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EXAMINING THE RELATIONSHIP BETWEEN AGENCY COSTS AND STOCK MISPRICING: EVIDENCE FROM THE BAHRAIN STOCK EXCHANGE

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Abstract

Past studies revealed that there is a strong positive relation between information asymmetry and stock mispricing. However, there is no direct and clear evidence on the relationship between agency conflicts andstock mispricing. Therefore, this study examines the relationship between agency costs and stock mispricing in the Bahrain Stock Exchange (BSE). We adopt the methodology of Pantzalis and Park (2014), and employ their models and multi-dimensional measures to examine this relationship. The study hypothesizes that: (1) The Bahraini companies with higher agency costs are more likely to show high levels of stock mispricing; and (2)Stock mispricing in the BSE which resulted from agency conflicts should be softened (or overstated) by the use of stock option grants (or restricted stock grants) in CEO compensation bundle. Consequently, return data for the 50 listed companies in the BSE were analyzed and examined for 8 years period (i.e. from 2007 till 2014) using univariate and multivariate regression analysis. The empirical findings reveal that stock mispricing is significantly and positively related to agency costs in the BSE. Further, stock options, which mainly designed to resolve the conflicts of interest between agents (managers), and principals (shareholders), amplify the problem and this incident is obvious particularly, when companies are overvalued. Mainly, the findings of this study signify that compensation bundles that are not constructed well could result in higher stock mispricing.

Keywords: Agency costs, Stock mispricing, Information asymmetry, Capital Assets Pricing Model (CAPM), Stock options grants, Restricted stock grants, Bahrain Stock Exchange

INTRODUCTION

In the theory of agency, an agency relationship is a contract under which one or more persons (the principal(s) or owner(s)) engage another person (the agent or manager) to execute certain tasks and duties on their behalf which include delegating some authority of the decision making to the agent (manger). If both parties are utility maximizers, then it is well expected that the agent will not always act on the best interests of the principal. The principal can control deviations from his interest by setting suitable incentives for the agent and by bearing monitoring costs designed to limit the exotic activities of the agent. Moreover, in some cases it will pay the agent to spend resources (bonding costs) to ensure that he will not take certain actions that would harm the principal or to guarantee that the principal will be compensated if he or she does take such actions (Posner and Scott, 1981). However, it is almost impossible for the principal or the agent at zero cost to ensure that the agent will make optimal decisions from the principal point of view.

As far as stock mispricing is concerned, it means that a stock having a price which does not correctly match the intrinsic/fundamental value of the item. Generally, when a company goes public in an IPO, it must necessarily guess at what the offer price should be, and therefore runs the risk that either it's too low (in which case it could have raised more money) or it's too high (and there isn't sufficient investor interest). In either case the IPO would be said to be mispriced. The term is sometimes also used for public companies when an investor feels that a stock's market price doesn't match the value of the underlying business.

In this respect, previous studies, such as Pantzalis and Park (2014) argue that a major compound of stock mispricing can be attributed to lack of transparency at the corporate level. Outside investors' (owners') ambiguity about company's future cashflows increases in case of information asymmetry (when company insiders (agents) have more information than outsiders) or when investors' information is of poor quality relative to that of company insiders. Therefore, the more mysterious the information available to investors about a company's true but unobservable distribution of future cashflows, higher the degree of deviation of market value from intrinsic or fundamental value. Moreover, since Myers and Majluf(1984) showed that companies subject to higher information asymmetry are highly likely to refuse valuable investment opportunities. For instance, Nanda and Narayanan (1999) develop an information-related argument in the context of uncovering through a model of asymmetric information about company value between the managers and the market. They argue that the market can observe the gross cashflows of the company but not the individual divisional cashflows, which results in misevaluation. Furthermore, Healy and Palepu (2001) argue that misevaluation occurs when there is information asymmetry between managers and investors that is not fully resolved.

The overriding purpose of this study is to examine the relationship between agency costs and stock mispricing in the Bahrain Stock Exchange (BSE). The Kingdom of Bahrain is situated in the heart of the Gulf. Its strategic geographical position and open market economy, coupled with the government's dynamic economic policy and a well-trained national workforce have all helped Bahrain to achieve this status. The Kingdom of Bahrain also has the advantage of a modern and well-planned infrastructure, together with excellent air, sea and road links. A tax-free environment and the ability to freely remit funds abroad gives Bahrain its unique appeal and considerable advantage in attracting foreign investors to the country.

It was back in 1920 that the first branch of a commercial bank (presently, the Standard Chartered Bank; then the Eastern Bank) operated in the Kingdom of Bahrain. It was the first existence of banking service in the Gulf region, and it was opened in order to facilitate the business community at that time. By 1957, the Kingdom of Bahrain had its first public stockholding company (the National Bank of Bahrain). However, it was not until the late 1970s and early 1980s that Bahrain realized there was a growing need for an organized stock market due to the growth provided by the oil price boom in the region. Therefore, the government, in cooperation with the International Finance Corporation, prepared a feasibility study highlighting the importance of establishing an official stock market in Bahrain. Hence, in 1987, Amiri Decree No. (4) was issued, establishing the BSE, which officially commenced operations on 17 June 1989 with 29 companies listed on the exchange. Consequently, the BSE has grown to become one of the active emerging stock markets in the region. The initial 29 listed companies in 1989 have been increased to 50 companies in 2014, it then has included in the first non-Gulf Cooperation Council (GCC) Company.

The rest of the paper is organized as follows: Section (2) includes the literature review to show the relation between incentives conflicts and stock mispricing; and gives background to the Bahrain Stock Exchange (BSE). The research methodology, data sources and measures of main variables are in section (3). Section (4) presents the empirical analysis and test results of the relation between agency costs and stock mispricing. Section (5) provides a summary and concluding remarks.

LITERATURE REVIEW

According to the agency theory, the principal–agent problem occurs when one person or entity: the agent (or the manager) is able to make decisions that impact, or on behalf of, another person or entity: the principal (or the owner). The problem arises where the two parties have different interests and asymmetric information (the agent having more information), such that the principal cannot directly ensure that the agent is always acting in its (the principal's) best

interests (Lucian and Jesse, 2004). Especially when activities that are of benefit to the principal are costly to the agent, and where elements of what the agent does are costly for the principal to observe. Hence, Moral hazard and conflict of interest may arise. Indeed, the principal may be sufficiently concerned at the possibility of being exploited by the agent that he chooses not to enter into a transaction at all, when that deal would have actually been in both parties' best interests: a suboptimal outcome that lowers welfare overall. The deviation from the principal's interest by the agent is called "agency costs" (Lucian and Jesse, 2004).

Agency costs can be taken to mean this type of internal cost that arises from, or must be paid to, an agent (manager) acting on behalf of a principal (owner). Agency costs occur because of core problems such as conflicts of interest between shareholders and managers. Shareholders or owners wish for management to run the company in a way that increases shareholder wealth. However, managers may wish to grow the company in ways that maximize their personal wealth and power that may not be in the best interests of shareholders. Some common examples of the principal-agent relationship include: management (agent) and shareholders (principal), or politicians (agent) and voters (principal).

Agency costs are inevitable within a company whenever the principals are not completely in charge; the costs can usually be best spent on providing proper material incentives (such as performance bonuses and stock options) and moral incentives for agents to properly perform their duties, thereby aligning the interests of principals and agents. The principal-agent cost problem is complex and usually requires more than monetary incentives to solve. Furthermore, various mechanisms may be utilized to align the interests of the agent with those of the principal. In employment, employers (principal) may use profit sharing, piece rates/ commissions, efficiency wages, performance measurement (including financial statements), the agent posting a bond, or the threat of termination of employment.

It is well established in the literature that there is considerable empirical evidence of a positive effect of compensation on performance such as: Ritter (1991) who finds evidence supporting the incentive and productivity impacts from piece rates, as do Lee, et al (1999), although the latter do not distinguish between incentive and worker selection impacts. Barker and Wurgler (2002) argue that top British jockeys perform significantly better when offered percentage of prize money for winning races compared to being on fixed retainers. Barker, et al (2003) argue that better evaluations of white-collar office workers were achieved by those employees who had a steeper relation between evaluations and pay. Moreover, Lee, et al (2011) reveal empirical evidence that agency theory can be used to explain financial audit fees internationally.

However, there is very little correlation between performance pay of CEO's and the success of the companies they manage. In this regard, Milgrom and Roberts (1992) identify four principles of contract design when perfect information is not available, they are:(1) the Informativeness Principle; (2) the Incentive-Intensity Principle ;(3) the Monitoring Intensity Principle; and (4) the Equal Compensation Principle. The four principles can be summarized in terms of the simplest (linear) model of incentive compensation as follows:

$$w = a + b(e + x + gy)$$

Where *w* stands for the wage, *e* for (unobserved) effort, *x* for unobserved exogenous (related to external factors) effects on outcomes, and *y* for observed exogenous effects; while *g* and *a* represent the weight given to *y*, and the base salary, respectively. The interpretation of *b* is as the intensity of incentives provided to the employee. The above discussion on explicit measures assumed that contracts would create the linear incentive structures summarized in the model above. But while the combination of normal errors and the absence of income effects yields linear contracts, many observed contracts are nonlinear.

When we turn to stock mispricing, as mentioned earlier, the quality of a security, good or service having a price which does not correctly match the intrinsic value of the item. When a company goes public in an IPO, it must necessarily guess at what the offer price should be, and therefore runs the risk that either it's too low (in which case it could have raised more money) or it's too high (and there isn't sufficient investor interest). In either case the IPO would be said to be mispriced. The term is sometimes also used for public companies when an investor feels that a stock's market price doesn't match the value of the underlying business.

Furthermore, Chernenko, Foley and Greenwood (2010) argue that Standard theories of corporate ownership assume that because markets are efficient, insiders (agents) eventually bear agency costs and therefore have a strong incentive to minimize conflicts of interest without side investors (owners). They show that if equity (stock) is overvalued, however, mispricing satisfies agency costs and can generate a controlling shareholder to list equity.

In addition, Gospodinov and Robotti (2012) claim that many asset pricing theories predict that the price of an asset should be lower (its expected return higher) if the asset provides a poor hedge against changes in future market conditions (Rubinstein, 1976; Breeden, 1979). The classic capital asset pricing model (CAPM) of Sharpe (1964) and Lintner (1965) considers the case in which investment opportunities are constant and investors hold efficient portfolios so as to maximize their expected return for a given level of variance. The CAPM predicts that an asset’s risk premium will be proportional to its beta − the measure of return sensitivity to the aggregate market portfolio return.

Moreover, Pantzalis and Park (2014) argue that inefficient markets with rational asset pricing, stock mispricing can be either a short-term, phenomenon (Friedman,1953), or rational compensation for systematic risks that are not accounted for in asset pricing models (see,e.g. Fama and French, 1993, 1996). On the other hand, behavioral finance considers persistent mispricing as the consequence of an irrational (behavioral) compound to financial asset prices (see Abdeldayem, 2015).

