THE EFFECT OF CORPORATE GOVERNANCE MECHANISMS ON IPO PERFORMANCE: THE CASE OF U.S. EQUITY REAL ESTATE INVESTMENT TRUSTS

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STEPHANIE ANTOINE CHOUCAIR

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Notre Dame University - Louaize

Faculty of Business Administration and Economics

Department of Accounting and finance

We hereby approve the thesis of

Stephanie Antoine Choucair

Candidate for the degree of the Master of Science in Financial Risk Management

Grade: B+

Dr. Richard Abi Saleh — Supervisor, Chair

Dr. Viviane Naimy — Reader

Dr. Roy Khoueiri — Committee Member

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LIST OF ABBREVIATIONS

AR: Market adjusted excess return/ abnormal return

BHAR: Buy and hold abnormal return.

BHR: Buy and hold return

CAR: Cumulative abnormal return

CG: Corporate governance

IPO: Initial public offering

IR: Initial return

NAREIT: National association of REITs

REIT: Real estate investment trust

RR: Raw return

SEC: The U.S. Securities and Exchange Commission

WR: Wealth relative

ABSTRACT

Purpose: The purpose of this thesis is to shed more light on the impact of corporate governance mechanisms on the Initial Public Offering (IPO) performance of U.S. Equity Real Estate Investment Trusts (REIT) in the short and long run.

Design/methodology/approach: I conduct multi-linear regressions on a sample of 89 US REIT IPO for the years 2003 to 2016. I compute the market adjusted excess returns for each of the first 5 days following the IPO to measure short-run IPO performance and the semi-annual cumulative abnormal returns for each of the three years following the IPO to measure long-run IPO performance.

Findings: We find that U.S. REIT IPOs, mainly IPOs with relatively small asset size, exhibit short run underpricing and long run overperformance. However, the overall level of underpricing for U.S. REIT IPOs is not very significant. REITs that adopt strong corporate governance structures receive high IPO valuations in the short run. We find mixed results regarding the relation between long-run IPO performance and corporate governance.

Research limitations/implications: The first limitation is that more robustness tests could have been made. The second limitation is using only two performance measures, although there is a broad set of approaches that could be used to measure the impact of corporate governance mechanisms on IPO performance such as offer-to-open returns, open-to-close returns, buy and hold returns and wealth relative ratio.

Practical implications: This study will help REIT firms that are planning to go public understand the effect of certain corporate governance mechanisms on their expected IPO performance.

Originality/value: This thesis evaluates the effect of corporate governance on the short-run and long-run U.S. Equity REIT IPO returns.

Chapter 1

Introduction

1.1. General Background

Williamson (1984) defines corporate governance as the mechanism that aligns the interests of both managers and shareholders. Fishkind and Kautz (2001) state that a sound corporate governance system is fundamental to ensure a firm's sustainability and transference across generations[1]. Following the "Crisis of shareholder value", also known as the scandals of Enron[2] and WorldCom[3], the U.S. corporate governance system underwent serious adjustments and reforms through the Sarbanes and Oxley Act of 2002 (Sorensen and Miller, 2017). Afterwards, Macey (2008) states that the main purpose of corporate governance is to ensure that corporate managers and directors pursue firm's profitability and keep their promises to the investors rather than pursuing their personal benefits and power. As a result, Macey (2010) defined corporate governance as a comprehensive term that comprises everything that can affect a firm's operation, such as devices, institutions and mechanisms. Moreover, Isaksson and Kirkpatrick (2009) and Pinto (2010) state that corporate governance describes how the company is controlled and operating, and also reveals a company's principles and accountability.

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1 Almost 85% of businesses, especially family businesses, fail to make it to the third generation as a result of a poor corporate governance system according to Al bawaba, (2017).

2 Enron was an energy trading firm and its collapse was one of the biggest corporate scandals in the United States history.

3 WorldCom is a telecommunication corporation that went public in 1989. Its scandal was mainly caused by the powerless board of directors and financial fraud.

The United States implements a market-based approach[4] for corporate governance. That makes the U.S. a good benchmark globally and a maestro in corporate governance practices and wide-reaching standards. Hence, in this thesis, we focus on corporate governance mechanisms used by U.S. Real Estate Investment Trust (REITs) (Shleifer and Vishny, 1997).

Ritter (1998) finds that corporate governance has a significant impact on firm valuation and IPO performance. IPOs are a way to raise funds to expand and grow a business, by changing the firm's ownership from private to public (Bancel and Mitto, 2009). Going public gives the founders and shareholders the option to transfer a part of their wealth in the firm into cash in the future (Ritter and Welch, 2002). IPOs have long been seen as one of the most important and interesting research subjects in finance (Bansal and Khanna, 2012). Ritter and Welch (2002) suggested that companies going public benefit from many advantages, which are mainly financial, liquidity and publicity advantages. Nonetheless, going public entails disadvantages related to disclosure requirements, expenses and fees, and to the dispersion of shareholders' ownership. Therefore, going public is not always a step that large companies prefer to make. According to Pagano et al. (2017), going public is a choice that even the largest companies might choose to ignore and stay private.

[4] In a market-based corporate governance system, shareholders play an important role in the corporation and are engaged in decision-making through voting and exit.

IPOs are often associated with an "Underpricing" phenomenon which represents the difference between the (lower) offer price and the (higher) closing price on the first trading day of an IPO. In other words, the issuing firm is "leaving money on the table" (Loughran and Ritter, 2002) and gaining less than what it should gain. The consequential opportunity cost in this process is equal to: (Closing Price at IPO date – Offer Price) x Number of shares sold. Bairagi and Dimovski (2011) stated that this underpricing phenomenon is driven by the disparity in the law of supply and demand in the short-run. Absurdly and for many reasons, the amount of money left on the table during IPOs is enormously big. As reported by Loughran and Ritter (2002), more than 27 billion dollars were left on the table for subscribers in IPOs during the period 1990-1998. Khan and Chowdhury (2017) explained this phenomenon as a tactic in which firms attract investors. Even though the phenomenon of underpricing is persistent across IPOs, nonetheless the depth and breadth of the average underpricing level differs considerably from one country to another, from one sector to another and even from one period to another (Heerden and Alagidede, 2012). In the matter of fact, IPO performance varies significantly between two firms within the same market, same industry and at the same time period due to many factors such as the firm's corporate governance system that can have a significant effect on the IPO proceeds at the first day of trading. The REIT market represents a good example of such variations. Dimovski (2016) notices that in the specific case of REITs, the level of IPO underpricing appears to be significantly low compared to other property company IPOs. Dimovski et al. (2017) investigate the magnitude of underpricing in dollar amounts for 56 U.S. REIT IPOs and find that the amount left on the table is equivalent to $7.9 million from 2010 till 2015. Buttimer et al.

(2005), Bauer et al. (2010) and Anglin et al. (2011) believe that this low level of REIT IPOs underpricing relative to other property companies is largely due to the unique characteristics of REITs in addition to their legal and organizational structure.

REITs market has long been considered a good place for smart and profitable investments on the long-term and according to Block (2012), this market attracts investors who seek diversification in their investment portfolios despite the recent instability in property valuation. Unlike other investments such as bonds, a rise in interest rates will not significantly impact REITs profit. Instead, an increase in interest rates will encourage a lot of potential home buyers to switch to rentals since they can no longer afford house purchases. More tenants means more demand for rentals and of course raising rents, which means more profits to stockholders. Therefore, these equities are considered less volatile compared to other assets and can be used as hedging instruments against inflation (Fama and Schwert, 1977 and Block, 2012). REITs dominate the property IPOs field, in fact these IPOs represent a high percentage of property IPOs worldwide (Brobert, 2016).

Amongst many criteria behind choosing Equity REITs as the interest of this study is that REITs opt to finance and develop their investments through equity issuance such as IPOs instead of raising debt capital in order to preserve this special tax treatment (Bairagi and Dimovski, 2011). The other criteria are divided as follows: legal restrictions, taxes, nature, management style, compensation structure and state incorporation.

1.1.1. Definition of REITs:

A REIT is a company that operates similar to a mutual fund of real estate specializing its investments in real estate projects (Haslam et al., 2015). Therefore, various investors pool their money together in order to purchase shares of a real estate property that is operated by a trust, this in turn allows stockholders to earn a regular income distributed in form of dividend payouts that is higher than average compared to other equities without actually having to buy commercial properties. REITs were founded in September 14, 1960 under the guidance of NAREIT which is the National Association of REITs after the approval and signature of the President Dwight D. Eisenhower (NAREIT, n.d.). Before the launching of REITs, it was almost impossible for small investors to benefit from commercial real estate investments, and therefore huge and prolific investments were preserved solely for wealthy investors (Feng et al., 2011). In other words, REITs democratized real estate investment by allowing individuals to buy REIT shares that are listed on stock exchanges such as the NASDAQ and the NYSE. REITs securities can be bought via a broker and can be either common or preferred stocks. The REIT industry has witnessed a noticeable spurt of growth since their launch. Gokkaya et al. (2015) believe that U.S. Equity REITs growth was triggered by high level of institutional ownership.

1.1.2. Types of REITs:

There are three types of REITs which are equity REITs, mortgage REITs and hybrid REITs. Equity REITs are the most popular. Block (2012) defined this type of REITs as a

firm that owns mainly and exclusively real estate properties[5] and therefore it is the role of the corporation to manage these properties, for example they can sell, rent, renew and even expand their portfolios in order to produce real estate income. Consequently, by purchasing REIT shares the investor becomes a partial owner of a physical residential or commercial property and receives a big percentage of the annual income in form of dividends after deducting certain operating expenses. The advantages of investing in equity REITs is allowing small and medium scale investors to reap the benefits derived from commercial real estate investment that could not be possible otherwise and more importantly to enjoy these benefits but without the hassles of managing the real estate properties. A group of professional managers lease out and manage these properties. It is important to note that there is a difference between REIT managers and property managers. Generally speaking, property managers provide "on the ground" property-level services unlike REIT managers who are mainly concerned with managing the overall REIT including assets identification, capital structure optimization and project planning. Property managers belong either to an internal or external management team and they usually receive a percentage of the rental collections as a service fee. The second type are mortgage REITs that own either mortgages or real estate loans that are granted against a real estate property collateral, so unlike equity REITs, they do not invest in tangible properties (Block, 2012). Mortgage equities also operate through mortgage-backed securities (MBS). Hence, investors in mortgage REITs earn their share of income either from the interest accrued on the mortgages or from selling them.

[5] Real estate properties such as malls, resorts, offices, apartments, industries etc. But the most popular REITs are retail REITs example: shopping malls.

Finally, Hybrid REITs are a combination of equity and mortgage REITs. In this thesis, only U.S. Equity REITs are considered. Although U.S. Equity REITs enjoy an actively trading private[6] market, public trade through IPOs seems to be more attractive and preferable. As we will show later in this introduction, to be qualified as a tax-exempt corporation, a REIT must comply with an internal revenue code that requires stringent abidance by the rules such as distributing a big percentage of its annual return to investors in form of dividend payouts. Therefore, this distribution requirement limits the amount of internal funding available for investment. In addition to this, the tax-exempt status makes financing through leverage unfavorable due to its high associated fees and expenses. This leverage risk can intensify losses in case the underlying investment underperformed the market by decreasing the amount of money available for distribution, hence the REIT will no longer meet the tax-exempt qualifications and this in turn will worsen the situation by imposing taxes on the annual returns.

1.1.3. Legal Restrictions of REITs:

REITs differ from other companies with regards to their imposed legal restrictions. U.S. law imposes an obligatory 90% dividend payout per year (that was 95% prior to 1999), this means that 90% of the yearly taxable income goes to REITs stockholders and managers receive low free cash flows compared to other stocks (Anglin et al., 2011). REITs have required cash dividend to be distributed. In case the cash amount is less than

[6] These REITs are known as private REITs or non-traded REITs and unlike equity REITs they trade via financial advisors, brokers and dealers who usually charge them with a 10% commission. Private REITs are not listed on national stock exchanges.

the required ratio, then the trust must either liquidate assets or borrow money to meet the 90% distribution policy. Also to qualify as a REIT, managers have to disclose publicly and frequently the corporations' information especially if they wish to trade publicly and raise equity through IPOs. These legal restrictions also reduce agency problems. In other words, it does not allow managers to expropriate and use their powers and positions in contrast to shareholders' interests, but instead it promotes interest alignments (Bauer et al., 2010). In addition to the dividends' distribution, REITs are also subject to legal restrictions on their ownerships which is known as the "5-50 rule" that forbids shares control to exceed 50 percent by the five largest shareholders (Hartzell et al., 2008). Last but not least, in order to be REIT qualified, the number of shareholders a REIT must hold is at least one hundred and that should be done within only one year as declared by the Securities and Exchange Commission (SEC) (2011) and according to the Act Rule 424.

1.1.4. Taxes:

The nature of REITs makes them special in their tax-exempt characteristics since only investments in real estates are allowed (Buttimer et al., 2005). Even though REITs are corporate tax-exempt[7] as explained by Feng et al. (2011), and their taxable income is distributed as dividends, investors are paying taxes on these distributions and these taxes can impact REITs valuations. However, and generally speaking, this tax characteristic makes REITs IPOs attractive for investors and hence more valuable.

[7] If a REIT complies with specified regulatory requirements then it is corporate tax-exempted (Feng et al. 2011).

1.1.5. Nature of REITs:

Another characteristic of REITS that make it unique is its nature and transparency compared to other stocks (Buttimer et al., 2005). Every REIT submits financial reports to the SEC and these reports are available on the SEC website to ensure transparency. In their nature, REITs investments solely focus on one real estate type (primarily in commercial real estate) and these trades are heavily absorbed in specific locations (Anglin et al., 2011).

1.1.6. Management Style:

Sagalyn (1996) said that REITs differ from other commingled real estate[8] fund in its mostly independent board of directors. REITs have two management styles that are internal and external. In the internal management structure, managers are employees in the REIT and the latter is considered to be self-managed. Whereas, in the external management structure, the REIT outsources property managers that are employees of a separate firm offering the REIT advisory services (Ambrose and Linneman, 2001). Companies can be either externally or self-advised at IPO date. However, recent studies show that internally-advised REITs are more popular in the United States (Nestoras, 2007). The first advantage of the internal management structure over the external one is its capability to reduce the conflict of interests between managers and stockholders. The second advantage is engaging managers with a single real estate portfolio management.

