of ownership identities: foreign and institutional ownership.

3.5 Foreign Ownership

According to the literature, the idea of foreign firms to invest abroad is motivated by the belief that foreign firms have better opportunities since they have superior utilizable capabilities compared to the domestic firms (Buckley & Casson, 1976, 2003; Dunning, 1988; Porter, 2011). The Agency Theory explains the relationship between different types of ownership concentration with firm performance and foreign concentrated ownership is one of them (Chhibber & Majumdar, 1999). The Agency Theory argues that the existence of foreign ownership in a firm is associated with better firm performance (Haat *et al.*, 2008). Hingorani, Lehn and Makhija (1997) concluded that foreign ownership reduces agency problems by aligning the interests of shareholders and management.

It is assumed that the increase in foreign ownership in a firm of any industry is associated with better performance as foreign firms support powerful capabilities not available for their domestic counterparts (Caves, 2007). Some of the earlier studies have found the existence of such direct effects of foreign ownership with respect to OECD countries (Dunning & Pearce, 1977; Forsyth & Docherty, 1972; Globerman, 1979).

Recent empirical studies have shown that foreign ownership and firm performance relationship is a highly debatable topic. It is argued that foreign involvement in the ownership of firms might has different effects on the relationship with firm performance. Mixed results have been produced by previous literature. Many studies have investigated the association between foreign ownership and firm performance around the world and at different periods of time (Akimova & Schwödiauer, 2004; Arouri, Hossain & Muttakin, 2014; Aydin, Sayim & Yalama, 2007; Douma, George & Kabir, 2006; Goethals & Ooghe, 1997; Gunduz & Tatoglu, 2003; Isik, Gunduz, Kilic & Uysal, 2004; Khawar, 2003; Yudaeva, Kozlov, Melentieva & Ponomareva, 2003; Zheka, 2005).

The earlier studies can be valuable to create an idea of the nature and development of the foreign ownership and performance relationship globally. Arouri *et al.* (2014) examined foreign ownership relationship with firm performance of companies in the CCG countries. They found that the involvement of foreign investors in the ownership structure of a firm improves the performance of the firm. Aydin *et al.* (2007) applied t-test statistics to compare the association of foreign investors in the firm with the domestic investors. They included all the listed firms on the Istanbul Stock Exchange (ISE) from 2003-2004 and demonstrated that firms with foreign ownership have better performance than those with no foreign involvement.

Yudaeva *et al.* (2003) tested the productivity of Russian firms and compared domestic firms with those that have foreign ownership in their structure. They also considered the possible spill-overs of foreign-owned firms to the local ones. The results of the comparative analysis showed that firms with foreign involvement are

more productive than the domestic Russian firms. They found that domestic firms have less advantage than foreign-owned firms as the latter have better management and better access to technologies.

Many other studies have found that foreign ownership reflects better firm performance than domestic ownership. Among others, Goethals and Ooghe (1997) compared the performance of Belgian companies which are owned by foreign investors and those that are locally owned. Gunduz and Tatoglu (2003) also examined the non-financial firms listed on Istanbul Stock Exchange, Isik *et al.* (2004) studied the banks in Turkey during the period between 1981 and 1990. Other studies have found similar positive results (Boubakri, Cosset & Guedhami, 2005; Khawar, 2003).

Other studies have observed some characteristics of firms with foreign ownership which can influence the relationship between foreign ownership and firm performance. For example, Douma *et al.* (2006) adopted a multi-theoretic approach to examine the influence of different foreign corporate shareholders and foreign institutions on firm performance of promising markets. They indicated that the positive relationship between foreign ownership and firm performance is associated with foreign firms that have higher commitment, larger ownership and longer involvement. They documented a positive impact of foreign ownership on the performance of financial institutions and found differences in the influence of the ownership involvement based on the business group of firms. Douma *et al.* (2006) also observed that the coefficient of foreign owned companies is positive and significant and showed consistent results with different performance proxies.

Chhibber and Majumdar (1999) examined the impact of foreign involvement on firm performance of firms listed on the Bombay Stock Exchange. The researchers categorized foreign ownership according to the firms' control at different levels of ownership involvement. They classified these categories based on the institutional structure of the Indian environment that helps define the property rights accruing at different levels of ownership. Return on sales (ROS) and ROA were used to measure firm performance. The findings showed that foreign ownership has a significantly positive influence on various dimensions of firm performance. However, the relationship between the level of ownership and performance differed for each category of ownership. In particular, the high foreign ownership variable has a greater influence on performance than either the foreign-medium or the foreign-low ownership variables (Chhibber & Majumdar, 1999).

A similar research by Akimova and Schwödiauer (2004) examined the impact of ownership structure on corporate governance and performance of 202 large and medium Ukrainian firms for the period 1998- 2000. They studied different types of ownership and foreign ownership was one of them. From all types of ownership, concentrated foreign ownership had the strongest association with performance. They indicated that the influence of foreign ownership on performance is only positive up to a level that falls short of majority ownership.

Of the crisis economies, Choi and Hasan (2005) studied Korean commercial banks from 1998 to 2002 and found a significantly positive relationship between foreign involvement and bank performance measured by different indicators. They reported that small involvement of foreign ownership is not a concern and only the extended

level of foreign ownership was found to have a statistically significant and positive influence on the returns and risk of banks.

In developing countries, Phung and Le (2013) examined the listed firms in Vietnam's Ho Chi Minh Stock Exchange during the period 2008-2011. They found that foreign ownership has a negative impact on firm performance. Praptiningsih (2009) invesitagetd some Asian emerging markets and concluded that foreign ownerhsip has a significantly negative influence on firm performance. Zheka (2005) also examined the influence of different ownership types on the efficiency and quality of corporate governance. He tested a sample of Ukrainian firms consisting of 283 observations in 2000-2001 and showed that foreign affiliation in firms does not enhance performance.

3.6 Institutional Ownership

Davis and Steil (2004) defined institutional investors as "specialized financial institutions, which manage savings collectively on behalf of other investors toward a specific objective in terms of acceptable risk, return maximization and maturity of claims". Bjuggren, Eklund and Wiberg (2007) considered this definition to be limited. They stated that institutional investors are significantly different, whether externally or internally. They provided a wider definition depending on the theory of the company. According to Bjuggren *et al.* (2007), "Institutional investors are investment cooperation's set up to reduce transaction costs between investors, and managed in a professional approach".

The relationship between institutional ownership and firm performance has been a point of concern for many researchers. Prior studies that have examined this relationship have produced mixed results (Bhattacharya & Graham, 2007; Bhattacharya & Graham, 2009; Bjuggren *et al.*, 2007; Chaganti & Damanpour, 1991; Clay, 2001; Cornett, Marcus, Saunders & Tehranian, 2007; Duggal & Millar, 1999; Seifert, Gonenc & Wright, 2005; Tsai & Gu, 2007a).

Inconsistent results have been found across different countries which suggest that the influence of institutional investors on firm performance is location-specific (Seifert *et al.*, 2005). Bjuggren *et al.* (2007) examined the impact of different ownership categories on investment decisions and firm performance. They found that a positive association exists between foreign and institutional ownership with firm performance.

A study undertaken by Cornett *et al.* (2007) revealed a positive association between institutional ownership and operating cash flow returns. Generally, they found a positive and significant association between the percentage of institutional ownership and specifically, the number of institutional investors holding stocks in a company and operating cash flow returns. They divided institutional investors into two types: pressure-insensitive for the investors with no business affiliation to a company and pressure-sensitive for those investors who have a business relationship with a company. The results showed a positive association only for pressure-insensitive institutional investors whereas they found no influence for pressure-sensitive institutional investors, suggesting that these institutional investors are

compromised as monitors by their interests to protect business affiliations with the company (Cornett *et al.*, 2007).

Other studies have also found a correlation between institutional ownership and the performance of firms (Chaganti & Damanpour, 1991; Lowenstein, 1991). Chaganti and Damanpour (1991) is one of the earliest studies that classified ownership to different categories after the studies of McEachern (1975); and Salancik and Pfeffer (1980). They analyzed ownership effect on the relationship between executive tenure and firm performance.

Chaganti and Damanpour (1991) studied the data from 40 companies in 40 industries covering the entire American manufacturing sector. They found that size of stockholdings by institutional investors is significantly associated with capital structure and performance. There is also an influence by the outsider institutional investors on ROE, ROA and price-to-earnings ratio, but the strong points of the influence are based on the size of corporate executives' stockholdings. In addition, Belghitar, Clark and Kassimatis (2011) investigated firm performance with regards to prudentially obligated strategic institutional ownership in the US. They classified institutional ownership into two types: pressure-sensitive and pressure-resistant, and found both types enhance firm performance.

Other studies have examined institutional ownership influence on firm performance in terms of industry type. For example, Tsai and Gu (2007a) investigated the influence of institutional ownership on performance of firms in the restaurant industry from 1999 to 2003. They showed that institutional ownership has a

significantly positive relationship with performance of firms. The study also revealed that financial institutions prefer to invest in better-performing restaurants with low leverage. Tsai and Gu (2007b) also found institutional ownership to have a significant and positive influence on firm performance in the casino industry. The study showed that the agency problem initiated by the separation of management from ownership could be reduced by more institutional ownership in the casino industry. These results are consistent with several studies in different industries (Cho, 1998; Clay, 2001; Demsetz, 1983; Demsetz & Lehn, 1985; Demsetz & Villalonga, 2001; Holderness, Kroszner & Sheehan, 1999; Loderer & Martin, 1997; Welch, 2003).

Some studies have concentrated on government ownership as a part of institutional ownership. For example, Essen *et al.* (2013); and Uddin, Halbouni and Raj (2014) examined the influence of state ownership on firm performance. Essen *et al.* (2013) found a signifcantly positive relationship between government ownership and firm performance during the financial crisis. They argued that government involvement in a firm encourages suppliers and creditiors to maintain their relationship with such firms during the crisis which make them more likely to retain profits. Uddin *et al.* (2014) examined the impact of government ownership on firm performance in the UAE's listed firms. They demonstrated that firms with government involvement perform best when they hold 20 to 50% of the ownership. Firms, however, show no improvement in performance when the government holds more than 50% of the ownership.

Another study by Arouri *et al.* (2014) investigated the role of institutional and government ownership separately in the financial industry of the GCC countries. They found that institutional ownership has a significantly positive influence on firm performance. Government ownership, however, was found to have insignificant impact on firm performance.

On the other hand, studies have indicated a negative association between institutional ownership and performance of firms. For instance, Beltratti and Stulz (2012); and Bhattacharya and Graham (2007) investigated the association between ownership of institutional investors and performance. They found a significantly negative influence of ownership of institutional investors that have business affiliation with firms on firm performance. Other studies have shown no significant influence of institutional ownership on firm performance. Duggal and Millar (1999) found that insider ownership significantly determines institutional ownership. The results show that institutional investors lack any active role to improve performance in the corporate control market.

3.7 Firm Performance

Firm performance can be defined in many ways. For example, it can refer to the output achieved from the firm's objectives through management operations (Fauzi & Idris, 2009). Firm performance also has been defined as the amount of utility or benefits derived from the firm or the organization by its stakeholders (Rashid, 2008). Performance can also be defined as the capability to employ the available resources effectively and efficiently to achieve the organization's goals (Daft, 1994).

Simons (2000) defined firm performance as a company's activities interacting with different market mechanisms (financial factors and customers). In the financial market, stockholders, creditors and potential investors should be satisfied with performance of the company using financial indicators. Other parties, such as suppliers and owners, evaluate performance based on the production factor and the ability to deliver payment on time in the agreed to amount. Finally, customers assess the performance in terms of getting products with good quality and reasonable price. Whichever definition is used, performance is very important for the interested parties as it shows how well the company is doing compared to others.

Corporate governance is one of the important areas that is argued as having an impact on the performance of companies. Corporate governance and ownership and their link to firm performance has been a topic of attention and argument in the previous literature (Ramdani & Witteloostuijn, 2010). The different governance codes, investment regulations and ownership structure among countries can have great implications for the country's economy in general, and firm performance in particular (Maher & Andersson, 2000).

Several measurements of firm performance have been used when examining the impact of corporate governance on firm performance. It can be measured using accounting-based, market-based, value-based or cash flow performance measures. Rechner and Dalton (2006) suggested using multiple measures of firm performance which can produce more accurate results. According to Dalton and Kesner (1985), *"the literature has strongly endorsed relying on multiple performance measures …"*. Previous studies have used several proxies to measure performance. For

example, Chaganti and Damanpour (1991); Choi and Hasan (2005); Holderness and Sheehan (1988); Kang and Shivdasani (1995);Maury (2006); Morck *et al.* (1988); Muniandy *et al.* (2010); Qi, Wu and Zhang (2000); and Watkins *et al.* (2009) measured performance using two accounting-based measurements. Others used both accounting-based and market-based measurements (e.g., Andres, 2008; Douma *et al.*, 2006; Maury, 2006; Shyu, 2011).

However, only a few studies have used value-based proxy to measure firm performance although it is argued that value-based measurements are superior performance indicators. Even fewer studies have used value-based concurrently with traditional measurements. Therefore, the current research uses two different measurements of firm performance: (i) Return on Assets (ROA) as an accounting-based measure; and (ii) Refined Economic Value added (REVA) as a value-based measure. Accounting-based measures are related to the previous performance of the firm.

3.7.1 Return on Assets (ROA)

Most of the accounting-based performance measures focus on profitability. The maximization of the firm's profit is considered as the firm's legitimate objective (Verweire & Berghe, 2004). Kocenda and Svejnar (2003); and Sun and Tong (2003) claimed that profitability is the best measure for firm performance. Arosa, Iturralde and Maseda (2010); Anderson and Reeb (2003); Chu (2011); Chu (2009); and Sciascia and Mazzola (2009) used profitability as a proxy for firm performance. Two of the most used profitability measures for firm performance are ROA and ROE.

ROA measures how much profits a firm makes using the assets it owns (Arosa *et al.*, 2010). It is also defined as the net income of the firm plus depreciation, divided by book value of total assets (Watkins *et al.*, 2009). ROE is defined as the net income of the firm plus depreciation, divided by book value of equity. However, only ROA is chosen as the accounting-based measure in the current study because it considers debt. If a firm has more debt (which is the case of firms during the global crisis), it is argued that ROE might exaggerate profits (Ward & Price, 2008).

In addition, a meta-analysis conducted by Sanchez-Ballesta and Garcia-Meca (2007) based on 33 studies on performance shows that financial accounting measures are criticized regularly as they may analytically undervalue assets and may create distortions. Sharma and Kumar (2010) also indicated that traditional performance is criticized as they are unable to incorporate full cost of capital. Others have indicated that profitability measures ignore the changes in the price level and pay no attention to the time value of money. It is also argued that these types of measurements are subject to manipulation (Bhattacharya & Phani, 2005; Moghaddam & Shoghi, 2012; Stewart, 1991).

ROA is chosen rather than market-based measurements because the psychology of investors cannot affect accounting profit, but can only anticipate a few future events, including the valuation of assets. Investor psychology, however, affects market-based measures pertaining to forecast world events including the effects of current business strategies. Market-based measures can also severely suffer from accounting artifact problems. Demsetz and Villalonga (2001) found that performance variation is better explained by variables that control for accounting artifacts. On the other

hand, accounting-based measures are constrained by the standards of the accounting profession (Demsetz & Villalonga, 2001).

ROA has its weaknesses in that it is affected by the accounting profession, especially during the crisis, where the global and 2001 crises evidenced accounting manipulations. Therefore, attention has been paid to value-based measurements in the academic literature (Sharma & Kumar, 2010, 2012). Erasmus (2008) indicated that the role of value-based measures is to overcome the conventional performance measures' limitations. Economic Value Added (EVA) is one of the important innovations in the external and internal performance measurement under value-based performance measures (Sharma & Kumar, 2010, 2012).

3.7.2 Refined Economic Value Added (REVA)

EVA was developed by Stern Stewart as a result of the perception that conventional accounting measures are insufficient measures of firms' performance (Anderson, Bey & Weaver, 2005). EVA has been proposed as the true measurement of performance (Stewart, 1991). EVA considers the cost of capital and only recognizes the estimated firm's return when the net profit after tax is above the cost of capital, including equity and debt (Lee & Kim, 2009). It has also been promoted that value-based performance measures are methods used to improve the alignment of managerial incentives and enhance the performance of firms (Hamilton, Rahman & Lee, 2009).

It is realized that the most important part of EVA is the cost of capital. Most firms show profitability under the traditional measures of firm performance, where in fact,

it is not real wealth (Sharma & Kumar, 2010). Drucker (1995) stated that firms are not really creating wealth until their profit is greater than their cost of capital; otherwise, their wealth is being destroyed. Good corporate governance is also argued as generating less cost of capital by minimizing risk (Donker & Zahir, 2008), but when measuring performance, cost of capital is not considered under the accounting proxies.

Therefore, value-based proxies can hopefully explain better whether good corporate governance minimizes the cost of capital. It is also believed that EVA has some other related facts. For instance, agency conflicts can be reduced by EVA and subsequently can help in improving decision-making (Biddle, Bowen & Wallace, 1999; Lovata & Costigan, 2002). Further, different from other performance measures, EVA is mostly associated with stock returns (Lehn & Makhija, 1996; Maditinos, Loukas & Željko Šević, 2006). Bhattacharya and Phani (2005) indicated that EVA proponents have claimed its superiority over the other measures as it is close to the firm's real cash flows and highly correlated to market value.

The superiority of EVA over the other traditional measures of performance has showed mixed results. Some studies have shown that EVA is superior over the other traditional performance measurements and vice versa (ArabSalehi & Mahmoodi, 2011; Arabsalehi & Mahmoodi, 2012; Kim, 2006; Kyriazis & Anastassis, 2007; Lee & Kim, 2009; Panahian & Mohammadi, 2011; Sharma & Kumar, 2010). Several studies have used EVA to measure firm performance with association to corporate governance (for example, Adjaoud *et al.*, 2007; Bayrakdaroglu, Ersoy & Citak, 2012; Coles, McWilliams & Sen, 2001; Pham, Suchard & Zein, 2011).

Bacidore *et al.* (1997) developed a new version of EVA, i.e., the Refined Economic Value Added (REVA). REVA is defined as a new measurement of firm performance which deducts the cost of capital from the market value of the firm whereas EVA is charging the capital cost from the book value of the invested capital. Researchers have confirmed that although EVA has performed well in correlation with shareholder value creation, REVA is theoretically a more superior measure. They have also proven that REVA can outperform EVA in predicting the creation of shareholders' value.

REVA is considered a significant complementary and efficient criterion for assessment toward EVA. Several studies have been conducted to examine the ability of REVA to measure firms' performance. REVA aims to reach the accounting and economic profit by taking into consideration the market value of capital cost where it attempts to achieve better results than EVA in creating value for companies. Therefore, REVA can be better used for evaluating managers' and investors' performance (Moghaddam & Shoghi, 2012).

Kangarlouei *et al.* (2012); and Lee and Kim (2009) compared REVA with several traditional measurements of firm performance. They both suggested that REVA is expected to provide more accurate results compared to the other measurement tools related to firm performance. Lee and Kim (2009) compared the incremental explanatory power of three traditional accounting proxies of performance for market adjusted returns with EVA and REVA. They found that of the six measurements used in the study, REVA is one of the most valuable measures to evaluate the industry of hospitality firms.

Kangarlouei *et al.* (2012) also provided evidence that the theoretical index of REVA is one of the most correlated indices of measurements compared to EVA and the other traditional financial measurements during 2005-2010. Another recent study conducted by Ghaderzadeh *et al.* (2012) compared the internal criteria of the performance measures of REVA and EVA and found that REVA has more satisfactory results than EVA.

Since REVA deducts the cost of capital from the market value of the assets unlike EVA, it is expected to overcome the outcomes of the recent amendment of the IFRS 7 to calculate the valuation of assets with the book value instead of the market value. The IFRS 7 was amended in 2008 with intense political pressure (which was deemed as a cheap way to support technically failed corporations in Europe) as a result of the huge losses by corporations during the financial crisis (Bushman & Landsman, 2010).

