

CEO Compensation, Managerial Overconfidence and Performance of Sharia Compliant Firms and Non-Sharia Compliant Firms: Evidence from Listed GCC Firms

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ABSTRACT

Background: The positive relationship between managerial overconfidence and performance implies that overconfident managers overestimate their ability to create value and improve their firm's performance, which also lead to overestimate their own firms returns by taking over other firms. **Purpose:** The study examines relationship between managerial overconfidence, CEO compensation, and performance of sharia compliant firms and non-sharia compliant firms for 207 GCC listed firms from 2010 to 2014. **Methodology:** The study sample comprised of 207 firms for the main empirical analysis. The data used in this study were collected from GCC stock exchange data-base and firms financial report provided by website argaam.com between 2010 and 2018. **Findings:** The study found that managerial overconfidence is positively and significantly related to firm performance. CEO compensation and managerial overconfidence is also associated positively with sharia-compliant firms' performance. The findings supported first hypothesis that managerial overconfidence leads to better firms' performance. **Originality:** The study has revealed a positive impact of sharia compliant firms' managerial overconfidence on firm performance. Furthermore, the effect of CEO compensation is favorable in sharia compliant firms.

Keywords: CEO compensation, Managerial overconfidence, Non-Sharia compliant firms, Performance, Sharia compliant firms.

INTRODUCTION

The study of the managerial over-confidence is developed under a behavioral corporate finance theory whose underpinning foundation is the cognitive psychology literature with the belief that people in general are too optimistic (Wei Huang et al 2011). Previous studies on psychology and corporate finance have already authenticated that overconfident manager tend to overestimate (under overestimate) the probability of achieving good (poor) firms' performance, which leads to incorrect evaluation and unrealistic expectation (Yizhong Wang et al 2016; Cooper and Dunkelberg 1988).

Several recent researches focus on how managerial overconfidence proxies affect corporate's performance (Anlin Chena and Cheng-Shou Lu 2015). The relationship between CEO compensation, managerial overconfidence, and performance is mostly well-understood and documented. Mark Humphery-Jenner et al. (2016) argued that overconfident CEOs receive more option-intensive compensation and this relationship increases with CEO bargaining

power similarly. Lien and John (2015) found that the proxies of job complexity and firm stock market performance are positively related to the level of CEO compensation. The positive relationship between managerial overconfidence and performance implies that overconfident managers overestimate their ability to create value and improve their firm's performance, which also lead to overestimate their own firms returns by taking over other firms.

Dissemination information about building advance understanding of overconfidence is a central to growing literature since managerial overconfidence is one of the most important factors affecting firms' performance. Scholars have shed light on significant queries whether and how management overconfidence affects corporate performance (Amel Kouaib and Anis Jarboui 2017; Goel and Thakor 2008). Therefore, the study is motivated to examine the effect of managerial overconfidence on performance of sharia compliant firms and non-sharia compliant firms.

The study has used a panel data from 2010 to 2015 excluding the financial companies because firms in this sector are administered by different set of instructions and rules. The data used in this study were collected from two sources: (1) GCC stock exchange data-base and (2) firms financial report. This study has adopted two indicators of managerial overconfidence to investigate the effect of managerial overconfidence on firm performance of sharia compliant companies versus non- sharia compliant firms. The study has tested whether there is any difference between sharia compliant firms and non-sharia compliant firms. Furthermore, the study is consistent with agency theory that the main goal of management is to serve the interests of the capital's owners (Amel Kouaiba and Anis Jarboui 2017). The study has further examined the interaction effect of CEO compensation on the relation of overconfidence and firm performance.

This study contributes to the literature in different ways. Firstly, the effect of financial styles of top managers on risk and performance has been addressed. Secondly, this study investigates the financial styles of managers who switch from or to sharia and non-sharia compliant firms for explaining modifications risk and performance of firms. This study, for examining these issues, utilizes the data on sharia firms in the GCC. Sharia compliant firms are progressively dominant after the international financial crisis of 2008-09. The market, according to Robinson (2007), for the financial products of sharia compliant firms has elevated by 30% throughout the last few years. Thirdly, Naz, Shah and Kutun (2017) explored the impact of financial styles of strategic financial decisions, dividend policy of sharia and non-sharia compliant firms, and working capital for finding that managers play an important role to explain the difference in financial decisions. On the contrary, Naz, Shah and Kutun (2017) emphasize merely on financial decisions, whereas this study addresses concerns associated to risk and performance in sharia and non-sharia compliant firms.