[8] In commingled real estate funds ownership held by investors doesn't allow them to make managerial or investment decisions. In other words investors are powerless.

By doing so, this makes managers better able to work efficiently by focusing on one REIT instead of several ones.

1.1.7. Compensation Structure:

One of the main concerns in REITs' income statement are compensation fees. Hartzell et al. (2008) outlined three compensation structures of REITs. The first is a compensation fee that is paid irrespective of the firm's operating performance. The second is based on the operating performance and finally the third one which is a mix of the two former. Compensations' structures can be very risky for firms. Managers might want to increase their incentives and compensations by engaging in fraud and risky activities such as increasing the firm's debt. This of course gives rise to moral hazard and principal-agent problems, where shareholders (the principals) believe that managers (the agents) are pursuing their own interests above those of shareholders.

1.1.8. State of Incorporation:

Managers most usually fear the loss of corporate control also known as takeovers. Takeovers are seen as corrective or penalizing steps for the managers. Shleifer and Vishny (1997) and Hartzell et al. (2008) agree that managers tend to avoid takeovers in order to protect their personal and private benefits and not those of shareholders and by making anti-takeovers changes they intend to reduce shareholders' wealth. REITs' state

of incorporation is Maryland[9] which appears very attractive to managers who are afraid of takeovers and looking for some kind of protection. Maryland provisions impose certain laws and restrictions regarding share acquisition, voting rights and business combinations. Therefore, generally speaking, REITs are takeover threat free and as Campbell et al. (2011) said, REITs characteristics make unfriendly acquirers attempts almost impossible.

1.2. Need for the Study

The ambiguity of previous research concerning the performance of REIT IPOs relative to other industrial companies raises the need to determine which corporate governance factors have significant negative or positive impact on U.S. Equity REIT IPO performance on the short-run and the long-run.

Particularly, this study helps in understanding the importance of certain corporate governance mechanisms such as CEO-Chairman duality, Founder-CEO, CEO-board member, board size, board compensation, gender diversity, board independence, average board age and ESG score. Thus, it is possible to test the relationship between these above listed corporate governance variables and the aftermarket performance of REIT IPOs in the short-run using abnormal returns for the five first trading days alongside an analysis of the long-run performance using cumulative abnormal returns for each of the first three trading years following the IPO event, for the very special case of REITs that

[9] The majority of REITs follow a Maryland corporate organization, which is a business-friendly corporation.

are substantially different from other stocks due to their unique natural, management, legal and organizational structures.

1.3. Purpose of the Study

This study has two main purposes, the first is to investigate whether REITs exhibit significant underpricing when they go public. The second purpose is to identify the main corporate governance determinants of REIT IPOs performance on the short-run and the long-run. In order to achieve this purpose, a quantitative and deductive approach is used by ensuring high objectivity. Therefore, the selected measurements of IPO returns are the abnormal returns and the cumulative abnormal returns, while the relationship between the variables and returns will be tested using multi-linear regression models.

1.4. Brief Overview of all the Chapters

This thesis will be structured as follows: Chapter 2 is the review of literature in the fields of IPOs and corporate governance. Many researchers were interested in exploring the case of REITs with regards to IPO performance and corporate governance structures since REITs must abide by stringent rules regarding their legal, managerial and organizational structures. A considerable number of studies have tackled the issue of determining the corporate governance mechanisms that can enhance REIT IPOs performance using diverse measurement approaches. However, the review of literature sheds light on two major loopholes. The first one is the ongoing debate whether REITs are underpriced in the short-run and whether they outperform their peers in the long-run. Second, previous researches have revealed inconsistent results in the identification of the

main corporate governance determinants of the U.S. Equity REIT IPOs underpricing. This study aims to fill these gaps.

Chapter 3 tackles the data and methodological design used in this study. First, the research questions are defined. Next, a description of the data and their sources are presented along with a definition of the adopted approaches used to measure REIT IPO performance by calculating short-run abnormal returns (AR) and long-run cumulative abnormal returns (CAR). Finally, the selected model which is the multi-linear regression model conducted on the STATA software is described.

Chapter 4 represents a summary of the main findings. First, descriptive statistics of all the corporate governance and control variables are presented. Then descriptive statistics of the ARs and CARs are discussed. Finally, the main findings of the research are presented in eight regression models that demonstrate the impact of certain significant explanatory governance variables on the IPO underpricing of REITs.

Finally, chapter 5 concludes the analysis of the main results obtained in chapter 4. Conclusions are then compared to previous findings in the review of literature. Lastly, the limitations of this study are stated and future recommendations are suggested for future researches.

Chapter 2

Literature Review

2.1. State of Knowledge and Previous Research

The impact of corporate governance mechanisms on REIT IPOs performance has long been regarded worthy of academic investigation. Shleifer and Vishny (1986) and Saidi (2004) addressed the importance of a sound corporate governance system in paving the way to a better performance and hence higher profitability. Chahine and Zeidan (2014) also stated that corporate governance has a positive impact on the long-term performance. Specifically, Chahine and Safieddine (2011) found in their research that board characteristics have a major effect on the firm's market performance.

According to Ritter (1998) and Baker and Gompers (2003), the corporate governance structure plays an important role in firm valuations and IPO underpricing because it provides a kind of minority protection. Therefore, it is reasonable to notice different outcomes in terms of IPO performance and pricing, even between companies within the same industry and the case of REITs represents a good example. According to Chan et al. (2013), the case of REITs is a complex puzzle in the domain of IPOs and market performance. For instance, a study carried out by Buttimer et al. (2005) documented insignificant initial returns, and in rare cases they observed positive significant returns that are considered very low when compared to other IPO returns in different industries. In early work, rigorous studies confirmed the worldwide prevalence of property IPO underpricing (Bairagi and Dimovski, 2011). However, REITs appear to show low level of underpricing compared to the industrial companies as investigated by Dimovski

(2016). According to Hartzell et al. (2008) and Anglin et al. (2011), the distinctive corporate governance structure of REITs along with their transparency and legal restrictions play an important role in the magnitude of IPO underpricing. Moreover, as proposed by Chan et al. (2013), a rational explanation of the difference in outcomes is that Equity REIT IPOs performance varies depending on the variables used, the period considered and waves of IPOs in the real estate market. According to Buttimer et al. (2005) the market of REITs exhibits considerable IPOs fluctuations over time defined as IPO waves such as "hot" markets and "cold" markets. "Hot" markets denote periods that witness extensive IPO issuances triggered by an increase in the capital demand or the launch of a new technological innovation in a specific industry, whereas "cold" markets represent periods with infrequent and rare IPO issuances.

2.2. IPO Underpricing

Stoll and Curley (1970) were the first to introduce the concept of underpricing in the field of finance. Wang et al. (1992) were the first to examine IPO underpricing for U.S. REIT IPOs. Underpricing as defined by Dimovski and Brooks (2004) is the positive percentage change between the offer price and the shares trading price following the IPO. Perera (2014) identified the main factors behind the short-run underpricing process, and allocated independent variables under three categories which are firm-specific, issue-specific and market-specific factors. Firm-specific factors are those related to the firm itself such as firm size, firm age, book value, profitability, leverage, cash flows, earnings and corporate governance structure. Issue-specific factors are factors related to the offer, such as offer size, offer price, total listing period, underwritten IPOs, listing

delay, issue cost, capital retention, attached share option and oversubscription. Market-specific characteristics such as market volatility, average market return, market sentiment and hot issue market.

According to Ritter (1991): "The underpricing of IPOs that has been widely documented appears to be a short-run performance" (p.3). So in other words, underpricing is how much the close price at the end of the first trading day differs from the offer price of a REIT. Hence, this could be measured using first day returns or post-day listing returns. First day returns are used extensively by many researchers such as Bansal and Khanna (2012), Brobert (2016), Gokkaya et al. (2015), Perera (2014) and Ritter and Welch (2002).

Loughran and Ritter (2002) and Gokkaya et al. (2015) mentioned that previously underpricing referred to first day returns using offer-to-close returns. This return represents the percentage change between the offer price and the closing price at the first trading day. To be fairly priced this initial day return must be equal to 0; a positive return means that the closing price was higher than the offer price and this in turn indicates a good market performance (seamlessly, negative offer-to-close returns indicate a poor IPO performance). Offer-to-close returns are extensively used amongst researchers to measure the underpricing degree in primary markets. However, Barry and Jennings (1993) were the first to introduce underpricing in terms of secondary market returns where returns are calculated using open-to-close returns instead of offer-to-close returns. Nonetheless, there exist various measurement approaches to evaluate short-run market performance such as offer-to-open, open-to-close, open-to-hour and hour-to-

close returns but the most important and adopted methodology is using first day offer-to-close returns (Gokkaya et al., 2015).

Hartzell et al. (2008) analyzed the effect of corporate governance mechanisms on 107 IPOs of REITs for the period 1991-1998. They used the Tobin's Q measurement ratio and adjusted returns to measure IPO performance. Their analysis proved that firms that have a strong corporate governance system perform better at IPOs compared to their peers.

Dolvin and Pyles (2009) found that REIT IPOs for the period 1986 till 2004 exhibit insignificant average underpricing equal to 3.72% which is lower than other industrial IPOs by approximately 5%. They attributed this high performance to the transparency of REITs.

Bairagi and Dimovski (2011) examined the underpricing of 123 U.S. REIT IPOs for the period 1996-2010. They used offer-to-close returns to measure the degree of underpricing. Their study documented an insignificant average underpricing equal to 3.18%.

2.3. IPO in the Long-Run

Previously, two anomalies that IPOs are subject to have been reported intensively and these are short-term underpricing and "hot issue"[10] market phenomenon. However Ritter (1991) introduced a third anomaly related to IPO performance and this one is concerned

[10] Hot issue market phenomenon also referred to as IPO waves that fluctuate based on economic, technological or any event that can affect investors' behavior.

with the long-run performance of IPOs. The long-run performance appeared to be overpriced three years after the IPO event since companies underperformed relative to the market. Long-run performance is not as simple as the short-run, and the presence of two different approaches in calculating the long-run performance makes it even more complicated. Calculating the long-run performance can be done using two approaches which are the event-time approach and the calendar-time approach (Perera, 2014). However, many researchers such as Barber and Lyon (1997), Loughran and Ritter (2000) agree that the event-time approach is better than the calendar-time approach and more important in measuring long-run performance because it allows to measure investors experience and the post-listing behavior of stocks.

In order to assess the long-run IPOs performance, there are four measures that fall under the umbrella of the event-time approach. These four measures as identified by Ritter (1991) and Perera (2014) are Cumulative Abnormal Returns (CAR), the three year Buy and Hold Return (BHR), Buy and Hold Abnormal Returns (BHAR) and Wealth Relative ratio (WR). However, in our thesis only the CAR methodology was used for measuring long-run performance as suggested by Fama (1998).

2.4. Corporate Governance Variables and Their Impact on IPO Performance

This section highlights previous literature regarding the main corporate governance variables considered in this thesis and that contribute to the understanding of the impact on REIT's corporate governance mechanisms on IPO performance. These variables are

CEO/Chairman duality, board size, gender diversity, the percentage of board independence and board average age.

2.4.1. CEO/Chairman Duality

Krause et al. (2014) defined CEO duality as a person who holds dual positions as CEO and board chair at the same time. Tuggle et al. (2010) defined this duality as the lowest degree of board independency which may hinders effective monitoring of the CEO's management and actions and consequently reduces firm valuation. Giovannini (2010) found in his research a negative relationship between CEO duality and IPO performance. Campbell et al. (2011) agree that CEO duality is usually considered to be negatively correlated with REIT IPO valuation but it is still questionable. Feng et al. (2005) believe that for a REIT to have a good board and better performance, the board must not be chaired by the chief executive officer. On the other hand, Brickley et al. (1997) disagree the negative correlation between IPO performance and CEO duality since they got no evidence of a significant relation between the two. They believe that separating CEO and chairman is bad for large institutions. Lin and Chuang (2011) found that IPO underpricing is high when the CEO is the chairman of the board. Chahine and Tohmé (2009) also believe that CEO duality has many added values and benefits for financial institutions but it also violates certain governance rules since the corporate governance structure may not be respected and there is no board independence and competitiveness. In their recent research, Chahine and Goergen (2011) proved that investors prefer firms or funds in which the CEO holds great authority, this could be the case if the CEO is the

founder or the chairman or even both, such is the case for the majority of family-owned businesses.

In our research, we will try to investigate the CEO duality on the REITs since there is no final conclusion about such relationship.

2.4.2. Founder-CEO

Founder-CEO represents the case when the founder holds the position of CEO at IPO date (Yang et. al, 2011). Fischer and Pollock (2004) and Chahine and Goergen (2011) found that usually the presence of Founder-CEO is perceived by investors as a commitment to the company and thus has a positive impact on IPO survival. Baron et al. (1999) believe that this dual position boosts the firm's operation and performance. Yang et al. (2011) agree that this also impacts IPO positively because it reduces agency problems. Nelson (2003) proved that investors' reaction to firms' IPOs with Founder-CEOs are very high compared to other IPOs where the founder of the firm is not its CEO. In contrast to the previous findings, Noguera (2015) proved that Founder-CEO reduces board independency and in turn impacts negatively REITs performance.

2.4.3. CEO-Board Member

Previous literature analyzed the relationship between CEO-board relationship and CEO-Chairman relationship or duality. Li (2013) found a strong positive relationship between CEO-board membership and firm performance. According to Brickley et al. (1997), CEO-board participation eases the transfer of information which is very substantial in

order to ensure an effective decision-making process. However, to the best of my knowledge, there exists a huge gap in the literature dealing with the CEO-board membership and its impact on IPO.