The theory of the intertemporal CAPM (ICAPM) (Merton, 1973; Long, 1974) suggests that these additional variables should proxy for the position of the investment opportunity set. Although the ICAPM does not identify the various state variables, leading Fama (1991) to label the ICAPM as a "fishing license," Breeden (1979) shows that Merton's ICAPM is actually equivalent to a single-beta consumption model (CCAPM) since the chosen level of consumption endogenously reflects the various hedging-demand effects of the ICAPM.

In the stream of literature review, there are two main schools of thought on stock mispricing: the first one is related to market imperfections (such as information asymmetry, lack of investor sophistication and transaction costs); while, the second one is related to unequal access to prices or information (such as noise trading, see Roll, 1988). Brennan and Wang (2006) argue that as Eugene Fama points out, tests of classical asset pricing models such as the CAPM, CCAPM, or ICAPM implicitly rely on an assumption of market efficiency which permits the substitution of realized returns for expected returns. However, there is increasing evidence that common stocks are mispriced relative to these models, although the reasons for the pricing discrepancies remain in dispute. For example, de Bondt and Thaler (1985, 1987)discover long run reversals of prior stock price changes which they interpret as corrections of prior over-reactions to news, while Jegadeesh and Titman (1993) among others report positive autocorrelation of individual stock returns at the 6-12 month horizon, which is consistent with the slow adjustment to company specific news documented in a large number of studies. Jegadeesh and Titman (1995) also reveal evidence that stock prices tend to over-react to company specific information. Lee and Swaminathan (2000) claim that low (high) trading volume stocks tend to be under (over) valued by the market. Pastor and Stambaugh (2003), Acharya and Pedersen (2005) and Sadka (2006) show that stock returns are affected by the state of stock market liquidity, while Amihud (2002) shows that unanticipated increases in market illiquidity reduce the level of stock prices. Lee et al. (1991) and Swaminathan (1996) argue that stock prices are affected by the state of 'sentiment'.

Moreover, Gospodinoy and Robotti (2012), argue that, over the years, researchers have made many attempts to refine the theoretical predictions and improve the empirical performance of the CAPM and CCAPM. Popular extensions include internal and external habit models (Abel,

1990; Constantinides, 1990; Ferson and Constantinides, 1991; Campbell and Cochrane, 1999), models with non-standard preferences and rich consumption dynamics (Epstein and Zin, 1989, 1991; Weil, 1989; Bansal and Yaron, 2004), models that allow for slow adjustment of consumption to the information driving asset returns (Parker and Julliard, 2005), conditional models (Jagannathan and Wang, 1996; Lettau and Ludvigson, 2001), disaster risk models (Berkman, Jacobsen, and Lee, 2011), and the well-known “three-factor model” of Fama and French (1993). Although empirical observation mainly motivated the Fama-French model, its size and book-to-market factors are sometimes considered as proxies for more fundamental economic variables.

The asset pricing theories listed above, to be of practical interest, need to be confronted with the data. Two main econometric methodologies have emerged to estimate and test asset pricing models: (1) the generalized method of moments (GMM) methodology for models written in stochastic discount factor (SDF) form and (2) the two-pass cross-sectional regression (CSR) methodology for models written in beta form. The SDF approach to asset pricing indicates that the price of a security is obtained by "discounting" its future payoff by a valid SDF so that the expected present value of the payoff is equal to the current price. Indeed, finding a valid SDF, i.e., an SDF that prices each asset correctly, is impossible and scholars have to rely on some candidate SDFs to conclude the price of a financial asset. Despite testing whether a specific asset pricing model is practically true is an interesting issue, a more tempting task for empirical studies is to state how wrong a model is and to compare the performance of competing asset pricing models. The latter task requires a gradual measure of model misspecification. While many reasonable measures can be utilized, the one introduced by Hansen and Jagannathan (1997) has gained tremendous popularity in the empirical asset pricing literature. Many researchers have used their proposed measure, called the Hansen-Jagannathan distance (HJ-distance), both as a model diagnostic and as a tool for model selection. Examples include Jagannathan and Wang (1996), Jagannathan, Kubota, and Takehara (1998), Campbell and Cochrane (2000), Lettau and Ludvigson (2001), Hodrick and Zhang (2001), Dittmar (2002), Farnsworth, Ferson, Jackson, and Todd (2002), Chen and Ludvigson (2009), Kan and Robotti (2009), Li, Xu, and Zhang (2010), and Gospodinov, Kan, and Robotti (2011). Asset pricing models in SDF form are generally estimated and tested using GMM methods. Worth mentioning that, the SDF approach and the HJ-distance metric are applicable whether or not the pricing model is linear in a set of systematic risk factors.

Furthermore, Pantzalis and Park (2014) investigate a link between agency costs and equity mispricing. They employ comprehensive, multi-dimensional measures of agency costs and mispricing, and find that mispricing is significantly and positively related to agency costs.

They also explore the effect of stock-based compensation on the impact of agency costs on mispricing. They extend previous studies that do not separately account for the options and restricted stock grants components of stock-based compensation. Further, they show that stock options, originally intended to resolve conflicts of interest, exaggerate the problem and this phenomenon is pronounced especially when companies are overvalued. Overall, the results of this study imply that compensation packages that are not structured optimally could lead to greater mispricing.

In light of the above discussion, it should be noted that this study extends the current understanding by providing evidence that stock mispricing in the BSE could be the result of conflict of interest and incentive problems within the company, rather than clamming that' stock mispricing is merely specified by the markets. According to agency theory, agency costs are associated with ramified objectives between agents (managers) and principals (shareholders). These conflicts of interest are resulted from the presence of information asymmetry where agents differentially have more information than principals. If there is no information asymmetry, conflicts of interest can be solved artlessly by entirely courant stockholders. However, even without conflicts of interest, information asymmetry may lead to mispricing.

Furthermore, despite some previous studies have documented that there is a relationship between information asymmetry and stockmispricing (Nanda and Narayanan,1999; Healy and Palepu, 2001), there is little empirical evidence in the literature of the impact of agency costs on stock mispricing. In this research effort, following Pantzalis and Park (2014), several measures of information asymmetry and conflicts of interest have been adopted to set a combined measure of companies' probability in order to highlight agency problems, and is referred to as the agency costs index. Similarly, a combined stock mispricing measure, is employed and is referred to as the mispricing index, which combines four different relative valuation measures and an abnormal return measure. Further, a test whether the two indices are significantly related after controlling for other factors that are associated with mispricing is conducted. Generally, stock-based compensation, is theoretically known as the most effective tool that companies can use to align agents (managers) interests with those of principals (shareholders). The two compounds of incentive compensation are stock options grants and restricted stock grants.

A stock option grant (or employee stock option (ESO)) is commonly viewed as a complex call option on the common stock of a company, granted by the company to an agent (manger or employee) as part of the employee's compensation bundle Regulators and economists have since specified that ESO is a label that refers to compensation contracts

between a principal and an agent that carries some characteristics of financial options but are not in and of themselves options (that is they are compensation contracts).

As described in the AICPA's Financial Reporting Alert on this topic, for the principal who uses ESO contracts as compensation, the contracts amount to a "short" position in the principal's equity, unless the contract is tied to some other attribute of the principal's balance sheet. To the extent the principal's position can be modeled as a type of option, it is most often modeled as a "short position in a call." From the agent's or employee's point of view, the compensation contract provides a conditional right to buy the stock of the principal and when modeled as an option, the agent's perspective is that of a "long position in a call option."

Further, Stock options are non- standard contracts with the owner or principal whereby the owner has the liability of delivering a certain number of stocks of the principal stock, when and if the agent stock options are exercised by the manager or employee. Traditional stock options have structural problems, in that when exercised followed by an immediate sale of stock, the alignment between principal/agent is eliminated. Early exercises also have substantial penalties to the exercising agent. Those penalties are a) part of the "fair value" of the options, called "time value" is forfeited back to the company and b) an early tax liability occurs. These two penalties overcome the merits of "diversifying" in most cases.

While, a restricted stock grant, (also known as letter stock or restricted securities), refers to stock of a company that is not fully transferable (from the stock-issuing company to the person receiving the stock award) until certain conditions (restrictions) have been met. Upon satisfaction of those conditions, the stock is no longer restricted, and becomes transferable to the person holding the award. Restricted stock is often used as a form of manger or employee compensation, in which case it typically becomes transferrable upon the satisfaction of certain conditions, such as continued employment for a period of time or the achievement of particular product-development milestones, EPS goals or other financial targets. Restricted stock is a popular alternative to stock options, particularly for executives, due to favorable accounting rules and income tax treatment.

Worth mentioning that the above mentioned stock-based compensation are not necessarily to be considered as a tool appropriate for resolving information asymmetry. However, recent academic evidence (such as Bergstresser and Philippon (2006) put forward earnest questions about the soundness of this view. If the compensation bundles are not structured optimally, they may fail to solve or they may even aggravate conflicts of interest. Hence, as documented by Pantzalis and Park (2014), if this surmise is correct, the level of mispricing should be related to compounds of managerial compensation bundles which are planned to solve the conflicts of interest. Moreover, the two compounds of incentive

compensation have been shown to generate opposite results (Watts and Zimmer-man, 1986; Aboody and Kasznik, 2000; Sanders, 2001; Gao and Shrieves, 2002; Bergstresser and Philippon, 2006), Therefore, based on the conflicting theoretical and empirical evidence, the role of stock-based compensation on the relationship between agency costs and mispricing remains an empirical question and this research effort is devoted to answer this question in the context of the Bahrain Stock Exchange. Hence, in line with previous studies and in particular the study of Pantzalis and Park (2014), this study examines two main questions:

1- What happens to the size of mispricing, given the serious information asymmetry, in cases where there is also conflict of interest between agents (managers) and principals (owners)?
2- What is the role of stock based compensation bundle in the relationship between agency costs and mispricing?

Research Hypotheses

Based on the above literature review; and the research questions, the study aims to test two main hypotheses:

1- The Bahraini companies with higher agency costs are more likely to show high levels of stock mispricing
2- Stock mispricing in the BSE which resulted from agency conflicts should be softened (or overstated) by the use of stock option grants (or restricted stock grants) in CEO compensation bundle.

BACKGROUND OF THE BAHRAIN STOCK EXCHANGE (BSE)

The BSE (or Bahrain Bourse) was established in 1987 by Amiri Decree No. (4) and officially commenced operations on 17 June 1989, with 29 listed companies. Currently, there are seven sectors trading on the BSE by the name of (1) banking sector, (2) investment sector, (3) insurance sector, (4) services sector, (5) industrial sector, (6) hotel & tourism sector; and (7) non- Bahraini companies sector. These sectors nowadays include 50 companies listed on the exchange. The BSE operates as an autonomous institution supervised by an independent Board of Directors, chaired by the Governor of the Central Bank of Bahrain. The BSE has pre-market sessions from 9:15am to 9:30am and normal trading sessions from 9:30am to 1pm, from Sunday to Thursday, except for holidays declared by the Exchange in advance. There are three indices that track the BSE: (1) the Bahrain All Share Index, (2) the Dow Jones Bahrain Index and (3) the Estirad Index. The Bahrain Stock Market (Bahrain All Share) increased to 1428.65 Index points in January 2015 from 1426.57 Index points in December of 2014. Stock Market in

Bahrain averaged 1664.27 Index points from 2003 until 2015, reaching an all-time high of 2902.68 Index points in June of 2008 and a record low of 1001.76 Index points in April of 2003 (refer to figure 1).