To the best of the researcher's knowledge, very few studies have actually used REVA to measure firm performance and most of the researchers have examined the effect of REVA on the other measures or compared REVA to the other traditional measurements of performance. Since the accuracy and the way of measuring firm performance is gaining greater attention by researchers recently (Chau, Thomas, Clegg, & Leung, 2012), and since several studies have suggested that REVA may provide better explanation about the performance of firms, this research uses REVA as one of the measurements of firm performance.

Dalton and Kesner (1985); and Rechner and Dalton (2006) recommended using several proxies to measure firm performance. Also, Sharma and Kumar (2012) revealed that it is better to use value-based measures along with traditional measures to gauge firm performance. Therefore, this research uses two measurements of firm performance: ROA as an accounting-based measure and REVA as a value-based measure. This enables us to compare the outcomes of REVA with the traditional measurements of performance and provide better idea of the usefulness of the widely used traditional performance measurements. It also allows avoiding the possibility of having misleading results when a single measurement tool is used.

3.8 Conclusion

This chapter reviews the previous studies related to the examined variables. Firm performance literature is reviewed and the different measurements of performance and their advantages and disadvantages are highlighted. The applied measurements are further explained to discuss the usefulness of applying two measurements of performance and how these measures can complement each other. Corporate governance literature is then reviewed with further explanations of how corporate governance strength can be better combined as an index rather than separate governance variables. The rationality of how governance strength acts as a moderator is also explained. Finally, investment opportunities, leverage and ownership identities (independent variables) are also reviewed while discussing the connection of each variable to the crisis environment in the UAE and to the governance and performance of firms.

CHAPTER FOUR

RESEARCH METHODOLOGY

4.1 Overview of the Chapter

This chapter views the selected approaches and measures that are used in the current study to achieve the objectives of the research. This chapter is divided into six sections. The next section presents the theoretical framework and the underpinning theories. In the third section, hypotheses are developed based on the supporting theories. The fourth section discusses the research design and the methodology of the research. Next, measurements and operational definitions of the variables are explained. Finally, the sixth section elaborates the techniques of data analysis.

4.2 Theoretical Framework

This theoretical framework covers the relationship between investment opportunities, leverage and ownership identity (foreign and institutional ownership) with firm performance and the role of corporate governance strength as a moderating variable in the relationship. The empirical and theoretical literature suggests that good corporate governance might moderate the relationship between selected independent variables and firm performance. Investment opportunities, leverage and ownership identity are chosen as the independent variables. The performance indicators are accounting-based measurement represented by ROA, and value-based performance measurement represented by REVA.

4.2.1 Proposed Theoretical Framework

Many studies have investigated the direct relationship between corporate governance variables and firm performance. However, only a few studies have given attention to the possible interaction role of corporate governance strength on important related factors, such as investment opportunities, leverage and ownership identity with firm performance. The model of this research examines the moderating effect of corporate governance strength on the relationship between investment opportunities, leverage and ownership identity with firm performance in crisis and non-crisis times. The theoretical framework of this research is grounded on the previous literature of similar work as explained in Chapter 2. Figure 4.1 shows the conceptual framework of this study.

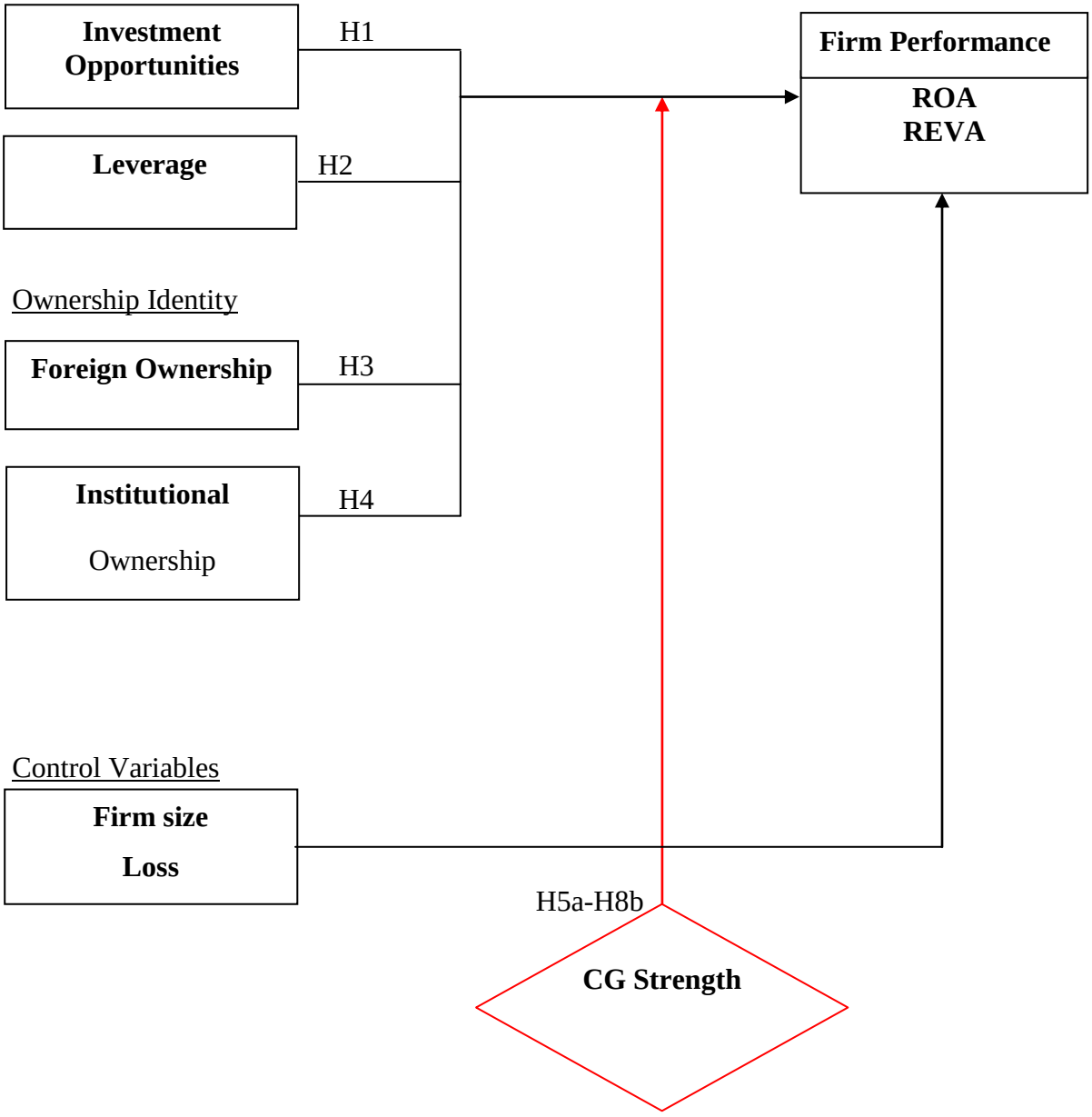

Figure 4.1
Conceptual Framework

The theoretical framework of this research is based on three main theories. The main theories that support this study are the Agency Theory, Contracting Theory and Pecking Order Theory. The Agency Theory provides an explanation on the relationship between the principals and agents of the economic resources. The principals are the owners or the shareholders of the firm and the agents are the managers who are controlling the resources of the firm (Jensen & Meckling, 1976). In the Agency Theory, it is assumed that the agents (managers) have more information than the principals (owners) as the agents have more control over the firm operations which make it difficult for the principals to monitor the agents effectively (Adams, 1994). Therefore, as the agents have more information about the economic resources, they might consider maximizing their own interests over the principals' interest of maximizing wealth.

Corporate governance mechanisms are applied in most of the organizations to manage any possible conflicts that might occur between the agents or managers and the principals through the separation of ownership and management which can influence the agents' decisions. However, firms with any kind of concentrated ownership might have their decisions affected by the dominant owner. In general, it is believed that managerial opportunism can be reduced by having strong corporate governance mechanisms (Rabi *et al.*, 2010).

Corporate governance creates effective monitoring and incentive-based arrangements to decrease the capabilities of management when their actions might be expensed from the wealth of shareholders. However, the necessary arrangements that can mitigate agency costs are usually having high costs where direct cost might

be faced when designing, executing and enforcing contracts between conflicting parties with different interests (Fama & Jensen, 1983). Loss might occur when high costs arise for principals to absolutely monitor agents or for agents to guarantee principals that have no divergence in their interests (Jensen & Meckling, 1976).

In addition, the Agency Theory considers agency costs as a determinant of the various types of corporate governance existence. These costs are associated with divergent agency problems or information asymmetry. For instance, based on Agency Theory, it is found that frequency of information asymmetry is more for firms with higher investment opportunities (Hutchinson & Gul, 2004). Previous studies have found firms with higher investment opportunities have more related issues to deal with, such as superior use of stock options and more compensation levels, which might increase the monitoring costs and incentives to adopt other performance and reporting accounting measures (Gaver & Gaver, 1993; Smith & Watts, 1992). Gillan *et al.* (2003) argued that greater discretion in project selection might be accompanied with managements that have high opportunities which make board monitoring more beneficial for higher growth industries or that have more investment opportunities.

Based on the Contracting Theory, Smith and Watts (1992) proposed that investment opportunities set can significantly contribute to determining corporate governance and financial policies. They indicated that environmental factors might influence several aspects of corporate governance. The Contracting Theory is a combination of some particular models with analysis and perceptions of the ways companies should contract which provide forecasting of the relationship between investment

opportunities set and variables of corporate policies (Baker, 1993). Based on the Contracting Theory, Hutchinson and Gul (2004) suggested a negative relationship between investment opportunities set and firm performance. Based on the Agency Theory, they also anticipated that the negative relationship depends on some governance variables which can moderate the relationship as a part of the governance system. This can show the superior importance of considering the whole governance system to moderate the relationship with firm performance.

Agency costs are related to problems of divergent objectives and information asymmetry that influence the existence of corporate governance control levels. Therefore, corporate governance control system is established to encourage the management to achieve the objectives that can maximize shareholders' wealth and limit activities that might reduce the wealth of shareholders (Hutchinson & Gul, 2004). It has also been suggested that managers might deviate from owners' interest without corporate governance controls (Fama & Jensen, 1983).

Further, the Agency Theory also argues that concentrated ownership can have more influence on the monitoring of a company which could positively affect firm performance. It is believed that ownership concentration would benefit the firms by requesting greater monitoring of managers (Jensen & Meckling, 1976). It is also claimed that concentrated ownership may, with the monitoring of shareholders by managers, enhance the quality of managerial decisions (Shleifer & Vishny, 1986). Conversely, it is inferred by the Agency Theory that decisions on value maximizing might be ineffective for firms with high ownership concentration. The agency problems are raised since the Agency Theory introduces the separation between

ownership and management. The agency problems can be reduced through effective monitoring by the concentrated shareholders.

The Agency Theory explains debt as an organizational factor that has a primary role in influencing firm performance. The Agency Theory suggests a positive association between debt and firm performance as it is believed that a larger debt can create stronger monitoring from the creditors which then can improve performance. On the other hand, the Pecking Order Theory anticipates that firms with less leverage are more likely to have good financial performance (Morck *et al.*, 1988). Based on the Pecking Order Theory, firms with good performance usually have the availability in their internal financing funds and they first use the internal resources; when the internal funds are exhausted, they turn to borrowing (Myers & Majluf, 1984).

The Pecking Order Theory suggests that to achieve less financing costs and less asymmetric information costs, firms should first use their available cash to finance their investment and operations and then use external financing, or as a last resort, issue of equity (Myers, 1984). Therefore, previous studies have expected negative relationship between debt and firm performance because it is influenced by the corporate investment decisions (McConnell & Servaes, 1995).

4.3 Hypotheses Development

Theoretically, investment opportunities, leverage, and ownership identity are argued to have an influence on firm performance. Empirically, several studies that have examined the relationship between investment opportunities, leverage and ownership identity with firm performance have found mixed results. Moreover, the direct

relationship between corporate governance and firm performance has also showed mixed results. In this research, four independent variables are hypothesized to have a relationship with firm performance (ROA and REVA). Corporate governance strength is subsequently hypothesized to have a moderating effect in the relationship. Firm size and loss are also examined as control variables. The hypotheses development process is explained in detail as follows.

4.3.1 Investment Opportunities

Based on the Contracting Theory, Smith and Watts (1992) posited a significant role of investment opportunities in determining the financial policies and governance of the firm and showed that other factors can influence the market for corporate control.

Hutchinson and Gul (2004) and Muniandy *et al.* (2010) suggested a negative relationship between investment opportunities and firm performance. Their theoretical model explains that the direct criticized relationship between corporate governance and firm performance can be affected by the environment of the firm and identified investment opportunities as one of the variables that can intervene in the relationship. Based on the Contracting Theory, Hutchinson and Gul (2004) suggested a negative relationship between investment opportunities and performance of firms (Baber, Janakiraman & Kang, 1996; Baker, 1993; Gul, 1999).

It is also argued based on the Agency Theory that information asymmetry is more for firms with higher investment opportunities as they have more issues to deal with. Accordingly, these firms require more monitoring costs which then reflect on firm performance (Chen *et al.*, 2010; Hutchinson & Gul, 2004). The aim of the current

study is to test the influence of investment opportunities on firm performance. Therefore, the following hypothesis is developed:

Hypothesis 1: There is a negative relationship between investment opportunities and firm performance.

4.3.2 Leverage

The Pecking Order Theory suggests a negative association between leverage and firm performance as firms with less leverage are more likely to have good financial performance (Morck *et al.*, 1988). Negative association can be expected in the relationship between debt and performance (Tsai & Gu, 2007b). The Pecking Order Theory argues that to achieve less financing costs and less asymmetric information costs, good firms first use their available cash to finance their activities and then turn to external financing or issuing of equity (Myers, 1984). Numerous studies have found a negative association between leverage and firm performance and have suggested debt to be used as a substitute to mitigate the agency problem (Bathala *et al.*, 1994; Crutchley *et al.*, 1999; Switzer & Tang, 2009).

During the financial crisis, debt was known to be a dangerous financing instrument that could have a serious implication on the performance of firms. Several corporations were badly affected by the huge leverage and faced liquidity problems which pushed governments to bail them out in order to save them. The CEOs of the bankrupt Lehman Brothers was asked what he would have done differently if the time turned back. He mentioned reducing leverage as one of three actions. It is a similar scenario in the UAE where some of the big firms were badly hit in the crisis

as a result of the huge amount of debt they had and were about to go bankrupt. Therefore, a negative influence of leverage is expected in the current study which goes in line with the Pecking Order Theory. Therefore, the following hypothesis is developed:

Hypothesis 2: There is a negative relationship between leverage and firm performance.

Ownership Identity

Jensen and Meckling (1976) demonstrated the distribution of power between owners and managers and how this allocation can affect firm performance. Special attention has been drawn to ownership concentration as it would benefit the firms by requesting greater monitoring of managers. Concentration of ownership has also been considered theoretically and empirically as the major corporate mechanism that could influence firm performance (Sanchez-Ballesta & Garcia-Meca, 2007). Therefore, this study examines the role of different types of ownership (foreign and institutional ownership) in influencing firm performance.

4.3.3 Foreign Ownership

The Agency Theory explains the relationship between foreign ownership concentration and firm performance. The Agency Theory argues that the existence of foreign ownership in a firm is associated with better firm performance (Haat *et al.*, 2008), as foreign ownership can reduce agency problems by aligning the interests of shareholders and management (Hingorani *et al.*, 1997).

Caves (2007) believed an axiomatic hypothesis in the foreign investment research that firms with higher foreign ownership are more likely to have better performance than their domestic counterparts. In the previous decades, it is argued that foreign firms have better opportunities by having superior utilizable capabilities compared to the domestic firms as they come from developed economies (Buckley & Casson, 1976, 2003; Dunning, 1988; Porter, 2011).

Many studies have reported a positive association between foreign ownership and performance of firms in different countries (Aydin *et al.*, 2007; Boubakri *et al.*, 2005; Chhibber & Majumdar, 1999; Douma *et al.*, 2006; Goethals & Ooghe, 1997; Gunduz & Tatoglu, 2003; Isik *et al.*, 2004; Khawar, 2003). Some of the earlier studies have found the existence of such direct effects of foreign ownership with respect to OECD countries (Dunning & Pearce, 1977; Forsyth & Docherty, 1972; Globerman, 1979). However, other studies have found either unclear or no positive influence of foreign ownership on the performance of firms (Globerman, Ries, & Vertinsky, 1994; Zheka, 2005). Based on the previous discussion, the following hypothesis is developed:

Hypothesis 3: There is a positive relationship between foreign ownership and firm performance.

4.3.4 Institutional Ownership

It is believed that institutional shareholders reduce agency problems that are related to corporate governance as they have the incentives to monitor their concentrated investment (Mayer, 1997; Shleifer & Vishny, 1997). However, some studies have

argued that institutional investors may have conflicts of their own interests which result in their not aligning them with the interests of the shareholders (Davis & Kim, 2007; Matvos & Ostrovsky, 2008).

Pound (1988) argued that institutional ownership can influence firm performance either positively or negatively. The positive effect is justified through the idea that institutional investors have the ability to monitor the firm's management more efficiently than individual shareholders. Institutional investors have more power and greater incentives to monitor as they usually have large shares invested in a firm. Besides that, institutional investors are often old players in managing investments and have more experience than individual investors; hence, they can lower the monitoring costs.

In addition, it is demonstrated by Jensen and Merkling (1976) different ownership identity types may affect firm performance differently. Empirically, several studies have found a positive influence of institutional ownership on firm performance (Belghitar *et al.*, 2011; Bjuggren *et al.*, 2007; Chaganti & Damanpour, 1991; Clay, 2001; Cornett *et al.*, 2007; Tsai & Gu, 2007a, 2007b). On the other hand, some studies have found a negative relationship or no relationship between institutional ownership and firm performance (Bhattacharya & Graham, 2007; Bhattacharya & Graham, 2009; Duggal & Millar, 1999). Given the inconsistent findings from previous studies, this research aims to examine the influence of institutional ownership on firm performance. Therefore, the following hypothesis is developed:

Hypothesis 4: There is a positive relationship between institutional ownership and firm performance.

4.3.5 Corporate Governance Strength

Corporate governance is a regulatory activity that attempts to protect the interests of the shareholders and resolve the agency problem (Dalwai, Basiruddin, Abdul Rasid, Kakabadse & Fleur, 2015). One of the main ideas of the Agency Theory is the separation of management and ownership. Corporate governance is defined as a system that organizes the separation between ownership and management (Larcker *et al.*, 2007). It is argued that shareholders' wealth might be in great risk when there is a conflict between the interest of agents and principals (Jensen & Meckling, 1976). Therefore, it is suggested that good corporate governance monitors responsibilities and reduces managerial opportunism, thus helping to improve performance of firms (Rabi *et al.*, 2010).

It is recommended that the governance system as a whole be examined rather than separate variables as it is believed that these variables are not independently determined (Agrawal & Knoeber, 1996; Bekiris & Doukakis, 2011; Gillan *et al.*, 2003). However, it is demonstrated by several studies that the direct relationship between corporate governance and firm performance has inconsistent results (Agrawal & Knoeber, 1996; Baliga *et al.*, 1996; Black *et al.*, 2006b; Bloom & Milkovich, 1998; Chhaochharia & Grinstein, 2007; Core *et al.*, 1999; Cremers & Nair, 2005; Dalton *et al.*, 1998; Demsetz & Villalonga, 2001; Evans & Weir, 1995; Gompers *et al.*, 2003; Hermalin & Weisbach, 1991; Jensen & Murphy, 1990; Kohli & Saha, 2008; Kosnik & Bettenhausen, 1992; Kren & Kerr, 1997; Lehn *et al.*, 2007).

In crisis times, it is believed that good corporate governance has an important role as poor governance is reported to be one of the main reasons behind the financial crisis

(FCIC, 2011; Kirkpatrick, 2009; Mülbert, 2010; Yeoh, 2010). Some studies have provided evidence that firms with good governance find their firm performance was less affected in the time of the crisis (Peni & Vähämaa, 2012; Suvankulov & Ogucu, 2012; Watkins *et al.*, 2009). In contrast, Beltratti and Stulz (2012); and Aebi *et al.* (2011) indicated that firms with good corporate governance were not less risky and have poorer performance.