2.4.4. Board Size

Board size refers to the number of directors in the board composition as defined by Linck et al. (2008). Dempere (2007) proved in his findings that board size has a significant but negative impact on IPO underpricing. Other researchers such as Certo et al. (2001) also found that board size and board reputation have a negative relation with IPO underpricing. Yermack (1996) found that the smaller the board size the higher is the firm valuation and performance. John and Senbet (1998) and Li (2013) also believe that small boards are better as they enhance communication and exchange of ideas. Consistent with this, Noguera (2015) agree that this is also the case when it comes to REITs. However, board size is also related to the firm size and hence more directors are required for larger and complicated firms (Baker and Gompers, 2003). According to Dalton et al. (1999), large boards are better as they facilitate the data collection process which improves firm's performance.

2.4.5. Board Compensation

Board compensation refers to the total annual compensation of the board members in U.S. dollars. Lazarides et al. (2009) proved that high compensations improve a firm's performance. Feng et al. (2007) found that for 136 REITs, there is a positive relationship between board compensation and REIT performance. However, Brick et al. (2006) find

that excess board compensation leads to serious firm underperformance. They attribute this negative relationship between board compensation and firm performance to principal-agent problems. Compensations can encourage managers to engage in risky activities and pursue their own benefits instead of maximizing shareholders' wealth. However, firms that adopt "pay-performance" compensation structures can reduce principal-agent problems by tying the board's compensation to the firm's performance (Fernandes, 2008).

2.4.6. Gender Diversity

There has always been a huge debate regarding the presence of gender diversity in the board composition. Recent researches in the corporate governance domain, tend to investigate the effect of board diversity on IPO performance, (i.e., the percentage of women directors). Women directors were previously stereotyped and avoided. McGuiness (2016) proved that women directors add many advantages to the financial institution and can therefore affect positively IPO long-run performance. Reutzel and Belsito (2015) found that prior the Sarbanes-Oxley Act, investors used to invest in companies IPOs that are governed by male directors, but this changed after 2007 when the level of underpricing proved not to be caused mainly by the presence of women directors on board, since it showed a very low and weak impact on IPO underpricing. Handa and Singh (2015) found in their research which includes 127 Indian IPOs, that

there is an insignificant but negative[11] effect of the percentage of women directors on short-run performance also known as IPO underpricing. Other studies proved that a board of directors of which women constitute at least 10%, stock prices outperformed those with no women directors (Welbourne, 1999). Another study also carried out by Welbourne et al. (2007) that covers 534 IPOs, prove that the presence of women directors have a positive impact on both short and long term IPO performance. A rational explanation would be that a diverse board team usually leads to more creativity and innovation but most importantly diversity can help with problem-solving and risks that encounter financial institutions. As agreed by Welbourne et al. (2007) women usually perform better than men. However other studies show that the impact of women directors on IPO performance depends on the related industry. For example Dimovski and Brooks (2006) found that in the mining industry women were perceived weak as directors.

2.4.7. Board Independence

Board independence refers to the percentage of non-executive directors of the board. Chahine and Goergen (2013) found in their research that board independence has an impact on both short-run and long-run IPO performance. Francis et al. (2012) found that during the financial crisis of 2007, firms with board independence outperformed other institutions. A REIT should have an independent board in order to improve its performance (Feng et al., 2005). In their findings, Ghosh and Sirmans (2003) found that

[11] A statistical negative sign means that even that it is insignificant, if the percentage of women on board increases in the future it can lower IPO underpricing (Handa and Singh, 2015).

in the case of REITs, independent directors or outsiders improved REITs performance but the overall level of improvement was weak. Hermalin and Weisbach (1998) believe that board independence intensifies a firm's poor performance. Linck et al. (2008) in a consistent finding agree that board independence affects negatively a firm's performance.

2.4.8. Average Board Age

There is a huge debate in the literature regarding the impact of the average board age on IPO performance. Yang et al. (2011) found that age affects positively and significantly a firm's IPO performance. For instance, Vroom and Pahl (1971) agree that old CEOs are not risk-takers and that these two exhibit a strong negative relationship. In other words, younger directors are more willing to take risk and make their companies go public (Yang et al., 2011). As Wiersema and Bantel (1992) agree, young directors are more creative and can better adapt to changes and technologies. But then again, older directors are more committed to the firm. Nonetheless, old directors are not always more experienced than young ones.

2.4.9. ESG Score

ESG score refers to an overall percentile ranking score for a firm based on economic, social and corporate governance information reported. Equities with a high ESG score are considered high quality and according to Hanson and Dhanuka (2016), this score is positively related to the IPO underpricing. Cajias et al. (2011) found that there is a positive link between ESG score and the performance of real estate firms. Similarly,

Eccles et al. (2014) agree that firms that have high ESG scores are characterized with a high sustainability and hence they are better performers in the future in terms of financial returns. Cajias et al. (2014) also found that there is no significant relationship between high ESG scores and returns in the short-run. Gillan et al. (2010) found a negative relationship between abnormal returns and ESG scores in the long-run. However, there is no enough literature regarding this variable and its impact on IPO performance. The inclusion of this variable in this thesis is an attempt to measure its impact on the REIT IPO performance in the short and the long run.

2.5. Other Control Variables

Tian (2012) defined the firm's age as the level of maturity in term of years. In other words, firm age refers to the time to IPO from the date of incorporation. Clarkson and Merkley (1994) believe that firm age has a negative impact on underpricing irrelevant to the industry category. Ln proceeds represents the natural logarithm of gross proceeds raised by the issuing firm. Bairagi and Dimovski (2011) found in their empirical test for 123 U.S. REIT IPOs from 1996 till 2010, that Ln proceeds has a positive and significant impact on underpricing. As for the long-run performance in the IPO aftermarket, Levis (1993) found that firms with large proceed amounts performed better after the public offering. Ibbotson et al. (1994) found that low offer prices have a high and significant impact on underpricing. Whereas, Dimovski and Brooks (2008) proved the opposite in their empirical tests, where they found that high offer prices affect positively the level of underpricing. As discussed subsequently, these control variables are taken into consideration in the short-run underpricing and the long-run performance.

2.6. Conclusion

The main purpose of the review of literature is to discuss published articles regarding the characteristics of corporate governance mechanisms and their relationship with the level of underpricing of U.S. REIT IPOs. Moreover, the review of literature addresses IPO underpricing along with the long-run IPO performance. Most studies confirm the low levels of REIT IPOs underpricing relative to other IPOs. However, it can be concluded that there are mixed findings with regard to the impact of corporate governance variables on IPO performance since different authors documented different results.

This study aims to investigate the role of numerous corporate governance variables in explaining the underpricing of U.S. REITs in the short-run and long-run. Two methodologies are used to measure this performance which are market adjusted excess returns (for the short-run returns) and cumulative abnormal returns (for the long-run returns). The next chapter will elaborate the adopted data and methodology. Additionally, the regression models used will be presented along with a description of all the exogenous and endogenous variables.

Chapter 3

Procedures and Methodology

3.1. Introduction

As discussed in chapter 1, REITs are considered as distinctive passive investment vehicles. Their originality offers a special experiment in terms of IPO performance and corporate governance systems due to their legal and organizational structures such as their tax-exempt status and the imposed 90% dividend distribution to stockholders.

The previous literature did not present a unified finding concerning the relation between IPO performance and corporate governance mechanisms of REITs. This ongoing debate regarding the underpricing of REITs and whether they exhibit low levels relative to the market motivates us to test the magnitude of the underpricing of U.S. REIT IPOs for the period of time ranging from 2003 to 2016. In this study, two measurement approaches will be used in order to tackle the following research questions:

- How does corporate governance impact U.S. REITs' IPOs?
- Are U.S. REITs' IPOs underpriced in the short run?
- What are the corporate governance's main determinants of short-run IPO performance of U.S. REITS?
- How do U.S. REITs' IPOs perform in the long-run?
- What are the corporate governance's main determinants of long-run IPO performance of U.S. REITS?

Hence, this chapter describes the data and methodology used in order to address the above research questions. The following sections will be organized as follows. First, the data used will be discussed in details, then the equations and the regression models used will be presented, finally the corporate governance variables along with the control variables used in the regression tests will be defined.

3.2. Data

Offer prices, open prices, closing prices, daily and monthly stock prices for the equities and the market benchmark Russell 2000 index, are downloaded from Bloomberg Terminal Platform. The Russell 2000 index is commonly used as a market benchmark that tracks and measures the performance of 2000 "small-cap" companies. Therefore, the Russell 2000 represents a reliable barometer of the U.S. economy, much like the S&P 500 index. For these reasons, we chose the Russell 2000 index as the benchmark for market returns.

Moreover, the control and corporate governance variables are collected from Thomson Reuters Eikon and the companies' prospectuses.

The original sample retrieved from 23 March 2001 till 23 March 2017, consists of 219 REIT IPOs in North America, United States. After omitting withdrawn, duplicated[12], postponed and pending REITs, the sample size decreased to 133 trading REITs. Moreover, we limit our sample to REITs with available historical prices on Bloomberg as well as for the availability of the variables on Eikon and issues' prospectuses. Thus,

[12] GMRE U.S. Equity was removed once, due to a duplication reason.

the final sample consists of 89 IPOs which represents 66.91% of the 133 REIT IPOs and 40.64% of the original sample. Therefore, the final sample time period is from June 25, 2003 till September 29, 2016. Performance and governance variables are winsorized at the 1% level to exclude extreme values from our analysis.

Below is a table that highlights previous studies on U.S. Equity REIT IPOs along with the sample sizes and the time period of the research, as a supporting evidence that the sample size used throughout this thesis of 89 IPOs is quite acceptable.

Authors Name And years of research	Sample size	Time period
Sinan Gokkaya, Michael J. Highfield, Kenneth Roskel ley, and Denni s F. Steele, J r. (2015)	126 Equity REIT IPOs	1993-2007
Su Han Chan , Jiajin Chen and Ko Wang (2013)	129 U.S. REIT IPOs	1996-2010
Jay C. Hartzell, Jarl G. Kallberg and Crocker H. Liu (2008)	107 U.S. REIT IPOs	1991-1998
Paul Anglin, Robert Edelstein, Yanmin Gao, and Desmond Tsang (2011)	109 U.S. REIT IPOs	2003-2006
Richard Buttimer, David Hyland and Anthony Sanders (2005)	163 U.S. Equity REIT IPOs	1980-2001
Zhilan Feng, S McKay Price and C F Sirmans (2011)	118 U.S. Equity REIT IPOs	1994-2009
Bill Dimovski, Christopher Ratcliffe and Monica Keneley (2017)	42 U.S. Equity REIT IPOs	2010-2015

Table 1: Previous U.S. REIT IPOs sample sizes and time period.

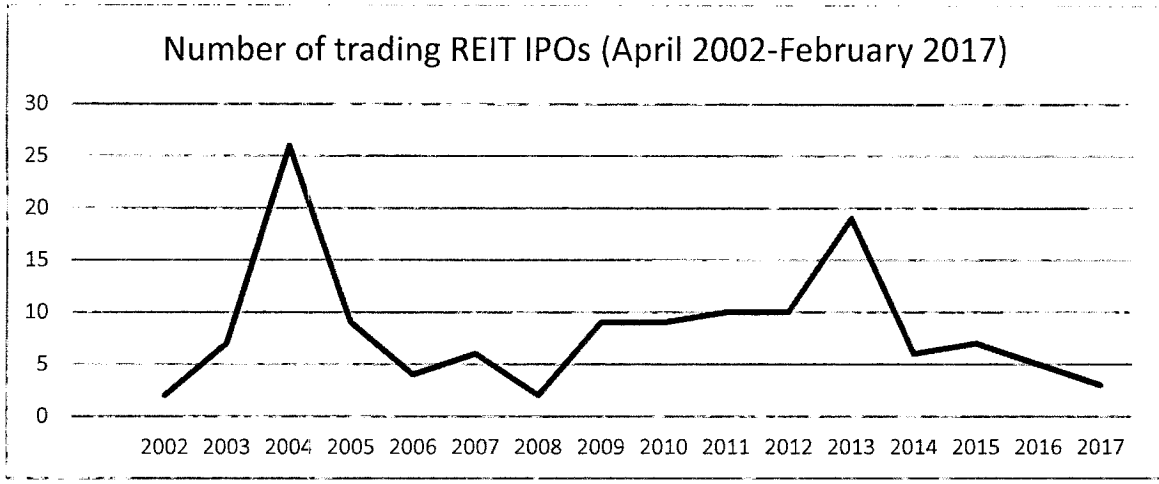

Figure 1: The number of trading U.S. Equity REIT IPOs (April 2002-February 2017).

As shown in the chart above, the number of REITs that went public through an IPO for the period 2002-2017 is at its top in 2004. Then this issuance number drops to its lowest in 2008 due to the credit crisis of 2007-2008. Then again the number of IPOs increases in 2013. It is obvious from the graph that REIT IPOs are subject to waves that are triggered by changes in economic conditions. For instance, "Hot" market waves are highly remarkable in 2004 and 2013. "Hot" markets are triggered by an increase in the capital demand or the launch of a new technological innovation. Whereas, year 2008 represents a very good example of "Cold" markets. A look back in time sheds light on major events and negative economic shocks that hit the global markets badly such as the credit crunch of 2007-2008 that resulted in huge unexpected failures of many gigantic financial institutions (Hull, 2012).

3.3. Dependent Variables

This thesis covers both the short and long-run performance of REIT IPOs. Therefore, the dependent variables are the market adjusted excess returns (ARs) to measure short-run performance and cumulative abnormal returns (CARs) to measure long-run performance.

3.3.1. Market Adjusted Excess Returns ARs

For the short-run underpricing, we use ARs, also known as market adjusted excess returns for each of the first five trading days of an IPO, similar to Hartzell et al. (2008), Chan et al. (2013), Brobert (2016) and Dimovski et al. (2017).

Therefore, in order to calculate ARs, we should calculate the security or issue returns (*IRi*) and the market index or benchmark returns (*BRi*) on a daily basis for each of the first five trading days right after the issue, or the REIT goes public.

The first step is to calculate the daily returns given the daily closing prices. Usually, daily returns are calculated using the following equation:

$$IR_i = \frac{s_t - s_{t-1}}{s_{t-1}} \quad (1)$$

Where, s_t is the closing price of the stock and s_{t-1} is the closing stock price at the end of the previous day.