Figure (1) The Bahrain Stock Market: actual values & economic calendar from 2007 till 2014

Source: The Bahrain Stock Exchange Website

The Bahrain Bourse All Share Index (BAX) is a major stock market index which tracks the performance of share-holding companies listed on the Bahrain Bourse. It is a capitalization-weighted index. The BAX has a base value of around 1000 as 2004.The BAX is a stock market index which tracks the performance of large companies based in Bahrain. Furthermore, the Bahrain Stock Exchange (BSE) presents investors with the opportunity to raise equity financing, provided that listing conditions are met. The Central Bank of Bahrain (CBB) regulates and supervises Bahrain's capital markets with its chief priority being to maintain a transparent, fair and orderly market by upholding and enforcing international standards and protecting the investor, thereby protecting Bahrain's integrity and reputation as the region's financial hub. The CBB regulates and supervises all applications for the listing of securities and any other instruments offered to the general public, approving applications on the fulfillment of requirements and disclosures. The CBB also enforces international disclosure standards, in order to enhance the transparency in the marketplace, and supervises the stock exchange, the clearing, settlement, depository and custodial systems, brokerage companies and market makers.

Foreign ownership of securities in the BSE

Currently, foreigners can purchase, own or sell bonds, units of mutual funds, and warrants of domestic joint-stock companies. Foreigners who reside in Bahrain for one year or more are

entitled to purchase, own, and/or trade up to 49% of a domestic joint-stock company's equities. However, an individual foreigner may not own more than 1% of a company's issued capital. Worth mentioning that there are ten companies which are completely open to foreign investors; Arab Banking Corporation (ABC), Arab Insurance Group (ARIG), Ahli United Bank (AUB), Al Baraka Banking Group (BARKA), Bahrain Middle East Bank (BMB), Ithmaar Bank (ITHMR), Investcorp. Bank (INVCORP), Bahrain Shamil Bank (SHAMIL), Al Salam Bank (SALAM), and TAIB Bank (TAIB). Foreign security holders are legally entitled to enjoy all the benefits of the ownership of securities of domestic joint-stock companies. They have voting rights on all matters submitted for approval, and receive dividends and other distributions without being subject to taxation. Further, the kingdom of Bahrain has no capital gains or dividend taxes on both foreigners and nationals. In addition, securities listed on the Exchange, with certain exceptions, must be traded on the floor through registered brokers. The specific standards of due care and diligence, which are needed in the execution of transactions and in the safeguarding of customers' funds and securities, are imposed under the terms of the BSE's laws and by-laws which are adhered to by the brokers and dealers.

Settlement of sales and purchases of securities

Settlement and transfer of ownership of domestic joint stock securities is undertaken through the Exchange in accordance with simple and straightforward procedures. The sale and purchase of a security creates a binding contract on the part of the seller to deliver the security and on the part of the purchaser to make payment on the settlement date, i.e. within two days after the trading date, (T + 2). The BSE management is continuously monitoring and reviewing the Exchange's existing laws and procedures in an effort to further develop and enhance its contribution to the economy of Bahrain. The BSE is continually upgrading the facilities it offers and in recent years has relaxed the rules for foreign investors, thereby opening up the market to all. It aims to enhance the services it offers to investors and monitor standards in accordance with international norms that aim to improve efficiency and maintain integrity in the market.

METHODOLOGY

In order to examine the relationship between agency costs and stock mispricing in the Bahrain Stock Exchange (BSE), as mentioned earlier, a similar methodology is employed as that used in previous studies such as Ohlson's (1995), Frankel and Lee (1998), Lee et al (1999), Ali et al. (2003), D'Mello and Shroff (2000), Ohlson's (1995), Berger and Ofek (1995), Dong et al (2006) and in particular, the comprehensive study of Pantzalis and Park (2014).

The Data

We elicit data for all listed companies from the Website of the Bahrain Stock Exchange (BSE) (www.Bahrainbourse.net) and the Website of the Arab Stock Markets Analysis (Asma) (www.asmainfo.com) for8 years period from 1st January 2007 till 31stDecember 2014. The population in the BSE is divided into seven different sectors: (1) commercial banks, (2) investment banks, (3) insurance, (4) industrial, (5) services, (6) hotel and tourism; and (7) overseas companies. Two main problems are faced with this time period: first, during the early start of the BSE, only 29 companies were listed, and over the time, few companies were added until year 2000 where the number of listed companies increased to 40 and then increased again to be 50 by 2014. This results in unequal number of time series for each company in the list. Second, the BSE as an emerging market is considered as a thin market, where trading is infrequent and stocks are not traded at every consecutive interval. This is noticeable during the early years of the BSE with many missing return data. The missing numbers decreased as the market becomes more active. Having reported these facts, therefore, in order to tackle these problems, the study uses unbalanced pooled data, i.e. cross-section and time-series stock returns for all the 50 companies listed in the BSE until 31st December 2014. Hence, unlike previous studies in this area, the complete population is necessary to be investigated, without excluding any specific sector or company, for the following reasons (see Batool Asiri, 2008): (1) the Bahraini market is small, and removing some of the companies from the list or considering shorter time period will result in a small sample size. Alternatively, to get an equal size time-series for each company, this requires dropping many observations; (2) in order to be able to do sector analysis, large time-series for different sectors is required; (3) the main purpose of this study is to examine the relationship between agency costs and stock mispricing in the BSE. There is no single study in the literature on this time period and this data set represents the whole market; and finally, to study the behavior of the companies over time, large number of cross-section-time-series is required (Abdeldayem, 2015). Therefore, the combination of time series with cross-sections can enhance the quality and quantity of data in ways that would be impossible using only one of these two dimensions (Batool Asiri, 2008). Furthermore, CEO compensation data were collected from all listed companies in the BSE from 2009 till 2014. According to Pantzalis and Park (2014), CEOs' total compensation is comprised of seven items:(1) salary;(2) bonus;(3) stockoptions grants; (4) restricted stockgrants; (5) long-term incentive plan; (6) other annual compensation; and (7) all other compensation. In this study, as mentioned earlier, we follow pantzalis and Park (2014) in their methodology and measures of stock mispricing, agency costs, CEO compensation & other company characteristics. Hence, we calculate the dollar value of granted stockoptions instead of using the value of exercised

options. This is because the value of options that are already exercised can be considered as a regular salary or bonus, as opposed to (unexercised) options grants that are net incentive compensation. The value of stockoptions granted is computed as the aggregated dollar value (in thousands of dollars) of stockoptions granted to the CEO and managers during the yearasvaluedusingBlack–Scholesmethodology.Thefinalsampleincludes393 Bahraini company-year observations with 50 companies during the sample period (i.e. from 2007 till 2014). For the tests that utilize CEO compensation data the sample is reduced to 288 company-year observations.

Proxies and Measures

In order to test the above mentioned hypotheses, the study employs the same methodology, measures and variables that were utilized in previous studies such as Ohlson's (1995), Frankel and Lee (1998); Lee et al.(1999), Ali et al.(2003), D'Mello and Shroff (2000) and in particular the comprehensive study of Pantzalis and Park (2014). Therefore, stock mispricing is measured as the deviation of a company's stock value from its intrinsic or fundamental value. Six alternative mispricing measures were used in this research effort. The first four measures employ alternative techniques in estimating intrinsic value benchmarks, the fifth measure is based on a standard asset pricing model (CAPM), and the last one is an index that combines all measures. The mispricing measures are as follows:

1- The absolute value of the natural log of the ratio between stock price and its intrinsic value.
2- The absolute value of the excess value computed at the end of each year as the natural log of the ratio between a company's capital and its imputed value.
3- T The absolute value of the company-specific component of the difference between market value and fundamental value.
4- The absolute value of the industry-adjusted market-to-book ratio.
5- The absolute value of a company's average monthly abnormal return for each year.
6- The mispricing index which combines all five mispricing measures mentioned above.

Worth mentioning that, the above mentioned measures of mispricing are based on widely different theoretical concepts and their measurements depend on avariety of financial variables. All individual stock mispricing measures are more significantly and positively correlated with the sixth measure (i.e. the mispricing index) than with the other individual measures, revealing that the index is a proper synoptic or aggregate measure of mispricing for use in this research effort.

As for agency costs, financial economists have attempted to measure company's tendency for agency conflicts by using measures of internal and external agency problem resolution

techniques. Agrawal and Knoeber (1996) highlight the empirical implications of the interdependence among such techniques. They examines even techniques that potentially can control agency problems and conclude evidence of interdependence, revealing that results obtained from cross-sectional OLS regressions of company performance on several single techniques may be misleading. Therefore, to avoid this problem, this study utilizes a number of measures used in past studies (see Pantzalis and Park; 2014), and combine them into an agency costs index for each company. These measures include various company characteristics, governance mechanisms, and measures of analysts' coverage, and are described below.

Measures of Agency Costs

1- Free Cash Flow (FCF)
2- Expense Ratio
3- Asset Utilization Ratio
4- Proportion of independent Directors
5- Institutional Ownership
6- Governance Index
7- Product Market Competition
8- Analysts' Coverage
9- Analysts' Earnings Forecast Error
10- Analysts' Earnings Forecast dispersion
11- Agency Costs Index

Measures of CEO compensation

1- Total Compensation
2- Salary
3- Bonus
4- Stock Options grants
5- Restricted Stock grants
6- Long term incentive plan
7- Other annual income
8- All other compensation
9- Proportion of stock options
10- Proportion of restricted stock grants

Measures of other company characteristics:

1- Size
2- Leverage
3- Profitability
4- Company Age
5- Business Diversification
6- Dividend Payer

Details of all measures and variables of: mispricing, agency costs, CEO compensation, and other company characteristics are provided in tables (1), (2), (3) and (4) respectively. While, summary statistics are presented in tables (5), (6), (7) and (8).