Durnev and Kim (2005); Gillan *et al.* (2003); and Smith and Watts (1992) found that economic factors and industrial environment play a vital role with regards to the choices of corporate governance mechanisms adopted by firms. They suggest that corporate governance can be better explained with such factors. Another study has argued that large shareholders may affect the way a corporate governance system works in the firm. It is also argued that conflict of interests varies among countries depending on the governance system (Sanchez-Ballesta & Garcia-Meca, 2007).

With regards to the above, the current research examines the influence of investment opportunities, leverage and ownership identity (foreign and institutional) on firm performance. In addition, the role of corporate governance strength as a moderator is examined. The four independent variables are some of the most affected during the crisis. While investment opportunities and leverage were in the centre of the crisis in the UAE, new ownership investors were involved in many firms during the crisis (Borisova *et al.*, 2012).

Therefore, the current study considers corporate governance strength as a moderator as suggested by Peni and Vähämaa (2012); Rabi *et al.* (2010). This study also

explores the impact of corporate governance strength during the crisis since firms operate differently during crisis and non-crisis times (Essen *et al.*, 2013). Based on the belief that corporate governance mechanisms have a more pronounced role during crises, the study expects positive roles of corporate governance during crisis and non-crisis times. The current study therefore hypothesizes:

Hypothesis 5a: Corporate governance strength has a positively moderating role in the relationship between investment opportunities and firm performance.

Hypothesis 5b: Corporate governance strength has a positively moderating role in the relationship between investment opportunities and firm performance during crisis.

Hypothesis 6a: Corporate governance strength has a positively moderating role in the relationship between leverage and firm performance.

Hypothesis 6b: Corporate governance strength has a positively moderating role in the relationship between leverage and firm performance during crisis.

Hypothesis 7a: Corporate governance strength has a positively moderating role in the relationship between foreign ownership and firm performance.

Hypothesis 7b: Corporate governance strength has a positively moderating role in the relationship between foreign ownership and firm performance during crisis.

Hypothesis 8a: Corporate governance strength has a positively moderating role in the relationship between institutional ownership and firm performance.

Hypothesis 8b: Corporate governance strength has a positively moderating role in the relationship between institutional ownership and firm performance during crisis.

4.4 Research Design

4.4.1 Population and Data Collection

In this study, the population includes all the listed firms in both stock markets in the UAE: the ADX and the DFM during the period 2008-2012. This period is chosen as it is the latest when the data was collected and because it includes the year of the crisis. According to the SCA, both markets have between 123-130 listed firms during the period from 2008-2012 with a total of 643 observations. Conducting a census is encouraged rather than a sample when the population has a small number of elements as it relatively requires less time and cost (Zikmund, 2003). Therefore, this study considers all the listed firms in both markets.

The firms that did not have the data on the required variables were eliminated (142 observations in the five years). First, the firms that have two years or more of their financial reports not available were deleted. Then, the firms that did not have the data for beta to calculate REVA or any other variables were removed. As a result, the final sample comprised 501 observations for the five years as described in Chapter Five. Financial firms are included as they played an important role during the financial crisis. Studies such as Coles, Daniel and Naveen (2008); and Demsetz and Villalonga (2001) also included financial firms in their samples.

Secondary data is the main source of the current study. Financial Data was collected for the period 2008-2012 from: (i) annual reports, corporate governance reports, board reports, annual bulletins and guides of listed companies which are available on the websites of the ADX, the DFM and the SCA; (ii) Thomson Financial Datastream Advance and Worldscope Database; and (iii) reports issued by international

organizations, such as the IMF and a website, Zughaibi & Kabbani Financial Consultants, better known as Gulf Base (www.gulfbase.com).

Secondary data has also been used as the main source for most of the similar previous studies. The data is argued as being of better quality than primary data and it is usually permanent, available and can be easily checked (Denscombe, 2007; Stewart & Kamins, 1993).

This study also examines corporate governance strength role during crisis times. Shivakumar, Urcan, Vasvari and Zhang (2011) identified the period of the crisis from July 2007 to December 2009. However, the UAE was only affected by the crisis in 2009 with the bursting of the real estate market bubble and the decline in oil prices (Hasan, 2010; Ravichandran & Maloain, 2010). At the end of 2009, the traded value in both UAE's markets declined from AED 537 billion in 2008 to 243 billion in 2009. Therefore, to accurately consider the time of the serious crisis effect, the year 2009 is considered as the crisis time.

4.5 Operational Definitions and Measurement of Variables

The operational definitions of the used variables are as follows:

4.5.1 Firm Performance

Firm performance is defined as the management's capability to employ the available resources effectively and efficiently to achieve the objectives of the firm (Daft, 1994). It also refers to the output achieved from the firm's objectives through management operations (Fauzi & Idris, 2009).

The type of performance indicator can to a great extent influence the findings of firm performance research (Chau *et al.*, 2012). There are several measurements of firm performance and each one has its own advantages and disadvantages. Firm performance can be measured by accounting-based, market-based, and value-based performance measures. Due to the criticism of each type of performance measure, this study uses two proxies for measuring performance in order to compare and complement each other. Past studies have suggested using multiple performance measurements in order to produce richer results (Dalton & Kesner, 1985; Rechner & Dalton, 2006). Sharma and Kumar (2012) recommended that it is better to use value-based measures along with traditional measures of firm performance.

Therefore, ROA is used as accounting-based measure and REVA as a value-based measurement. ROA measures how much profit a firm can make using the assets it owns (Arosa *et al.*, 2010). ROA is calculated as net income before extraordinary items scaled by total assets. Several studies have used ROA to measure the performance of firms (Abdullah, Shah, Iqbal & Gohar, 2011; Brick & Chidambaran, 2010; Martínez, Stöhr & Quiroga, 2007; Sami, Wang & Zhou, 2011). Net income before extraordinary items scaled by total assets is used as this ratio reflects corporate performance more faithfully than any market data indicator. Accordingly, Bhagat and Bolton (2008); and Cornett, McNutt and Tehranian (2009) explained that this proxy is more focused on current performance and is not tied to share prices. Thus, it is not affected by investor anticipation.

REVA is considered as high level measurement of performance and is best in considering shareholders' value where it includes the invested capital and the return

rate on this capital. REVA is calculated as the difference between the firms' net operating profit after taxes (NOPAT) at the end of the period and the product of the weighted average cost of capital (WACC) times the market value of assets at the end of the period (kw) (Bacidore *et al.*, 1997). The calculation of ROA and REVA are as follows:

$$\text{ROA} = \frac{\text{Net income before extraordinary items}}{\text{total assets}}$$

REVA = NOPAT – (kw × WACC)

Where:

NOPAT = Net operating profit after taxes at the end of the period,

kw = Market value of assets at the end of the period,

WACC = Weighted average cost of capital,

= [Debt percentage in the capital × cost of debt × (1-tax rate) + equity percentage in the capital × cost of equity],

Cost of equity = risk free rate + (market risk premium – risk free rate) × beta

4.5.2 Investment Opportunities

Investment opportunities, also referred to as growth which is all risk-return combinations available to investors (Zakamulin, 2011). Investment opportunities are also known as the choices of investments available to the firm (Morgenson & Harvey, 2002). There are different proxies for investment opportunities which are classified as investment-based and price-based indicators.

This research uses the market-to-book value of equity (MBVE) as a price-based proxy for investment opportunities (Kallapur & Trombley, 1999). MBVE is chosen based on the assumption that growing firms have higher market value compared to the assets they own as future prospects are related to the stock prices, particularly in recession. Kallapur and Trombley (1999) indicated that the closest measurements that reflect future growth are those that have market-to-book value ratios. Several researchers have used this measurement (Baber *et al.*, 1996; Ferdinand A, 1999; Hutchinson & Gul, 2004; Muniandy *et al.*, 2010; Smith & Watts, 1992). The data was collected from DataStream which can be calculated as follows:

Market-to-Book Value of Equity (MBVE) = [number of shares outstanding × share closing price]/total common equity

4.5.3 Leverage

Leverage is the proportion of capital that is financed by borrowing besides equities (Ward & Price, 2008). Debt is one of the components that forms a firm's capital structure which can be utilized to finance the firm's operational activities (Ross *et al.*, 2008). In this study, leverage is defined as total debt percentage in the capital structure of the firm which is the most common proxy for leverage and calculated as the total debt divided by total assets (Bonna, 2012; Reddy *et al.*, 2008; White, Sondhi, & Fried, 2003).

4.5.4 Foreign Ownership

Foreign ownership refers to the percentage of shares in a firm that are owned by foreign investors. In this study, foreign ownership is the proportion of shares held by foreign investors/shareholders. This can be measured as the number of shares held

by foreign owners divided by total shares which has been widely used in previous studies (D'souza, Nash & Megginson, 2000; Haat *et al.*, 2008; Smith, Cin & Vodopivec, 1997; Sueyoshi, Goto & Omi, 2010; Yudaeva *et al.*, 2003).

4.5.5 Institutional Ownership

Institutional ownership refers to the shares that are held by large organizations in a firm and have the ability to influence its management. Institutional ownership is determined by the percentage of shares owned by the institutional investors that hold 5% or more of the firm's shares divided by the total shares of the firm. Institutional ownership shares are held by institutions, such as pension funds, insurance companies, state-owned companies and mutual funds, which are believed to play significant disciplining and monitoring roles. Several previous studies have used similar measurement (Chung, Elder & Kim, 2010; Erkens *et al.*, 2012; Sahut & Gharbi, 2010).

4.5.6 Corporate Governance Strength

Corporate governance is the system that organizes the relationship between the owners of the firm and the management. Larcker *et al.* (2007) defined governance as the set of mechanisms that control firm decisions as a result of the separation between management and ownership. Corporate governance is also defined as the rules and regulations that control the firms' operations (Gillan & Starks, 2000).

There are no fixed accepted governance practices or one indicator to measure corporate governance practices. Past studies have used several instruments to

measure corporate governance. One of the main instruments to measure corporate governance as a system is governance indices. Governance indices have been developed based on individual elements of governance compiled of a single metric or rating to measure the overall strength of corporate governance (Aguilera & Desender, 2012).

For example, Gompers *et al.* (2003) created the G-index which has 24 firm-specific items based on anti-takeover provisions and shareholders' rights. The data of the index is provided by the Investor Responsibility Research Center (IRRC) in the US. The firm's G-index ranges from a minimum of 0 to a maximum of 24 where one point is given for each item complied by the firm. A firm with high index score is considered as having better governance or in other words, having better anti-takeover provisions and shareholders' rights. Bebchuk *et al.* (2009) also constructed an entrenchment index which has six provisions based on IRRC data with the same equal weighted scoring.

Brown and Caylor (2006) created an index based on the available data provided by the Institutional Shareholder Services (ISS). This governance index consists of 52 governance items, measuring the governance practices of the listed firms in the US major stock markets. Brown and Caylor assigned weighted equal score for each item disclosed where higher scores represent better practices of corporate governance and vice-versa.

Most of the previous studies have concentrated on the environment of developed countries. However, it is currently encouraged to look into indices that are developed

considering the context or specifications of countries (Aguilera & Desender, 2012). Therefore, some studies developed indices considering the environment of developing countries. In India for example, Balasubramanian *et al.* (2010) constructed an index to examine corporate governance strength in 370 listed Indian firms. Their index is survey-based and contains 49 provisions divided into five sub-indices: disclosure, board structure, related party transactions, board procedures and shareholders' rights.

Mohanty (2003) developed an index based on 19 items to measure corporate governance strength in the Indian firms. He examined the corporate governance of 113 Indian firms, including firms' behavior toward their shareholders, bondholders, government, customers, employees and society. Similarly, Black and Kim (2012) and Black *et al.* (2006b) investigated Korean firms based on a governance index of 27 items and 38 items, respectively, grouped into five sub-indices including: shareholders' rights, ownership, disclosure, board structure and procedures.

Other studies have evaluated corporate governance in several emerging countries. For example, Klapper and Love (2004) assessed corporate governance practices in 14 emerging markets with an index of 57 items. They found a variation in the firm-level governance in their sample of 374 firms. Munisi and Randøy (2013) examined corporate governance practices in 10 Sub-Saharan African countries with an index of 39 items. They found that African countries are far from perfect in the application of good corporate governance.

From another perceptive, Price, Román and Rountree (2011) crafted an index to examine the impact of corporate governance reforms in Mexico during the period 2000-2004. Their index consists of 55 questions recommended by the Mexican Securities Commission. Wahab *et al.* (2007) constructed an index of 30 items based on the Malaysian governance code. They examined the improvement of corporate governance practices after the implementation of the code.

Zheka (2006) examined corporate governance strength in Ukrainian firms via a self-constructed index of 14 items encompassing board arrangements, ownership, shareholders' rights and disclosure. Another index by Chen, Kao, Tsao and Wu (2007) comprised of four items to evaluate the strength of corporate governance in Taiwan. Their index includes the board size, CEO duality, management ownership and block shareholders' holding.

Last but not least, Leal and Carvalhal-da-Silva (2005) constructed an index (which is used as a base in the current study) to examine the corporate governance strength in Brazilian firms. This index was constructed from 24 items grouped into four sub-indices to be applicable to the environment of developing countries. The authors also examined corporate governance data of Chilean firms and conducted a comparative analysis with the Brazilian firms. Other studies have reproduced the same index while reorganizing the items to suit their data.

For example, Garay and González (2008) used the Leal and Carvalhal-da-Silva index to measure the quality of corporate governance in Venezuelan firms. They deleted seven items from the original index and ended up with 17 modified items to suit their

data and the environment of Venezuela. Other studies, such as Silveira, Leal, Barros and Carvalhal-da-Silva (2009); and Carvalhal da Silva and Leal (2005) have also used Leal and Carvalhal-da-Silva's index to measure corporate governance strength.

Among all the pervious discussed indices, Leal and Carvalhal-da-Silva's (2005) index is found to be the most appropriate to be used in the UAE environment due to several reasons. First, the Leal and Carvalhal-da-Silva index has less subjectivity and can be reproduced to fit other developing countries and indeed has been reused to other settings. Second, nine out of the eleven extracted questions from the Leal and Carvalhal-da-Silva index are suggested by the UAE's code of corporate governance and the SCA regulations of disclosure and transparency (the other two are related to quality which are if the firm uses one of the big four auditors and the size of the board). Third, the reconstruction of the index can be robust following the example of the modified index by Garay and González (2008). Finally, the index is suitable to the practices of corporate governance by the UAE's firms. Using a more complicated index could significantly reduce the sample size since listed firms are in their initial steps of adopting corporate governance standards.

The questions of the Leal and Carvalhal-da-Silva index were checked against the UAE code of corporate governance, the SCA regulations of disclosure and transparency and the practices of corporate governance as published by the listed firms. After checking the applicability of the index to the environment and regulations of the UAE, 11 questions were extracted from Carvalhal da Silva's (2005) 24 questions that are suitable to the Emirate setting, as did Garay and González (2008); and Carvalhal da Silva and Leal (2005).

For example, six questions related to additional voting rights were eliminated because shares have equal voting rights based on the UAE's regulations. After that, a question related to arbitration was deleted as the arbitration law was only issued in 2014 in the UAE. Two questions are influenced by the requirements of the Brazilian authorities which look into whether the firm is under any investigation by the Brazilian Securities Commission or if the firm has free-float greater than required. These questions are not relevant in the context of the UAE authorities. Three other questions were removed because they are not practiced in the UAE which are about the availability of permanent fiscal board, consecutive one-year terms of the board members and control agreements of ownership concentration. Finally, a question about the indirect control of the firm was deleted because indirect ownership is not disclosed in the UAE.

Subsequently, three more questions were added from the corporate governance requirements by the SCA in the UAE. These questions are related to the internal audit and the social and environmental activities of the firm. The index finally comprised 14 questions divided into three sections: disclosure (six questions); board composition and functioning (four questions); and ethics and conflicts of interest (four questions). These questions could be answered based on publicly available information with either yes or no. If the answer is "Yes", the question is scored 1 and if the answer is "No", the question is scored 0. The index ranges from a feasible low of 0 to a highest score of 14 which is presented in a form of percentage from 0% to 100%. The list of questions is shown in Table 4.1.

Table 4.1
Corporate Governance Index

Disclosure
1) Does the company's annual report, website or public disclosure include information about potential conflicts of interest, such as related party transactions? (It was verified if the annual report contained a section on related party transactions)
2) Does the company specify in its annual report or by other means sanctions against management in the case of violations of corporate governance regulations? (It was verified if the firm reports any sanctions)
3) Does the company produce its legally required financial reports by the required date? (It was verified if the company published its legally required reports up to March 31st of each year, which is the legal limit date)
4) Does the company use an international accounting standard? (IFRS)
5) Does the company use one of the leading global auditing firms? (It was verified if the company has one of the big four auditing firms as an auditor)
6) Does the company disclose in its website or annual report compensation information for the CEO and board members? (It was verified if any compensation information is disclosed)
Board composition and functioning
7) Are the Chairman of the Board and the CEO different persons? (It was verified if the name of the chairman and CEO are different)
8) Does the company have monitoring committees, such as a compensation and/or nomination and/or audit committee? (It was verified if the company has one or more of these committees)
9) Does the board clearly comprise independent and possibly outside directors? (It was verified if at least one-third of the board members are independent)
10) Is the board size between five to nine members, as recommended by international best practices? (It was verified if the board consists of more than four and less than ten board members)
Ethics and Conflicts of Interest
11) Is the company free of any SCA penalties and/or fine for governance malpractices or other securities law violations during the last year? (It was verified if the company did not paid any fine to the SCA in the year)
12) Is there an internal audit system taking place in the company? (It was verified if the firm has an internal audit unit)
13) Does the firm have any human and social development programs? (It was verified if the firm has any social development activities)
14) Does the firm use environment friendly materials or make any positive contributions to save the environment? (It was verified if the firm contributed in any way to protect the environment)

4.5.7 Control Variables

Two control variables, firm size and loss, are used in this study.

4.5.7.1 Firm Size

Firm size is one of the variables that should be controlled when examining firm performance. Several studies have used the size of the firm as a control variable with firm performance (Aldamen *et al.*, 2011; Bhattacharya & Graham, 2009; Ertugrul & Hegde, 2009). It is believed that the size of the firm has a positive influence through the economies of scale and scope argument (Baumol, 1967), whereas it might have a negative impact from organizational inefficiency. Firm size is represented by the market capitalization of the firm. However, due to the large value of market capitalization and for ease of interpretation, logarithm of the firm's market capitalization is used in the regression.

4.5.7.2 Loss

There are about 100 firms that reported losses during the five years examined in this study. These firms should be controlled since loss firms could perform differently (Peni & Vähämaa, 2012). Therefore, loss is added to the current study as a control variable. It is expected to have a negative and significant impact on the performance of firms. Loss has been used as a control variable by several previous studies (Hutchinson, Percy & Erkurtoglu, 2008; Peni & Vähämaa, 2012; Sun & Cahan, 2009).

Table 4.2
Summary of the Measurements of Variables

Variables	**Acronym**	**Measurement**
Firm Performance	ROA & REVA	Explained above
Firm Size	SIZE	Log of market capitalization
Loss	LOSS	Dummy equals one if the firm has loss
Investment Opportunities	INVEST	Market-to-Book Value of Equity
Leverage	LVRG	Total debt/total assets
Foreign Ownership	FOWN	Percentage of foreign ownership
Institutional Ownership	INSOWN	Percentage of institutional ownership
Corporate Governance Strength	CG	Corporate governance index
The Financial Crisis	CRSS	"1" for the year 2009 & "0" otherwise

4.6 Data Analysis Techniques

This study uses panel data analysis to examine the effect of the independent and moderator variables on firm performance represented by ROA and REVA. Panel data analysis is widely used in accounting and finance studies. Panel data, also known as cross-sectional time series data or longitudinal data, typically refers to data of a number of individuals observed over a period of time. Therefore, panel data observations usually include a minimum of two aspects: a time series dimension represented by t; and a cross-sectional dimension represented by i (Hsiao, 2003). Greene (2003) argued that some issues are better studied for a longer period of time and with more observations. The influence of changes in corporate governance is one of these issues that is recommended to be studied using panel data analysis (Donker & Zahir, 2008). Therefore, this research studied around 101 firms over a five-year period.