But, in this study returns for REIT equities will be calculated using the percentage log daily returns equation which is similar to equation (1) and it is defined as:

$$IR_i = \ln\left(\frac{Closing\ price_i}{Offer\ price_0}\right) \times 100 \qquad (2)$$

Where: IR_i: the raw/initial first day return.

Hence, if $IR_i > 0$, then the equity REIT is underpriced.

If $IR_i < 0$, then the equity REIT is overpriced.

If $IR_i = 0$, then the equity REIT is fairly priced.

Therefore, *IRi* was calculated for every issue for each of the REITs IPOs in our sample for each of the first five trading days after they went public. It is worth noting that the first day IPO return is calculated using the offer-to-close price return whereas the second day IPO return to the fifth day IPO return were all calculated using the close-to-close return as mentioned in equation (2).

The second step is to calculate the benchmark's daily return (The "Russell 2000 index" daily return). The equation is as follows:

$$BR_i = \ln\left(\frac{S_i}{S_{i-1}}\right) \times 100 \qquad (3)$$

Where BR_i represents the Russell 2000 index daily return, S_i is the closing price and S_{i-1} is the closing price at the end of the previous trading day.

The third step is to calculate the market adjusted excess return, *ARi* that is the IPO return of a single issue at a single date (*IRi*) minus the benchmark return on the same date the issue return is calculated (*BRi*). *ARi* equation is therefore as follows:

$$AR_i = (IR_i - BR_i) \times 100 \qquad (4)$$

Below is a figure that illustrates the methodology used to measure the short-run market performance of REIT IPOs.

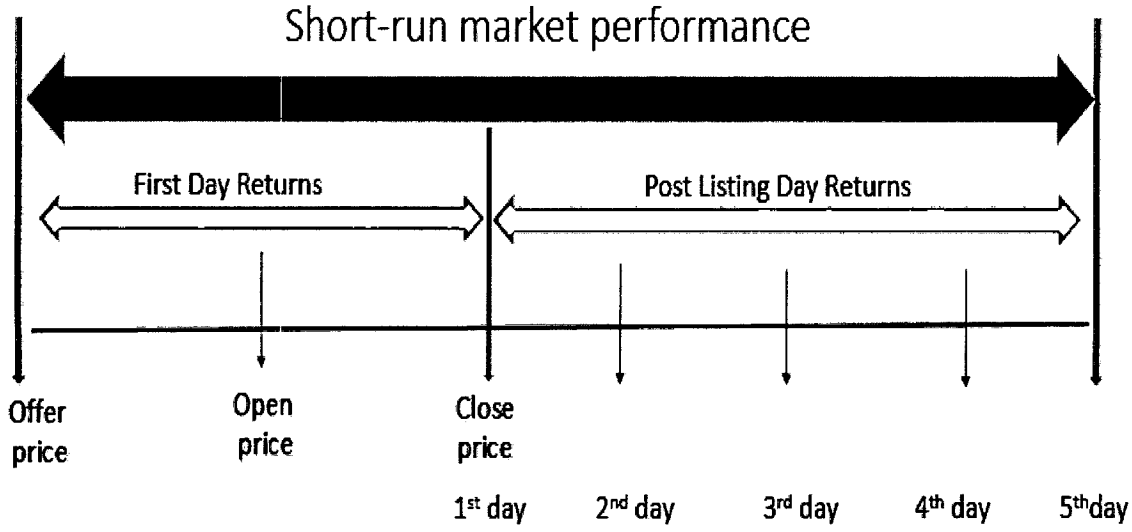

Figure 2: Short-run market performance measurement

3.3.2. Cumulative Abnormal Returns (CARs)

For the long-run performance, Ritter (1991) and Fama (1998) suggest that the CAR method is the least biased amongst the four long-run market performance measurements that were previously mentioned in section 2.3. Therefore, semi-annual CARs for three years after IPO date are used as the long-run dependent variables by computing monthly returns up to month 36. These variables are for the 6, 12, 18, 24, 30 and 36 months denoted by m6, m12, m18, m24, m30 and m36.

In order to calculate CARs, the first step is to calculate the monthly benchmark adjusted return by using the following equation:

$$AR_{it} = \ln\left(\frac{MR_{it}}{MR_{it-1}}\right) - \ln\left(\frac{MBR_{it}}{MBR_{it-1}}\right) \times 100 \quad (5)$$

Where AR_{it} is the monthly benchmark adjusted returns as specified by Ritter (1991).

MR_{it} represents the equity's monthly return.

MR_{it-1} represents the equity's previous monthly return.

MBR_{it} represents the monthly benchmark return.

MBR_{it-1} represents the previous monthly benchmark return.

The second step is to calculate the CAR from event month "q", which is the summation of the AR_t.

$$CAR_{q,s} = \sum_{t=q}^{s} AR_{it}. \quad (6)$$

Returns are calculated based on daily closing share prices retrieved from Bloomberg for the time period 2003 till 2016. For the short-run performance, all 89 REITs were considered. Whereas, for the long run-performance the data sample varies because a semiannual performance measurement is used for a three years period, since it is the mostly recommended to test IPOs long-run performance, and some IPOs were issued in 2016. For instance, for the 6, 12, 18, 24, 30 and 36 months, data sample are 89, 88, 86, 86, 79 and 73 IPOs respectively. As for the explanatory variables, this study is based on data collected from Bloomberg, prospectuses of REIT IPOs submitted to SEC filings and Eikon (Thomson Reuters) database. Therefore, we also limit our sample to the availability of the related data.

3.4. Model Specification

Multi-linear regression models are used to investigate the presence of a relationship between ARs and multiple factors (for the CARs as well) and its significance. We run the regression analysis on STATA software. We run eight models (described below) attempting to explain the short-run and long-run IPO performance of these firms given different explanatory variables that are related to corporate governance.

The general model used to regress ARs in the short-run is as follows:

$$ARi = \alpha + \sum \beta i Xi + \varepsilon \quad (7)$$

The model used to regress CARs in the long-run is as follows:

$$CARi = \alpha + \sum \beta i Xi + \varepsilon \quad (8)$$

Where, α is the model's constant or intercept.

βi represents the coefficient/parameter of the related explanatory variable.

Xi is the explanatory/independent variable.

ε is the error term.

Specifically, the models are as follows:

Model (I):

$$AR_{day\,1} = \alpha + \beta_1 CEO - Board\ member + \beta_2 NAV\ per\ share + \beta_3 Share\ float + \beta_4 Diversity + \beta_5 Offer\ price + \beta_6 Firm\ age + \beta_7 Board\ age + \beta_8 Ln\ assets + \varepsilon \quad (9)$$

Model (II):

$$AR_{day\,1} = \alpha + \beta_1 Duality + \beta_2 NAV\ per\ share + \beta_3 Share\ float + \beta_4 Diversity + \beta_5 Board\ size + \beta_6 Offer\ price + \beta_7 Firm\ age + \beta_8 Board\ age + \beta_9 Market\ capitalization + \varepsilon \quad (10)$$

Model (III):

$$AR_{day\,1} = \alpha + \beta_1 CEO - Founder + \beta_2 NAV\ per\ share + \beta_3 Share\ float + \beta_4 Diversity + \beta_5 Board\ size + \beta_6 Offer\ price + \beta_7 Firm\ age + \beta_8 Board\ age + \beta_9 Market\ capitalization + \varepsilon \quad (11)$$

Model (IV):

$$AR_{day\,1} = \alpha + \beta_1 ESG\ Score + \beta_2 Debt\ to\ capital + \beta_3 NAV\ per\ share + \beta_4 Shares\ float + \beta_5 Diversity + \beta_6 Volatility + \beta_7 Board\ size + \beta_8 Offer\ price + \beta_9 Firm\ age + \beta_{10} Board\ age + \beta_{11} Market\ capitalization + \varepsilon \quad (12)$$

Model (V):

$$AR_{day\,1} = \alpha + \beta_1 Board\ compensation + \beta_2 Debt\ to\ capital + \beta_3 NAV\ per\ share + \beta_4 Shares\ float + \beta_5 Diversity + \beta_6 Volatility + \beta_7 Market\ capitalization + \beta_8 Offer\ price + \beta_9 Firm\ age + \beta_{10} Board\ age + \varepsilon \quad (13)$$

Model (VI):

$$CAR_{month\ 18} = \alpha + \beta_1 CEO - Founder + \beta_2 Ln\ assets + \beta_3 Board\ age + \beta_4 Firm\ age + \beta_5 Offer\ price + \beta_6 Duality + \varepsilon \quad (14)$$

Model (VII):

$$CAR_{month\ 30} = \alpha + \beta_1 Board\ compensation + \beta_2 Debt\ to\ capital + \beta_3 NAV\ per\ share + \beta_4 Shares\ float + \beta_5 Diversity + \beta_6 Volatility + \beta_7 Market\ capitalization + \beta_8 Offer\ price + \beta_9 Firm\ age + \beta_{10} Board\ age + \varepsilon \quad (15)$$

Model (VIII):

$$CAR_{month\ 30} = \alpha + \beta_1 ESG\ score + \beta_2 Debt\ to\ capital + \beta_3 NAV\ per\ share + \beta_4 Diversity + \beta_5 Market\ capitalization + \beta_6 Offer\ price + \beta_7 Firm\ age + \beta_8 Board\ size + \varepsilon \quad (16)$$

3.5. Independent Variables

Variable	Definition
Board size	The size of the board of directors.
CEO-Founder	Dummy variable with 1 if the CEO is the founder at the time of IPO and 0 otherwise.
ESG score	A score found on Thomson Reuters. It is an overall score for a firm based on Economic, social and corporate governance information reported.

CEO-Board member	Dummy variable with 1 if the CEO is a board member, and 0 otherwise.
Chairman is ex-CEO	Dummy variable with 1 if the chairman was ex- CEO and 0 otherwise.
Board compensation	Natural logarithm of the total compensation of the board members in U.S. dollars.
Diversity	The percentage of women directors on board.
CEO-Chairman duality	Dummy variable with 1 if the CEO is the chairman at the same time and 0 otherwise.
Board Age	The board's average age.
Board independency	The percentage of independent directors on board.
Corporate governance committee	Dummy variable equal to 1 if the firm has a corporate governance board committee and 0 otherwise
CEO compensation	Dummy variable equal to 1 if the CEO's compensation is linked to total shareholder return and 0 otherwise.
Independent current directors	The percentage of independent current directors.
Strictly independent	The percentage of strictly independent directors on board.
Board tenure	The average board tenure in years.
Firm age	Time to IPO. Calculated as the number of years from the incorporation of the firm till its IPO date.
Offer price	The offer price at IPO as defined by the issuer.
Market capitalization	Natural logarithm of (number of shares x closing price at IPO).
Volatility	The standard deviation of the return, when the return is calculated using continuous compounding (Hull, 2012).
Debt to capital ratio	The percentage of Long term debt/ total capital (where total capital = total equity + total debt + minority interest).
NAV per share (or B.V. per share)	The value per share of an equity = (Assets - liabilities)/ (Number Of shares outstanding).
Shares float	The percentage of equity shares offered on IPO. It is equal to (number of shares issued at IPO date / total number of companies' shares after IPO).
Ln assets	Natural logarithm of total assets
Proceeds	Natural logarithm of gross proceeds.
NI	Income after all operating and non-operating income and

	expense, revenue, income taxes, minority interest and extraordinary items in USD.
ROE	Return on equity

Table 2: Definition of the variables

Table 2 represents the independent variables used to regress on ARs and CARs.

To investigate a robust relationship between corporate governance variables and IPO performance it is crucial to take into consideration independent control variables that can affect IPO performance (Bohren and Odegaard, 2001).

3.6. Conclusion

Now that we have specified the methodology used to calculate ARs and CARs, as well as the sources of data collection and the definition of variables, the following chapter will present the regression models.

Therefore, chapter 5 starts with the descriptive statistics of the explanatory variables used to estimate the degree of underpricing. Next, descriptive statistics of the abnormal and cumulative abnormal returns will be presented. Finally, the main results will be stated in order to define the main corporate governance determinants of U.S. REIT IPOs.

Chapter 4

Findings

4.1. Introduction

In the previous chapter, we defined the methodology used in this thesis and the data collection sources were stated accordingly. Then the variables used in the multi-linear regression models were defined in detail. This chapter describes the data used throughout this thesis. First it will present a general descriptive statistics of the governance, control and performance data used. Then, this chapter will discuss empirical results of the regression analysis.

4.2. Descriptive Statistics

This table represents descriptive statistics for the independent and control variables.

Stats	N	Mean	Stand. Dev.
Governance variables			
Board size	89	7.24	1.31
ESG score	46	40.64	9.36
Corporate governance committee	46	0.98	0.15
CEO compensation	46	0.63	0.49
CEO-board member	46	0.96	0.21
CEO-ex-chairman	46	0.48	0.51
Board compensation	46	13.74	0.65
Independent current directors	46	73.07	13.09
Strictly independent	46	46.33	27.36
Board tenure	46	1.26	0.68
CEO-Founder	69	0.17	0.38

Diversity (Percentage of women on board)	46	10.86	9.73
Duality	89	0.44	0.5
Board independency	89	0.66	0.12
Board age	89	55.46	4.96
IPO Variables			
Ln proceeds	88	19.18	0.78
Offer price	88	16.04	4.25
NAV per share	46	4.82	10.5
Shares float	46	123.73	91.86
Firm Variables			
Firm age	89	1.84	4.26
Market capitalization	70	21.08	1.13
Volatility	70	28.62	9.49
Ln assets	84	6.86	1.12
NI	85	7.56	54.32
ROE	74	34.94	18.78
Debt to capital	46	0.45	0.14

Table 3: Descriptive statistics of the firm, corporate governance and IPO related variables

Table 3 represents descriptive statistics of the firm, corporate governance and IPO related variables. The sample size is 89. However, for some of the variables the sample size is less than 89 due to missing data. On average, board size is composed of 7 directors and the average age of the board of directors is between 55 and 56. The percentage of women on board is very small (around 11%). Moreover, it is evident that the CEO is a board member at the same time for most of the REIT IPOs, but this was not the case for CEO-Founder where the CEO was the founder only 17% of the times. Also, we can conclude that for almost 50% of the sample, REITs have a chairman who is an ex- CEO of the firm. Board independence also appears to be very high for REIT IPOs, a

66% of their board members are independent on average. Another important information revealed by table 4 is the average of ESG score equal to 40.64, which is equivalent to Grade C+ according to Eikon, and this is considered a low score.