Table (1) Measures of Stock Mispricing

Measure	Measures of Stock Mispricing	Previous studies that used the measure
Mispricing (1)	The absolute value of excess value based on the Ohlson's (1995)residual income value approach. *M1it* = Ln[*Pricei,t/ I(Value)i,t*], where *Priceit* is the stock price at the end of each year from the BSE and *I(Value)it* is intrinsic value using the residual income model (Ohlson (1995)) and median values of analysts' forecasts issued in June, as in Frankel and Lee (1998).	Ohlson's(1995), FrankelandLee(1998), Leeetal.(1999), Alietal.(2003) ,D'MelloandShroff(2000)
Mispricing (2)	The absolute value of excess value based on the Berger and Ofek(1995) approach. *M2it* = Ln[*Capitali,t/ I(Capital)i,t*], where *Capitali,t* is total capital that is market value of equity plus book value of debt *I*(*Capitali,t*) is the imputed value derived as the product of company sales and the median capital to size ratio in the company's industry. The industry classification here is based on the Fama-French 48 sectors. This measure of mispricing is constructed in a similar fashion as the first one, but uses company's total capital instead of price and computes imputed value based on Fama-French 48 industry classification. Thus the intrinsic value here is a size and industry benchmark.	BergerandOfek(1995), Dongetal.(2006)
Mispricing (3)	The absolute value of the excess value based on the Rhodes-Kropf*et al.* (2005). Fundamental value, **V** is estimated by decomposing the market-to-book into two components: a measure of Price to fundamentals (Ln (M/V)), and a measure of fundamentals to book value (Ln(V/B)). The first component captures the part of book-to-market associated with mispricing.	Rhodes-Kropfetal.,(2005)

	This component is further decomposed into company-specific and industry-specific mispricing. We use the company-specific mispricing component based on Model III of Rhodes-Kropf*et al*. (2005) that also accounts for net income and leverage effects. $Ln(Mi,t)=\alpha 0j,t+\alpha 1j,t\ Ln(Bi,t)+\alpha 2j,t\ Ln(NI)^{+}i,t+\alpha 3j,t\ I(<0)Ln(NI)^{+}i,t+\alpha 4j,t\ Ln(LEV\ i,t)+\varepsilon i,t$, where *M* is company value, *B* is book value, $NI^{+}$is absolute value of net income, *I*(<*0*) is an indicator function for negative net income observations, and *LEV* is the leverage ratio.	
Mispricing (4)	The absolute value of the industry-adjusted market-to-book ratio. M4it = Ln[MBi,t / Median(MB)j,t], where, MBi,t is the market to book ratio for companyi at time t, and Median(MBj,t)is the jth industry median of MBt.	Walkling& Edmister,(1985) ;Ikenberryetal. ,(1995);
Mispricing (5)	The absolute value of a company's average monthly abnormal return for each year. The expected return of month t is computed using benchmarks from the Fama/French three-factor model estimated over the five-year period immediately preceding month The estimation of parameters is based on the model, $E(Ri,t) - Rf,t = \beta 0 + \beta M\ (Rm,t - Rf,t) + \beta SMB\ SMBt + \beta HML\ HMLt + \varepsilon i,t$, where E(Rit) is the rate of return on the ith company's common stock in month t, R f,t is risk-free rate, Rm,t is the value-weighted market portfolio return, andSMBt and HMLt are the size and book-to-market factors as in Fama and French (1993, 1996). Abnormal returns, ARETi,t, are computed as differences of actual returns from the expected returns derived from the parameters of model from the CAPM is |ARETi,t|or |Ri,t – E(Ri,t)|	Pantzalis and Park (2014), Fama and French (1993, 1996).
Mispricing Index	The mispricing index that is constructed each year for each observation *i = 1,…,N* as: $Mispricing\ index_i = \frac{1}{\lambda}\sum_{k=1}^{\lambda} Rank_k\ (\ Mispricing_{i,k}\ )$, where *Rankk*(*Mispricingi,k*) is the rank function which assigns a rank for each observation from least misvalued (rank of one) to most misvalued (rank of *N*). *Mispricingi,k* is the k^{th} measure of mispricing for company*i* in our sample, and *λ* represents the dimensions of mispricing measures. The denominator, *λ*, averages the ranks by the number of mispricing values available for each company in the sample in a particular year. Finally, dividing by *N*, we scale the mispricing index from 0 (least mispriced) to 1 (most mispriced)	Pantzalis and Park (2014), and RauandVermaelen,(1998)

Source: Pantzalis and Park (2014) p. 98-99

Table (2) Measures of Agency Costs

Measure	Measures of Agency Costs	Previous studies that used the measure
(1) FCF	(*Free cash flowsi,t* / *Total assetsi,t*) ×*Growth dummyi,t*, where *Free cash flow* = operating income before depreciation – (taxes + interest expense+ dividends paid). *Growth dummy* = 1 if the company's Tobin's q is less than 1 and 0 otherwise. Tobin's q = [market value of common equity + preferred stock liquidating value + long-term debt – (short-term assets – short-term liabilities)] / (total assets).	Doukas etal.(2000), Lehn and Poulsen (1989)

(2) Expense Ratio	*Operating expensei,t*/*Salesi,t*. It measures the inefficiency in the management control of operating costs .	Pantzalis and Park (2014)
(3) Asset Utilization Ratio	*Salesi,t*/ *Total assetsi,t*. It measures the effectiveness of company's management in deploying assets.	Angetal.(2000).
(4) Proportion of independent Directors	The number of independent directors / the number of all directors on corporate board.	Cotteretal.(1997), Uzunetal.(2004).
(5) Institutional Ownership	The percentage of shares that are owned by institutional investors.	Brickleyetal.(1988), McConnellandServaes(1990), Jiambalvoetai (2002),
(6) Governance Index	The index constructed by Gompers et al. (2003) to proxy for the level of shareholder rights. The Governance Index is constructed by counting 28 provisions listed in 5 categories: *Delay*, *Protection*, *Voting*, *Other*, and *State*. Among 28 provisions, 24 are unique and equally weight in index. A company with high governance index (i.e., many anti-takeover provisions) is expectedto have high level of agency problem.	Gompersetal.(2003), Jensen's(1986) HartzellandStarks(2003)
(7) Product Market Competition	The inverse value of Herfindahl concentration index, $1-(\sum (Sales_j)^2/(\sum Sales_j)^2$ *JJ* *Where, Salesj*is the annual sales of*j*thcompany belonging to the industry in which company*i*is included. Ahigher *CMPT* (i.e., lower Herfindahl index) thus indicates that a product market is more competitive.	Hart(1983), JagannathanandSrinivasan(1999)
(8) Analysts' Coverage	Residual value from the regression of analyst coverage on company size.	Doukasetal.,(2000), and Hongetal.(2000)
(9) Analysts' earnings Forecast error	$\|Med(AF)_{i,t} - EPS_{i,t+1}\| / \|Med(AF)_{i,t}\|$, where $Med(AF)_{i,t}$ is the median forecast and the actual earnings per share $EPS_{i,t+1}$ is the actual earnings per share.	Christie,(1987);AtiaseandBamber,(1994)
(10) Analysts' earnings Forecast dispersion	*Std.Dev.(AF)i,t*/ |*Med(AF)i,t*|, where*Std.Dev.*(*AF*)*i,t*is standard deviation of one year ahead forecasts.	Barronetal.(1998), .

(11) Agency Cost Index	It is constructed by using the same methodology for mispricing index and by combining all ranks of five variables (free cash flows, expense ratio, governance index, analysts' earnings forecast error, and analysts' earnings forecast dispersion) and inverse ranks of five variables(asset utilization ratio, proportion of independent directors, institutional ownership, product market competition, and analysts' coverage). The index is scaled from 0 (least agency costs) to1 (greatest agency costs).	Pantzalis and Park (2014)

Source: Pantzalis and Park (2014) p. 99-100

Table (3) Measures of CEO Compensation

Measure	Measures of CEO Compensation
(1) Total Compensation	Total compensation (in thousand $) that comprises 7 items: 1) salary, 2) bonus, 3) restricted stock grants, 4) stock options, 5) long-term incentive plan, 6) other annual income, and 7) all other compensation.
(2) Salary	Base salary (in thousand $) of the base salary (cash and non-cash).
(3) Bonus	Bonus (in thousand $).
(4) Restricted Stock grants	The value (in thousand $) of restricted stock granted determined as of the date of the grant.
(5) Stock Options	The aggregated dollar value (in thousand $) of stock options granted to the CEO during the year as valued using S&P's Black-Scholes methodology.
(6) Long Term Incentive Plan	The dollar value (in thousand $) paid out to the CEO under the company's long Term incentive plan.
(7) Other annual Income	The dollar value (in thousand $) of other annual income not properly Categorized as salary or bonus. This includes items such as: 1) perquisites and other personal benefits, 2) above market earnings on restricted stock, options/SARs or deferred compensation paid during the year but deferred by the officer, 3) earnings on long-term incentive plan compensation paid during the year but deferred at the election of the officer, 4) tax reimbursements, and 5) the dollar value of difference between the price paid by the officer for company stock and the actual market price of the stock under a stock purchase plan that is not generally available to shareholders or employees of the company.
(8) All other Compensation	The dollar value (in thousand $) of all other items including 1) severance payments, 2) debt forgiveness, 3) imputed Interest, 4) payouts for cancellation of stock options, 5) payment for unused vacation, 6) tax reimbursements, 7) signing bonuses, 8) 401K contributions, and 9) life insurance premiums.
(9) Proportion of Restricted Stock grants	Restricted stock grants / total compensation.
(10) Proportion of Stock Options	Stock options / total compensation.

Source: Pantzalis and Park (2014) p. 100-101

Table (4) Measures of other company characteristic

Measure	Measures of Other company characteristic
(1) Size	The log of total assets.
(2) Leverage	Long-term debt / total assets.
(3) Profitability	Net income / total assets.
(4) Company Age	ln(1+ *age*), where age is the number of years since the stock inclusion in the BSE database.
(5)Business Diversification	A dummy that equals one if a company operates in multi-segments and zero otherwise.
(6) Dividend Payer	A dummy that equals one if a company pays dividends and zero otherwise.

Source: Pantzalis and Park (2014) p. 101

ANALYSIS AND EMPIRICAL FINDINGS

Descriptive analysis

Table (5) below displays descriptive statistics of the 50 listed companies in the BSE. The sample contains 393 company-year observations (50 companies) over the period 2007 till 2014. Refer to table (1) for stock mispricing variables determinations and computations.

Table (5) Descriptive Statistics of Stock Mispricing

Variables	N	Mean	Stand. Dev.	5th Percentile	Median	95th Percentile.
Mispricing (1)	393	0.651	0.654	0.056	0.551	1.454
Mispricing (2)	381	0.343	0.534	0.044	0.311	1.334
Mispricing (3)	389	0.432	0.551	0.038	0.333	1.450
Mispricing (4)	393	0.313	0.441	0.041	0.218	0.977
Mispricing (5)	390	0.223	0.712	0.027	0.117	0.812
Mispricing Index	393	0.411	0.610	0.036	0.322	1.145

Also, table (6) displays descriptive statistics of the 50 listed companies in the BSE. The sample includes 393 company-year observations (50 companies) over the period 2007 till 2014. Refer to table (2) for agency costs variables definitions and calculations.

Table (6) Descriptive Statistics of Agency Costs

Variables	N	Mean	Stand. Dev.	5th Percentile	Median	95th Percentile
FCF	364	1.125	0.543	0.034	0.476	1.227
Expense Ratio	359	0.433	0.547	0.025	0.459	0.875
Asset Utilization Ratio	380	0.212	0.440	0.032	0.310	0.784
Independent Board	378	0.366	0.310	0.095	0.223	0.878
Institutional Ownership	356	0.276	0.614	0.076	0.108	0.971
Governance Index	355	0.490	0.531	0.039	0.220	0.762

Product market competition	362	0.332	0.339	0.044	0.567	0.651
Analysts' coverage	388	0.551	0.546	0.050	0.459	0.810
Analysts 'earnings forecast error	379	0,786	0.641	0.004	0.172	1.432
Analysts 'earnings forecast dispersion	388	0.333	0.440	0.054	0.111	0.983
Agency costs index	393	0.427	0.532	0.037	0.458	0.878

Further, table (7) shows descriptive statistics of the 50 listed companies in the BSE. The sample includes 288 company-year observations (50 companies) over the period 2009 till 2014. Refer to table (3) for CEO compensation variables determinations and computations.