4.6.1 Panel Data Analysis

The simple ordinary least squares (OLS) regression treats each examined observation as homogeneous and does not take into consideration heterogeneity unlike the panel data regression where each observation is considered as heterogeneous. Using simple OLS regression for panel data can lead to different results with misleading inference (Jager, 2008). Therefore, it is vital to apply panel data regression techniques for longitudinal data.

Baddeley and Barrowclough (2009); and Wooldridge (2010) explained the importance of taking into consideration the individual unique factors of panel data observations which remain constant over time and cannot be assumed as independently distributed across time. Therefore, pooled OLS estimation may lead to incorrect inference and cannot be always applied to panel data. Firm-specific factors are not considered in pooled OLS when applied to panel data which result in autocorrelation as there is no isolation of the years in the same firm. It could also result in omitted variables bias and heterogeneity bias because observations could have similar characteristics that are not considered (Baddeley & Barrowclough, 2009). A fixed-effects model or random-effects model is used to control for heterogeneity effect in panel data regression. The main difference between the two methods is whether the unobserved effects (the error term) are correlated with the examined independent variables (Wooldridge, 2010).

4.6.1.1 Fixed-Effects Model

Individual characteristics might be connected to each entity. These characteristics are constant across time and have the possibilities to affect the dependent variables. Fixed-effects actually examine the relationships between variables within an individual, whether it is a firm or country, etc. This means that the fixed-effect model takes into consideration the differences between the individual and itself within the period and this could control for any unobserved unique characteristics or the time-invariant factors which may bias the results.

The error term in a fixed-effects method is correlated with the independent variables. Therefore, a fixed-effects method is believed to eliminate the impact of unobserved time-invariant characteristics of independent variables and make the estimation assessable. For this reason, it is preferable to use a fixed-effects estimate although it could be unproductive with time-variant factors (Allison, 2009; Wooldridge, 2010) . We can apply fixed-effects technique either through the mean deviation method or by creating dummy variables for each individual. The unobserved time-invariant factors can be detected by the estimates of the individual's dummies. The dummies method is criticized as being impractical for large data sets with many cross-sectional observations which could impose calculating difficulties (Allison, 2009; Wooldridge, 2010).

The other alternative is the mean deviation method which can simply be performed by econometrics software. The mean values of time-varying variables are identified for each individual in the mean deviation method. Accordingly, these individuals' specific means are subtracted from the observed value for each variable. Estimate

coefficients are not given for the time-invariant independent variables as their values are constant for each entity. If we deduct the mean of the individual-specific of time-invariant variables from the individual values, we shall gain a value of zero for all individuals. Therefore, the time-invariant factors are omitted from the regression with control of their effects (Allison, 2009).

4.6.1.2 Random-Effects Model

The main advantage of the random-effects estimate is its ability to examine time-constant independent variables which are dropped in the fixed-effects estimate. This is based on the assumption that the unobserved effect is not correlated with the independent variables regardless of the variation over time (Schmidheiny, 2013). Therefore, the random-effects method might be preferable if the main concern of the research is time-constant variables. Random-effects might be biased, however, if the appropriate method is fixed-effects.

Hausman test is the generally accepted way to determine whether fixed or random effects method is appropriate for the examined data. Statistically, fixed effects model always provides consistent results which many researchers think is the reasonable model to run with panel data, but it might not be the most efficient. However, random effects model provides better p-values and can be a more efficient estimator which makes it more appropriate only if it is statistically justifiable. Therefore, Hausman test should be applied in any panel data research to determine the appropriate method.

4.6.2 Advantages of Panel Data

Baltagi (2008); Hsiao (2003); and Klevmarken (1989) explained several advantages of panel data over pure time-series and pure cross-sectional analysis summarized as follows:

1. More data provide more information: panel data is richer with information as it normally comprises time-series and cross-sectional data. Therefore, more informative data could provide less collinearity, more variability, more efficiency and greater degree of freedom.

2. Controlling for individual heterogeneity: cross-sectional and time-series data do not control for heterogeneity which may produce biased findings (e.g., see, Moulton, 1986, 1987). In panel data, each of the examined individuals is assumed to be heterogeneous. Panel data also resolves the issue of omitted variables due to no observed items or mismeasurment.

3. Less multicollinearity: time-series data is usually criticized over the issue of multicollinearity which is less in panel data as the cross-sectional dimension usually increases the variability and adds more information on the examined variables. The variation in panel data is actually decomposed between the time-series and cross-sectional dimensions. The cross-sectional variation is usually larger which provides more information that can produce reliable estimates of parameters.

4. Better in measurement: Panel data are able to measure and identify effects that are basically not detectable in time-series or cross-sectional data. Panel data also can minimize measurement errors.

5. Ability to test complicated models: more complicated behavioral models can be better constructed and tested in panel data than time-series or cross-sectional data. Panel data also can study the dynamics of adjustment.

4.6.3 Regression Models

To achieve the objectives of this study, three models were created. First, the following regression model tests the direct influence of investment opportunities, leverage and ownership identity (foreign and institutional) on firm performance (ROA and REVA) with control for firm size and loss.

$$Perf_{it} = \beta_0 + \beta_1 INVEST_{it} + \beta_2 LVRG_{it} + \beta_3 FOWN_{it} + \beta_4 INSOWN_{it} + \beta_5 SIZE_{it} + \beta_6 LOSS_{it} + Year\ dummies + \varepsilon_{it} \quad (1)$$

Where,

For each firm (*i*) and each year (*t*)

Perf	=	denotes ROA or REVA
INVEST	=	[shares outstanding×share closing price]/total common equity
LVRG	=	Total debt/total assets
FOWN	=	Percentage of foreign ownership
INSOWN	=	Percentage of institutional ownership
CG	=	Governance index

SIZE	=	log of market capitalization
LOSS	=	dummy that equals one if the firm reported negative earning
Years	=	dummy variables for years controlling for change over time
ε	=	constant

In order to achieve the fourth and fifth objectives, a second regression model was created to test the moderating effect of corporate governance strength on the relationship between investment opportunities, leverage, ownership identity (foreign and institutional) and firm performance (ROA and REVA) while controlling for firm size and loss. Corporate governance strength (CG) is also included and subsequently multiplied with each independent variable creating four interaction terms as shown in the model below.

$$Perf_{it} = \beta_0 + \beta_1 INVEST_{it} + \beta_2 LVRG_{it} + \beta_3 FOWN_{it} + \beta_4 INSOWN_{it} + \beta_5 SIZE_{it} + \beta_6 LOSS_{it} + \beta_7 CG_{it} + \beta_8 (INVEST \times CG)_{it} + \beta_9 (LVRG \times CG)_{it} + \beta_{10} (FOWN \times CG)_{it} + \beta_{11} (INSOWN \times CG)_{it} + Year\ Dummies + \varepsilon_{it} \quad (2)$$

Finally, the third model was built to achieve the sixth objective of this study which is to examine the moderating role of corporate governance strength during the financial crisis. To achieve this objective, the interaction terms of corporate governance strength with each independent variable were also interacted with the crisis dummy (CRSS, "1" for the year 2009 and "0" otherwise) to assess the impact of corporate governance in the crisis. For simplicity, only the third order interactions were created as suggested by the nonhierarchical log-linear models (Eye & Mun, 2012; Yuan, Joseph & Lin, 2007).

$$Perf_{it} = \beta_0 + \beta_1 INVEST_{it} + \beta_2 LVRG_{it} + \beta_3 FOWN_{it} + \beta_4 INSOWN_{it} + \beta_5 SIZE_{it} + \beta_6 LOSS_{it} + \beta_7 CG_{it} + \beta_8 (INVEST_{it} \times CG_{it} \times CRSS_I) + \beta_9 (LVRG_{it} \times CG_{it} \times CRSS_i) + \beta_{10} (FOWN_{it} \times CG_{it} \times CRSS_i) + \beta_{11} (INSOWN_{it} \times CG_{it} \times CRSS_i) + Year\ Dummies + \varepsilon_{it} \quad (3)$$ [2]

4.7 Conclusion

This chapter is developed based on the understanding of the previous chapters. The chapter explains the methodology of the study. It begins with a discussion of the theoretical framework and the underlying theories. The hypotheses are then developed based on the related theories. Subsequently, the research design is discussed by explaining the data sources and the population of the study. The variables are then defined by further providing explanation of the measurements of each variable. Finally, techniques of data analysis are discussed.

The next chapter reports the results of the study starting with descriptive statistics of the variables. Corporate governance index descriptive is then summarized. The regression results of all models are also reported after testing for the regression assumptions. The chapter finally discusses the results and concludes.

[2] The crisis as a standalone variable is included in the year dummies

CHAPTER FIVE

RESULTS AND DISCUSSION

5.1 Introduction

This chapter reports and discusses the findings of this study. The chapter is organized as follows: Section 5.2 summarizes the descriptive statistics of the tested variables in the regression tests. Then Section 5.3 describes in detail the summary statistics of the corporate governance index. After that, the diagnostic tests of the results are presented in Section 5.4. Then, Section 5.5 reports the multivariate analysis of the direct relationships. Section 5.6 discusses the results of the moderating effect during crisis and non-crisis times. Finally, Section 5.7 concludes the chapter.

5.2 Descriptive Analysis

First of all, the sample firms are distributed by year and stock market in Table 5.1. There were between 123-133 listed firms on the ADX and DFM during the period from 2008-2012. However, only the firms with available data for all variables were included in the analysis as can be seen in Table 5.1.

Table 5.1
Firms Distribution

	2008	2009	2010	2011	2012	Total
ADX	54	57	57	56	57	281
DFM	44	44	44	44	44	220
Total	98	101	101	100	101	501

Descriptive statistics of the variables are reported in Table 5.2. The current study employs panel data analysis of 501 firm-year observations for the years 2008-2012. Table 5.2 shows the descriptive statistics of all 501 firm-year observations and Table 5.3 shows the mean of each variable by year. Detailed statistics of all variables are reported by year in Appendix A.

Firm performance, as measured by ROA, varies from as low as -44.35% to a maximum of 29.18% with 1.94% mean. The mean score is similar to those reported by Al-Tamimi and Charif (2011) among 38 Emirate banks for the period (1996-2005); and Hassan and Halbouni (2013) who examined 95 listed Emirate firms in 2008. Firm performance, as measured by REVA, varies between -2.47 million to 13.27 million. The mean of REVA is 0.495 million. The yearly mean of REVA shows some fluctuations as can be seen in Table 5.3. Although REVA was high in 2008, it was -0.018 during the year of the crisis, 2009.

Table 5.2
Descriptive Statistics

Variables	N	Mean	Std. Dev.	Min	Max
ROA	501	1.94	7.45	-44.35	29.18
REVA (Millions)	501	0.495	1.58	-2.47	13.27
INVEST	501	2.45	5.11	0.01	61.24
LVRG	501	16.28	17.92	0	78.64
FOWN	501	13.52	21.65	0	100
INSOWN	501	38.36	26.65	0	99.96
CG	501	56.79	19.57	7.14	92.85
SIZE	501	5.98	0.715	4.16	7.93
LOSS	501	0.199	0.40	0	1

Dependent variable is Firm Performance measured by ROA = net income before extraordinary items scaled by total assets and REVA = [net operating profit after tax – market value of assets at the end of the year] × Weighted Average Cost of Capital (WACC); INVEST is measured as market-to-book value of equity [shares outstanding × share price]/total common equity; LVRG = total debt divided by total assets; FOWN = the percentage of shares owned by foreign owners; INSOWN= the percentage of shares owned by institutional investors; CG is the constructed governance index; Size is the logarithm of market capitalization; LOSS is a dummy that equals one if the firm reported negative earnings.

Investment opportunities (INVEST), represented by market-to-book value, varies from a low of 0.01% to a high of 61.24% with a mean value of 2.45%. The mean score is approximately similar to the mean reported by Arouri *et al.* (2014) who studied 58 GCC banks for the year 2010. Investment opportunities mean was 4.41% in 2008 and decreased significantly during the crisis and in the following years as shown in Table 5.3. The average of leverage (LVRG) is 16.28% and ranges from a minimum of 0 to a maximum of 78.64% which indicates that some firms are highly leveraged and others have no leverage. These statistics are consistent with Switzer and Tang (2009).

Table 5.3
The Mean of Variables per Year

Variables	2008	2009	2010	2011	2012	Average
ROA	3.200	2.460	1.381	0.690	2.007	1.943
REVA (Millions)	1.120	-0.0181	0.308	0.694	0.392	0.495
INVEST	4.406	2.494	2.185	1.670	1.552	2.451
LVRG	17.33	15.38	15.96	16.08	16.69	16.28
FOWN	12.19	12.75	13.72	13.61	15.32	13.52
INSOWN	38.96	39.99	38.57	37.23	37.10	38.36
CG	44.10	47.52	55.02	69.71	67.47	56.79
SIZE	6.073	6.045	5.993	5.887	5.926	5.985
LOSS	0.153	0.168	0.198	0.280	0.198	0.199

In terms of ownership identity, Table 5.2 shows that the percentage of foreign ownership (FOWN) ranges between 0 to 100% with a mean of 13.52%. Bayrakdaroglu *et al.* (2012) reported similar mean of foreign ownership using 41 corporations listed on the Istanbul stock market for the period from 1998 to 2007. Klapper and Love (2004) also showed a low level of foreign ownership and argued that foreign investors act as minority shareholders.

As can be seen in Table 5.2, the UAE firms have a high institutional ownership. The percentage of institutional ownership (INSOWN) varies from a high of 99.96% to a low of 0 with 38.36% mean. This is similar to a recent study by Hussainey and Aljifri (2012) which investigated a sample of 72 firms in both UAE markets using 2006 data. High institutional ownership is also reported by Arouri *et al.* (2014) among a sample of GCC banks in the year 2008. Institutional ownership has kept steady levels over time except a little increase in 2009 which could be due to the government's involvement during the crisis.

Corporate governance index (CG) ranges from a low of 1 to the highest score of 13. Not a single firm obtained a full score which is 14. The low score of 1, even after the enforcement of the governance code, implies that several firms have failed to comply. The percentage mean of CG is 56.8% with a 7.14% minimum and a 92.9% maximum. Corporate governance (CG) shows improvement by the years as shown in Table 5.3, which demonstrates that the corporate governance code has enhanced the corporate governance practices among listed firms. Detailed statistics of corporate governance strength are discussed in the next section.

With respect to the control variables, the size of the firm (SIZE) as measured by the log of market capitalization varies from 4.16 (AED14.5 million) to 7.92 (AED84.99 billion) with a mean of 5.98. This is similar to the mean reported by Uddin and Hassan (2013) who examined 95 Emirate firms in 2010. LOSS has a mean of 0.199 reflecting that around 100 firms had negative earnings during the five years of the study.

5.3 Descriptive Statistics of Corporate Governance

Table 5.4 reviews the statistics of the corporate governance index. The index consists of 14 questions divided into three main sections: disclosure (six questions); board functions (four questions); and ethics and conflict of interests (four questions). Table 5.4 illustrates the scores of each question alongside the percentage complied by all firms on the ADX and DFM. The scores vary from a high 497 (99.2%) to a low 19 (3.8%). On average, firms complied with 76.8% of the disclosure section; 70.9% of the board functioning section; and only 24.5% in the ethics and conflict of interests section.

The disclosure section shows that 99.2% of the firms disclosed a section of related party transactions; only 3.8% of the firms disclosed sanctions against management in the case of violations of corporate governance regulations; 98.8% of the firms reported their annual reports by March 31st which is the required date as companies use calendar year in the UAE; 98.8% of the firms used IFRS standards; 86.2% of the firms had one of the big four auditing firms as their auditor; and 74.5% disclosed board compensation.

In the board composition and functioning section, 90% of the firms had different persons as chairman of the board and CEO; 47.9% had one or more monitoring committees; 56.3% of the firms had one-third independent members on their boards; and 89.6% of the firms' board comprised between five to nine members.

Table 5.4
Corporate Governance Index Scores (N=501)

Questions	**Scores**	**%**
Disclosure		**76.8%**
1) Does the company's annual report, website or public disclosure include information about potential conflicts of interest, such as related party transactions? (It was verified if the annual report contained a section on related party transactions)	497	99.2%
2) Does the company specify in its annual reports or other means sanctions against management in the case of violations of corporate governance regulations? (It was verified if the firm reports any sanctions)	19	3.8%
3) Does the company produce its legally required financial reports by the required date? (It was verified if the company published its legally required reports up to March 31st of each year, which is the legal limit date)	495	98.8%
4) Does the company use an international accounting standard? (IFRS)	495	98.8%
5) Does the company use one of the leading global auditing firms? (It was verified if the company has one of the big four auditing firms as an auditor)	432	86.2%
6) Does the company disclose in its website or annual report compensation information for the CEO and board members? (It was verified if any compensation information is disclosed)	373	74.5%
Board composition and functioning		**70.9%**
7) Are the Chairman of the Board and the CEO different persons? (It was verified if the names of the chairman and CEO are different)	451	90.0%
8) Does the company have monitoring committees, such as a compensation and/or nomination and/or audit committee? (It was verified if the company has one or more of these committees)	240	47.9%
9) Does the board clearly comprise independent and possibly outside directors? (It was verified if at least one-third of the board members are independent)	282	56.3%
10) Is the board size between five to nine members, as recommended by international best practices? (It was verified if the board consists of more than four and less than ten board members)	449	89.6%
Ethics and Conflicts of Interest		**24.5%**
11) Is the company free of any SCA penalties and/or fine for governance malpractices or other securities law violations during the last year? (It was verified if the company did not pay any fine to the SCA in the year)	123	24.6%
12) Is there an internal audit system taking place in the company? (It was verified if the firm has an internal audit unit in each year)	186	37.1%
13) Does the firm have any human and social development programs? (It was verified if the firm has any social development activities)	58	11.6%
14) Does the firm use environment friendly materials or make any positive contributions to save the environment? (It was verified if the firm contributed in any way to protect the environment)	125	25.0%

According to the ethics and conflict of interests section, 24.6% of the firms did not pay any fines to the regulatory bodies; 37.1% of the firms had an internal audit unit; 11.6% of the firms contributed to social development programs; and 25% of the firms implemented green activities or contributed to save the environment. Taking the averages of each section, we can notice that firms complied with more than 70% of the disclosure and the board functioning sections, but more needs to be done, particularly in ethics and conflict of interests. At the firm level, there is great variation between firms as some firms score as high as 92.8% according to the index and others have a total lack of corporate governance practices where they score the lowest score of 7.14%.

The improvement of corporate governance practices can be observed over time in Figure 5.1. Firms show good disclosure scores with a slight change since 2008. They also show a dramatic improvement in the board composition and functioning section and in the ethics and conflict of interests section. Firms enhanced their board composition and functioning by the years which reflect the role played by the governance code to raise awareness on the importance of corporate governance by companies. The ethics and conflict of interests section shows low scores in 2008 and 2009 before the enforcement of the code. However, firms demonstrated a significant improvement in 2010 and even further improvement in 2011 and 2012.