Year IPO	Day 1	Day 2	Day 3	Day 4	Day 5
2003	4.94%	5.32%	6.27%	5.91%	4.91%
2004	2.52%	2.07%	1.18%	0.64%	0.52%
2005	-1.22%	2.66%	3.15%	1.96%	2.45%
2006	2.46%	0.88%	1.80%	1.62%	0.49%
2007	2.43%	1.21%	-1.54%	0.12%	-0.10%
2008	-1.08%	2.30%	2.03%	1.33%	0.47%
2009	-4.12%	-4.16%	-4.13%	-4.27%	-3.69%
2010	-0.46%	-2.22%	-0.70%	-1.38%	-1.31%
2011	-1.92%	-2.60%	-1.65%	-2.99%	-1.32%
2012	-0.50%	0.05%	0.80%	0.93%	1.08%
2013	1.04%	1.26%	1.56%	2.24%	1.85%
2014	-2.00%	-1.60%	-2.11%	2.87%	-12.84%
2015	4.35%	4.85%	4.36%	5.12%	4.33%
2016	-2.04%	-3.22%	-1.89%	-4.03%	-5.56%
Average underpricing	**0.34%**	**0.30%**	**0.38%**	**0.50%**	**-0.38%**

Table 4: Average short-run performance per year of IPO (2003 to 2016 time period)

Table 4 represents equal-weighted average IPO returns for the first 5 days for the sample period 2003-2016. We used the equal weighting method similar to Buttimer et al. (2005) and Bairagi and Dimovski (2011) in order to avoid larger firms influencing the results.

For example, the number 4.94% for day 1 (Day 1) returns in year 2003, is obtained by calculating the average of all ARs on day 1 for all the IPOs that took place in this year. As shown in the table, IPO underpricing is evident for the first 4 trading days for the 2003-2016 period. However, the underpricing is considered insignificant (0.34%, 0.30%, 0.38% and 0.50% respectively). It is also noticeable that the highest degrees of underpricing took place in year 2003, with a value of (6.27%) for day 3. On the other hand, ARs on the 5th trading day of the same time period present an insignificant (-0.38%) overpricing for equity REIT IPOs. In general, we can conclude that usually REIT IPOs exhibit insignificant underpricing in the short-run.

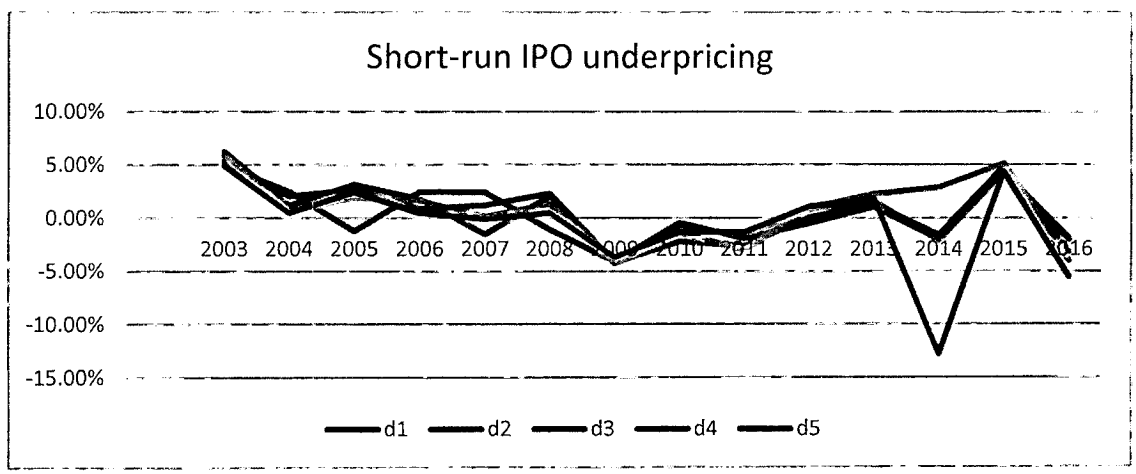

Figure 3: Short-run IPO underpricing (2003 to 2016 time period)

It is evident from the figure that short-run underpricing for all REIT IPOs follow on average the same directional pattern in 2003 and 2004. However, for the years 2005, 2006 and 2007 day1 line deviates and displays different pattern. From the year 2008 till 2013, all lines follow the same direction. Then again, d5 deviates to reach the lowest value of (-12.84%) in 2014, which means overpricing of REIT shares at IPO on average.

Performance sample used in this thesis are presented by returns that are calculated on excel based on daily closing prices of REITs for the 2003 – 2016 period.

To investigate the effect of firm size on the degree of underpricing in the short-run, we compute asset weighted returns on STATA. The results are presented in table 5.

Year IPO	Day 1	Day 2	Day 3	Day 4	Day 5
2003	0.06%	0.07%	0.08%	0.07%	0.06%
2004	0.03%	0.02%	0.01%	0.01%	0.01%
2005	-0.02%	0.03%	0.03%	0.02%	0.03%
2006	0.04%	0.02%	0.03%	0.03%	0.01%
2007	0.07%	0.03%	-0.01%	0.01%	0.00%
2008	-0.02%	0.03%	0.03%	0.02%	0.01%
2009	-0.05%	-0.05%	-0.04%	-0.05%	-0.04%
2010	0.00%	-0.02%	0.00%	-0.01%	0.00%
2011	-0.02%	-0.03%	-0.02%	-0.04%	-0.02%
2012	0.00%	0.00%	0.01%	0.01%	0.02%
2013	0.02%	0.02%	0.03%	0.03%	0.03%
2014	-0.02%	0.00%	-0.01%	0.03%	-0.08%
2015	0.06%	0.06%	0.06%	0.06%	0.05%
2016	-0.02%	-0.03%	-0.02%	-0.04%	-0.06%
Total	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.00%**

Table 5: Weighted average short-run performance per year of IPO (2003 to 2016 time period)

Table 5 represents the asset weighted returns for the first 5 days for the sample period 2003-2016. We find that the underpricing is very insignificant. Compared to the results found using equal weights (Table 4), IPO underpricing is less significant for the first 4 trading days. We conclude that REIT IPOs exhibit insignificant underpricing in the short-run and that on average, in our sample, large firms are less likely to exhibit underpricing than smaller firms. Tajuddin et al. (2017) argue that larger firms have lower information asymmetry and hence do not need to underprice their IPOs to attract investors.

Year_IPO	m6	m12	m18	m24	m30	m36
2003	3.45%	8.09%	11.83%	10.08%	19.25%	20.55%
2004	1.19%	2.25%	14.72%	12.05%	12.99%	50.25%
2005	1.10%	9.32%	-8.35%	4.48%	12.97%	23.00%
2006	7.17%	0.26%	20.68%	25.81%	62.32%	70.25%
2007	-1.51%	20.52%	11.45%	23.38%	31.90%	25.50%
2008	-14.16%	-46.89%	-47.31%	-24.68%	-32.79%	-11.56%
2009	4.79%	15.39%	25.53%	39.23%	38.46%	34.23%
2010	11.63%	24.00%	27.43%	24.60%	23.18%	23.15%
2011	0.55%	-5.71%	-6.49%	4.20%	20.83%	21.37%
2012	-3.73%	14.44%	32.09%	32.95%	43.42%	53.14%
2013	12.45%	9.49%	6.03%	6.26%	9.14%	-3.34%
2014	39.61%	43.96%	-0.31%	4.93%	15.72%	26.48%
2015	-8.46%	-15.98%	-7.40%	4.37%	.	.
2016	17.41%	.	.	.	.	.

Total	**5.53%**	**8.5%**	**10.97%**	**15.33%**	**22.14%**	**29.11%**

Table 6: Average long-run performance per year of IPO (2003 to 2016 time period

Table 6 reports cumulative abnormal returns for up to 3 years after REIT IPOs date for firms that went public from the year 2003 to 2016. The "-" mark represents unavailable statisticcs due to the unavailability of the corresponding data at the time when the data was retrieved. From the table, it is evident that CARs on semi-annual basis present positive total average returns. The long-run performance for three years after IPO proved to outperform the market, especially 36 months after IPO.

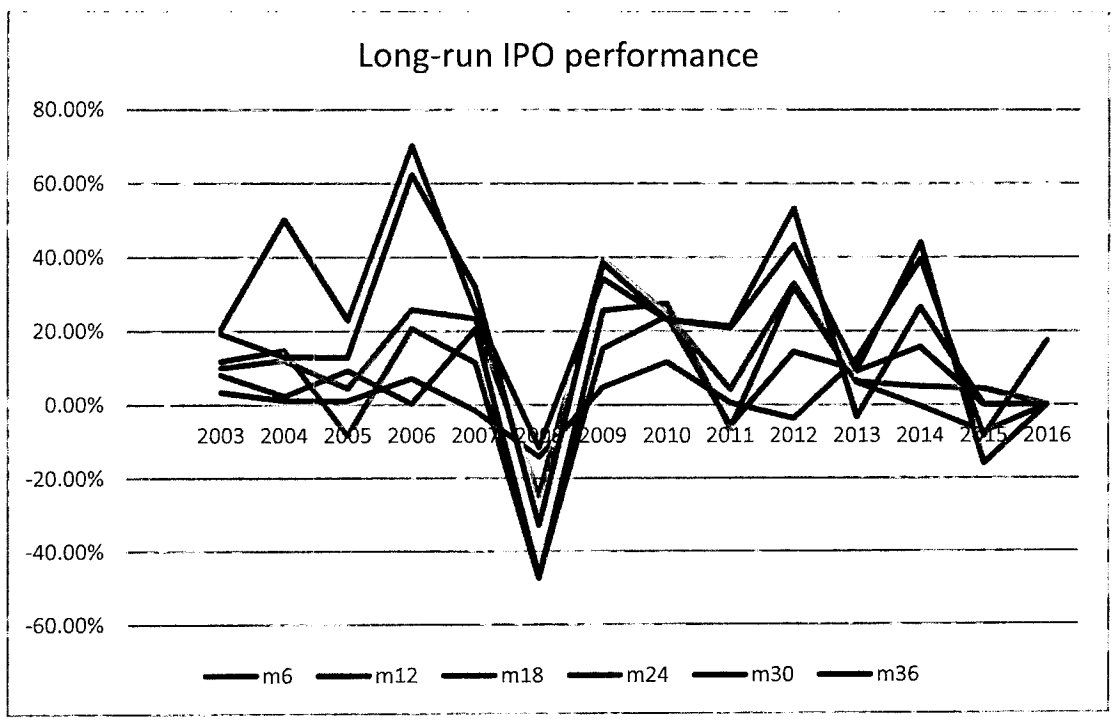

Figure 4: Long-run IPO performance (2003 to 2016 time period)

From the figure, good IPO performance is obviously remarkable for all years except for the year 2008 where CARs are considered low (-47.31%, from the table 11). This could be explained by the credit crisis of 2007-2008.

To investigate further the effect of firm size on the degree of underpricing in the long run, we conduct weighted average returns for 3 years after IPO. The results are presented in table 7.

Year IPO	m6	m12	m18	m24	m30	m36
2003	0.03%	0.10%	0.14%	0.11%	0.23%	0.27%
2004	0.01%	0.03%	0.19%	0.15%	0.15%	0.55%
2005	0.01%	0.10%	-0.10%	0.05%	0.14%	0.26%
2006	0.10%	0.01%	0.27%	0.34%	0.87%	0.96%
2007	0.11%	0.96%	0.98%	0.88%	0.71%	0.59%
2008	-0.21%	-0.69%	-0.70%	-0.36%	-0.48%	-0.17%
2009	0.05%	0.19%	0.27%	0.44%	0.41%	0.38%
2010	0.13%	0.25%	0.28%	0.24%	0.23%	0.24%
2011	-0.01%	-0.09%	-0.09%	0.05%	0.25%	0.25%
2012	-0.07%	0.16%	0.40%	0.41%	0.54%	0.67%
2013	0.11%	0.07%	0.03%	0.02%	0.02%	-0.06%
2014	0.27%	0.29%	-0.01%	0.06%	0.22%	0.31%
2015	-0.11%	-0.19%	-0.08%	0.06%	.	.
2016	0.19%	.	.	.	.	.
Total	**0.05%**	**0.09%**	**0.14%**	**0.18%**	**0.25%**	**0.34%**

Table 7: Weighted average long-run performance per year of IPO (2003 to 2016 time period)

Table 7 reports cumulative abnormal returns for up to 3 years after REIT IPOs date for firms that went public from the year 2003 to 2016. The mean is an asset weighted average mean. The "-" mark represents unavailable statistics due to the unavailability of the corresponding data at the time when the data was retrieved. From the table, we can conclude that CARs on semi-annual basis present positive total average returns. By

comparing these findings to the results found using equally weighted means (presented in table 6), we find that on average, for our sample, small firms exhibit better long term IPO performance than large firms. In general, we conclude that on average, IPOs exhibit positive long-run performance

4.3. Main Results

4.3.1. Model I

Day 1 ARs	Coef.	T	P-value
CEO-board member	0.04747**	2.22000	0.033
NAV per share	0.00040	0.66000	0.513
Shares float	0.00000	-1.41000	0.166
Diversity	0.00208**	2.06000	0.047
Offer price	-0.00173	-0.73000	0.472
Firm age	-0.00207*	-1.85000	0.073
Board age	0.00080	0.60000	0.553
Ln assets	0.01573*	1.89000	0.067
_cons	-0.16368	-1.36000	0.183

Note: ***, ** and * denote the level of significance at 1%, 5% and 10% respectively.