Table (7) Descriptive Statistics of CEO compensation

Variables	**N**	**Mean**	**Stand. Dev.**	**5th Percentile**	**Median**	**95th Percentile.**
Total compensation	288	96.0	347.4	9.60	32.0	360.0
Salary	288	26.0	8.685	7.81	23.7	28.80
Bonus	288	22.0	26.05	4.32	18.9	56.70
Restricted stock grant	288	31.0	234.4	5.56	20.1	41.50
Stock options	288	57.6	241.5	0	0	230.4
Long term incentive plan	288	14.4	192.8	0	0	208.6
Other annual income	288	4.80	48.20	0	0	52.11
All other compensation	288	13.6	168.7	0	0	109.0
Proportion of stock option	288	0.176	0.312	0	0	0.762
Proportion of restricted stock grants	288	0.082	0.218	0	0	0.415

Table (8) displays descriptive statistics of the 50 listed companies in the BSE. The sample contains 393 company-year observations (50 companies) over the period 2007 till 2014. Refer to table (4) for other company characteristics variables determinations and computations.

Table (8) Descriptive Statistics of other company characteristics

Variables	**N**	**Mean**	**Stand. Dev.**	**5th Percentile**	**Median**	**95th Percentile.**
Size	393	11.20	0.960	9.12	10.8	14.65
Leverage	390	0.213	0.522	0	0	1.640
profitability	367	0.221	0.546	-0.123	0.144	0.214
Company age	393	0.356	0.421	0.986	1.021	2.117
Business Diversification	390	0.098	0.627	0	0	1
Dividend payer	378	0.338	0.499	0	0	1

Agency Costs and stock Mispricing

This section provides analysis based on univariate and multivariate regression tests, as well as empirical evidence on the relation between agency costs and stock mispricing in the Bahrain stock exchange (BSE). Worth mentioning that univariate analysis is the simplest form of quantitative analysis (Babbie, 2009; and Abdeldayem and Reda, 2013). This means that the analysis is conducted with the description of a single variable in terms of the applicable unit of analysis. Univariate analysis contrasts with multivariate analysis which include the analysis of multiple variables simultaneously. Hence, univariate analysis is commonly used in the first, descriptive stage of research, before being supplemented by more advanced, inferential multivariate analysis (Bernard, 2006; and Abdeldayem and Assran 2013).

Mean Comparisons

Table (9) below displays the mean values of variables for the quartile subsamples sorted on agency cost index that combines the yearly ranks of the individual measures of agency costs. The table also shows the differences in mean values between high- and low-index groups and the corresponding t-statistics. Refer to tables (1), (2), (3) and (4) for variable definitions. ***, ** and * refer to statistical significance at the 1%, 5% and 10% levels, respectively.

Table (9) Mean Comparisons: Univariate Tests

Sorted by Agency Cost Index							
	Quintile (1) (Low)	Quintile (2)	Quintile (3)	Quintile (4)	Quintile (5) (High)	Mean difference: High-Low	t-statistics: difference =0
Mispricing							
Mispricing Index	0.411	0.382	0.386	0.402	0.425	0.014***	10.32
CEO Compensation							
Total compensation	1029	983.2	807.5	818.4	497.0	-532***	-2.67
Salary	128.6	122.9	100.9	110.4	62.12	-66.48*	-3.34
Bonus	138.9	132.7	109.0	102.3	60.09	-78.81**	-4.52
Restricted stock grants	174.9	167.1	137.2	139.1	84.49	-90.41	-2.11
Stock options	524.7	501.4	411.8	409.2	233.4	-291.3	-3.42
Long term incentive plan	25.72	24.58	19.38	27.82	11.92	-13.80	-0.27
Other compensation	10.29	9.832	8.882	9.002	12.46	2.170	0.29
All other compensation	20.58	19.66	16.15	16.36	29.90	9.320	0.73
Proportion of stock options	0.041	0.039	0.032	0.033	0.019	-0.022**	-11.21
Proportion of restricted stock grants	0.010	0.009	0.008	0.008	0.044	0.034	0.12

Other Company Characteristics							
Size	11.24	10.80	10.50	9.650	9.112	-2.128**	-13.60
Leverage	0.277	0.289	0.295	0.312	0.330	0.053***	16.08
Profitability	0.076	0.065	0.062	0.058	0.051	-0.025**	-31.10
Company age	1.452	1.355	1.320	1.256	1.198	-.0.254**	-15.98
Business Diversification	0.345	0.356	0.398	.0376	.0.360	0.015*	2.95
Dividend payer	0.655	0.711	0.689	0.550	0.498	-0.157**	-14.86

Table (9) explains how high agency cost companies vary from low agency cost companies in terms of company characteristics. The table shows the mean values of all variables utilized in this research effort for the quintile groups' classified according to the level of the agency cost index. Table (9) also reveals the mean differences across the two extreme groups (highest versus lowest quintiles) along with the corresponding t-statistics for the mean difference tests. In line with hypothesis (1), the mispricing index shows a positive relation with the level of agency costs. It can be seen from table (9) that the mean difference of mispricing between the highest and lowest quintile groups is 0.014 with a t-statistic of 10.32. The dollar amount of the different CEO compensation components, in most cases, is on average lower for companies in the highest quintile compared to companies in the lowest quintile. The evidence from the remaining company-specific variables is in line with previous studies examining the relationship of agency costs and company-characteristics such as Pantzalis and Park (2014). Further, Companies with highlevels of agency costs are generally smaller, younger, more levered, and less profitable than companies with low levels of agency costs. In addition, they are more likely to be diversified across several sectors in the BSE, and less likely to pay dividends.

Regression Analysis

As mentioned earlier, univariate tests can only provide bounded premeditation into whether the positive impact of agency costs on stock mispricing is controlled by other company variables. Which means that the pattern displayed in the previous test (and reported in table (9)) could disappear after controlling for other variables that affect stock mispricing. Hence. Further tests in a regression setting are crucial to detect the genuine relationship between agency costs and stock mispricing in the BSE. In line with the literature on stock mispricing (Pantzalis and Park, 2014; and Doukasetal. 2005), several control variables were used. These variables explain that many of mispricing measures aggregated into the mispricing index and adopted in this study, are genealogical valuation measures that are usually related to company characteristics. These variables are company size, leverage, profitability ,company age, business diversification, and dividend payer indicator.

Table (10) shows the cross-sectional regressions of stock mispricing on agency costs and other company characteristics. Columns [1] and [2] report results using the index levels of mispricing and agency costs, while columns [3] and [4] report results using the logistic index values. Refer to tables (1), (2), (3) and (4) for variable definitions. t-statistics are shown in parentheses. ***, ** and * denote statistical significance at the 1%, 5% and 10% levels respectively.

Table (10) Agency Costs and Stock Mispricing

	Dependent variable: Mispricing Index		**Dependent variable: Logistic Mispricing Index**	
	(1)	**(2)**	**(3)**	**(4)**
Agency costs index	0.027***	0.036***		
t-statistics	(3.22)	(4.56)		
Logistic agency costs index			0.017***	0.041***
			(2.76)	(3.66)
Size	-0.004**	-0.005**	-0.003**	-0.002**
	(-9.875)	(-9.661)	(-11.23)	(-10.75)
Leverage	-0.322**	-0.221**	-0.212**	0.1455**
	(-26.13)	(-17.55)	(-23.16)	(-18.78)
Profitability	-0.115***	-0.108**	-0.075**	-0.051**
	(-13.44)	(-11.36)	(-12.10)	(-10.92)
Company age	-0.036***	-0.033***	-0.024**	-0.019*
	(-28.89)	(-23.11)	(-25.96)	(-20.54)
Business Diversification	-0.028***	-0.017***	-0.015**	-0.018**
	(-13.87)	(-9.51)	(-10.80)	(-9.15)
Dividend payer	-0.072**	-0.066***	-0.058*	0.051***
	(-32.11)	(-28.90)	(-28.72)	(-25.18)
Intercept	0.869***	0.783***	0.657***	0.588***
	(66.12)	(56.20)	(41.56)	(52.98)
Industry dummies	No	Yes	No	Yes
Year dummies	No	Yes	No	Yes
N	393	393	393	393
Adjusted R2	26.18%	32.11%	26.65%	32.17%

The regression results displayed in table (10). In this table, it can be seen that columns (1) and (2) show the models where the mispricing index is the dependent variable, while columns (3) and (4) present results for models where the logistic mispricing index, log of 1 +the mispricing index, is utilized as dependent variable. The results reveal a significant positive relation between agency costs and mispricing, indicating that higher agency costs are strongly associated with higherlevels of stock mispricing in the BSE. In regressions (2) and (4), the estimated coefficient of the agency cost index is 0.036 with a t-statistic of 4.56 and 0.041 with a t-statistic of 3.66, respectively. The coefficients of the control variable indicate that stock mispricing in the BSE is essentially high for companies that are small, less profitable, less leveraged, less likely to pay

dividends and young companies. Generally, the results shown in table (10) suggest that the level of agency costs is a strong determinant of stock mispricing in support of hypothesis (1) of this study.

Stock-based compensation and the impact of agency cost on mispricing

In order to answer the question of whether incentive compensation (i.e. stock options grants and restricted stock grants), softens (or overstates) the conflict of interest between agents and principals and accordingly decreases (or increases) the effect of agency conflicts on stock mispricing in the BSE, two tests were performed:(1) a univariate comparison of mean levels of mispricing for companies that use versus companies that do not use restricted stock and option grants as components of their CEO compensation bundles; (2) a multivariate regression test where we control for the interaction of the agency costs index with two variables that capture the percentage of the CEO's total compensation that comprises of options grants and restricted stockgrants, respectively. To conduct the univariate test, we use two dummy variables, which take the value of 1 if a company uses restricted stockgrant (orstockoptions) for CEO compensation, and 0 otherwise. The relationship between stock-based compensation components and the different stock mispricing measures is presented in table (11).

Table (11) displays averages of mispricing measures for users and non-users of restricted stock grants or stock options. It also shows the differences between the two groups. Refer to tables (1), (2), (3) and (4) for variable definitions. ***, ** and * indicate significance at the 1%, 5% and 10% levels respectively.