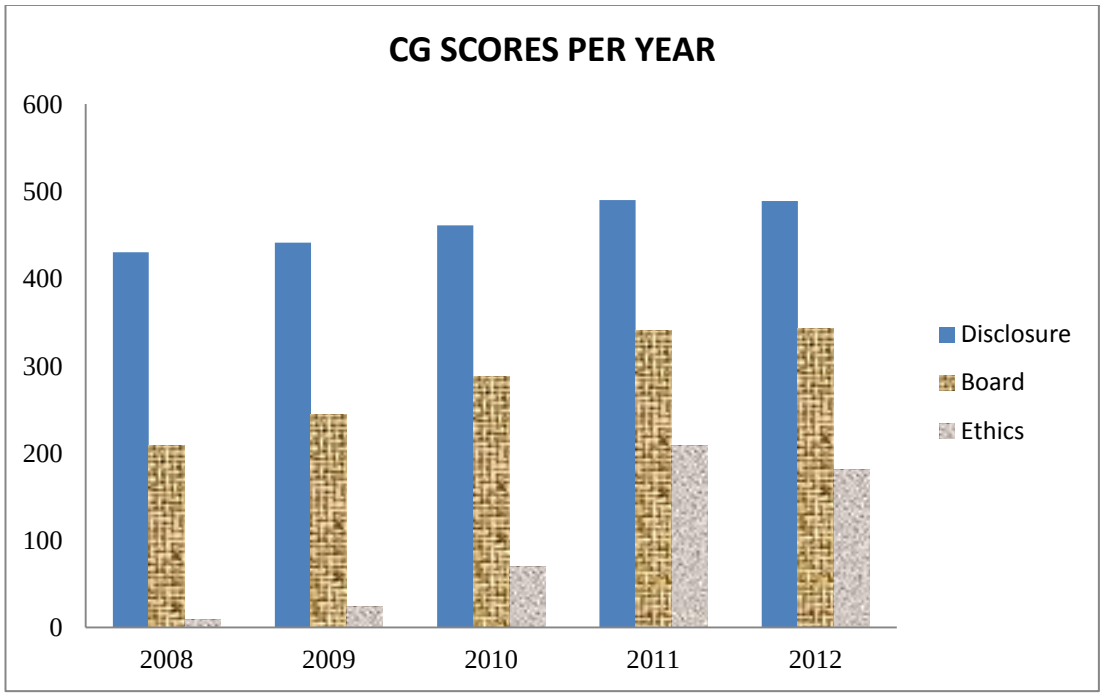

Figure 5.1
Corporate Governance Sub-Indices Scores by Year

Table 5.5 shows comparison of the results obtained in this study with some other studies conducted in other emerging markets. Emerging market studies were chosen as these markets have similar environment to the UAE although the items of the indices could have some variation. Black and Kim (2012) found similar outputs from their index in the Korean context. They examined around 500 firms during the period from 1998-2004. Klapper and Love (2004); and Munisi and Randøy (2013) studied several emerging markets and obtained results close to the current study. Garay and González (2008) investigated the Venezuelan market and showed lower scores in their corporate governance practices.

Table 5.5
Comparative Statistics for the UAE CG Index versus Other Emerging Market Studies

Description	This Research	Black and Kim (2012)	Klapper and Love (2004)	Munisi and Randøy (2013)	Garay and González (2008)
Country	UAE	Korea	14 countries	Africa	Venezuela
Mean	56.79%	34.27%	54.11%	56.40%	40.34%
Maximum	92.8%	91.76%	92.77%	92.0%	71.67%
Minimum	7.14%	7.03%	11.77%	15.0%	16.67%
Observations	501	500	374	300	46
Years	2008-2012	1998-2004	1999	2005-2009	2004

5.4 Diagnostic Tests

This section explains the diagnostic tests performed on the data to test the regression assumptions. First, the diagnostic tests are presented on the data distributions in terms of normality, multicollinearity and extreme outliers. The diagnostic tests related to panel data are then explained, which are Hausman test to decide whether to use fixed or random-effects models, homoscedasticity, autocorrelation and cross-sectional dependence.

5.4.1 Normality

Normality refers to the distribution of the data and whether the shape of the data is normally distributed. There are several ways to check the normality of the data. It can be checked using several tests, such as Shapiro-Francia, Shapiro-Wilk and Kamagorov Smiron tests by obtaining the values of skewness and kurtosis or by using residual graphs, such as normal probability plots, quartiles of a normal distribution plot and histograms. Skewness and kurtosis values were checked for each variable. Kline (2011) suggested that skewness values should not exceed three

and kurtosis should be less than 10. ROA, REVA, investment opportunities and firm size showed kurtosis more than 10. Therefore, this study implemented gladder and ladder tests by Stata to seek the best transformation options of these variables. As suggested by the tests, investment opportunities and firm size were transformed to log and ROA and REVA were kept without transformation because their current distribution status is better than any transformation forms. Finally, any minor deviation from normality is normal in social sciences and should not cause any major problems especially when examining the entire population or if the sample size exceeds 30 (Pallant, 2010), which is in line with the Central Limit Theorem.

4.5.2 Outliers

The observations that have unique or different characteristics compared to the whole population are called outliers. Some scientists advocate that outliers should be retained for better representation of the whole population unless there is evidence of measurement errors (Hair, Tatham, Anderson & Black, 2006). Others provide several ways to detect and treat any possible outliers. Cook's distance, studentized residual and leverage are some common ways of detecting and eliminating influential outliers. Other ways, such as transformation, winsoring and trimming the data are also used to deal with any problematic outliers. However, researchers, such as Grissom (2000) argued that transforming the data could change the main characteristics of the original data. Tabachnick and Fidell (2006) argued against any transformation unless it is the last option of failure of normality.

In the current study, Cook's distance was used to check the possibility of having influential outliers after exploring the data with graphs, such as leaf plot, box plot

and scatter plot. Cook's distance actually measures the points with high leverage or large outliers in the regression which could affect the accuracy of the results. After running the test, any Cook's distance value (D_i) that is larger than 1 is considered a problematic outlier (Pallant, 2010). In the examined models, no single outlier was detected according to Cook's distance test. This study does not use any stricter test for outliers because it aims to examine the event of the crisis (which might have extreme units) and any removal of observations may bias the representation of the data and the study's focus. Thus, robust regressions were run to ensure less weight is given if any possible outlier is presented.

5.4.3 Multicollinearity and Correlation

Multicollinearity is the issue of having high correlation between independent variables which could inflate the regression results. Hair *et al.* (2006); and Tabachnick and Fidell (2006) recognize the problem of multicollinearity if the correlation between variables is more than 0.9. Unreliable and unstable regression coefficient can be caused by high multicollinearity (Hamilton, 2012). One of the common ways to check for multicollinearity is the Pearson and Spearman Correlations. Table 5.6 shows Pearson correlation matrix where the highest correlation between variables is between ROA and the control variable loss at 0.69. The correlation between REVA and loss is the next highest value at 0.46. Since the highest values are less than 0.9, there is no evidence of multicollinearity.

Table 5.6
Pearson Correlation Matrix

	ROA	REVA	INVEST	LVRG	FOWN	INSOWN	CG	SIZE	LOSS
ROA	1								
REVA	0.128**	1							
INVEST	-0.134**	-0.083	1						
LVRG	-0.221**	0.061	0.096*	1					
FOWN	-0.179**	-0.080	0.198**	0.188**	1				
INSOWN	0.056	0.169**	-0.024	-0.034	-0.452**	1			
CG	0.134**	0.014	-0.295**	-0.041	-0.258**	0.082	1		
SIZE	0.154**	0.469**	-0.223**	0.067	-0.184**	0.249**	0.112*	1	
LOSS	-0.698**	-0.167**	0.117**	0.091*	0.105*	-0.046	-0.072	-0.341**	1

** Correlation is significant at the 0.01 level (2-tailed), * correlation is significant at 0.05 level (2-tailed)

Further, it is argued that the correlation matrix is not enough to detect multicollinearity and it is important to perform the variance inflation factor (VIF) test to ensure no collinearity between variables (Hamilton, 2012). VIF is an indicator of the influence of the estimated coefficient because of collinearity. The rule of thumb states that a VIF value that is more than 10 would have a multicollinearity problem (Hair *et al.*, 2006). As can be seen from Table 5.7, none of the VIF scores is more than 10, which indicates that there is no evidence of multicollinearity problem.

Table 5.7
Results of the VIF Test

Variables	ROA Model		REVA Model	
	VIF	1/VIF	VIF	1/VIF
Investment opportunities	1.19	0.84	1.19	0.84
Leverage	1.07	0.93	1.07	0.93
Foreign ownership	1.48	0.68	1.48	0.68
Institutional ownership	1.33	0.75	1.33	0.75
Corporate governance	1.63	0.61	1.63	0.61
SIZE	1.31	0.77	1.31	0.77
LOSS	1.17	0.85	1.17	0.85

5.4.5 Hausman Specification Test

Hausman test, also known as Hausman specification test and Durbin–Wu–Hausman test, were first proposed by Hausman (1978) based on the difference between the estimations of random and fixed-effects. It helps researchers decide which model corresponds better to the data. The Hausman test generally compares the coefficients of fixed-effects estimate with coefficients of the random-effects estimate. The null hypothesis is that the coefficients estimated by the efficient random -effects estimator are the same as the ones estimated by the consistent fixed-effects estimator. If the p-value is significant (i.e., less than 0.05), then fixed-effects should be applied and using random-effects would be biased. However, if the p-value is insignificant, random-effects can be safely used (Wooldridge, 2010).

Hausman test was applied to both models: ROA and REVA in the current study as shown in Table 5.8 below. Results show significant p-values for both models which means that fixed-effects model should be used.

Table 5.8
Results of Hausman Specification Test

	Direct effect		**Interaction included**	
	ROA	**REVA**	**ROA**	**REVA**
Chi^2(11)	29.83	19.82	73.53	23.39
Prob>chi^2	0.0000	0.0030	0.0000	0.0156

5.4.6 Test of Homoscedasticity

Homoscedasticity refers to the constant variation of the residual as the errors process should be homogenous across units. Heteroscedasticity is the problem that arises when the variance of the errors is not independently and identically distributed over the examined observations. In panel data, even if the variance of errors is constant between cross-sectional observations, the variance may differ within observations through time which raise the issue of group-wise heteroscedasticity (Baum, 2001).

It is argued that ignoring the presence of heteroscedasticity can result in inefficient coefficient estimations and biased standard errors (Baltagi, 2008). Therefore, this study applied the Modified Wald test for group-wise heteroscedasticity to test the error term in the examined models. The output of the test confirmed the presence of heteroscedasticity in ROA and REVA models which needs to be corrected. If autocorrelation and cross-dependence problems are not present, heteroscedasticity can be individually corrected using White's standard error.

5.4.7 Autocorrelation

Autocorrelation is the issue of error components being correlated across time due to high similarities. The regression model assumes that the error term of units is not correlated and not influenced by other units. Although this is a violation of the ordinary assumption, it is a common issue in panel or time-series analysis (Wooldridge, 2010).

The Wooldridge test for autocorrelation is the appropriate test to detect autocorrelation in fixed and random-effect models in panel data. The Wooldridge test was applied to this study's models. The test confirmed the presence of autocorrelation in ROA and REVA models. The problem of autocorrelation has to be corrected to achieve accurate results. Autocorrelation can be corrected using techniques, such as Rogers or Newey-West standard errors. However, this can only be accurate if the panel data is free from cross-sectional dependence as explained by Petersen (2009).

5.4.8 Cross-Sectional Dependence

Cross-sectional dependence, also known as contemporaneous correlation, refers to correlation of the residuals across entities. Petersen (2009) identified two forms of cross-dependence: one is when the firm residuals are correlated across years and the other when the residuals of a particular year are correlated across firms. He argued that finance and economic data are more likely to have the problem as entities have strong similarities in between and across time. Ignoring the problem could produce under or overestimation of the true estimation of coefficients.

Pesaran's test is the appropriate test to explore whether the data has cross-sectional dependence problem. It is the most appropriate test for the panel data that has large cross-sectional units and small time-series (Hoyos & Sarafidis, 2006). The test was applied to ROA and REVA models and confirmed the existing of cross-sectional dependence. Accordingly, the presence of the problem had to be corrected.

Time dummies are one of the common approaches to overcome the cross-sectional dependence. However, several studies have argued that time dummies are not enough where cross-sectional dependence still existed in many cases (Hoechle, 2007; Petersen, 2009; Sarafidis, Yamagata & Robertson, 2009). Petersen (2009) has provided evidence that time dummies will only remove cross-sectional dependence entirely if the time effect is unchanging; otherwise, clustering the standard errors by firms can be biased.

The diagnostic tests confirmed the presence of heteroscedasticity, autocorrelation and cross-sectional dependence in our models. Therefore, this study corrected the three issues by employing Driscoll and Kraay's standard errors based on Hoechle (2007) which is robust to heteroscedasticity, autocorrelation and cross-sectional dependence. The adjusted Driscoll and Kraay's standard errors by Hoechle (2007) is a nonparametric covariance matrix estimates fixed-effect model and valid for balanced and unbalanced panel data.

5.5 Multivariate Analysis

Six regressions were run representing both measurements of firm performance (REVA and ROA) to test the hypotheses of this study. First, the results of the direct influence of the independent variables on ROA and REVA are shown side by side. Then, the results of the moderating effect of corporate governance strength on the relationship between investment opportunities, leverage and ownership identity (foreign and institutional) and firm performance represented by ROA are discussed. The moderating effect of corporate governance strength is tested during two time periods: normal time represented by the entire five-year period (controlled for years) and also during the financial crisis. Finally, the results with REVA as a performance measurement are presented during crisis and non-crisis times.

First, the direct regression model was employed to examine the direct effect of investment opportunities, leverage and ownership identity (foreign and institutional) on firm performance represented by ROA and REVA. Firm size and loss were also included as control variables.

Table 5.9 summarizes the results of the direct relationship of the independent and control variables with firm performance represented by ROA and REVA. The panel regression model was estimated using fixed-effects regression with Driscoll and Kraay's standard errors in order to control for heteroscedasticity, autocorrelation and cross-sectional dependence. Both models show a significant level of 1% and the R-square is 73.6% for the ROA model and 63.3% for the REVA model. The statistics

indicate that the ROA model explains 73.6% and the REVA model explains 63.3% of the variance in firm performance.

Table 5.9
Results of ROA and REVA Direct Models Using Fixed-Effects with Driscoll and Kraay's Standard Errors

VARIABLES	Predicted signs	ROA	REVA
INVEST	-	-1.458***	-0.356***
		(-3.629)	(-5.162)
LVRG	-	-0.170***	-0.017***
		(-20.663)	(-3.187)
FOWN	+	-0.064	-0.006**
		(-1.252)	(-2.037)
INSOWN	+	0.069***	0.007**
		(2.815)	(2.047)
SIZE		2.011	0.331
		(1.164)	(0.978)
LOSS		-10.993***	-0.274***
		(-11.573)	(-10.392)
Constant		-6.897	-0.746
		(-0.673)	(-0.362)
Observations		501	501
Number of firms		101	101
R^2		0.736	0.633
Sig		0.000	0.000
FE Year		YES	YES

Dependent variable is firm performance measured by ROA = net income before extraordinary items scaled by total assets and REVA = [net operating profit after tax – market value of assets at the end of the year] × Weighted Average Cost of Capital (WACC); INVEST is measured as market-to-book value of equity [shares outstanding × share price]/total common equity; LVRG = total debt divided by total assets; FOWN is the percentage of shares owned by foreign owners; INSOWN is the percentage of shares owned by institutional investors; SIZE is the logarithm of market capitalization; LOSS is a dummy that equals one if the firm reported negative earnings. t-statistics in parentheses *** p<0.01, ** p<0.05, * p<0.1

5.5.1 Investment Opportunities and Firm Performance

Results in Table 5.9 show that investment opportunities (INVEST) are negatively related to firm performance at 1% significance level in both REVA and ROA models. Firms with high investment opportunities were hypothesised to negatively influence firm performance. Firms with high investment opportunities are more risky

and therefore have a high capital cost and low performance. The result is consistent with the expectation of the first hypothesis and with the conjecture of the Contracting Theory. Thus, H1 is supported.

Previous studies have found higher compensation and higher monitoring costs to be associated with firms with high growth (Anderson *et al.,* 1993; Gaver & Gaver, 1993; Sun, Lan, & Ma, 2014). Firms with higher investment opportunities spend more resources to employ these opportunities or projects that have the possibility of failure which are reflected negatively on the performance of firms. These firms also have more information asymmetry as managers have more undisclosed information about future projects which are not available to shareholders or to the public. Aggarwal and Samwick (2006) found no over-investment by firms based on the assumption that managers may have private benefits, but provided evidence of under-investing by managers due to private costs of investment. Several studies have documented a negative relationship between investment opportunities and firm performance (Hutchinson & Gul, 2004; Muniandy *et al.*, 2010).

5.5.2 Firm Leverage and Firm Performance

This study expects that leverage has a negative association with firm performance. The Pecking Order Theory suggests that firms with less leverage are more likely to have good financial performance (Morck *et al.*, 1988). The theory argues that strong performance firms try to achieve less financing costs and less asymmetric information costs by using their available cash first to finance their investments and operations and then turn to external financing or issuing of equity (Myers, 1984).

Consistent with the Pecking Order Theory, both models' regression results (Table 5.9) demonstrate a significantly negative relationship between leverage and firm performance. The results show a significant level of 1% for both performance indicators. Thus, H2 is supported. Aljifri and Moustafa (2007) found similar results based on a sample of listed firms in the UAE. The negative influence of leverage on firm performance was also found by many other studies (Bonna, 2012; Switzer & Tang, 2009; Tan, 2012).

Following the subprime mortgage crisis, the excessive leverage by corporations was one of the main causes that exacerbated the situation leading to the Great Recession. Debt could be a dangerous financing instrument and might lead to serious implication on the performance of firms. The collapse of several corporations has been viewed to be the result of the high leverage during the GFC. In the UAE, some of the big firms were badly hit as a result of the huge amount of debt they had during the crisis and were on the edge of bankruptcy. These could be some of the reasons that have led to such findings.

5.5.3 Foreign Ownership and Firm Performance

Foreign firms are believed to have better opportunities since they have superior utilizable capabilities compared to the domestic firms and their involvement in ownership is expected to boost firm performance. The results shown in Table 5.9 are inconsistent with expectations. Thus, H3 is not supported for both models. First, ROA model shows no significant relationship between foreign ownership and firm performance.

Second, for REVA model, foreign ownership indicates a significantly negative relationship with firm performance at 5% level of significance and -2.037 t-value.

The argument is that foreign ownership enhances performance by bringing in more production techniques and sophisticated management (Buckley & Casson, 1976, 2003; Dunning, 1988; Porter, 2011). However, the mean of foreign ownership in this study is 13.52% which is a low percentage to make a change that can affect performance. In this regard, Choi and Hasan (2005) indicated that it is not simply the presence of foreign ownership that could significantly influence the performance of Korean firms, but only a high level of foreign ownership. Along the same line, Chhibber and Majumdar (1999) found only when foreign investors are given proper authority and at least control more than 50% of ownership, are they able to display better performance. In the current study, only 7% of the firms have more than 50% of their shares held by foreign investors.

Further, it is doubtful that foreign investors can have the total economic freedom to run firms in developing countries based on their agenda. Aslund and Boone (2002); and Shleifer and Vishny (1997) argued that corruption and high bureaucracy in developing economies could prevent foreign investors from influencing firms. As domestic investors could protect their rights through their connections, different techniques can be used against foreign investors, such as losing voting records or declaring their shares illegal (Zheka, 2005). This argument could be the reason behind the decline of foreign investment in the UAE of late.

Besides that, the fact that most of the foreign investment in the UAE is from Arab or GCC countries debunks the general perspective that foreign investors are from developed countries and have superior capabilities. These countries are less likely to be developed with better techniques of production and sophisticated management. Therefore, the presence of such investors might be the reason behind the negative relationship with firm performance. Phung and Le (2013) found similar results in Vietnam and argued that foreign investors have less ability to monitor firms in emerging markets as they are not concentrated and suffer from information asymmetry. Various studies have found negative influence of foreign ownership (e.g., Bayrakdaroglu *et al.*, 2012; Praptiningsih, 2009).

5.5.4 Institutional Ownership and Firm Performance

Institutional investors are commonly believed to mitigate agency problems as they have the incentives to monitor their concentrated investments (Mayer, 1997; Shleifer & Vishny, 1997). As expected, the results show a positively significant influence of institutional ownership on firm performance measured by ROA at 1% significance level and 2.851 t-value. Results also demonstrate a positively significant influence with REVA at 5% level and a t-value of 2.047. This means that the involvement of institutional ownership is more likely to enhance the performance of firms. Thus, H4 is supported for both indicators.