Table 8: Regression analysis for model I

To take the effect of the IPO and firm characteristics into consideration, we included the control variables into the regression model: NAV per share, shares float, diversity, offer price, firm age, board age and ln assets similar to Chambers and Dimson (2009), Bansal and Khanna (2012), Welbourne et al. (2007), Ibboston et al. (1994), Li (2013), Vroom and Pahl (1971) and Bauer et al. (2010) respectively.

Based on the regression analysis, we suggest that variables of CEO serving as a board member and the diversity of the board have a positive and significant impact on the day 1 returns at 5% significance level. According to Chahine and Goergen (2011), the presence of CEO-board membership increases the level of short-run underpricing since investors prefer to invest in firms in which the CEO holds great authority. CEO-board membership allows CEOs to attend the board of directors' meetings. Therefore, CEOs can participate in the decision-making process which is not possible otherwise and their participatory activities enable knowledge sharing and prolific group discussions among the board members (Li, 2013). Results also suggest that diversity increases the underpricing degree of U.S. REITs because fostering gender diversity brings many benefits such as promoting innovation, problem-solving, productivity and creativity in the work environment (Welbourne et al., 2007).

Moreover, firm age and size have negative and positive significant relationship respectively at a 10% significance level.

Expressed in terms of the variables used in the table, the regression model's equation is:

$$Day\ 1\ ARs\ predicted = -0.16368 + 0.04747\ CEO - board\ member + 0.0004\ NAV\ per\ share + 0.00208\ diversity - 0.00173\ offer\ price - 0.00207\ Firm\ age + 0.0008\ Board\ age + 0.01573\ ln\ assets \quad (17)$$

4.3.2. Model II

Day 1 Ars	Coef.	T	P-value
Duality	-0.01821*	-1.73000	0.09200
NAV per share	0.00041	0.71000	0.48000
Shares float	0.00000	-1.37000	0.18000
Diversity	0.00243***	3.76000	0.00100
Board size	0.02292***	5.00000	0.00000
Offer price	-0.00151	-1.11000	0.27200
Firm age	-0.00125	-1.26000	0.21800
Board age	0.00193*	1.81000	0.07800
Market capitalization	0.00659	0.73000	0.46700
_cons	-0.38496*	-1.84000	0.07400

Table 9: Regression analysis for model II

To take the effect of the IPO and firm characteristics into consideration, we included the following control variables into the regression model: firm age, market capitalization and shares float similar to Bansal and Khanna (2012). In addition, we included other control variables such as NAV per share, diversity, board size, offer price and board age similar to Aggarwal et al. (2009), Handa and Singh (2015), Dempere et al. (2007), Ibboston et al. (1994) and Yang et al. (2011) respectively.

From this table, the regression analysis proves that there is a negative and significant relationship between duality and day 1 ARs (at 10% significance level). CEO-duality proved to lower initial day returns of REITs since it violates one of the ultimate corporate governance rules which is board independency (Fama and Jensen, 1983). Moreover, this may hinder effective monitoring of the CEO's management and actions,

raise principal-agent problems since CEOs are in a great place to expropriate shareholder interests according to Li (2013) and this consequently reduces firm valuation (Tuggle et al., 2010). Another important result from regression model II is a positive and highly significant relationship between diversity and board size on day 1 revenues (at 1% significance level). Also, board age proved to be positively significant to day 1 ARs (at a 10% significance level).

Expressed in terms of the variables used in the table, the regression model's equation is:

$$Day\ 1\ ARs\ predicted = -0.38496 - 0.01821\ Duality + 0.00041\ NAV\ per\ share + 0.00243\ diversity + 0.02292\ Board\ size - 0.00151\ Offer\ price - 000125\ Firm\ age + 0.00193\ Board\ age + 0.00659\ Market\ capitalization \quad (18)$$

4.3.3. Model III

Day 1 Ars	Coef.	T	P-value
CEO-Founder	-0.0228*	-1.8100	0.0790
NAV per share	0.0003	0.4300	0.6730
Shares float	0.0000	-1.3600	0.1840
Diversity	0.0025***	3.6600	0.0010
Board size	0.0241***	4.7300	0.0000
Offer price	-0.0014	-1.0000	0.3250
Firm age	-0.0017	-1.6000	0.1180
Board age	0.0014	1.3100	0.1980
Market capitalization	0.0071	0.7500	0.4560
_cons	-0.3785*	-1.7100	0.0970

Table 10: Regression analysis for model III

To take the effect of the IPO and firm characteristics into consideration, we included the following control variables into the regression model: NAV per share, shares float, diversity, board size, offer price, firm age, board age and market capitalization similar to Chambers and Dimson (2009), Sohail and Nasr (2007), Welbourne et al. (2007), Handa and Singh (2015), Dimovski and Brooks (2008), Bakers and Gompers (2003), Vroom and Pahl (1971) and Hartzell et al. (2008) respectively.

From the regression table, we can conclude that CEO-Founder is negatively significant to day 1 ARs (at a 10% significance level). Noguera (2015) attributes this negative relationship between founder-CEO and equity REITs' performance to low levels of board independency since founders will favor nepotism over outside directors which is not convenient to investors who perceive this as an abuse of a dominant dual position.

Moreover, diversity and board size both have a positive and significant impact on day 1 returns (at a 1% significance level).

Expressed in terms of the variables used in the table, the regression model's equation is:

$$Day\ 1\ ARs\ predicted = -0.3785 - 0.0228\ CEO - FOUNDER + 0.0003\ NAV\ per\ share + 0.0025\ diversity + 0.0241\ Board\ size - 0.0014\ Offer\ price - 0.0017\ Firm\ age + 0.0014\ Board\ age + 0.0071\ Market\ capitalization \quad (19)$$

4.3.4. Model IV

Day 1 ARs	Coef.	T	P-value
ESG score	0.0013*	1.8700	0.0700
Debt to capital	0.0452	1.1100	0.2760
NAV per share	0.0003	0.4600	0.6450
Shares float	0.0000*	-1.7900	0.0820
Diversity	0.0020***	2.8300	0.0080
Volatility	-0.0006	-1.1300	0.2670
Board size	0.0247***	5.4000	0.0000
Offer price	-0.0023	-1.6000	0.1190
Firm age	-0.0016	-1.5900	0.1210
Board age	0.0025**	2.2200	0.0330
Market capitalization	0.0066	0.7200	0.4740
_cons	-0.4689**	-2.1600	0.0380

Table 11: Regression analysis for model IV

To take the effect of the IPO and firm characteristics into consideration, we included the following control variables into the regression model: Debt to capital and market capitalization similar to Hartzell et al. (2008). In addition we included other control variables such as board size and diversity similar to Handa and Singh (2015), Firm age and volatility similar to Baker and Gompers (2003) and finally NAV per share, shares float, board size, offer price and board age similar to Aggarwal et al. (2009), Bansal and Khanna (2012), Certo et al. (2001), Gokkaya et al. (2015) and Yang et al. (2011) respectively.

Regression results demonstrate the presence of a significant and positive relationship between ESG score and day 1 ARs (at 10% significance level). High ESG score firms

are characterized with high sustainability and are hence considered as high quality firms (Hanson and Dhanuka, 2014).

The above table also suggests that diversity and board size are positively significant to day 1 ARs (at a 1% significance level). Board age also proved to have a positive and significant impact on day 1 ARs but at a 5% significance level.

Expressed in terms of the variables used in the table, the regression model's equation is:

$$Day\ 1\ ARs\ predicted = -0.4689 + 0.0013\ ESG\ score + 0.0452\ debt\ to\ capital + 0.0003\ NAV\ per\ share + 0.002\ diversity - 0.0006\ volatility + 0.0247\ Board\ size - 0.0023\ Offer\ price - 0.0016\ Firm\ age + 0.0025\ Board\ age + 0.0066\ Market\ capitalization \quad (20)$$

4.3.5. Model V

Day 1 Ars	Coef.	T	P-value
Board compensation	0.0233*	1.7500	0.0880
Debt to capital	0.0625	1.1800	0.2440
NAV per share	0.0001	0.1800	0.8600
Shares float	0.0000	-1.1800	0.2450
Diversity	0.0015*	1.7400	0.0900
Volatility	-0.0009	-1.2300	0.2280
Market capitalization	0.0045	0.3700	0.7130
Offer price	-0.0003	-0.1600	0.8710
Firm age	-0.0007	-0.5300	0.6030
Board age	0.0016	1.1100	0.2730
_cons	-0.4905	-1.5700	0.1250

Table 12: Regression analysis for model V

To take the effect of the IPO and firm characteristics into consideration, we included the following control variables into the regression model: Firm age and market capitalization similar to Li (2013), in addition to the following variables: debt to capital, NAV per share, shares float, diversity, volatility, board age and offer price similar to Bauer et al. (2010), Bansal and Khanna (2012), Welbourne et al. (2007), Brobert (2016), Yang et al. (2011) and Ibboston et al. (1994).

From the regression result, board compensation and diversity have a positive significant impact on day 1 ARs (at 10% significance level). Specifically, board compensations enhance a firm's performance in the short-run (Lazarides et al., 2009). By tying the board compensation to the performance, this will reduce principal-agent problems by aligning their interests (Fernandes, 2008).

Expressed in terms of the variables used in the table, the regression model's equation is:

$$Day\ 1\ ARs\ predicted = -0.4905 + 0.0233\ board\ compensation + 0.0625\ debt\ to\ capital + 0.0001\ NAV\ per\ share + 0.0015\ diversity - 0.0009\ volatility + 0.0045\ Market\ capitalization - 0.0003\ Offer\ price - 0.0007\ Firm\ age + 0.0016\ Board\ age \quad (21)$$

4.3.6. Model VI

Month 18 CARs	Coef.	T	P-value
CEO-FOUNDER	-0.1201	-1.44	0.154
Ln assets	-0.1216***	-3.6	0.001
Board age	-0.0075	-0.98	0.329
Firm age	0.0083	2.02	0.049
Offer price	0.0222**	2.44	0.018
Duality	-0.1238*	-1.68	0.099
_cons	1.0487**	2.15	0.036

Table 13: Regression analysis for model VI

To take the effect of the IPO and firm characteristics into consideration, we included the following control variables into the regression model: Ln assets and firm age similar to Baker and Gompers (2003). Other control variables used in similar articles are board age, offer price and duality similar to Yang et al. (2011), Dimovski and Brooks (2008) and Feng et al. (2005) respectively.

From this regression analysis, p value for ln assets is 0.001 which means there is negative and significant (at 1% significance level) relationship between the size of the

firm and month 18 returns. Also, firm age and offer price proved to have positive and significant impact on month 18 returns (at 5% significance level). The last significant variable in this model is Duality (at 10% significance level), but with a negative impact on month 18. However, we did not find any significant relationship between CEO-founder and month 18 CARs. Expressed in terms of the variables used in the table, the regression model's equation is:

$$Month\ 18\ CARs\ predicted = 1.0487 - 0.1201\ CEO - FOUNDER - 0.1216\ ln\ assets - 0.0075\ Board\ age + 0.0222\ Offer\ price + 0.0083\ Firm\ age - 0.1238\ Duality \quad (22)$$

4.3.7. Model VII

Month 30 CARs	Coef.	T	P-value
Board compensation	-0.0908*	-1.7900	0.0840
Debt to capital	0.0448	0.1500	0.8850
NAV per share	-0.0015	-0.2800	0.7780
Shares float	0.0000	-0.2300	0.8230
Diversity	-0.0023	-0.3700	0.7140
Volatility	-0.0147***	-4.0000	0.0000
Market capitalization	-0.1585**	-2.2300	0.0330
Offer price	0.0157	1.2700	0.2140
Firm age	0.0074	1.6700	0.1050
Board age	-0.0073	-0.7100	0.4850
_cons	5.3578***	3.6100	0.0010

Table 14: Regression analysis for model VII

To take the effect of the IPO and firm characteristics into consideration, we included the following control variables into the regression model: Debt to capital and market capitalization similar to Hartzell et al. (2008), in addition to other control variables such as: NAV per share, shares float, volatility, offer price, firm age, board age and diversity similar to Champers and Dimson (2009), Bansal and Khanna (2012), Dimovski et al. (2017), Dimovski and Brooks (2008), Tian (2012), Vroom and Pahl (1971) and Reutzel and Belsito (2015) respectively.

From the regression analysis, results suggest the presence of a negative and significant relationship between board compensation and month 30 CARs (at 10% significance level). Excess compensations on the long-run impact negatively returns since they promote principal-agent problems (Brick et al., 2006).

Moreover, volatility has a negative and highly significant impact on month 30 CARs (at 1% significance level). Another important finding is that Market capitalization has a negative significant impact on month 30's CARs (at 5% significance level). Expressed in terms of the variables used in the table, the regression model's equation is:

$$Month\ 30\ CARs\ predicted = 5.3578 - 0.0908\ board\ compensation + 0.0448\ debt\ to\ capital - 0.0015\ NAV\ per\ share - 0.0023\ diversity - 0.0147\ volatility - 0.1585\ Market\ capitalization + 0.0157\ Offer\ price + 0.0074\ Firm\ age - 0.0073\ Board\ age \quad (23)$$

4.3.8. Model VIII

Month 30 CARs	Coef.	T	P-value
ESG score	-0.0087*	-1.91	0.0640
Debt to capital	-0.0830	-0.32	0.7500
NAV per share	0.0008	0.13	0.8980
Diversity	-0.0001	-0.01	0.9910
Market capitalization	-0.1314**	-2.13	0.0410
Offer price	0.0214*	1.71	0.0970
Firm age	0.0095	2.49	0.0180
Board size	0.0149	0.31	0.7570
_cons	2.8163**	2.60	0.0140

Table 15: Regression analysis for model VIII

To take the effect of the IPO and firm characteristics into consideration, we included the following control variables into the regression model: Firm age, board size and diversity similar to Reutzel and Belsito (2015). Other control variables used in similar articles include: debt to capital and market capitalization similar to Hartzell et al. (2008), NAV per share and offer price similar to Aggarwal et al. (2009) and Gokkaya et al. (2015) respectively.

This regression model suggests that there is a negative significant relationship (at 5% significance level) between market capitalization and month 30 CARs. Also there is a positive and highly significant (at 5% significance level) relationship between firm age and month 30 returns. The model also found a positive significant relationship between offer price and month 30 returns (also at 10% significance level).