In particular, there is sufficient evidence for recommending that managerial financial styles can impact idiosyncratic risk and firm performance. On the contrary, the literature pays minimal attention to the direct role played by managers in order to explain cross-sectional difference in idiosyncratic risk and firm performance in sharia compliant firms. There are merely a few empirical studies. For instance, the effect of financial styles of managers on financial decisions has been explored by Naz, Shah and Kutun (2017) for the UK and Pakistan. They create, for every firm, a manager-firm matched panel data for identifying the top executives across the

variations in financial decisions and revealed that a significant role was played by managers to explain the variations in financial decisions across the firms and the financial styles of managers who move between a sharia and non-sharia compliant firm.

In this study, the managers may further play a role to explain cross-sectional differences in risk and firm performance as risk and performance are the consequences of financial decisions. According to Wooi and Ali (2015), there is no substantial variation in performance of non-sharia and sharia compliant firms, but the firms with Muslim CEOs revealed significantly lower performance than the firms with non-Muslim CEOs. They further found that Muslim-dominated board can enable the lower performance of the firm with Muslim CEOs, and significantly, the lower performance can be reduced if the dominant owner had a higher extent of control over the company. Another essential outcome is that the Muslim CEOs can contribute positively to the firm's performance if the owners possess more controlling rights.

The study findings provided a more thorough understanding of how managerial overconfidence can influence firm performance and also findings could hold important implications for practitioners seeking to improve performance by efficiently designing and implementing executive compensation packages. Moreover, to best of the author's knowledge, this study is among the first to examine the effect of CEO compensation, managerial overconfidence, and performance of sharia compliant firms and non-sharia compliant firms among listed GCC Firms. Lastly, this study has intended to study the neglected link between the dynamic effect of the interaction of managerial overconfidence and CEO compensation because previous studies considered them as two independent and un-related topics.

The remainder of this paper is structured as follows: The next section reviews the literature on overconfidence, examines the interaction of CEO compensation and overconfidence, and development the research hypothesis. Section three describes data and sampling process along with variable construction. Section four presents descriptive statistics, empirical results, and hypotheses analysis. Conclusions, implications, and limitations are presented in section five.

THEORETICAL BACKGROUND

Compensation and Performance of Firms

Previous studies have capitalized performance measurements under either accounting or marketing indicators since only measurable things are manageable. For financial measure, Return on Assets (ROA) measure is used by net income over total assets at the end of the year (Al-Manaseer et al 2012; Mehul 2016). Return on Equity (ROE) can be analyzed by profit after tax/ total equity shares in issue (Obiyo and Lenée 2011; Rouf 2011). Return on Sales (ROS) is calculated by dividing net profit by sales (Geletkanycz and Boyd 2011). Return on Investment (ROI) is calculated by dividing the benefit (return) of an investment on the cost of the investment (Adjaoud, Zeghal and Andaleeb 2007) and Profit Margin (PM) which can be evaluated by Profit after tax / Turnover.

The review of 375 cases of acquirement with overconfidence by Johansson and Olvebrink (2013) showed that CEO's compensation and overconfidence are decreased due to unbound board. However, managerial overconfidence is not affected by duality of CEO responsibility. Another study by Baccar et al. (2013) narrated that managerial optimism and overconfidence is affected by lack of CEO duality and failure to comply with the organizational rules. The

relationship of CEO compensation and managerial overconfidence was studied by Hribar and Yang (2015), which showed that possibility to perform predictions by managers increases as the result of overconfidence. First, recent studies examine the concentration of overconfidence on market's reaction (Ulrike Malmendier and Geoffrey 2008), corporate debt maturity (Ronghong et al 2016), and ownership choice in foreign market entry decision.

The second type of measurement is the market-based measurement which is categorized as long term like Tobin's Q in CEO overconfidence-firm performance literature (e.g., Hirshleifer et al 2014). It is calculated by the ratio of the market capitalization plus total debt divided by total asset of the company (Kang and Kim 2011). Market Value Added (MVA) estimate is calculated by the difference between the Market Value and book value of Equity. Market-to-Book Value (MTBV) can be calculated by Market value of equity / book value of equity (Wahla, Shah and Hussain 2012).