The results support the idea that the power and incentives of institutional investors could be used to monitor the firms' management. This might be due to the experience institutions have in managing investments and their ability to reduce the

monitoring costs (Pound, 1988). The results are in line with Arouri *et al.* (2014) who examined the influence of institutional ownership on banks' performance in GCC countries. Several other studies have found similar findings (Belghitar *et al.*, 2011; Bjuggren *et al.*, 2007; Chaganti & Damanpour, 1991; Clay, 2001; Cornett *et al.*, 2007; Tsai & Gu, 2007a, 2007b).

5.5.5 Control Variables

Two control variables were used in the regression models, which are firm size and loss.

5.5.5.1 Firm size

Firm size is perceived to have a positive influence on firm performance as it is believed that larger firms have better resources and capabilities. Larger firms are more likely to employ more skilled individuals and market power, and to use economies of scale (Kumar, 2004). Further, larger firms have better image and reputation than smaller firms. On the other hand, larger firms could be less efficient as they may have larger agency problems and face more government bureaucracy and redundancy issues (Lehn, Patro, & Zhao, 2009). In this study, firm size (SIZE) does not appear to have a significant relationship with firm performance. The finding is consistent with the results of Moustafa (2005); and Aljifri and Moustafa (2007) who examined the performance of UAE's firms.

5.5.5.2 Loss

It is argued that losses indicate less information about future firm performance than profits which could impact the relationship between corporate governance and accounting performance (Sun & Cahan, 2009). In the current research, firms with losses (LOSS) are found to be negatively associated with firm performance whether measured by ROA or REVA at 1% significance level. Negative results were found although it is argued that management will be more likely to manipulate earnings to reflect a better financial position which is usually associated with their remuneration (Hutchinson *et al.*, 2008). The finding is similar to the findings of several other studies (Hutchinson *et al.*, 2008; Peni & Vähämaa, 2012; Sun & Cahan, 2009).

5.6 The Moderating Effect of Corporate Governance Strength during Crisis and Non-Crisis Times

As explained by Aiken and West (1991), interaction terms must be created in order to detect the moderating effect. Accordingly, the predictor variables were multiplied with the moderator variable to create the interaction terms. First, four interactions were created: each independent variable was interacted with the moderator variable to create the second model for the moderating effect of corporate governance strength which is hypothesized to influence the direct relationship between investment opportunities, leverage, ownership identity (foreign and institutional) and firm performance in normal times.

Then, the four interactions were also interacted with the crisis dummy which is the year 2009 to assess the impact of corporate governance strength during the crisis as

explained in Chapter 4. The interaction terms raise concerns of multicollinearity problem between the interacted terms and the original components. To avoid this problem, the moderator and predictor variables were centred (Cohen, Cohen, West & Aiken, 2003; Frazier, Tix & Barron, 2004; West, Aiken & Krull, 1996). Centering also facilitates the interpretation of the interaction and predictors and helps to achieve accurate estimated coefficients (Frazier *et al.*, 2004; West *et al.*, 1996). After the creation of the interaction terms, everything should be in place to run the models.

Therefore, two regression models were run for each performance proxy to examine the moderating effect of corporate governance strength in the relationship between investment opportunities, leverage, ownership identity (foreign and institutional) and firm performance during normal and crisis times. Firm size and loss were also included as control variables. First, the results of ROA as a measurement of firm performance are demonstrated during crisis and normal times followed by the models with firm performance represented by REVA.

5.6.1 Return on Assets (ROA)

Table 5.10 shows the results of the interaction terms of corporate governance strength with investment opportunities, leverage and ownership identity (foreign and institutional) and their relationship with ROA. It is assumed that the stronger the system of corporate governance, the better the firm is monitored. Strong corporate governance system is believed to positively moderate the relationship between the independent variables and firm performance. According to Kim, Al-Shammari, Kim

and Lee (2009), beta coefficient for interaction should be used to determine the significance of the moderating effect of corporate governance strength.

The results of the two regression models in Table 5.10 show that corporate governance strength moderates all independent variables with ROA during normal times, but only three variables during crisis time. Although institutional ownership is negatively moderated by corporate governance strength in normal times, it is positively moderated during the financial crisis time. The results of each variable are explained in detail as follows.

5.6.1.1 The Moderating Effect of Corporate Governance Strength on the Relationship between Investment Opportunities and ROA

As shown in Table 5.10, the results indicate that corporate governance strength positively moderates the relationship between investment opportunities and firm performance measured by ROA. The direct negative relationship turns to positive at 1% significance level. This means that good corporate governance system plays a significant role in reducing the costs of monitoring large investment opportunities which enhance the performance of the firm. In other words, firms with large investment opportunities increase profitability only if the firm has strong corporate governance. It is logical to say that corporate governance strength helps firms with high investment opportunities to effectively monitor their investment activities.

Table 5.10
Results of ROA Using Fixed-Effects with Driscoll and Kraay's Standard Errors

Variables	Predicted sign	Model (1) Normal time	Model (2) Crisis time
INVEST		-1.415***	-1.452***
		(-4.223)	(-3.227)
LVRG		-0.171***	-0.169***
		(-19.375)	(-18.786)
FOWN		-0.025	-0.070
		(-0.571)	(-1.100)
INSOWN		0.072***	0.084***
		(3.879)	(3.474)
CG		0.456***	0.365***
		(5.283)	(4.262)
INVEST*CG	+	0.375***	
		(6.412)	
LVRG*CG	+	-0.003*	
		(-1.786)	
FOWN*CG	+	0.013***	
		(5.268)	
INSOWN*CG	+	-0.009***	
		(-3.337)	
INVEST*CG*CRSS	+		0.398***
			(2.859)
LVRG*CG*CRSS	+		0.002
			(0.276)
FOWN*CG*CRSS	+		0.031***
			(5.909)
INSOWN*CG*CRSS	+		0.012***
			(3.991)
SIZE		1.862	1.860
		(1.153)	(1.023)
LOSS		-10.783***	-10.747***
		(-11.040)	(-12.124)
Constant		-4.783	-5.346
		(-0.489)	(-0.490)
Observations		501	501
Number of firms		101	101
R^2		75.37	74.95
Sig		0.000	0.000
Year FE		YES	YES

Dependent variable is firm performance measured by ROA = net income before extraordinary items scaled by total assets; INVEST is measured as market-to-book value of equity [shares outstanding × share price]/total common equity; LVRG = total debt divided by total assets; FOWN is the percentage of shares owned by foreign owners; INSOWN is the percentage of shares owned by institutional investors; CG is corporate governance strength measured by the governance index; CRSS is the financial crisis represented by a dummy with a value of 1 if the year is 2009, or 0 otherwise; SIZE is the logarithm of market capitalization; LOSS is a dummy that equals one if the firm reported negative earnings; t-statistics in parentheses *** p<0.01, ** p<0.05, * p<0.1.

Corporate governance strength also has a positive moderating role during the GFC as shown in Model 2 of Table 5.10. The result is significantly positive at the 1% level with a t-value of 2.859 in crisis time. Hutchinson and Gul (2004) found that higher levels of executives' independence and remuneration weaken the negative association between growth and firm performance. The findings here support and extend their results by providing evidence that the strength of corporate governance as an entire system can play a more efficient role and significantly moderate the relationship between investment opportunities and performance in different time periods.

5.6.1.2 The Moderating Effect of Corporate Governance Strength on the Relationship between Leverage and Firm Performance

High leverage is believed to be a risky tool, especially in times of financial distress. The Great Recession brought to light the trend of de-leveraging as a result of the panic that corporations with high leverage have faced since the subprime mortgage crisis. The results in Table 5.10 show a significant moderating role of corporate governance strength on the negative relationship between leverage and firm performance. This means that corporate governance strength weakens the negative influence of leverage on ROA significantly at the 10% level. The results indicate that strong corporate governance practices help in getting less financing costs and monitoring of the borrowing process. This result supports the argument of McConnell and Servaes (1995) that leverage is a dangerous financial instrument unless it is employed with careful moderation.

On the other hand, corporate governance strength has no significant moderation between leverage and ROA during the crisis time. This means that corporate governance strength does not have a positive role to effectively employ leverage during the crisis. The negative role of excessive leverage during the crisis might make it out of control. It is known that leverage multiplies losses in bad times just as it multiplies profits in good times.

Therefore, the additional negative impact of leverage during the crisis could suddenly hit firms giving no time for the board of directors to react. In fact, the use of poorly understood financial instruments could make it harder for the board of directors to provide helpful advice. This could be also due to the fact that government bail-out is one of the largest sources of leverage during the crisis which gave the corporate governance system limited power to control the use of leverage to productive capacities. Grove, Patelli, Victoravich and Xu (2011) argued that there is low debt monitoring during crisis due to the presence of depository insurance and the perceived likelihood of a government bail-out.

5.6.1.3 The Moderating Effect of Corporate Governance Strength on the Relationship between Foreign Ownership and Firm Performance

The results of the direct relationship between foreign ownership and firm performance indicate a lack of a significant impact on ROA. Corporate governance strength, however, strengthens the relationship with ROA. Corporate governance strength positively moderates the relationship between foreign ownership and profitability at the 1% significance level and 5.286 t-value. This means that the presence of foreign ownership can enhance performance if a firm has strong

corporate governance practices. Such finding is expected as the main role of corporate governance is to address the possible conflicts between owners and managers as suggested by the Agency Theory. Corporate governance normally influences the way wealth is distributed among various stakeholders by reducing firms' financing costs, improving market values and mitigating financial distress (Bonna, 2012; Love, 2011).

Similar results were also found during the crisis as corporate governance strength has a positive moderating effect at the 1% significance level and a t-value of 5.909. This means that corporate governance strength plays a similar role in both periods to improve the influence of foreign ownership on ROA.

5.6.1.4 The Moderating Effect of Corporate Governance Strength on the Relationship between Institutional Ownership and ROA

The results of the direct relationship between institutional ownership and firm performance show a significantly positive relationship with ROA. The interaction of corporate governance strength worsens the relationship and turns the relationship from significantly positive to negative at the 1% significance level and -3.337 t-value. This means that corporate governance strength does more harm than good between institutional ownership and performance in normal times.

Studies, such as Atanasov (2005); and Sahut and Othmani Gharbi (2010) found that institutional ownership can negatively influence performance with poor governance practices. They argued that institutional owners are unlikely to encourage the implementation of good corporate governance practices and prefer to preserve their

business relations with firms' management in their portfolios. Atanasov (2005) argued that large holding of shares by institutional owners enable them to deteriorate firm value through private benefits control. Corporate governance system could be constrained when institutional ownership holds large proportions of shares. This argument can be applied to the case of the UAE as the mean of institutional ownership in the examined firms is 38.36%.

Another explanation of such results is that a large proportion of institutional ownership is actually government owned which could be more influential over the corporate governance system and limit its power. Lu and Shi (2012) found that corporate governance regulations are less effective for state-owned firms. They argued that agency problems reduce firm performance through three channels: empire-building activities, enjoying quiet life behaviors and diversion/stealing. Certain agency problems are easier to be solved for non-state-owned firms compared to state-owned firms.

Corporate governance strength reduces information asymmetry between external shareholders and internal managers which then decreases the agency problems related only to empire-building activities and diversion/stealing. However, the agency problems related to the channel that is more connected to state-owned firms, i.e., managers' enjoyment of quiet life behaviors is not effectively reduced by corporate governance practices because governance strength does not provide more incentives to managers.

Furthermore, Borisova *et al.* (2012); and Durnev and Fauver (2007) demonstrated that government intervention deteriorates corporate governance strength. Borisova *et al.* (2012) showed that government ownership is negatively associated with corporate governance quality in civil law countries. Durnev and Fauver (2007) explained that positive corporate governance influence on firm performance worsens in countries with more predatory governments. The findings also support the results of Bai, Li, Tao and Wang (2000); and Dewenter and Malatesta (2001) who found that state ownership engenders expropriation of minority shareholders in normal times.

On the other hand, in crisis time, corporate governance strength played a positive role to moderate institutional ownership and ROA at the 1% significance level (t-value of 3.991). This means that corporate governance strength played a more efficient role during crisis. This could be because institutional investors are usually the largest losers during financial crises as they usually hold large proportions of shares which decline in value during crisis. Institutional owners may then realize the importance of corporate governance during crisis and try to activate its role assuming they can reverse their losses with strong corporate governance.

It could also be a political agenda to monitor corporate governance practices during crises. Several countries tried to enforce governance regulations and activate the board of directors' role during crisis. During the crises, especially in state-owned firms, it is a political decision to strengthen corporate governance system in firms where governments then care more about the stability of the economy rather than the

profits of individual firms. These results are in line with Liu *et al.* (2012) who argued that state ownership stabilized shareholders value during crisis.

5.6.2 Refined Economic Value Added (REVA)

Table 5.11 shows the results of the interaction effect of corporate governance strength with investment opportunities, leverage and ownership identity (foreign and institutional) on firm performance as measured by REVA. The same models were applied with controlling for firm size and loss. The results are a little different than those with ROA. Corporate governance strength appears to significantly moderate only the relationship between leverage and REVA in normal times. However, corporate governance strength shows a stronger effect during crisis. Corporate governance strength moderates the relationship between investment opportunities, leverage, institutional ownership and REVA during crisis.

These results support the findings of Suvankulov and Ogucu (2012); and Watkins *et al.* (2009) that firms with strong corporate governance perform better during the crisis. The results, however, are against the notion of Beltratti and Stulz (2012); and Erkens *et al.* (2012) that firms with strong corporate governance practices had poorer performance during the crisis. The results of the moderating effect of corporate governance strength on each independent variable and REVA are explained below.

Table 5.11
Results of REVA Using Fixed-Effects with Driscoll and Kraay's Standard Errors

Variables	Predicted sign	Model (1) Normal times	Model (2) Crisis times
INVEST	-	-0.384***	-0.362***
		(-5.470)	(-5.941)
LVRG	-	-0.015**	-0.016***
		(-2.494)	(-3.215)
FOWN	+	-0.013***	-0.004*
		(-4.679)	(-1.898)
INSOWN	+	0.004	0.008**
		(1.624)	(2.536)
CG		-0.031	-0.032
		(-1.043)	(-1.263)
INVEST*CG	+	0.028	
		(1.546)	
LVRG*CG	+	0.002***	
		(7.016)	
FOWN*CG	+	-0.002	
		(-1.645)	
INSOWN*CG	+	-0.001	
		(-0.759)	
INVEST*CG*CRSS	+		-0.074***
			(-4.579)
LVRG*CG*CRSS	+		0.002***
			(3.449)
FOWN*CG*CRSS	+		0.000
			(0.487)
INSOWN*CG*CRSS	+		0.002**
			(2.473)
SIZE		0.441	0.341
		(1.435)	(1.016)
LOSS		-0.245***	-0.280***
		(-5.710)	(-8.604)
Constant		-1.451	-0.868
		(-0.794)	(-0.433)
Observations		501	501
Number of groups		101	101
R^2		63.67	63.65
Sig		0.000	0.000
Year FE		YES	YES

REVA = [net operating profit after tax – market value of assets at the end of the year] × WACC; INVEST is measured as market-to-book value of equity [shares outstanding × share price]/total common equity; LVRG = total debt divided by total assets; FOWN is the percentage of shares owned by foreign owners; INSOWN is the percentage of shares owned by institutional investors; CG is corporate governance strength measured by the governance index; CRSS is the financial crisis represented by a dummy with a value of 1 if the year is 2009, or 0 otherwise; SIZE is the logarithm of market capitalization; LOSS is a dummy that equals one if the firm reported negative earnings; 2009 is the year of the financial crisis; t-statistics in parentheses *** p<0.01, ** p<0.05, * p<0.1.

5.6.2.1 The Moderating Effect of Corporate Governance Strength on the Relationship between Investment Opportunities and REVA

The results in Table 5.11 indicate no significant moderating effect between investment opportunities and firm performance measured by REVA in non-crisis times. Although corporate governance strength positively moderated investment opportunities with ROA, this is not true with REVA. This result suggests that strong governance enhances the short-term profitability (ROA) but does not actually create value for shareholders. It is believed that executives of firms that have high investment opportunities try to improve profitability of the firm in the short-run rather than the shareholders' value as their remuneration is usually based on profitability (Abdel-Khalik, 1985; Hutchinson & Gul, 2004).

Since investment opportunities can be financed by leverage and equity capital and REVA considers the entire cost of capital, corporate governance system might be lacking in monitoring all sources of finance. Nevertheless, corporate governance strength shows a moderating effect during the crisis. As shown in Model 2 of Table 5.11, corporate governance strength weakens the negative relationship between investment opportunities and firm performance represented by REVA. It significantly has a moderating effect at the 1% level. Investment opportunities are known to be less during the crisis and have a different nature. This could enable corporate governance to correct some negative influence of investment opportunities on REVA. The results support the findings of Peni and Vähämaa (2012) who showed that strong governance mitigated the negative impact of the crisis.

5.6.2.2 The Moderating Effect of Corporate Governance Strength on the Relationship between Leverage and REVA

It is believed that leverage affects the returns generated by investment and the entire future of the firm (Morri & Mazza, 2014). The direct result shows that leverage has a significantly negative influence on REVA. However, with the moderation of corporate governance strength, the negative influence turns to positive with a 1% significance level when REVA is the proxy for firm performance. This means that leverage can positively influence REVA when it is accompanied by a good corporate governance system.

Strong corporate governance is expected to reduce the costs of raising external capital by minimizing asymmetric information costs (Chen *et al.*, 2010). Therefore, it was expected that stronger corporate governance system decreases the costs of financing. Mande, Park, and Son (2012) found that good corporate governance reduces the costs of debt and equity financing. It is clear from the results that corporate governance strength has a strong moderating effect on the relationship between leverage and REVA. The results support the argument of McConnell and Servaes (1995) that firms' leverage can be employed only with careful moderation. Although the moderating effect of corporate governance strength is lower during the crisis with a t-value of 3.449 compared to normal times, it is still positive at the 1% significance level. Corporate governance strength might have less monitoring role during crisis which could be a result of the extra influence of leverage and lack of liquidity during financial distress.

5.6.2.3 The Moderating Effect of Corporate Governance Strength on the Relationship between Foreign Ownership and REVA

The results of the direct relationship show a negatively significant influence of foreign ownership on firm performance measured by REVA. However, as shown in Table 5.11, corporate governance strength indicates insignificant moderating effect between foreign ownership and REVA in crisis and non-crisis times. This means that H7a and H7b are not supported. The fact that corporate governance code is not mandatory for foreign firms in the UAE might be the reason behind the lack of significant moderation of corporate governance strength. Another reason could be that foreign investors are usually investing for a short time period and try only to influence the profitability of the firm and not REVA.

5.6.2.4 The Moderating Effect of Corporate Governance Strength on the Relationship between Institutional Ownership and REVA

The result of the direct relationship between institutional ownership is positively significant at the 5% level with REVA. However, this association is no longer significant when corporate governance strength was interacted with institutional ownership in normal times. This means that corporate governance system is restricted or ineffective when there is a large institutional ownership in the structure of the firm. This supports the findings of Atanasov (2005) who argued that institutional investors may find cooperation and sharing control with managers more beneficial than forcing strict corporate governance practices.

In spite of that, corporate governance strength positively moderated the relationship during the crisis at the 5% significance level and 2.473 t-value. Since institutional

owners are the largest shareholders and it is known that stock prices declined dramatically during recession, they are believed to effectively work to improve the quality of corporate governance and alleviate agency problems (Shleifer & Vishny, 1997; Sundaramurthy, 1996). Institutional investors might hesitate to spend on corporate governance when economic conditions are stable, but are encouraged to do so in the time of crises.

5.7 Additional Analysis

Additional tests were conducted to ensure the sensitivity and robustness of the main results reported earlier.

5.7.1 Winsorizing the Data

To test the robustness of the findings, the analysis was repeated after winsorizing ROA and REVA to ensure results are not influenced by any extreme outliers. ROA and REVA have kurtosis more than 10. In order to reduce the kurtosis to the normal level, ROA was winsorized at first and 99^{th} percentile and REVA at fifth and 95^{th} percentile. The results are presented in Tables 5.12 and 5.13. First, the results with firm performance as measured by ROA, as seen in Table 5.12, are consistent with the main analysis except that corporate governance shows a lack of significant influence on the relationship between investment opportunities and performance in crisis time. This confirms that most of the extreme cases are related to the time of the crisis and should be included to obtain more representative results regarding the crisis.