Another important finding from the regression results is the negative and significant relationship (at 10% significance level) between ESG score and month 30 returns which is similar to the findings of Gillan et al. (2010) and Demir (2013) who reported negative relationships between ESG scores and average abnormal returns in the long-run. Specifically, Gillan et al. (2010) found evidence that investors do not always favor ESG practices and rather prefer to avoid investing in firms that adopt strong ESG policies especially that ESG activities are sometimes viewed by investors as a pursue of the managers' own interests. As articulated by Renneboog et al. (2008), investors are not always keen to accept a lower financial performance in order to pursue social, corporate governance and ethical objectives. Expressed in terms of the variables used in the table, the regression model's equation is:

$$\begin{aligned} Month\ 30\ CARs\ predicted = {} & 2.8163 - 0.0087\ ESG\ score - \\ & 0.083\ debt\ to\ capital + 0.0008\ NAV\ per\ share - 0.0001\ diversity - \\ & 0.1314\ Market\ capitalization - +0.0214\ Offer\ price + \\ & 0.0095\ Firm\ age + 0.0149\ Board\ size \end{aligned} \tag{24}$$

	Number of observations	R-squared
Model I	46	0.2949
Model II	46	0.5649
Model III	44	0.5659
Model IV	46	0.5857
Model V	46	0.2795
Model VI	62	0.1643
Model VII	42	0.4498
Model VIII	42	0.2541

Table 16: Summary of the models' ANOVA tables

This table summarizes the ANOVA tables for the 8 regression models. Based on the R-squared reported in the table above, we can state that the variations in the independent variables included in each of the eight regression models explain a significant portion of the variations in the short run and long run IPO performance.

The R-squared reported in articles that are very similar in terms of research question and methodology range between 0.158 and 0.254 (Yan et al., 2011), 0.24 and 0.45 (Campbell et al., 2011) and between 0.49 and 0.53 (Hartzell et al., 2008). Given that the R-squared results reported in table 17 fall in that range, we can state that the model is satisfactory and reliable.

4.4. Conclusion

In an effort to investigate the relationship between corporate governance mechanisms and REIT IPOs performance, we regressed ARs and CARs against various independent

and control variables using multi linear regression models. We conclude from the results mentioned before, that corporate governance as measured by CEO-board member, diversity, board size, board age, ESG score and board compensation all proved to have a positive and significant impact on the short-run underpricing measured using first day abnormal returns. In other words, the presence of these variables increased REIT IPO underpricing. Other variables such as duality and CEO-founder proved to have a negative impact on first day abnormal returns. Moreover, we can conclude that corporate governance mechanisms positively influence long term IPO performance.

Chapter 5

Conclusions and Recommendations

5.1. Introduction

IPOs have long been mispriced and many research findings report IPO underpricing (Ritter, 1991). Market performance of IPOs varies from year-to year and across industries. This thesis investigates the impact of corporate governance mechanisms on the performance of 89 U.S. REIT IPOs from July 2003 till September 2016. Performance is measured using market adjusted excess returns in the short-run and cumulative abnormal returns in the long-run. This paper contributes to the literature related to corporate governance and REIT IPOs. We believe that the unique nature of REITs reduces uncertainty valuation compared to many industries (Buttimer et al., 2005).

Therefore, this chapter concludes the overall study. First, it will present an analysis of the main findings. Then, it will discuss the limitations of this research and finally it will suggest some recommendations for future research.

5.2. Analysis of the Findings

With respect to the aim of this thesis, some evidence supports the short-run underpricing phenomenon illustrated with positive average ARs, even though negative mean returns were detected during certain years. However, similar to a recent finding by Dimovski et al. (2017) from January 2010 to June 2015, the overall level of underpricing for U.S. REIT IPOs is not very significant. As for the long-run IPO performance, results show

that mean returns exhibit positive and high cumulative abnormal returns, which means that on average, REITs outperform the market benchmark.

Specifically, and in consistency with Welbourne et al. (2007), this study proves that the presence of women directors has a positive and significant impact on short-term IPO performance. Therefore, the presence of women on board increases the underpricing of REIT IPOs. A diverse board team usually leads to more creativity and innovation but most importantly diversity can help with problem-solving and risks that encounter financial institutions (Welbourne et al., 2007)

ESG score is positively related to the short-run underpricing of REIT IPOs which confirms the finding of Eccles et al. (2014) and Hanson and Dhanuka (2014) who believe that investors prefer to invest in firms that have high ESG scores because such firms are characterized with a high sustainability. Firms with high ESG scores are considered high quality firms. However, this is not the case in the long-run. ESG scores proved to negatively impact month 30 CARs similar to Renneboog et al. (2008) and Gillan et al. (2010). Investors do not always favor ESG practices and rather prefer to avoid investing in firms that adopt strong ESG policies especially that ESG activities are sometimes viewed by investors as a pursue of the managers' own interests.

Board age proved to be significantly positively related to the underpricing of REIT IPOs, since older directors are more committed to the firms, which is consistent with Yang et al. (2011). Also, old directors are usually more experienced and tend to avoid risky activities (Vroom and Pahl, 1971).

Companies also experience high and significant levels of underpricing when board size is high which is not consistent with the findings of Yermack (1996), Certo et al. (2001) and Dempere (2007). According to Baker and Gompers (2003) and Campbell et al. (2011), larger and complicated firms require larger board size to help with problem-solving and to enhance creativity. Moreover, large boards promote valuable expertise and enable effective monitoring and evaluation of the managers' actions and behaviors which improves the firm's performance (Dalton et al., 1999 and Li, 2013).

Another important finding in this thesis is the positive relationship between CEO-board member and underpricing. CEO-board participations help with the flow of information to the board of directors which is difficult otherwise since CEOs are involved in daily operations and are more aware of risks and opportunities encountering the firm (Brickley et al., 1997). Their positions allow them to collect and transfer important and needed information to the board in order to ensure an effective decision making process (Li, 2013).

We also found that the presence of Founder-CEO proved to negatively impact REIT IPO underpricing which is consistent with the finding of Noguera (2015), since it reduces board independency and in turn impacts negatively REITs performance. However, this is not the case for Non-REIT IPOs as confirmed by Baron et al. (1999) and Yang et al. (2011), where they find a positive relationship between Founder-CEO and underpricing.

Consistent with Feng et al. (2007) we find that board compensation is positively related to underpricing on day 1 since compensations improve a firm's performance (Lazarides et al., 2009). However, board compensation appears to have a negative effect on IPO performance for firms on the long-run as it exhibits a negative relationship with the

cumulative abnormal returns of month 30 similar to Brick et al. (2006). This negative relationship between firm performance and board compensation is mainly driven by principal-agent problems. Compensations can encourage directors to engage in risky activities and pursue their own benefits instead of maximizing shareholders' wealth.

As for duality, it exhibits a negative relationship with the first day abnormal returns and month 18 cumulative abnormal returns, which means that the presence of a CEO who is a chairman at the same time causes lower returns of REITs in the short-run and long-run similar to Feng et al. (2005) and Campbell et al. (2011). CEO-Chairman duality is the lowest degree of board independency which may hinders effective monitoring of the CEO's management and actions and consequently reduces firm valuation (Tuggle et al., 2010).

In conclusion, we find that U.S. REIT IPOs, mainly IPOs with relatively small asset size, exhibit short run underpricing and long run overperformance. Similar to Hartzell el al. (2008), we find that REITs that adopt strong corporate governance structures receive high IPO valuations in the short run. Specifically, we find that the more powerful the CEO is, the lower the short run IPO underpricing; and the higher the board compensation, which is associated with better performance (Lazarides et al., 2009), and the higher the ESG score (which is a sign of corporate governance quality (Hanson and Dhanuka (2016)), the higher the short run IPO underpricing is. Regarding the relation between IPO performance and corporate governance, we have mixed results.

5.3. Limitations of the Research

The first limitation is that more robustness tests could have been made by adding and removing regressors as suggested by Lu and White (2014). The second limitation is using only two performance measures, although there is a broad set of approaches that could be used to measure the impact of corporate governance mechanisms on IPO performance such as offer-to-open returns, open-to-close returns, buy and hold returns and wealth relative ratio.

5.4. Recommendations for Future Studies

The limitations of this research shed light on opportunities for further studies in this field. Improving results can be done using multiple approaches to measure both short and long-run IPO performance. Short-run performance measurement could be done using the followings: offer-to-open, open-to-close, open-to-hour and hour-to-close returns. Long-run performance could be measured using the three year buy and hold return (BHR), buy and hold abnormal returns (BHAR) and Wealth relative (WR). However, based on previous studies, the measurements used in this thesis are considered optimal.

Bibliography

Aggarwal, R., Bhagat, S., & Rangan, S. (2009). The impact of fundamentals on IPO valuation. *Financial Management, 38*(2), 253-284.

Ambrose, B. W., & Linneman, P. (2001). REIT organizational structure and operating characteristics. *The Journal of Real Estate Research, 21*(3), 141.

Anglin, P., Edelstein, R., Gao, Y., & Tsang, D. (2011). How does corporate governance affect the quality of investor information? The curious case of REITs. *Journal of Real Estate Research, 33*(1), 1-23.

Bairagi, R. K., & Dimovski, W. (2011). The underpricing of US REIT IPOs: 1996-2010. *Journal of Property Research, 28*(3), 233.

Baker, M., & Gompers, P. (2003). The determinants of board structure at the initial public offering. *The Journal of Law & Economics, 46*(2), 569-598.

Bancel, F., & Mittoo, U. R. (2009). Why do European firms go public? *European Financial Management, 15*(4), 844-884.

Bansal, R., & Khanna, A. (2012). Determinants of IPOs Initial Return: Extreme Analysis of Indian Market. *Journal of Financial Risk Management, 1(4), 68-74. Published Online December 2012 in SciRes (http://www.SciRP.org/journal/jfrm).*

Barber, B. M., & Lyon, J. D. (1997). Detecting long-run abnormal stock returns: The empirical power and specification of test statistics. *Journal of Financial Economics, 43*(3), 341-372.

Baron, J. N., Hannan, M. T., & Burton, M. D. (1999). Building the iron cage: Determinants of managerial intensity in the early years of organizations. *American sociological review*, 527-547.

Barry, C. B., & Jennings, R. H. (1993). The opening price performance of initial public offerings of common stock. *Financial Management, 22*(1), 54-63.

Bauer, R. M. J., Eichholtz, P. M. A., & Kok, N. (2010). Corporate governance and performance: The REIT effect. *Real Estate Economics, 38*(1), 1-29.

Bianco, C., Ghosh, C., & Sirmans, C. F. (2007). The impact of corporate governance on the performance of REITs: Yes, poor governance can destroy value. *Journal of Portfolio Management,* 175.

Block, L. R. (2012). *Investing in REITs: Real Estate Investment Trusts.* Hoboken, New Jersey: John Wiley & Sons, Inc.,

Bohren, O., & Odegaard, B. A. (2001). Corporate governance and economic performance in Norwegian listed firms. *Research Reports, 11.*

Brick, I. E., Palmon, O., & Wald, J. K. (2006). CEO compensation, director compensation, and firm performance: Evidence of cronyism? *Journal of Corporate Finance, 12*(3), 403-423.

Brickley, J. A., Coles, J. L., & Jarrell, G. (1997). Leadership structure: Separating the CEO and chairman of the board. *Journal of Corporate Finance, 3*(3), 189-220.

Brobert, G. (2016). The global REIT market: Initial-day performance of IPOs. *Journal of European Real Estate Research, 9*(3), 231-249.

Buttimer, R. J., Hyland, D. C., & Sanders, A. B. (2005). REITs, IPO waves and long-run performance. *Real Estate Economics, 33*(1), 51-87.

Cajias, M., Fuerst, F., McAllister, P., & Nanda, A. (2011). Is ESG commitment linked to investment performance in the real estate sector?

Cajias, M., Fuerst, F., McAllister, P., & Nanda, A. (2014). Do responsible real estate companies outperform their peers? *International Journal of Strategic Property Management, 18*(1), 11-27.

Campbell, R. D., Ghosh, C., Petrova, M., & Sirmans, C. F. (2011). Corporate governance and performance in the market for corporate control: The case of REITs. *Journal of Real Estate Finance and Economics, 42*(4), 451-480.

Carter, R. B., Dark, F. H., & Singh, A. K. (1998). Underwriter reputation, initial returns, and the long-run performance of IPO stocks. *The Journal of Finance, 53*(1), 285-311.

Carter, R., & Manaster, S. (1990). Initial public offerings and underwriter reputation. *The Journal of Finance, 45*(4), 1045-1067.

Certo, S. T., Daily, C. M., & Dalton, D. R. (2001). Signaling firm value through board structure: An investigation of initial public offerings. *Entrepreneurship: Theory and Practice, 26(2),* 33.

Chahine, S., & Filatotchev, I. (2011). The effects of corporate governance and audit and non-audit fees on IPO value. *The British Accounting Review, 43*(3), 155-172.

Chahine, S., & Goergen, M. (2011). The two sides of CEO option grants at the IPO. Journal of Corporate Finance, 17(4), 1116-1131.

Chahine, S., & Goergen, M. (2013). The effects of management-board ties on IPO performance. *Journal of Corporate Finance, 21*, 153-179.

Chahine, S., & Safieddine, A. (2011). Is corporate governance different for the Lebanese banking system? *Journal of Management & Governance, 15*(2), 207-226.

Chahine, S., & Tohmé, N. S. (2009). Is CEO duality always negative? An exploration of CEO duality and ownership structure in the Arab IPO context. *Corporate Governance: An International Review, 17*(2), 123-141.

Chahine, S., & Zeidan, M. J. (2014). Corporate governance and market performance of parent firms following equity carve-out announcements. *Journal of Management & Governance, 18*(2), 471-503.

Chambers, D., & Dimson, E. (2009). IPO underpricing over the very long run. *The Journal of Finance, 64*(3), 1407-1443.