Managerial Overconfidence

Overconfidence is a heuristic bias defined as individuals' tendency to overestimate their own ability (Hill, et al 2014). To identify indicators of CEO overconfidence, the study has conducted a literature review using a computerized search tool used by Hill (2014). The result shows a lot of proxies utilized by different studies. For example, Malmendier and Tate, 2005, 2008) have identified three different measures of overconfidence. Hawyward and Hambrick (1997) use performance measure as stockholder returns divided by the initial stock price. Po-Hsin et al (2016) and Campbell (2011) use stock option-based proxies. Consistent with prior and existing literature, the study has accurately followed Hill et al (2016), and Hayward and Hambrick (1997) to measure managerial overconfidence. The study has used two measures for the empirical study due to data availability organizational performance and overinvestment.

Controlling Factors

Debt ratio (leverage), Dividend payout rate (payout), Firm size (size), Profitability (prof) and Tangibility (Tang) are included as relevant control variables in this study consistent with Sabatino Vito Silveri et al (2016). Leverage can be calculated by dividing the total debt with the total assets. Ronghong et al (2016) have shown that similar results can be obtained if total long-term debt is divided by market value of the firm. Diamond (1991) has argued that firm with high leverage experiences higher default risk. Profitability is estimated by Earning divided by total capital. Tangibility which is defined as fixed assets divided by last period total assets. The study has also controlled for year and industry dummies so as to control for possible time and industry effects as mentioned by Roberts and White (2013). The definitions of all variables are summarized in Table 1.

Table 1: Summary of all Variable Definitions

Variables code	Variables name	Operation definition
Performance measure (dependent)		
Q	Tobin-Q	Ratio of the market capitalization plus total debt divided by total asset
ROA	Return on assets	(Net Income) / (Total Assets)
Overconfidence & Compensation (indep)		
Over-invest	Overinvestment	Equal 1if the residual of regression is in the top quartile for the industry- year and zero otherwise.
RO_PERF	Recent organization performance	Stockholder return divided by the initial stock price.
Tot_comp	Total compensation	The sum of salary, bonus, the total value of restricted stock granted the total value of stock options using long term incentive payout, and all other payment.
Cash_com	Cash compensation	CEO'S salary plus bonus provided by Execucomp
Control variables		
LEV	Debt ratio	dividing the total debt with the total assets
PAYOUT	Dividend payout rate	Cash dividend / earnings.
PROF	Profitability	Earning divided by total capital
Tang	Tangibility	Fixed assets divided by last period total assets
Year	Year	Year Dummy variable
IND	Industry	Industry Dummy variable

LITERATURE AND HYPOTHESIS DEVELOPMENT

This section provides a literature review and present hypotheses development based on the objective of this study. First, the study has investigated how CEO overconfidence affect firm performance. Secondly, the study has examined the effect of CEO compensation on the relationship between overconfidence and firm performance.

The Effect of Overconfidence on Performance

There is an increasing literature on the impact of CEO overconfidence on corporate performance. Overconfidence is vigorous phenomenon in the psychology. In financial literature, it is considered as a systematic overestimate of the precision of own knowledge and imply an underestimation of the variance of random variables (Lukas Menkhoff et al 2013). Overconfidence is also defined as the overestimation of one's ability, performance, chance of success, or level of control (Nathan Meikle et al 2016). Researchers share a considerable interest in managerial overconfidence and its relationship with firm performance. Previous research in behavioral finance has provided mixed and conflicting findings particularly regarding the influence of overconfidence on dividends, investments, and on mergers and acquisitions.

Overconfidence as competitiveness factor has been addressed in a few studies. For instance, Englmaier (2006), in this theory paper, investigates whether it might be preferable for a company to recruit an overconfident manager for strategic causes. Furthermore, firms may prefer to delegate to overconfident managers under both a linear demand Cournot model and a tournament type version of Bertrand competition where the firms have the chance in carrying out cost mitigating R&D prior to their entrance into product market competition. Similarly, Kyle and Wang (1997), in their theory paper, claim that overconfident traders might create higher anticipated utility and profitability as overconfidence acts as a commitment instrument in Cournot duopoly. Therefore, both funds recruit overconfident managers and overconfidence can survive and persist in the long-run because of prisoner's dilemma. In addition, Ando (2004) investigates two different overconfidence sources and compare the behavioral outcomes of each situation. The overconfidence sources always persuade the aggressive behavior of participants, while the aggressive behavior is brought among one or both participants. These outcomes recommend that product market performance is enhanced by overconfident CEOs as witnessed in the previous papers (Gervais, Heaton and Odean 2011; Goel and Thakor 2008; Hirshleifer et al, 2012). This likelihood is labeled as the positive competitive performance hypothesis. Overconfident CEOs result effectively throughout industry sales performance under this hypothesis. On the contrary, overconfident CEOs are disadvantageous to firm value as they may interact in activities that disengage from maximizing shareholder value. These outcomes recommend that overconfident CEOs affect adversely firm competitive performance. Goel and Howe (2012) found that the level of dividend payout is lower in firms managed by overconfident CEOs. Malmendier and Tate (2005) found that, between 1980 and 1994, investment of overconfident CEOs is significantly more responsive to cash flow, particularly in equity-dependent firms. Amel Kouaiba and Anis Jarboui (2017) have pursued a new direction in the analysis of behavioral finance based on examining whether future performance of the firm is related to overconfidence displayed by the Chief Executive Office. On the negative side of overconfidence, Heaton (2002) has claimed that overconfidence negatively influences firm value as it may decline positive net present value and invest in negative net present value projects, which lead to decline investment efficiency. However, there has been little empirical analysis of the relationship between overconfident CEOs and the general performance of the firm. As the relationship between overconfidence and performance remains an open question, neglecting future firm performance may reduce firm's competitiveness and the potential of individual firms as well as the whole economy.