Second, the results of REVA model, as shown in Table 5.13, are similar to the main results except for the relationship between institutional ownership and firm performance. The significant influence disappears which can be explained by the fact that several firms have large proportions of institutional ownership of around 80% to 96% after the 95% percentile. This shows that such firms have similar performance which was affected when REVA is winsorized at the 5% level.

Table 5.12
Results of ROA Winsorized at 1% Using Fixed-Effects with Driscoll and Kraay's Standard Errors

VARIABLES	Model (1) Direct	Model (2) Non-crisis	Model (3) Crisis
INVEST	-1.408***	-1.407***	-1.388***
	(-3.338)	(-4.339)	(-3.110)
LVRG	-0.164***	-0.168***	-0.165***
	(-23.379)	(-17.787)	(-16.822)
FOWN	-0.050	-0.026	-0.046
	(-1.232)	(-0.767)	(-0.902)
INSOWN	0.063**	0.065***	0.077***
	(2.441)	(3.182)	(2.946)
CG		0.389***	0.326***
		(6.118)	(5.298)
INVEST*CG		0.288***	
		(5.828)	
LVRG*CG		-0.005***	
		(-3.874)	
FOWN *CG		0.008***	
		(3.521)	
INSOWN*CG		-0.009***	
		(-3.503)	
INVEST*CG*CRSS			0.188
			(1.438)
LVRG*CG*CRSS			-0.005
			(-0.711)
FOWN *CG*CRSS			0.018***
			(3.864)
INSOWN*CG*CRSS			0.007**
			(2.312)
SIZE	2.344	2.203	2.103
	(1.322)	(1.304)	(1.164)
LOSS	-10.495***	-10.308***	-10.379***
	(-12.166)	(-11.913)	(-12.322)
Constant	-9.089	-7.230	-7.040
	(-0.863)	(-0.708)	(-0.650)
R^2	0.767	0.780	0.773
Sig	0.000	0.000	0.000
Observations	501	501	501
Number of groups	101	101	101
Year FE	YES	YES	YES

Dependent variable is firm performance measured by ROA = net income before extraordinary items scaled by total assets; INVEST is measured as market-to-book value of equity [shares outstanding × share price]/total common equity; LVRG = total debt divided by total assets; FOWN is the percentage of shares owned by foreign owners; INSOWN is the percentage of shares owned by institutional investors; CG is corporate governance strength measured by the governance index; CRSS is the financial crisis represented by a dummy with a value of 1 if the year is 2009, or 0 otherwise; SIZE is the logarithm of market capitalization; LOSS is a dummy that equals one if the firm reported negative earnings; t-statistics in parentheses *** p<0.01, ** p<0.05, * p<0.1.

Table 5.13
Results of REVA Winsorized at 5% Using Fixed-Effects with Driscoll and Kraay's Standard Errors

VARIABLES	Model (1) Direct	Model (2) Non-crisis	Model (3) Crisis
INVEST	-0.205***	-0.214***	-0.209***
	(-6.853)	(-7.448)	(-7.951)
LVRG	-0.010***	-0.010***	-0.010***
	(-3.449)	(-3.321)	(-3.399)
FOWN	-0.004*	-0.006***	-0.003
	(-1.725)	(-3.326)	(-1.581)
INSOWN	0.002	0.001	0.002
	(1.129)	(0.617)	(1.324)
CG		-0.018**	-0.020***
		(-2.431)	(-2.812)
INVEST*CG		0.012	
		(1.007)	
LVRG*CG		0.000**	
		(2.347)	
FOWN *CG		-0.001	
		(-1.283)	
INSOWN*CG		-0.000	
		(-0.128)	
INVEST*CG*CRSS			-0.042***
			(-3.612)
LVRG*CG*CRSS			0.002**
			(2.539)
FOWN *CG*CRSS			-0.000
			(-0.672)
INSOWN*CG*CRSS			0.001***
			(2.838)
SIZE	0.611***	0.648***	0.627***
	(8.735)	(10.050)	(8.604)
LOSS	-0.142***	-0.131***	-0.144***
	(-5.031)	(-4.198)	(-4.814)
Constant	-2.963***	-3.216***	-3.094***
	(-7.045)	(-8.468)	(-7.183)
R^2	0.748	0.751	0.752
Sig	0.000	0.000	0.000
Observations	501	501	501
Number of groups	101	101	101
Year FE	YES	YES	YES

Dependent variable is firm performance measured by REVA = [net operating profit after tax – market value of assets at the end of the year] × Weighted Average Cost of Capital (WACC); INVEST is measured as market-to-book value of equity [shares outstanding × share price]/total common equity; LVRG = total debt divided by total assets; FOWN is the percentage of shares owned by foreign owners; INSOWN is the percentage of shares owned by institutional investors; CG is corporate governance strength measured by the governance index; CRSS is the financial crisis represented by a dummy with a value of 1 if the year is 2009, or 0 otherwise; SIZE is the logarithm of market capitalization; LOSS is a dummy that equals one if the firm reported negative earnings; t-statistics in parentheses *** p<0.01, ** p<0.05, * p<0.1.

5.7.2 Control for Industry Type

Some studies have argued that industry type should be controlled for in order to obtain better results. However, this study used the fixed-effects model which drops any time-invariant variable, such as industry type. Therefore, to ensure the robustness of the main findings, this study rechecked the models using new fixed-effects model that could control for industry type as shown in Tables 5.14 and 5.15. This model is unpopular but it has been applied by several studies to control for time-invariant variables (see for example, Uddin *et al.*, 2014).

Industry type is measured as a dummy variable that scores 1 if a firm is under the financial sector (banks, insurance and financial services) and 0, otherwise. Some studies have used a dummy for each industry; however, in the UAE, the ADX and DFM markets use different sector classifications which make it difficult and inaccurate to follow such classifications (Hussainey & Aljifri, 2012). The industry dummy was then interacted with the year dummies to control for the financial firms. Therefore, the industry variable itself does not appear in the tables as the purpose is to control for the financial firms and not to know the effect of financial firms. As shown in Table 5.14 and Table 5.15, the results show no significant difference with the main findings, whether firm performance is represented by ROA or REVA. This means that the results reported earlier are robust, regardless of the industry type.

Table 5.14

Results of ROA Using Fixed-Effects with Control for Industry Type

$ROA_{it} = \beta_0 + \beta_1 INVEST_{it} + \beta_2 LVRG_{it} + \beta_3 FOWN_{it} + \beta_4 INSOWN_{it} + \beta_5 SIZE_{it} + \beta_6 LOSS_{it} + \beta_7 CG_{it} + \beta_8 (INVEST \times CG)_{it} + \beta_9 (LVRG \times CG)_{it} + \beta_{10} (FOWN \times CG)_{it} + \beta_{11} (INSOWN \times CG)_{it} + \sum_{t=1}^{5} \beta_{12} (D_t \times IND_i) + \varepsilon_{it}$

VARIABLES	Model (1) Direct	Model (2) Non-crisis	Model (3) Crisis
INVEST	-1.370***	-1.264***	-1.305***
	(-3.246)	(-3.505)	(-2.675)
LVRG	-0.168***	-0.170***	-0.167***
	(-16.708)	(-19.533)	(-16.218)
FOWN	-0.068	-0.038	-0.082
	(-1.363)	(-0.960)	(-1.399)
INSOWN	0.074***	0.075***	0.087***
	(3.121)	(4.361)	(3.745)
CG		0.249***	0.122*
		(3.955)	(1.757)
INVEST*CG		0.353***	
		(6.857)	
LVRG*CG		-0.004**	
		(-2.193)	
FOWN *CG		0.013***	
		(4.211)	
INSOWN*CG		-0.010***	
		(-3.250)	
INVEST*CG*CRSS			0.350***
			(3.568)
LVRG*CG*CRSS			0.005
			(0.536)
FOWN *CG*CRSS			0.029***
			(5.318)
INSOWN*CG*CRSS			0.012***
			(3.912)
SIZE	2.488	2.451*	2.760*
	(1.614)	(1.733)	(1.679)
LOSS	-11.049***	-10.931***	-10.897***
	(-11.777)	(-11.744)	(-12.701)
Constant	-10.212	-9.292	-11.734
	(-1.129)	(-1.111)	(-1.211)
R^2	0736	0.749	0.745
Sig	0.000	0.000	0.000
Observations	501	501	501
Number of groups	101	101	101
Year FE	YES	YES	YES

Dependent variable is firm performance measured by ROA = net income before extraordinary items scaled by total assets; INVEST is measured as market-to-book value of equity [shares outstanding × share price]/total common equity; LVRG = total debt divided by total assets; FOWN is the percentage of shares owned by foreign owners; INSOWN is the percentage of shares owned by institutional investors; CG is corporate governance strength measured by the governance index; CRSS is the financial crisis represented by a dummy with a value of 1 if the year is 2009, or 0 otherwise; SIZE is the logarithm of market capitalization; LOSS is a dummy that equals one if the firm reported negative earnings; D_t is the year dummies; IND is a dummy equals 1 for financial firms and 0 otherwise. t-statistics in parentheses *** p<0.01, ** p<0.05, * p<0.1.

Table 5.15

Results of REVA Using Fixed-Effects with Control for Industry Type

$REVA_{it} = \beta_0 + \beta_1 INVEST_{it} + \beta_2 LVRG_{it} + \beta_3 FOWN_{it} + \beta_4 INSOWN_{it} + \beta_5 SIZE_{it} + \beta_6 LOSS_{it} + \beta_7 CG_{it} + \beta_8 (INVEST \times CG)_{it} + \beta_9 (LVRG \times CG)_{it} + \beta_{10} (FOWN \times CG)_{it} + \beta_{11} (INSOWN \times CG)_{it} + \sum_{t=1}^{5} \beta_{12} (D_t \times IND_i) + \varepsilon_{it}$

VARIABLES	Model (1) Direct	Model (2) Non-crisis	Model (3) Crisis
INVEST	-0.287***	-0.333***	-0.313***
	(-5.924)	(-7.741)	(-7.275)
LVRG	-0.017***	-0.014***	-0.016***
	(-4.125)	(-2.743)	(-3.542)
FOWN	-0.008***	-0.014***	-0.007***
	(-3.511)	(-3.814)	(-5.020)
INSOWN	0.006	0.002	0.005
	(0.906)	(0.423)	(1.278)
CG		-0.031	-0.027
		(-0.531)	(-0.486)
INVEST*CG		0.016	
		(0.813)	
LVRG*CG		0.002***	
		(5.182)	
FOWN *CG		-0.002*	
		(-1.661)	
INSOWN*CG		-0.001	
		(-0.700)	
INVEST*CG*CRSS			-0.037***
			(-4.274)
LVRG*CG*CRSS			0.001**
			(2.490)
FOWN *CG*CRSS			0.001***
			(3.331)
INSOWN*CG*CRSS			0.002**
			(2.368)
SIZE	0.152	0.225	0.136
	(0.552)	(0.770)	(0.450)
LOSS	-0.257***	-0.223***	-0.240***
	(-4.339)	(-4.507)	(-5.467)
Constant	-0.030	-0.496	0.036
	(-0.018)	(-0.287)	(0.020)
R^2	0.593	0.597	0.595
Sig	0.000	0.000	0.000
Observations	501	501	501
Number of groups	101	101	101
Year FE	YES	YES	YES

REVA = [net operating profit after tax – market value of assets at the end of the year] × WACC; INVEST is measured as market-to-book value of equity [shares outstanding × share price]/total common equity; LVRG = total debt divided by total assets; FOWN is the percentage of shares owned by foreign owners; INSOWN is the percentage of shares owned by institutional investors; CG is corporate governance strength measured by the governance index; CRSS is the financial crisis represented by a dummy with a value of 1 if the year is 2009, or 0 otherwise; SIZE is the logarithm of market capitalization; LOSS is a dummy that equals 1 if the firm reported negative earnings; D_t is the year dummies; IND is a dummy equals 1 for financial firms and 0 otherwise. t-statistics in parentheses *** p<0.01, ** p<0.05, * p<0.1.

5.7.3 Pooled Regression

This study used fixed-effects estimation in the main analysis. However, pooled regression with Driscoll and Kraay's standard errors was also estimated in order to compare the results. The findings as shown in Tables 5.16 and 5.17, are similar in some parts with the main analysis, but have some dissimilarity. This can be a sign that applying fixed-effects model is the right technique to be used as suggested by Hausman test which enabled the study to avoid any possible bias in the estimation.

Table 5.16
Results of ROA Using Pooled OLS with Driscoll and Kraay's Standard Errors

VARIABLES	Model (1) Direct	Model (2) Non-crisis	Model (3) Crisis
INVEST	-0.077	-0.082	0.017
	(-0.364)	(-0.404)	(0.061)
LVRG	-0.071***	-0.072***	-0.071***
	(-10.411)	(-5.272)	(-8.817)
FOWN	-0.040**	-0.036*	-0.025
	(-2.111)	(-1.893)	(-1.347)
INSOWN	-0.004	-0.002	0.000
	(-0.415)	(-0.341)	(0.016)
CG		0.201***	0.218***
		(4.693)	(4.114)
INVEST*CG		0.035	
		(0.780)	
LVRG*CG		-0.012**	
		(-2.567)	
FOWN *CG		-0.004	
		(-1.136)	
INSOWN*CG		-0.005	
		(-1.393)	
INVEST*CG*CRSS			0.241**
			(2.497)
LVRG*CG*CRSS			-0.006
			(-1.302)
FOWN *CG*CRSS			0.024***
			(6.527)
INSOWN*CG*CRSS			0.012***
			(6.517)
SIZE	-0.759***	-0.801**	-0.859***
	(-2.817)	(-2.601)	(-3.029)
LOSS	-12.528***	-12.473***	-12.435***
	(-11.139)	(-10.549)	(-10.907)
IND	-3.825***	-3.876***	-3.710***
	(-12.098)	(-11.122)	(-11.534)
Constant	12.075***	12.733***	12.979***
	(6.547)	(6.336)	(6.704)
R^2	0.592	0.604	0.602
Sig	0.000	0.000	0.000
Observations	501	501	501
Number of groups	101	101	101
Year dummies	YES	YES	YES

t-statistics in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table 5.17
Results of REVA Using Pooled OLS with Driscoll and Kraay's Standard Errors

VARIABLES	Model (1) Direct	Model (2) Non-crisis	Model (3) Crisis
INVEST	0.022	0.001	-0.032
	(0.228)	(0.007)	(-0.260)
LVRG	0.002	0.001	0.002
	(0.776)	(1.002)	(0.883)
FOWN	0.003	-0.000	0.002
	(0.962)	(-0.016)	(0.673)
INSOWN	0.005**	0.005*	0.006*
	(2.096)	(1.951)	(1.982)
CG		-0.045**	-0.045***
		(-2.523)	(-2.751)
INVEST*CG		-0.029**	
		(-2.367)	
LVRG*CG		0.002***	
		(3.595)	
FOWN *CG		-0.001	
		(-1.473)	
INSOWN*CG		0.000	
		(0.604)	
INVEST*CG*CRSS			-0.119***
			(-3.175)
LVRG*CG*CRSS			0.004***
			(2.635)
FOWN *CG*CRSS			0.001
			(1.569)
INSOWN*CG*CRSS			0.003***
			(4.193)
SIZE	1.006***	1.033***	1.036***
	(6.498)	(6.933)	(7.000)
LOSS	-0.081	-0.111	-0.120
	(-0.723)	(-0.793)	(-0.871)
IND	-0.034	-0.022	-0.055
	(-0.408)	(-0.340)	(-0.677)
Constant	-4.961***	-5.229***	-5.193***
	(-5.178)	(-5.694)	(-5.632)
R^2	0.286	0.297	0.298
Sig	0.000	0.000	0.000
Observations	501	501	501
Number of groups	101	101	101
Year dummies	YES	YES	YES

t-statistics in parentheses *** p<0.01, ** p<0.05, * p<0.1

5.7.4 Financial verses Non-Financial Firms

In order to provide wider views on the data, this study re-ran the main analysis for the financial and non-financial firms separately. The financial firms are represented by banks, insurance firms and financial services and the non-financial firms are those in other industries. Tables 5.18 and 5.19 show the results of the models for non-financial firms followed by the financial firms, where ROA is the proxy of firm performance. The findings, to some extent, are similar to the analysis of all the firms except for some minor differences. For example, corporate governance strength had an insignificant moderating effect in the relationship between investment opportunities and firm performance during the crisis. The rest of the results are similar with the main findings reported earlier.

Next, the same analysis was conducted using REVA as an indicator of firm performance. Tables 5.20 and Table 5.21 demonstrate the direct results and the moderating effect of corporate governance strength in crisis and non-crisis times. Most of the significant variables for non-financial firms are the same, as shown in Table 5.20. Moreover, a significant impact of corporate governance strength is noticed in the relationship between investment opportunities and firm performance in normal times and in the relationship between foreign ownership and firm performance in crisis times. On the other hand, Table 5.21 shows that leverage does not influence firm performance in financial firms, whether directly or with the interaction of corporate governance strength in normal times. This is not surprising because financial firms depend more on leverage, which could expose these firms to more risk.

Table 5.18
Results of Non- Financial Firms Using ROA during Crisis and Normal Times

VARIABLES	Model (1) Direct	Model (2) Non-crisis	Model (3) Crisis
INVEST	-2.101***	-2.454***	-2.139***
	(-3.966)	(-5.603)	(-3.661)
LVRG	-0.183***	-0.173***	-0.184***
	(-5.435)	(-5.607)	(-5.015)
FOWN	-0.073***	-0.051**	-0.074***
	(-4.740)	(-2.577)	(-2.744)
INSOWN	0.068***	0.077***	0.070***
	(4.440)	(7.064)	(4.315)
CG		0.088	0.050
		(0.431)	(0.277)
INVEST*CG		0.278***	
		(4.221)	
LVRG*CG		0.002	
		(1.552)	
FOWN *CG		0.007**	
		(2.480)	
INSOWN*CG		-0.007*	
		(-1.794)	
INVEST*CG*CRSS			0.109
			(0.520)
LVRG*CG*CRSS			-0.012**
			(-2.426)
FOWN *CG*CRSS			0.006***
			(2.933)
INSOWN*CG*CRSS			-0.014**
			(-2.079)
SIZE	4.522***	4.893***	4.140***
	(4.992)	(3.699)	(4.085)
LOSS	-11.291***	-11.244***	-11.444***
	(-8.065)	(-7.958)	(-8.273)
Constant	-19.514***	-21.238**	-17.068***
	(-3.798)	(-2.665)	(-2.823)
R^2	0.736	0.745	0.740
Sig	0.000	0.000	0.000
Observations	223	223	223
Number of groups	45	45	45
Year FE	YES	YES	YES

t-statistics in parentheses *** p<0.01, ** p<0.05, * p<0.1.

Table 5.19
Results of Financial Firms Using ROA during Crisis and Normal Times

VARIABLES	Model (1) Direct	Model (2) Non-crisis	Model (3) Crisis
INVEST	-1.027*	-0.230	-1.536***
	(-1.795)	(-0.613)	(-3.730)
LVRG	-0.138***	-0.148***	-0.141***
	(-12.986)	(-7.969)	(-7.847)
FOWN	-0.053	0.052	-0.065
	(-0.400)	(0.497)	(-0.563)
INSOWN	0.060*	0.073***	0.112***
	(1.950)	(2.843)	(3.383)
CG		0.892***	0.736***
		(29.899)	(11.328)
INVEST*CG		0.558***	
		(5.464)	
LVRG*CG		-0.004	
		(-1.049)	
FOWN *CG		0.050***	
		(17.202)	
INSOWN*CG		-0.012***	
		(-3.505)	
INVEST*CG*CRSS			0.053
			(0.335)
LVRG*CG*CRSS			-0.003
			(-0.261)
FOWN *CG*CRSS			0.100***
			(6.922)
INSOWN*CG*CRSS			0.035***
			(11.522)
SIZE	-0.299	-0.097	1.529
	(-0.123)	(-0.057)	(0.568)
LOSS	-10.600***	-9.741***	-9.448***
	(-14.492)	(-10.815)	(-15.631)
Constant	5.133	5.712	-4.639
	(0.349)	(0.561)	(-0.286)
R^2	0.722	0.764	0.771
Sig	0.000	0.000	0.000
Observations	278	278	278
Number of groups	57	57	57
Year FE	YES	YES	YES

t-statistics in parentheses *** p<0.01, ** p<0.05, * p<0.1.