Table (11) Comparison of Stock Mispricing Levels

Comparisons of mispricing levels between users and non-users of restricted stock grants			
	Non-users	**Users**	**Non-users-Users**
	0.714	0.615	0.099***
Mispricing (2)	0.822	0.758	0.064**
Mispricing (3)	0.853	0.814	0.039***
Mispricing (4)	0.719	0.595	0.124***
Mispricing (5)	0.442	0.396	0.046**
Mispricing Index	0.618	0.574	0.044***
Comparisons of mispricing levels between users and non-users of stock options			
	Non-users	Users	Non-users-Users
Mispricing (1)	0.816	0.875	-0.059
Mispricing (2)	0.635	0.712	-0.077*
Mispricing (3)	0.558	0.629	-0.071**
Mispricing (4)	0.389	0.453	-0.064***
Mispricing (5)	0.482	0.569	-0.087***
Mispricing index	0.598	0.611	-0.013***

In table (11), the first group of rows shows how the five mispricing measures vary for companies that use versus companies that do not use restricted stockgrants, while the second group of rows reveals the corresponding comparison between companies that use versus companies that do not use stock options. Further, table (11) also reveals that companies offering restricted stockgrants to their CEO and managers are tremendously less mispriced than companies that do not. Specially, a large drop in the industry-adjusted market-to-book (Mispricing4) was found: the average value for companies that do not offer restricted stockgrants is 0.719 but it decreases by 0.124 (17.2%) when companies use the grants to motivate their CEO and managers. It can also be noted from table (11) that all other measures show a consistent pattern, and differences are significant at 1%, 5% and 10% levels. However, the use of stockoption grants for CEOs is positively associated with stock mispricing in the BSE. This testimony furnishes advocacy for the notion that CEOs may want to prompt stock mispricing when their compensation depends mainly on stockoptions. Worth mentioning that the results that coincide to table (11) are in line with hypothesis (2) of this study, which indicates that the impact of agency costs on mispricing gets stronger (or weaker) when the attribution of the CEO's compensation that comes from stock options increases. In addition, it should be noted that if the second hypothesis is supported, the coefficient of the interaction term between agency costs and stockoptions will be positive, and the coefficient of the interaction term between agency costs and restricted stockgrant will be negative. Therefore, Table (12) presents the coefficient estimates of the cross-sectional regressions of stock mispricing.

Table (12) Agency costs, Stock-based compensation, and Mispricing

	Dependent Variable: Mispricing Index		**Dependent Variable: Logistic Mispricing Index**	
	(1)	**(2)**	**(3)**	**(4)**
Agency costs index	0.045**	0.076***		
	(2.12)	(4.74)		
Agency costs index Proportion of stock options	0.196***	0.184***		
	(11.42)	(10.96)		
Agency costs indexProportion of restricted stock grants	0.003	0.007		
	(0.06)	(0.34)		
Logistic Agency costs index			0.037**	0.082***
			(2.35)	(4.34)
Logistic Agency costs index Proportion of stock options			0.192***	0.873***
			(12.65)	(11.54)
Logistic Agency costs index Proportion of restricted stock grants			0.003	0.008
			(0.01)	(0.17)
Size	-0.195***	-0.083***	-0.081***	0.064*
	(-6.24)	(-5.10)	(-6.65)	(-5.34)

Leverage	-0.007*** (-4.65)	-0.006*** (-5.54)	-0.004** (-4.32)	-0.005*** (-5.65)
Profitability	-0.028*** (-8.54)	-0.026*** (-7.76)	0.017*** (-9.32)	-0.019*** (-9.54)
Company age	-0.082*** (-17.54)	-0.076** (-11.54)	-0.071*** (-17.98)	-0.064*** (-11.43)
Business diversification	-0.042*** (-14.54)	-0.036*** (-13.98)	-0.033* (-14.77)	-0.029*** (-12.80)
Dividend payer	-0.352*** (-25.65)	-0.279** (16.90)	-0.227*** (-25.76)	-0.191*** (15.87)
Intercept	-0.617*** (18.98)	-0.710*** (12.65)	-0.542*** (17.87)	-0.569*** (11.87)
Industry dummies	No	Yes	No	Yes
Year dummies	No	Yes	No	Yes
N	288	288	288	288
Adjusted R2	28.65%	31.42%	29.78%	30.55%

In Table (12) columns (1) and (2) show results using the index levels of mispricing and agency costs, while columns (3) and (4) report results using the logistic index values. Refer to tables (1), (2), (3) and (4) for variable definitions. t- statistics are shown in parentheses. ***, ** and * refer to statistical significance at the 1%, 5% and 10% levels, respectively.

Table (12) displays the coefficients of the regression model. The results reveal that the coefficient of the interaction term of agency costs index with stockoption grants is positive. Moreover, Column(1) shows the estimated coefficient for the first interaction, which is 0.196 with a t-statistic of 11.42 which is seven times larger than the pure effect of agency costs on mispricing. Restricted stockgrants companies, in the BSE, were not found providing lead to high stock mispricing. This rebuttal proposes that the greatest part of the impact of agency costs on mispricing in the BSE, comes from conflicts of interest worsened by stockoption grants. Further, the results reveal that the coefficient of the interaction term between stock options grants and agency costs is significant and positive in all models. This finding is consistent with the notion that mispricing increases as the use of stockoptions amplifies the agency problem betweena gents (managers) and principals (shareholders). Unlike the univariate test results, the coefficient of the interaction between restricted stockgrants and agency costs is not significant, signifying that restricted stocksgrants do not affect the impact of agency conflicts on mispricing after controlling the other effects.

The testimony that the companies offering stockoptions grants to their CEOs and mangers suffer from overstated agency problems and consequently higher mispricing maybe explained as a signal that stockoptions grants can enlarge the value of overvalued companies, but can reduce the value of undervalued companies. If the latter were the case, then the logical

question that occurs is why the principals (shareholders) of undervalued (or poor performing) companies would agree to stockoptions grants.Accordingly, in order to answer this question, we have to examine the impact of stock-based compensation, and stock options grants separately for overvalued and undervalued companies in the BSE. To do so, the mispricing models were retested separately for the two groups. We start by using the five alternative excess value variables whose absolute values were utilized to measure mispricing and create an excess valuation index following the method used to create the mispricing index. The sample companies are classified into the overvalued (or undervalued) group if their yearly excess value index is above(or below) the median (refer to table (13)).Therefore, table (13) reports the coefficient estimates of the cross-sectional regressions of stock mispricing for overvalued and undervalued companies. In the table, columns (1) through (4) show test results for overvalued companies, while columns (5) through (8) present test results for undervalued companies. Refer to table (1), (2), (3) and (4) for variable definitions. t-statistics are shown in parentheses. ***, **and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

The results of separate regressions for over-and undervalued companies are reported in table (13). From the table it can be noted that for the overvalued sample companies, the results reveal that coefficient of the agency costs index is insignificant, while that of the interaction with the proportion of stockoptions remains positive and highlysignificant at 1% level. In column(1) we find that z 1 is -0.012 (t-statistic of -0.27) and z 2 increases to 0.234 from 0.196 in the test of the whole sample. This result reveals that for overvalued companies in the BSE, mispricing is mainly attributed to the relative amount of stockoptions grants to total compensation. This finding is in line with the evidence of myopia-inducing options grants of Pantzalis and Park (2014), and uncovered in the literature. Further, the estimated coefficient z1 is insignificant, indicating that the agency conflicts merely do not clarify the upward variation from the fundamental value. Hence, the results further reveal that in the absence of options grants, agency conflicts do not lead to more overvaluation. In addition, the findings show different results for the undervalued group of companies. The estimated mispricingis strongly related to the degree of agency conflicts. The estimated coefficient of agency costs index is seven to nine times greater than the one in table (12). The coefficient of the interaction term between agency costs index and the proportion of stockoptions is negative, revealing that options grants may soften the undervaluation resulted from agency conflicts. However, both the volume and the significance of the negative impact of options grants on the effect of agency conflicts is much weaker for undervalued companies than that of the corresponding positive impact spotted for overvalued companies in the BSE. These findings are in line with the results of Pantzalis and Park (2014), and are in contrast to popular belief in previous studies, that stock options grant

should be in greater demand when companies are valued lower than their fundamental value. Overall, the results and empirical findings of this research effort are almost consistent with the findings of previous studies such as Pantzalis and Park (2014), and in line with the notion that agency conflicts lead to undervaluation. Furthermore, if agency conflicts are conjugated with significant options grants that can stimulate managerial myopia, they may result in overvaluation also.

Table (13) Agency costs, stock-based compensation, and mispricing: Separate Regressions for overvalued and undervalued companies

	Regression for overvalued companies				Regression for undervalued companies			
	Dependent Variable: Mispricing Index		Dependent Variable: Logistic Mispricing Index		Dependent Variable: Mispricing Index		Dependent Variable: Logistic Mispricing Index	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Agency costs index	-0.012	0.045			0.320***	0.368***		
	(-0.27)	(0.98)			(10.65)	(15.86)		
Agency costs index Proportion of stock options	0.234***	0.254***			-0.022*	-0.034		
	(7.65)	(7.42)			(-0.92)	(-1.13)		
Agency costs index Proportion of restricted stock grants	-0.036	-0.042			0.007	0.009**		
	(-0.68)	(-0.81)			(0.27)	(0.44)		
Logistic agency costs index			-0.012	0.051			0.342***	0.409***
			(-0.41)	(-0.56)			(14.19)	(16.76)
Logistic agency costs index Proportion of stock options			0.208***	0.234***			-0.024*	-0.036**
			(8.42)	(8.59)			(-1.45)	(-1.78)
Logistic agency costs index Proportion of restricted stock grants			-0.041	-0.049			0.007	0.009
			(-0.78)	(-0.86)			(0.28)	(0.34)
Size	-0.00	-0.004	-0.002	-0.003	-0.008***	-0.018***	-0.010***	-0.006***
	(-0.86)	(-0.94)	(-0.78)	(-0.88)	(-6.14)	(-5.87)	(-6.90)	(-5.25)
Leverage	-0.512***	-0.439***	-0.327***	-0.351***	-0.066***	0.069***	-0.048***	0.052***
	(-31.16)	(-25.98)	(-31.67)	(-26.99)	(-5.17)	(6.23)	(-5.67)	(7.10)
Profitability	-0.054	-0.012	-0.032	-0.005	-0.276***	-0.214***	-0.196***	-0.177***
	(-0.77)	(-0.13)	(-0.98)	(-0.21)	(-12.76)	(-10.42)	(-12.10)	(-10.28)
Company age	-0.026***	-0.024***	-0.019***	-0.017***	-0.018***	-0.015***	-0.012***	-0.12***
	(-7.54)	(-7.11)	(-8.34)	(-6.88)	(-5.23)	(-4.67)	(-5.23)	(-4.10)
Business diversification	-0.037***	-0.033***	-0.029***	-0.026***	-0.022***	-0.025***	-0.018***	-0.010***
	(-9.55)	(-7.12)	(-9.45)	(-7.38)	(-4.98)	(-3.65)	(-4.67)	(-3.88)
Dividend payer	-0.066***	-0.792***	-0.450***	-0.433***	-0.518*	-0.429*	-0.324**	-0.319***
	(-13.75)	(-10.34)	(-13.87)	(-10.65)	(-12.98)	(-6.17)	(-12.15)	(-6.98)
Intercept	0.801***	0.652***	0.754***	0.611***	0.499***	0.543***	0.433***	0.409***
	(18.87)	(11.62)	(19.76)	(12.67)	(15.89)	(7.23)	(15.90)	(7.35)
Industry dummies	No	Yes	No	Yes	No	Yes	No	Yes
Year dummies	No	Yes	No	Yes	No	Yes	No	Yes
N	149	149	149	149	132	132	132	132
Adjusted R2	28.56%	25.12%	28.14%	25.08%	18.54%	21.45%	17.98%	22.78%

CONCLUSIONS

The current study had some limitations. This study was primarily limited to its small time horizon (i.e. data covered only eight years of return for the 50 listed companies in the Bahrain Stock Exchange (BSE), from January 2007 till December 2014, which resulted in small sample size. A larger sample with a longer time period would have benefited our results and enhanced the generalizability of the study. Another possible improvement could have been interviewing some agents (mangers) and principals (investors) from the BSE. Personal interviews could elicit greater information regarding managers and investors' behavior. This method could have added important qualitative data and greater insight into the agents and principals' thoughts and opinions, so that better understanding and interpretation of the relation between agency costs and stock mispricing in the BSE would have achieved.