Chan, S. H., Chen, J., & Wang, K. (2013). Are REIT IPOs unique? The global evidence. *The Journal of Real Estate Finance and Economics, 47*(4), 719-759.

Chan, S. H., Erickson, J., & Wang, K. (2003). *Real estate investment trusts: Structure, performance, and investment opportunities.* USA: Oxford University Press.

Clarkson, P. M., & Merkley, J. (1994). Ex ante uncertainty and the underpricing of initial public offerings: Further Canadian evidence. *Canadian Journal of Administrative Sciences/Revue Canadienne des Sciences de l'Administration, 11*(2), 54-67.

Dalton, D. R., Daily, C. M., Johnson, J. L., & Ellstrand, A. E. (1999). Number of directors and financial performance: A meta-analysis. *Academy of Management journal, 42*(6), 674-686.

Darmetko, T. (2009). Long – run performance of Initial Public Offerings in the Polish capital market. A review of the IPO stock performance and its determinants.

Demir, E. (2013). The impact of ESG aspects on future returns.

Dempere, J. M. (2007). Impact of corporate governance on the pricing and performance of bank IPOs. *Review of Business, 28*(1), 32.

Dimovski, B. (2016). Differences in underpricing of A-REIT IPOs and Australian property company IPOs. *Journal of Property Investment & Finance, 34*(2), 107-115.

Dimovski, B., Ratcliffe, C., & Keneley, M. (2017). Another piece of the puzzle: REIT IPO underpricing after the financial crisis. *Journal of Property Investment & Finance, 35*(3), 264.

Dimovski, W., & Brooks, R. (2004). Initial public offerings in Australia 1994 to 1999, recent evidence of underpricing and underperformance. *Review of Quantitative Finance and Accounting, 22*(3), 179-198.

Dimovski, W., & Brooks, R. (2006). The gender composition of boards after an IPO.*Corporate Governance: The International Journal of Business in Society, 6*(1), 11-17.

Dolvin, S. D., & Pyles, M. K. (2009). REIT IPOs and the cost of going public. *The Journal of Real Estate Finance and Economics, 39*(1), 92-106.

Eccles, R. G., Ioannou, I., & Serafeim, G. (2014). The impact of corporate sustainability on organizational processes and performance. *Management Science, 60*(11), 2835-2857.

Eichholtz, P., Kok, N., & Yonder, E. (2011). Real estate, governance, and the global economic crisis. (pp. 165-187). Philadelphia: University of Pennsylvania Press.

Fama, E. F. (1998). Market efficiency, long-term returns, and behavioral finance. *Journal of Financial Economics, 49*(3), 283-306.

Fama, E. F. and Jensen, M. C. (1983). Separation of Ownership and Control. *Journal of*

Fama, E. F., & Schwert, G. W. (1977). ASSET RETURNS AND INFLATION. *Journal of Financial Economics 5 (1977) 115-146.* North-Holland Publishing Company.

Feng, Z., Ghosh, C., & Sirmans, C. F. (2005). How important is the board of directors to REIT performance? *Journal of Real Estate Portfolio Management, 11*(3), 281.

Feng, Z., Ghosh, C., & Sirmans, C. F. (2007). Director compensation and CEO bargaining power in REITs. *The Journal of Real Estate Finance and Economics, 35*(3), 225-251.

Feng, Z., Price, S. M., & Sirmans, C. F. (2011). Review articles: An overview of equity real estate investment trusts (reits): 1993-2009. *Journal of Real Estate Literature, 19*(2), 307.

Fernandes, N. (2008). EC: Board compensation and firm performance: The role of "independent" board members. *Journal of multinational financial management, 18*(1), 30-44.

Fischer, H. M., & Pollock, T. G. (2004). Effects of social capital and power on surviving transformational change: The case of initial public offerings. *Academy of Management Journal, 47*(4), 463-481

Fishkind, R. J., & Kautz, R. C. (2001). *Estate and Business Succession Planning: A Legal Guide to Wealth Transfer* (Vol. 5). John Wiley and Sons.

Francis, B., Hasan, I., & Wu, Q. (2012). Do corporate boards affect firm performance? New evidence from the financial crisis. *Bank of Finland Research Discussion Papers.* Nov. 2012.

Ghosh, C., & Sirmans, C. F. (2003). Board independence, ownership structure and performance: Evidence from real estate investment trusts. *The Journal of Real Estate Finance and Economics, 26*(2), 287-318.

Giovannini, R. (2010). Corporate governance, family ownership and performance. *Journal of Management & Governance, 14*(2), 145-166.

Gokkaya, S., Highfield, M. J., Roskelley, K., & Dennis F Steele Jr. (2015). An examination of primary and secondary market returns in equity REIT IPOs. *The Journal of Real Estate Research, 37*(1), 23.

Gupta, K., Krishnamurti, C., & Tourani-Rad, A. (2013). Is corporate governance relevant during the financial crisis? *Journal of International Financial Markets, Institutions & Money, 23*, 85-110.

Gillan, S., Hartzell, J. C., Koch, A., & Starks, L. T. (2010). Firms' environmental, social and governance (ESG) choices, performance and managerial motivation. *Unpublished working paper.*

Handa, R., & Singh, B. (2015). Women directors and IPO underpricing: Evidence from indian markets. *Gender in Management: An International Journal, 30*(3), 186-205.

Hanson, D., & Dhanuka, R. (2016). The "Science" and "Art" of High Quality Investing. *Journal of Applied Corporate Finance, 27*(2).

Hartzell, J. C., Kallberg, J. G., & Liu, C. H. (2005). The role of the underlying real asset market in REIT IPOs. *Real Estate Economics, 33*(1), 27-50.

Hartzell, J., Kallberg, J., & Liu, C. (2008). The role of corporate governance in initial public offerings: Evidence from real estate investment trusts. *The Journal of Law & Economics, 51*(3), 539-562.

Haslam, C., Tsitsianis, N., Andersson, T., & Gleadle, P. (2015). Real estate investment trusts (REITS): A new business model in the FTSE100. *Accounting Forum, 39*(4), 239-248.

Hermalin, B. E., & Weisbach, M. S. (1998). Endogenously chosen boards of directors and their monitoring of the CEO. *The American Economic Review, 88*(1), 96-118.

Hull, J. (2012) Risk Management and Financial Institutions. Third edition. Hoboken: New Jersey.

Hull, J. (2012). *Risk management and financial institutions, Web Site* (Vol. 733). John Wiley & Sons.

Ibbotson, R. G., Sindelar, J. L., & Ritter, J. R. (1994). The market's problems with the pricing of initial public offerings. *Journal of applied corporate finance, 7*(1), 66-74.

Investor Bulletin: Real Estate Investment Trusts (REITs). SEC report (Dec. 2011). Investor Assistance (800) 732-0330. Retrieved from www.investor.gov .

Isaksson, M., & Kirkpatrick, G. (2009). Corporate governance: Lessons from the financial crisis: Failures in corporate governance contributed to the collapse in financial markets. What can be done? *OECD Observer,* (273), 11.

John, K., & Senbet, L. W. (1998). Corporate governance and board effectiveness1. *Journal of Banking & Finance, 22*(4), 371-403.

Khan, F. A., & Chowdhury, T. S. (2017). Modelling of IPO Underpricing in Bangladesh. *International Journal of Business and Social Research, 7*(7), 01-10.

Krause, R., Semadeni, M., & Cannella Jr, A. A. (2014). CEO duality: A review and research agenda. *Journal of Management, 40*(1), 256-286.

Law and Economics, 26(2):301-325.

Lazarides, T., Drimpetas, E., & Dimitrios, K. (2009). Ownership structure in greece: Impact of corporate governance. *IUP Journal of Corporate Governance, 8*(3/4), 75.

Levis, M. (1993). The long-run performance of initial public offerings: The UK experience 1980-1988. *Financial Management*, 28-41.

Li, Q. (2013). CEO Membership of New Zealand Boards: Determinants and Firm Performance.

Lin, C., & Chuang, C. (2011). Principal-Principal conflicts and IPO pricing in an emerging economy. *Corporate Governance: An International Review, 19*(6), 585-600.

Linck, J. S., Netter, J. M., & Yang, T. (2008). The determinants of board structure. *Journal of Financial Economics, 87*(2), 308-328. doi:10.1016/j.jfineco.2007.03.004

Loughran, T., & Ritter, J. R. (2000). Uniformly least powerful tests of market efficiency. *Journal of Financial Economics, 55*(3), 361-389.

Loughran, T., & Ritter, J. R. (2002). Why don't issuers get upset about leaving money on the table in IPOs? *The Review of Financial Studies, 15*(2), 413-443.

Lu, X., & White, H. (2010). Robustness Checks and Robustness Tests in Applied Economics. *Department of Economics University of California, San Diego.*

Macey, J. R. (2010). *Corporate governance: Promises kept, promises broken.* Princeton: Princeton University Press.

McGuinness, P. B. (2016). IPO firm performance and its link with board officer gender, family-ties and other demographics. *Journal of Business Ethics*

NAREIT. (n.d.). History of REITs. Retrieved from https://www.reit.com/what-reit/history-reits.

Nelson, T. (2003). The persistence of founder influence: Management, ownership, and performance effects at initial public offering. *Strategic management journal, 24*(8), 707-724.

Nestoras, C., (2007). Moody's Corporate Governance – Corporate Governance of Externally Managed REITs Presents Credit Risks. Nov. 2007. Report Number: 105778.

Noguera, M. (2015). The effect of founder CEOs on the structure of REIT board of directors and REIT performance. *Real Estate Finance, 31*(3), 123.

Pagano, M., Panetta, F., & Zingales, L. (1998). Why do companies go public? an empirical analysis. *The Journal of Finance, 53*(1), 27-64.

Perera,W.(2014). Evaluation of Market Performance of Initial Public Offerings (IPOs) and Its Determinants: Evidence from Australian IPOs.

PINTO, A. R. (2010). An overview of United States corporate governance in publicly traded corporations. *The American Journal of Comparative Law, 58*(1), 257-283.

Renneboog, L., Ter Horst, J., & Zhang, C. (2008). Socially responsible investments: Institutional aspects, performance, and investor behavior. *Journal of Banking & Finance, 32*(9), 1723-1742.

Reutzel, C. R., & Belsito, C. A. (2015). Female directors and IPO underpricing in the US.*International Journal of Gender and Entrepreneurship, 7*(1), 27-44.

Ritter, J. (1998). Initial Public Offerings. Contemporary Finance Digest Vol. 2, No. 1 (Spring 1998), pp. 5-30.

Ritter, J. R. (1991). The long-run performance of initial public offerings. *The Journal of Finance, 46*(1), 3.

Ritter, J. R., & Welch, I. (2002). A review of IPO activity, pricing, and allocations. *The Journal of Finance, 57*(4), 1795-1828.

Sagalyn, L. B. (1996). Conflicts of interest in the structure of REITs. *Real Estate Finance, 13*(2), 34.

Saidi, N. (2004). Corporate governance and business ethics in Lebanon. *Keynote speech on occasion of the launch of the RDCL Code of Business Ethics, Beirut, Lebanon.*

Shleifer, A., & Vishny, R. W. (1997). A survey of corporate governance. *The Journal of Finance, 52*(2), 737-783.

Sohail, M. K., & Nasr, M. (2007). Performance of initial public offerings in Pakistan. *International Review of Business Research Papers, 3*(2), 420-441.

Sorensen, D. P., & Miller, S. E. (2017). Financial accounting scandals and the reform of corporate governance in the United States and in Italy. *Corporate Governance: The International Journal of Business in Society, 17*(1), 77-88.

Stoll, H. R., & Curley, A. J. (1970). Small business and the new issues market for equities.*Journal of Financial and Quantitative Analysis, 5*(3), 309-322.

Study: Corporate governance and succession issues still hound GCC family businesses. (2017). *Al Bawaba*

Tajuddin, A. H., Abdullah, N. A. H., & Taufil-Mohd, K. N. (2017). The Influence of Firm Size on IPO Oversubscription: Evidence from Bursa Malaysia. *International Journal of Research in Management, Economics and Commerce, 7 (8), 45, 50.*

Tian, Y. (2012). An examination factors influencing under-pricing of IPOs on the London Stock Exchange.

Tuggle, C. S., Sirmon, D. G., Reutzel, C. R., & Bierman, L. (2010). Commanding board of director attention: Investigating how organizational performance and ceo duality affect board members' attention to monitoring. *Strategic Management Journal, 31*(9), 946-968.

Van Heerden, G., & Alagidede, P. (2012). Short run underpricing of initial public offerings (IPOs) in the Johannesburg Stock Exchange (JSE). *Review of Development Finance, 2*(3-4), 130-138.

Vancil, R. F. (1989). *Passing the baton: Managing the process of CEO succession* Academy of Management.

Vroom, V. H., & Pahl, B. (1971). Relationship between age and risk taking among managers.*Journal of Applied Psychology, 55*(5), 399-405.

Wang, K., Chan, S.H., & Gau, G.W. (1992). Initial public offerings of equity securities. *Journal of Financial Economics, 31*(3), 381-410.

Welbourne, T. M. (1999). *Wall Street likes its women: An examination of women in the top management teams of initial public offerings* (CAHRS Working Paper #99-07). Ithaca, NY: Cornell University, School of Industrial and Labor Relations, Center for Advanced Human Resource Studies. http://digitalcommons.ilr.cornell.edu/cahrswp/106

Welbourne, T. M., Cycyota, C. S., & Ferrante, C. J. (2007). Wall Street's reaction to women in IPOs: An examination of gender diversity in top management teams. *Group & Organization Management, 32*(5), 524.

Wiersema, M. F., & Bantel, K. A. (1992). Top management team demography and corporate strategic change. *The Academy of Management Journal, 35*(1), 91-121.

Williamson, O. (1984). Corporate governance. *Yale Law Journal, 93*(7), 1197.

Yang, Q., Zimmerman, M., & Jiang, C. (2011). An empirical study of the impact of CEO characteristics on new firms' time to IPO. *Journal of Small Business Management, 49*(2), 163-184.

Yermack, D. (1996). Higher market valuation of companies with a small board of directors. *Journal of Financial Economics, 40*(2), 185-211.