Table 5.20
Results of Non-Financial Firms Using REVA during Crisis and Normal Times

VARIABLES	Model (1) Direct	Model (2) Non-crisis	Model (3) Crisis
INVEST	-0.280**	-0.356**	-0.277**
	(-2.314)	(-2.278)	(-2.429)
LVRG	-0.036***	-0.032***	-0.035***
	(-3.656)	(-3.397)	(-3.763)
FOWN	-0.008	-0.012**	-0.003
	(-1.323)	(-2.594)	(-0.697)
INSOWN	0.010**	0.008*	0.010*
	(2.279)	(1.937)	(1.974)
CG		0.021	0.004
		(0.688)	(0.168)
INVEST*CG		0.036**	
		(2.305)	
LVRG*CG		0.002***	
		(3.637)	
FOWN *CG		-0.001*	
		(-1.869)	
INSOWN*CG		0.000	
		(0.039)	
INVEST*CG*CRSS			-0.143***
			(-4.803)
LVRG*CG*CRSS			0.004***
			(6.768)
FOWN *CG*CRSS			-0.001**
			(-2.480)
INSOWN*CG*CRSS			0.002***
			(5.454)
SIZE	-0.267	-0.070	-0.158
	(-0.735)	(-0.207)	(-0.585)
LOSS	-0.246*	-0.185	-0.210*
	(-1.762)	(-1.129)	(-1.712)
Constant	3.170	2.030	2.501
	(1.422)	(1.007)	(1.558)
R^2	0.699	0.703	0.703
Sig	0.000	0.000	0.000
Observations	223	223	223
Number of groups	45	45	45
Year FE	YES	YES	YES

t-statistics in parentheses *** p<0.01, ** p<0.05, * p<0.1.

Table 5.21
Results of Financial Firms Using REVA during Crisis and Normal Times

VARIABLES	Model (1) Direct	Model (2) Non-crisis	Model (3) Crisis
INVEST	-0.365***	-0.283***	-0.346***
	(-9.207)	(-3.444)	(-14.460)
LVRG	-0.003	-0.005	-0.001
	(-0.531)	(-1.199)	(-0.163)
FOWN	-0.002	-0.011	0.002
	(-0.782)	(-0.749)	(1.307)
INSOWN	0.007*	-0.003	0.006***
	(1.883)	(-1.067)	(3.271)
CG		-0.104**	-0.082***
		(-2.480)	(-2.671)
INVEST*CG		0.030	
		(0.720)	
LVRG*CG		-0.001	
		(-0.603)	
FOWN *CG		-0.002	
		(-0.628)	
INSOWN*CG		-0.003	
		(-1.444)	
INVEST*CG*CRSS			-0.060***
			(-7.876)
LVRG*CG*CRSS			-0.005***
			(-5.756)
FOWN *CG*CRSS			0.003***
			(5.925)
INSOWN*CG*CRSS			0.000
			(0.495)
SIZE	0.586	0.533	0.470
	(1.047)	(0.906)	(0.756)
LOSS	-0.333**	-0.286***	-0.378**
	(-2.619)	(-3.686)	(-2.448)
Constant	-2.411	-2.321	-1.845
	(-0.702)	(-0.664)	(-0.491)
R^2	0.534	0.552	0.545
Sig	0.000	0.000	0.000
Observations	278	278	278
Number of groups	57	57	57
Year FE	YES	YES	YES

t-statistics in parentheses *** p<0.01, ** p<0.05, * p<0.1.

5.8 Conclusion

In this chapter, the process of data analysis is explained, from processing the data to the final results of the empirical tests and the discussion. The assumptions of multivariate analysis are first discussed and tested, followed by the assumptions of panel data analysis. Based on the output of the tests, fixed-effects estimation was used with Driscoll and Kraay's standard errors. This chapter also reviews the descriptive statistics of the examined variables and further provides statistics of the corporate governance index scores. The score of each question in the index is provided with the percentage of implementation by all the firms.

The F-statistics for all the regression models are significant, implying that the regression models fit the data. The empirical results are explained for the direct effect of the independent variables and then for the moderating effect of corporate governance in normal and crisis times. Corporate governance strength is found to moderate all the independent variables with ROA in normal times. However, it only moderates leverage with REVA in normal times. In the crisis time, corporate governance strength shows a more pronounced impact in moderating the independent variables, whether measured by ROA or REVA.

Additional analyses were undertaken to ensure the robustness of the main results. The data of the dependent variables were winsorized to ensure results are not influenced by extreme outliers. Pooled regression was also run and industry types were controlled, so that the results can demonstrate a broader view.

CHAPTER SIX

SUMMARY AND CONCLUSION

6.1 Introduction

This chapter reviews the findings of the study and discusses the main contributions and limitations of the research with some suggestions for future research. Section 6.2 provides an overview of the study and findings. Section 6.3 explains the potential implications of the study. Finally, Section 6.4 discusses research limitations and provides possible recommendation for further research.

6.2 Overview of the Study

After the GFC, many academic and legal bodies began to concentrate on the issue of corporate governance and the role it plays to prevent unexpected shocks. This research focuses on four critical variables that were affected by the financial crisis, namely, investment opportunities, leverage, foreign and institutional ownership. It examines the role of corporate governance in moderating the variables with firm performance. The aim is to explore the indirect influence of corporate governance on the four selected variables and their relationship with firm performance in crisis and non-crisis times.

The influence of corporate governance on firm performance is a widely debated topic, specifically during crisis. Some studies have argued that strong corporate governance enhances the performance of firms and mitigates any unexpected economic distress. Others have advocated against this notion and assert that strong

corporate governance gives no privilege for the firms during the crisis and might even worsen their performance. Due to the inconsistent results in the direct governance-performance relationship, the current study examines the moderating influence of corporate governance strength on the relationship between investment opportunities, leverage, foreign and institutional ownership with firm performance, measured by ROA and REVA.

Panel data analysis was applied to achieve the objectives of this study. Panel regressions were estimated using fixed-effects models with Driscoll and Kraay's standard errors to control for heteroscedasticity, autocorrelation and cross-sectional dependence. The UAE was chosen as it was one of the countries most affected by the crisis, where all listed firms on the ADX and DFM are analysed during the period from 2008-2012.

The results of the direct relationships between the independent variables and firm performance are mostly as expected. The influence of investment opportunities on firm performance is negatively significant, whether measured by ROA or REVA. This result is in line with the conjecture of the Contracting Theory which argues that the more investment opportunities the firm has, the more costs it needs to maintain these opportunities, which reduce firm performance. Leverage is also found to be negatively associated with firm performance as hypothesized which is consistent with the Pecking Order Theory. The theory explains that well managed firms tend first to use their available resources to finance operations and only turn to leverage as the last resort.

With regards to ownership identities, this study hypothesized a positive relationship between foreign and institutional ownership and firm performance. Institutional ownership is found as expected to positively affect ROA and REVA. However, contradictory to expectations, foreign ownership does not show any significant impact on ROA and has a negative influence on REVA. This is attributed to several reasons, mainly to the fact that the UAE does not enforce governance regulations on foreign firms. As for control variables, size has no impact on firm performance and loss has a significantly negative influence on both ROA and REVA in all models.

Subsequently, corporate governance strength was interacted with the independent variables to assess the role of corporate governance in moderating these variables with firm performance. The results for ROA and REVA are different. In the ROA model, corporate governance strength is found to significantly influence the four independent variables. Corporate governance strength improves the relationship between investment opportunities, leverage and foreign ownership with firm performance. However, it negatively influences the relationship between institutional ownership and firm performance. This negative impact can be attributed to several reasons, such as the power of institutional investors to dominate the management and ignore the strengthening of corporate governance practices. These results are justified in detail in the discussion.

The impact of corporate governance strength is somehow different with regards to the ROA during crisis. Corporate governance strength positively moderates investment opportunities, foreign and institutional ownership with firm performance during the crisis. However, unlike during normal times, governance strength

positively influences the relationship between institutional ownership and firm performance and shows a lack of significant influence on the relationship between leverage and firm performance.

With regards to the REVA model, corporate governance strength only moderates the relationship between leverage and firm performance in normal times. However, corporate governance strength is found to insignificantly influence the relationship between investment opportunities, foreign and institutional ownership with firm performance. In crisis time, corporate governance strength plays a more pronounced role in moderating the effect of independent variables on REVA. Corporate governance strength improves the relationship between investment opportunities, leverage and institutional ownership with firm performance represented by REVA. Governance strength, however, has no significant influence on the association between foreign ownership and firm performance in crisis times. A summary of the findings is depicted in Table 6.1 and Table 6.2.

Table 6.1
Summary of Hypotheses Testing for Direct Effect

	Hypothesis	**Findings**	
		ROA	**REVA**
H1	Investment opportunities There is a negative relationship between investment opportunities and firm performance.	Supported	Supported
H2	Leverage There is a negative relationship between leverage and firm performance.	Supported	Supported
H3	Foreign ownership There is a positive relationship between foreign ownership and firm performance	Not supported	Not supported
H4	Institutional ownership There is a positive relationship between institutional ownership and firm performance.	Supported	Supported

Table 6.2
Summary of Hypotheses Testing for Moderating Effect

	Hypothesis	Findings	
		ROA	**REVA**
H5a	Investment opportunities with governance strength Corporate governance strength has a positively moderating role in the relationship between investment opportunities and firm performance.	Supported	Not Supported
H5b	Investment opportunities with governance strength in crisis Corporate governance strength has a positively moderating role in the relationship between investment opportunities and firm performance during crisis.	Supported	Supported
H6a	Leverage with governance strength Corporate governance strength has a positively moderating role in the relationship between leverage and firm performance.	Supported	Supported
H6b	Leverage with governance strength in crisis Corporate governance strength has a positively moderating role in the relationship between leverage and firm performance during crisis.	Not Supported	Supported
H7a	Foreign ownership with governance strength Corporate governance strength has a positively moderating role in the relationship between foreign ownership and firm performance.	Supported	Not Supported
H7b	Foreign ownership with governance strength in crisis Corporate governance strength has a positively moderating role in the relationship between foreign ownership and firm performance during crisis.	Supported	Not Supported
H8a	Institutional ownership with governance strength Corporate governance strength has a positively moderating role in the relationship between institutional ownership and firm performance.	Not Supported	Not Supported
H8b	Institutional ownership with governance strength in crisis Corporate governance strength has a positively moderating role in the relationship between institutional ownership and firm performance during crisis.	Supported	Supported

6.3 Implications of the Study

The current study has some theoretical, practical and academic implications which are discussed in the following sub-sections.

6.3.1 Theoretical Implications

This study was conducted in a unique setting, the emerging markets, represented by the UAE and during an exceptional time context, i.e., the GFC. Only a few studies have taken into consideration the influence of corporate governance strength in the crisis and non-crisis times. Previous studies related to corporate governance and firm performance have been mixed, partly due to the different impact of corporate governance in different time periods. Although it seems that corporate governance strength has little positive impact on firm performance in normal times, it does have a stronger positive influence during the time of the financial crises. Results suggest that firms should be better prepared to face any unexpected events by having strong corporate governance practices.

Further, past studies that examined the direct relationship between corporate governance strength and firm performance are inconsistent. Therefore, it might be more useful to examine the indirect influence of corporate governance strength on the critical factors that affect firm performance, as shown in the current study. The idea is that corporate governance strength might have a direct positive or negative impact on firm performance, but it could have a different moderating influence on investment opportunities, leverage, foreign and institutional ownership with their effect on firm performance. Studies, such as Hutchinson and Gul (2004); Muniandy *et al.* (2010); and Rabi *et al.* (2010) have examined individual corporate governance variables as moderators with firm performance. However, as far as the researcher is aware, only a handful of studies have examined the moderating impact of corporate

governance as a system, although it is widely recommended that corporate governance can be better explained as a system rather than individual variables.

The type of indicator representing firm performance has also been an issue that has caused inconsistency of the results regarding the relationship between corporate governance and firm performance. Therefore, two measurements of firm performance are used: ROA which is the most commonly used proxy for performance; and REVA which is a new proxy for performance. It could be useful to use economic-based measurement of firm performance in times of economic trouble.

Several theories have been used to explain the relationship between the related variables of corporate governance and firm performance. In the current research, three theories are used to hypothesize the framework of the study: Agency Theory, Contracting Theory and Pecking Order Theory. The Contracting Theory and Pecking Order Theory propose a negative impact of investment opportunities and leverage on firm performance.

The Agency Theory suggests a positive influence of corporate governance and ownership identities with firm performance. This study is one of the few that explains the relationship between investment opportunities and firm performance using the Contracting Theory. Finally, the results show that the Agency Theory moderates the negative influence as argued by the Contracting and Pecking Order theories. The results also support the notion of the Agency Theory that the main role of corporate governance is to provide adequate monitoring to protect shareholders from any possible conflict of interests with the management.

6.3.2 Practical and Policy Implications

The results of this study can be useful to managers who are seeking to enhance their firm's performance through corporate governance. Findings could raise the awareness of the importance of strong corporate governance practices not only directly to improve firm performance but also indirectly through investment opportunities, leverage and the involvement of foreign and institutional investors. The results show differences between the role of corporate governance strength on these variables in normal times and in the time of the financial crisis which can provide an idea not only to managers but also to other related parties on the usefulness of corporate governance in each time period. Such results can provide feedback to the legislative authorities and other interested parties about the status of corporate governance practices in the UAE and the reflection of the corporate governance code application by the listed firms on the ADX and the DFM.

This study is one of a few that evaluates corporate governance practices after the enforcement of the corporate governance code in 2010 which provides a useful idea on how effective the code is and the level of compliance by companies. This could provide ideas to the relevant parties on the role of corporate governance strength in monitoring the external environment of the firm represented by investment opportunities, leverage and the level of foreign and institutional ownership. For example, investors can have an idea about the ability of a strong corporate governance system in monitoring the high investment opportunities or leveraged firms which can help in their investment choices and guide them to the well-

performing assets. Investors and management can also know the ownership identities that can drive the firm forward.

In addition, this study provides feedback about the differences between performance based on profitability and based on economic value. Short-term investors might base their decisions on the profitability of the firm rather than the long-term value of the firm. However, long-term investors and good management should focus more on the economic value of the firm and its ability to sustain the distressed market conditions. REVA could be a sign of how fragile the company is and to what extent corporate governance can play its monitoring role. Most of the times, governments tend to support robust corporations which can weather any unexpected events that may lead to unstable economy. Therefore, they try to regulate the market and discourage risk taking and high levels of leverage by companies, especially after the crisis. Corporate governance strength has been proven, based on the findings of this study, to play a positive role in guiding the use of leverage by firms in the right direction to enhance performance.

With regards to ownership, results show that corporate governance strength does a useful job by positively moderating foreign ownership in association with profitability. However, corporate governance strength negatively influences firm profitability through institutional ownership. This means that institutional investors might use the corporate governance system to their own advantages rather than to the shareholders'. Regulators should impose practical regulations to lessen the power of institutional investors over the corporate governance system in order to protect the interests of the minority shareholders.

The statistics of corporate governance show that some firms have been having strong corporate governance practices since 2008 which was still the voluntary period. On the other hand, other firms have failed to comply even after the enforcement of the corporate governance code in 2010. This means that the existing penalty of violating the governance code is not sufficient and authorities should impose stricter rules in order to force violating companies to comply.

Findings also suggest that corporate governance strength might not have as strong an effect in normal times as in crisis time. Results show that the preparation to face any unexpected distressed events, such as a crisis, might not result in any good at normal times, but could actually save the firm in crisis time, particularly with regard to its economic value. Therefore, regardless of the cost that seems unproductive immediately when implementing strong corporate governance system, this system could support the firm in bad times and create a robust environment against any future shocks.

Finally, corporate governance strength is shown to be a valuable system that in most times could correct the negative impact of investment opportunities, leverage and foreign ownership on firm performance. Therefore, firms are advised to adopt strong corporate governance practices, whether from the perspective of management, investors or any other related parties.

6.3.3 Academic Implications

The findings of the current study could be useful to researchers around the world who study corporate governance. The study provides insights on how corporate governance strength could play an important role in explaining other related variables that influence firm performance. Therefore, the current study can be helpful in setting a foundation for investigating the indirect role of corporate governance strength. Instead of focusing on the simple relationship between corporate governance with firm performance or any other dependent variable, this study provides evidence that corporate governance, as a system, can influence several factors in the firm's environment, which in turn highlights the extended use of the Agency Theory. Thus, the results can encourage other academic researchers to explore other relationships and other markets in the future.

6.4 Limitations of the Study and Suggestions for Future Studies

Similar to any other research, this study has some limitations that should be mentioned in order to ensure that results are fairly interpreted. Due to the unavailability of rich data on corporate governance in the UAE, corporate governance strength is measured using an index with 14 items which could be low compared to studies conducted in developed countries. Therefore, the results of this study should be more relevant if compared to other studies that have been conducted in emerging markets with a similar environment. Although the sample of the current study includes all listed firms on the ADX and DFM with available data, the results still cannot be generalized to non-listed firms which were not included as their data is not publicly available.

The above limitations highlight room for improvement in future corporate governance and firm performance studies. Extension to the current study may be possible in the following areas:

1. This study examines four independent variables in relation to firm performance. Future studies could include more variables that affect firm performance and expected to be monitored by corporate governance strength.
2. With respect to ownership identity, this study examines foreign and institutional ownership. Other studies can explore more categories of ownership and also more classifications of institutional and foreign ownership. For example, private institutional investors and public institutional investors can be further differentiated and also individual and institutional foreign investors can be separately investigated. If these distinctions are drawn clearly, corporate governance might provide better insight on its ability to monitor each category.
3. Since this study explores corporate governance in its initial stages in the UAE, firms still need time to adapt to the guidelines of corporate governance. Therefore, future studies should evaluate the practices of corporate governance by firms after several years of the enforcement of regulations as more time is needed for the markets to digest and firms to have a better idea of the usefulness of corporate governance regulations.
4. Since the results show significantly different impact in the time of crisis, future studies should address other political and economic crises.
5. This study uses Contracting, Pecking Order, and Agency theories to explain the relationships in the current research; future studies could use other

theories to explain the relationship of corporate governance with other variables.

6. Future studies could also analyze a wider context, such as including other emerging markets or comparing emerging with developed markets.
7. This study uses unweighted governance index of dummy scoring; future studies could use a weighted index to measure corporate governance which may be able to provide more information about the quality of corporate governance.
8. Using more than one measurement of investment opportunities can also be useful in future studies to reflect the results from different angles.

6.5 Conclusion

Unlike previous studies that have examined the direct relationship between corporate governance mechanisms and firm performance, this study examines the effect of corporate governance strength as a moderator with firm performance represented by ROA and REVA. This study indicates that investment opportunities, leverage and ownership identity (foreign and institutional) are important determinants of firm performance (ROA and REVA) in the UAE. It also shows that corporate governance strength can indirectly improve the relationship between these determinants and firm performance during crisis and non-crisis times.

The study assesses the extent of corporate governance practices by the UAE's listed firms during a five-year period. The interaction of corporate governance with investment opportunities, leverage, foreign and institutional ownership provides

insights to regulators and other stakeholders into the effectiveness of corporate governance in monitoring such critical factors. Finally, the results show that more work needs to be done in the area of corporate governance in the UAE as many firms have failed to comply with the corporate governance guidelines. Therefore, the outputs of the current research would be useful to the UAE's authorities to review the current practices of corporate governance and determine future directions for improvement. The results also serve as a call to future researchers to explore the interaction effect of corporate governance strength with other factors that might influence firm performance.

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