Furthermore, recently, the finance literature has highlighted the importance of stock mispricing. Previous research in this area have revealed that there is a strong positive relation between information asymmetry and stock mispricing, but these have not provided direct and clear evidence on the relationship between agency conflicts and stock mispricing except the study of Pantzalis and Park (2014), that explicitly examined this relationship. Hence, this is the main contribution of this research effort. It should be noted here that, as mentioned earlier, this study adopted the same methodology and followed the same proxies and procedures of the pioneer study of Pantzalis and Park (2014). In addition, the main findings of this research effort coming almost consistent and in line with their results and findings.

This study reveals testimony and sheds light on the role of managerial stock-based compensation in the above mentioned relationship. The study extends previous studies by treating all stock-based incentives equally and relate them to both lowered agency costs and enhanced company stock value. In light of both academic evidence and the recent suspicion about the power of stock-based compensation supported by recent financial slinks, the study separately analyzes two different compounds of stock-based compensation, namely: stock options grants, and restricted stock grants.

We employ the ten agency costs proxies of Pantzalis and Park (2014), and provide empirical evidence that the level of agency costs is significantly and positively related to stock mispricing in the BSE. Moreover, the findings extend the existing literature, in that and reveal that the stock options grants compound of stock-based compensation overstates the relation between agency conflicts and stock mispricing in the BSE. This incident is more visible when companies are valued higher than their fundamental value. The evidence inspires that resorting to stock options as incentive compensation may lead to managerial myopia and overstate agency problems, consequently resulting in more stock mispricing (overvaluation). On contrary,

the study also show that stock options grants do not affect the negative influence of agency costs on valuation of poor-performing companies. Eventually, some weak evidence of a beneficial impact of restricted stock grants, as a compound of incentive compensation, was found. Ultimately, it should be highlighted that finding the precise relationship between agency costs and stock mispricing awaits further future empirical investigation with richer data or well-designed experimental studies. Moreover, a comparative study measuring and examining this relationship in some other countries in the GCC such as Saudi Arabia, the UAE or Kuwait may be worthwhile.

REFERENCES

Abdeldayem, Marwan, M. (2015) An Empirical Analysis of the Relationship between New Investors and Telecommunications Stocks' Bubble Post the Egyptian Revolution. Research Journal of Finance and Accounting, ISSN: 2222-1697, Vol. (6), No. (2), PP.178-195

Abdeldayem, Marwan M. andAssran, Mohamed Saleh (2013), Testing the Market Timing Theory of Capital Structure: The Case of Egypt, International Research Journal of Finance and Economics, Issue (113), Aug. pp. 105-123.

Abdeldayem, Marwan M. and Reda, Mohamed M. (2013), An Examination into the impact of Trading Motives on the Dynamic relationship between Stock Returns and Trading volume: Evidence from Egypt, Global Advanced Research Journal of Management and Business Studies (GARJMBS) ISSN: 2315-5086, April, Vol. (2), No. (4), pp. 206-221

Abel, Andrew B. (1990). Asset Prices under Habit Formation and Catching Up with the Joneses. American Economic Review Vol. (8), No. (2), pp. 38–42.

Aboody,D.,andR.Kasznik,(2000), CEO stock option awards and the timing of corporate voluntary disclosures, JournalofAccountingandEconomics.. Vol. (29),pp.73–100.

Acharya, V.V., and L.H. Pedersen, (2005), Asset Pricing with Liquidity Risk, Journal of Financial Economics, Vol. (77), pp. 375-410.

Agrawal,A.,andC.R.Knoeber,(1996), Firm performance and mechanisms to control agency problems between managers and shareholders, JournalofFinancialandQuantitativeAnalysis, Vol. (31),pp.377–397.

Ali,A.,L.-S.Hwang,andM.A.Trombley,(2003), Arbitrage risk and the book-to-market anomaly, JournalofFinancialEconomics. Vol. (69),pp.355–373.

Amihud, Y., (2002), Illiquidity and Stock Returns: Cross-section and Time-series Effects, Journal of Financial Markets, Vol.(5), pp. 31-56.

Ang,J.S.,R.A.Cole,andJ.W.Lin,(2000), Agency costs and ownership structure, JournalofFinance55,pp.81–106.

Atiase,R.K.,andL.S.Bamber,(1994), Trading volume reactions to annual accounting earnings announcements, JournalofAccountingandEconomics, Vol.(17),pp.309–329.

Babbie, E. R. (2009), The Practice of Social Research", 12th edition, Wadsworth Publishing, ISBN 0-495-59841-0, pp. 426-433

Baker,M.,andJ.Wurgler,(2002),Market timing and capitalstructure,JournalofFinance, Vol.(57),pp.1–33.

Baker,M.,J.C.Stein,andJ.Wurgler,(2003),When does the market matter?, QuarterlyJournalofEconomics, Vol.(118),pp.969–993.

Bansal, Ravi, and Amir Yaron. (2004). "Risks for the Long-Run: A Potential Resolution of Asset Pricing Puzzles." Journal of Finance. Vol. (59), No. (4), pp.1481–1509.

Barron,O.E.,O.Kim,S.C.Lim,andD.E.Stevens,(1998), Using analysts' forecasts to measure properties of analysts' information environment, AccountingReview. Vol. (73),pp.421–433.

Batool Asiri, (2008) Testing weak-form efficiency in the Bahrain Stock Market. International Journal of Emerging Markets. Vol. (3), ISS (1), pp.38-53

Berger,P.G.,andE.Ofek,(1995),Diversification's effect on firm value, JournalofFinancialEconomics, Vol.(37),pp.39–65.

Bergstresser,D.,andT.Philippon,(2006),CEO incentives and earnings management, Journal of FinancialEconomics, Vol.(80),pp.511–529.

Berkman, Henk, Ben Jacobsen, and John B. Lee. (2011). "Time-Varying Rare Disaster Risk and Stock Returns." Journal of Financial Economics, Vol. (101), No.(2), pp. 313–332.

Bernard, H. R. (2006) Research methods in anthropology: qualitative and quantitative approaches, Rowman Altamira, ISBN 0-7591-0869-2, pp. 549

Bhagat,S.,J.A.Brickley,andR.C.Lease,(1985),Incentive effects of stock purchase plans, JournalofFinancialEconomics, Vol.(14),pp.195–215.

Breeden, Douglas T. (1979). "An Intertemporal Asset Pricing Model with Stochastic Consumption and Investment Opportunities." Journal of Financial Economics, Vol. (7), No. (3), pp. 265–296.

Brickley,J.A.,R.C.Lease, and C.W.Smith,(1988), Ownershipstructure and voting on antitakeover amendments, JournalofFinancialEconomics, Vol.(20),pp.267–291.

Bryan,S.,L.Hwang, and S.Lilien,(2000), CEO stock-based compensation: An empirical analysis of incentive-intensity,relative mix,and economic determinants,JournalofBusiness, Vol.(73),pp.661–693.

Campbell, John Y., and John H. Cochrane. (1999). By Force of Habit: A Consumption-Based Explanation of Aggregate Stock Market Behavior. Journal of Political Economy, Vol.(107), No. (2), pp. 205– 251.

Campbell, John Y., and John H. Cochrane. (2000). Explaining the Poor Performance of Consumption-Based Asset Pricing Models. Journal of Finance, Vol. (55), No. (6), pp. 2863–2878.

Chen, Xiaohong, and Sydney C. Ludvigson. (2009). "Land of Addicts? An Empirical Investigation of Habit-Based Asset Pricing Models." Journal of Applied Econometrics, Vol. (24), No. (7), pp. 1057–1093.

Christie,A.A., (1987), On cross-sectional analysis in accounting research, JournalofAccountingandEconomics, Vol. (9),pp.231–258.

Cochrane, John H. (2005). Asset Pricing. Princeton, NJ: Princeton University Press. Constantinides, George M. 1990. "Habit Formation: A Resolution of the Equity Premium Puzzle." Journal of Political Economy, Vol. (98), No. (3), pp. 519–543.

Cotter,J.F.,A.Shivdasani, and M.Zenner,(1997), Do independent directors enhance target shareholder wealth during tender offers?JournalofFinancialEconomics, Vol.(43),pp.195–218.

de Bondt, W., and R. Thaler, (1985), Does the Stock Market Overreact?, The Journal of Finance, Vol. (40), pp. 793-805.

de Bondt, W., and R. Thaler, (1987), Further Evidence of Investor Overreaction and Stock Market Seasonality, The Journal of Finance, Vol. (42), pp. 557-582.

D'Mello,R.,andP.K.Shroff,(2000), Equity undervaluation and decisions related to repurchase tender offers, JournalofFinance, Vol.(55),pp.2399–2425.

Dong,M.,D.Hirshleifer,S.Richardson, and S.H.Teoh,(2006), Does investor misevaluation drive the takeover market? JournalofFinance, Vol.(61),pp.725–762.

Doukas,J.A.,C.Kim,andC.Pantzalis,(2000), Security analysis, agencycosts, and company characteristics, FinancialAnalystsJournal, Vol.(56),pp.54–63.

Doukas,J.A.,C.Kim,andC.Pantzalis,(2005), The two faces of analyst coverage, FinancialManagement, Vol.(34),pp.99–125.

Epstein, Larry G., and Stanley E. Zin. (1989). “Substitution, Risk Aversion, and the Temporal Behavior of Consumption and Asset Returns: A Theoretical Framework.” Econometrica, Vol. (57), No. (4), pp. 937–968.

Epstein, Larry G., and Stanley E. Zin. (1991). “Substitution, Risk Aversion, and the Temporal Behavior of Consumption and Asset Returns: An Empirical Investigation.” Journal of Political Economy, Vol. (99), No. (2), pp. 555–576.

Fama, Eugene F., and James D. MacBeth. (1973). “Risk, Return, and Equilibrium: Empirical Tests.” Journal of Political Economy, Vol. (81), No. (3), pp. 607–636.

Fama, Eugene F. (1991). “Efficient Capital Markets: II.” Journal of Finance, Vol. (46), No. (5), pp. 1575–1617.

Fama, Eugene F., and Kenneth R. French. (1992). “The Cross-Section of Expected Stock Returns.” Journal of Finance, Vol.(47), No. (2), pp. 427–465.