According to Dashtbayaz and Mohammadi (2016), the relationship of CEO overconfidence with leverage has a negligible but negative influence on firm value. A positive impact is shown by overconfident managers on firm value by shifting investment levels closer to its optimal level. In particular, the relationship of CEO overconfidence with innovation has a positive impact on firm value. Similarly, Dev and Moore (2018) have shown that the advantages of positive feedback are not moderated by overconfidence. The study has also explored the accuracy of predictions of how positive feedback will affect self-efficacy, anxiety, self-esteem, and performance. Individuals who have a high confidence level have a tendency to avoid the information available. It should be noted that individuals with a high confidence level will be secure from the effects of the information sequence (Almilia and Wulanditya 2016). Mistakes were negatively correlated with overconfidence in future price forecasting. Overconfidence was not correlated with risk aversion and had no impact on experimental consequences

(Michailova, Mačiulis and Tvaronavičienė 2017). Thus, following hypothesis is derived based on the aforementioned discussion:

Hypothesis 1A. There is positive relationship between Sharia compliant firms' managerial overconfidence and firm performance.

Hypothesis 1B. The positive relationship between managerial overconfidence and performance Sharia compliant firms is stronger as compared to non-Sharia compliant firms.

The Interaction of CEO Compensation and Overconfidence

The second hypothesis is inspired by existing body of literature that examines the relationship between managerial overconfidence, CEO compensation, and firm performance. Since CEO compensation directly influences managerial overconfidence, it is logical to investigate the effects that CEO compensation and overconfident managers have on corporate performance and firm value because compensation and overconfident impact firm performance not only through their own impact but also through their interaction effect. The concept compensation examined in this study is defined as the sum of base pay, bonuses, stock grants, stock options, other forms of compensation, and benefits.

Takao Kato et al (2007) found that cash compensation of Korean executive is significantly related to stock market performance. Accordingly, Mahoney and Thorn (2006) also found a positive relationship between executive compensation and corporate social performance of Canadian firms. Berrone and Gomezmeja (2009) also showed a positive relationship between executive compensation and environmental performance. Contrary to evidence documented in prior literature, Sudhir Shive and Asish Kumar (2016) have examined the role of board ship and CEO characteristics in CEO compensation and found that CEO compensation is not associated with board characteristics instead with firm's attributes and its CEO's tenure. In a similar study, Faiz-ul Haque (2017) has examined the effect of board characteristics and sustainable compensation policy on carbon performance of UK firms and find mixed evidence. Zhao and Ziebart (2017) have hypothesized and showed that overconfident CEOs and CEO compensation are positively associated to extreme innovation consequences such as innovation failures and innovation breakthroughs. According to Aktas, Louca and Petmezas (2019), CEO overconfidence has a positive influence on the cash value among firms that are more likely to experience from the underinvestment issue. Furthermore, the value of cash in firms is negatively affected by CEO overconfidence that financially unconstrained. Overconfident CEOs are considered as better-than average and involved with over-investment and showed dominant performance for the firm. Firm performance is increased by the overconfident CEOs by following optimal levels of investments (Mundi and Kaur 2019). CEOs have better incentives to temporarily possess unconstrained equity where excess incentives have slower balance speed, and greater impact on firm performance (Bushman, Dai and Zhang 2018).