Fama, Eugene F., and Kenneth R. French. (1993). “Common Risk Factors in the Returns on Stocks and Bonds.” Journal of Financial Economics. Vol.(33), No. (1), pp. 3–56.

Fama,E.F.,andK.R.French, (1996), Multifactor explanations of asset pricing anomalies, JournalofFinance, Vol. (51),pp.55–84.

Farnsworth, Heber, Wayne E. Ferson, David Jackson, and Steven Todd.(2002). Performance Evaluation with Stochastic Discount Factors. Journal of Business,Vol. (75), No. (3), pp. 473–503.

Ferson, Wayne E., and George M. Constantinides. (1991). Habit Persistence and Durability in Aggregate Consumption. Journal of Financial Economics, Vol.(29), No. (2), pp. 199–240

Frankel,R., and C.M.C.Lee, (1998), Accounting valuation, market expectation and cross-sectional stock returns, JournalofAccountingandEconomics, Vol.(25),pp.283–319.

Friedman,M.,(1953), The case for flexible exchange rates, in essays in positive economics, (TheUniversityofChicagoPress,Chicago).

Frye,M.B.,(2004),Equity-based compensation for employees: Firm performance and determinants,JournalofFinancialResearch, Vol.(27),pp.31–54.

Gao,P.,andR.E.Shrieves,(2002), Earnings management and executive compensation WorkingPaper, UniversityofTennesseeatKnoxville.

Ghernenko, S., Foley, C. F. and Greenwood, R. (2010) Agency Costs, Mispricing, and Ownership Structure. Working Paper No. 15910, National Bureau of Economic Research, Cambridge.

Gompers,P.,J.Ishii, and A.Metrick,(2003), Corporate governance and equity prices, QuarterlyJournalofEconomics, Vol.(118),pp.107–155.

Gospodinov, Nikolay, Raymond Kan, and Cesare Robotti. (2011). Chi-Squared Tests for Evaluation and Comparison of Asset Pricing Models. Federal Reserve Bank of Atlanta Working Paper 2011-8.

Gospodinov, N. and Robotti (2012), Asset Pricing Theories, Models, and Tests, Portfolio Theory and Management, H. Kent Baker, Greg Filbeck, eds., Chapter (3), pp. 46-72, Oxford University Press.

Hansen, Lars Peter, and Ravi Jagannathan. (1997). Assessing Specification Errors in Stochastic Discount Factor Models. Journal of Finance, Vol.(52), No. (2), pp. 557–590.

Hart,O.D., (1983),The market mechanism as an incentive scheme, BellJournalofEconomics, Vol. (14),pp.366–382.

Hartzell,J.C.,andL.T.Starks, (2003), Institutional investors and executive compensation, JournalofFinance, Vol. (58),pp.2351–2374.

Healy,P.M.,andK.G.Palepu, (2001), Information asymmetry, corporate disclosure, and the capital markets, JournalofAccountingandEconomics, Vol. (31),pp.405–440.

Hodrick, Robert J., and Xiaoyan Zhang. (2001). Evaluating the Specification Errors of Asset Pricing Models. Journal of Financial Economics, Vol.(62), No. (2), pp.327–376.

Hong,H.,T.Lim,andJ.C.Stein,(2000),Badnewstravelsslowly:Size,analystcoverage,andtheprofitabilityofmomentumstrategies,JournalofFinance, Vol.(55),pp.265–296.

Ikenberry,D.,J.Lakonishok,andT.Vermaelen,(1995),Marketunderreactiontoopenmarketsharerepurchases,JournalofFinancialEconomics, Vol.(39),pp.181–208.

Jagannathan, Ravi, Keiichi Kubota, and Hitoshi Takehara. (1998). Relationship between Labor-Income Risk and Average Return: Empirical Evidence from the Japanese Stock Market. Journal of Business, Vol. (71), No. (3), pp. 319-348.

Jagannathan,R.,and S.B.Srinivasan,(1999), Does product market competition reduce agencycosts? NorthAmericanJournalofEconomicsandFinance, Vol.(10),pp.387–399.

Jagannathan, Ravi, and Zhenyu Wang. (1996). "The Conditional CAPM and the Cross-Section of Expected Returns." Journal of Finance, Vol.(51), No. (1), pp. 3–53.

Jegadeesh N., and S. Titman, (1993), Returns to Buying Winners and Selling Losers:Implications for Stock Market Efficiency, The Journal of Finance, Vol. (48), pp. 65-91.

Jegadeesh N., and S. Titman, (1995), Overreaction, Delayed Reaction,and ContrarianProfits, Review of Financial Studies, Vol.(8), pp. 973-993.

Jensen,M.C.,(1986),Agencycosts of free cashflow, corporatefinance, and takeovers, AmericanEconomicReview< Vol.(76),pp.323–329.

Jiambalvo,J.J.,S.Rajgopal,andM.Venkatachalam,(2002),Institutional ownership and the extent to which stockprices reflect future earnings,ContemporaryAccountingResearch< Vol.(19),pp.117–145.

Kan, Raymond, and Cesare Robotti. (2009). "Model Comparison Using the Hansen-Jagannathan Distance." Review of Financial Studie, Vol.(22), No. (9), pp. 3449–3490.

Krishnaswami,S.,andV.Subramaniam,(1999),Information asymmetry, valuation, and the corporatespin-off decision,JournalofFinancialEconomics, Vol. (53),pp.73–112.

Lee,C.M.C.,J.Myers,andB.Swaminathan,(1999),Whatistheintrinsicvalueofthedow?JournalofFinance, Vol.(54),pp.1693–1741.

Lee, C., Shleifer, A., and R. Thaler, (1991), Investor sentiment and the Closed End Fund Puzzle, The Journal of Finance, Vol. (46), pp. 75-110.

Lee, C., and B. Swaminathan, (2000), Price Momentum and Trading Volume, The Journal of Finance, Vol. (55), pp. 2017-2069.

Lee,K.T.,S.C.Lee,andS.Choi,(2011), Relationship between executivestockoption exercises and earnings management, Asia-PacificJournalofFinancialStudies, Vol.(40),pp.856–888.

Lehn,K.,andA.Poulsen,(1989),Free cashflow and stockholder gains in going private transactions,JournalofFinance, Vol. (44),pp.771–787.

Lettau, Martin, and Sydney C. Ludvigson. (2001). "Resurrecting the (C)CAPM: A Cross-Sectional Test When Risk Premia are Time-Varying." Journal of Political Economy, Vol.(109), No. (6), pp. 1238–1287.

Li, Haitao, Yuewu Xu, and Xiaoyan Zhang. (2010). Evaluating Asset Pricing Models Using the Second Hansen-Jagannathan Distance. Journal of Financial Economics,Vol. (97), No. (2), pp. 279–301.

Lie,E., (2005),On the timing of CEO stockoption awards,ManagementScience, Vol. (51),pp.802–812.

Lintner, John. (1965). The Valuation of Risky Assets and the Selection of Risky Investments in Stock Portfolios and Capital Budgets. Review of Economics and Statistics, Vol. (47), No. (1), pp. 13–37.

Long, John Jr. (1974). Stock Prices, Inflation, and the Term Structure of Interest Rates. Journal of Financial Economics; Vol.(1), No. (2), pp. 131–170

Lucian Bebchuk and Jesse Fried (2004), Pay Without Performance, Harvard University Press.

McConnell,J.J.,andH.Servaes,(1990),Additional evidence on equityownership and corporate value, JournalofFinancialEconomics,Vol. (27),pp.595–612.

Merton, Robert C. (1973). An Intertemporal Capital Asset Pricing Model. Econometrica, Vol. (41), No. (5), pp. 867–887.

Myers,S.C.,andN.S.Majluf,(1984),Corporate financing and investmentdecisions when firms have information that investors donot have,JournalofFinancialEconomics, Vol.(13),pp.187–221.

Nanda,V.,andM.P.Narayanan, (1999), Disentangling value: Financing needs, firmscope, and divestitures, JournalofFinancialIntermediation, Vol. (8),pp.174–204.

Narayanan,M.P., (1996), Form of compensation and managerial decision horizon, JournalofFinancialandQuantitativeAnalysis, Vol. (31),pp.467–491.

Ohlson,J.A., (1995), Earnings, bookvalues, and dividends in security valuation, Contemporary Accounting Research, Vol. (11),pp.661–687.

Pantzalis, C. and Park, J. C., (2014), Agency Costs and Equity Mispricing, Asia-Pacific Journal of Financial Studies, Volume (43), Issue (1), pp. 89-123.

Parker, Jonathan A., and Christian Julliard. (2005). Consumption Risk and the Cross-Section of Expected Returns. Journal of Political Economy, Vol.(113), No.(1), pp. 185–222.

Pastor, L. and R. F. Stambaugh, (2003), Liquidity Risk and Expected Stock Returns,Journal of Political Economy, Vol.(111), pp. 642-685.

Posner, R. A. and Scott, K. E. (1981), Economics of Corporation Law and Securities Regulation. Aspen Publisher Inc.

Rau,P.R.,andT.Vermaelen,(1998), Glamour, value and the post-acquisition performance of acquiring firms, JournalofFinancialEconomics, Vol.(49),pp.223–253.

RhodesKropf, M.,D.T. Robinson, and S.Viswanathan, (2005), Valuation waves and merger activity:The empirical evidence, Journal of Financial Economics, Vol.(77),pp.561–603.

Ritter,J.R.,(1991),The long-runperformance of initial public offerings, JournalofFinance, Vol.(46),pp.3–27.

Roll,R.,(1988),R2,JournalofFinance, Vol.(43),pp.541–566.

Roll, R., (1983), On Computing Mean Returns and the Small Firm Premium, Journal of Financial Economics, Vol.(12), pp. 371-386.

Rubinstein, Mark. (1976). The Valuation of Uncertain Income Streams and the Pricing of Options. Bell Journal of Economics, Vol. (7), No. (2), pp. 407–425

Sadka, R., (2006), Momentum and Post-earnings Announcement Drift Anomalies: the Role of Liquidity Risk, Journal of Financial Economics, Vol.(80), pp. 309-350.

Sanders,W.G.,(2001),Incentive alignment, CEO paylevel, and firm performance: A case of “HeadsIwin,tailsyoulose”? HumanResourceManagement, Vol.(40),pp.159–170.

Sharpe, William. (1964). Capital Asset Prices: A Theory of Market Equilibrium under Conditions of Risk. Journal of Finance,Vol. (19), No. (3), pp. 425–442.

SwaminathanB. (1996), Time-varying Expected Small Firm Returns and Closed-end Fund Discounts. Review of Financial Studies, Vol. (9), pp. 845-888.

The Bahrain Stock Exchange Website (WWW.Bahrainbourse.net) accessed on 12/1/2015.

The Arab Stock Market Analysis Website (WWW.asmainfo.com) accessed on 8/1/2015

Uzun,H.,S.H.Szewczyk,andR.Varma,(2004),Boardcompositionandcorporatefraud,FinancialAnalystsJournal, Vol.(60),pp.33–44.

Walkling,R.A.,andR.O.Edmister,(1985),Determinantsoftenderofferpremium,FinancialAnalystJournal, Vol.(41),pp.27–36.