In particular, an overconfident person overestimates finding associated to own competencies (Alicke 1985; Larwood and Whittaker 1977). Thereby, high incentive compensation motivates an overconfident CEO since the respective individual will overestimate the value of such benefits and the possibility that thresholds with respect to these benefits will be fulfilled (Gervais et al, 2011). In addition, an overconfident CEO has a tendency to overestimate the value of incentives (Otto 2014; Humphery-Jenner et al, 2016). Such overestimation, for a predefined incentives level, is potentially to be related with an elevation in corporate risk. It is

anticipated that a likely positive relationship between corporate risk and CEO incentive compensation, in line with this justification, is increased when dealing with overconfident CEOs. Likewise, a potentially positive relationship between CEO overconfidence and corporate risk has been anticipated due to this amplification and receiving high incentive compensation. The literature on the significance of managers is very limited for risk-taking behavior and performance of managers in the context of sharia compliant firms, but there are some associated studies, addressing different elements of Islamic business and finance. On the contrary, these studies do not emphasize on the role of manager in this context. The performance of mutual funds has been studied by Mansor and Bhatti (2011) in Islamic and conventional portfolios and revealed no variation in between returns of Islamic portfolios and those of traditional ones. They further report that the Islamic portfolio is riskier as compared to the conventional portfolios. They claim that the possible reason for this untraditional outcome is that the market penetration is minimal for Islamic portfolios but its volatility is higher as compared to that of conventional portfolios. However, it is claimed that financial styles of managers may assist to explain such different risk attributes of sharia and non-sharia compliant firms. Based on above literature review, following hypothesis is derived;

Hypothesis 2A. There is positive relationship between CEO compensation and managerial overconfidence that affect firm performance.

Hypothesis 2B. The positive relationship between CEO compensation and managerial overconfidence in Sharia compliant firm is stronger as compared to non-Sharia compliant firm.

METHODS

Data

The study has examined the relationship between managerial overconfidence and firm performance of sharia compliant firms and non-sharia compliant firms. Secondly, this study has investigated the effect of CEO compensation on this relationship. The initial sample consist of all firms listed on GCC countries stock exchanges, which is filtered to 207 firms for the main empirical analysis with reason of missing data. To calculate overconfidence and compensation, the study has also excluded the financial companies' sector because firms in this sector are administered by different set of instructions and rules based on previous studies (Abed et al 2012; Al-Fayoumi et al. 2010). The data used in this study were collected from two sources; GCC stock exchange data-base and firms financial report provided by website argaam.com from 2010 to 2018.

Based on prior studies (Omer Farooq, Amal Alahkam 2016; Omer Farooq 2013), the study has used the classification provided by Dow Jones Index in classifying the firm sample into two categories sharia compliant firm and non-sharia compliant firm. The Index has provided two criteria for identifying three ratios including leverage, cash, and liquidity. All ratios had to be less than 33% for sharia compliant firm. A second criterion is that Islamic compliant firms are prohibited to generate revenues from alcohol, pork, arms manufacture, gambling, and conventional financial services. In Table 2, the number of sharia compliant firms and non-sharia compliant firms are presented.

Table 2: Sharia- and Non-Sharia-Compliant Firms in Different Countries

	Sharia-compliant firms	Non-sharia-compliant firm
Countries	Number of firms-Frequency	Number of firms-Frequency
Panel A: Sharia-and Non-Sharia-Compliant Firms in Different Countries		
Saudi Arabia	54 (37.7%)	16 (25%)
Bahrain	08 (5.6%)	1(1.6%)
Qatar	25 (17.5%)	18(28.1%)
Kuwait	16 (11.9%)	6 (9.4%)
Oman	23 (16.1%)	16 (25%)
United Emirates	17(11.9%)	7 (10.9%)
Panel B: Sharia-and Non-Sharia-Compliant Firms in Different Industries		
Cement	10 (07%)	5 (7.8%)
Retail	14 (9.8%)	6 (9.4%)
Petrochemical Industrials	19 (13.3%)	9 (14.1%)
Agriculture and food	25 (17.5%)	7 (10.9%)
Real-State development	12 (8.4%)	4 (6.3%)
Consumer services	14 (9.8%)	8 (12.5%)
Telecommunication	4 (2.8%)	2 (3.1%)
Utilities	6 (4.2%)	2 (3.1%)

In a view of data availability, the study has constructed two proxies for firm performance in this study. The first proxy is Return on Assets (ROA), (account- based measure), which can be evaluated by net income over total assets at the end of the year. The second proxy is Tobin-Q (market- based indicator), which can be estimated by the ratio of the market capitalization plus total debt divided by total asset of the company. Victor (2014) defines firm size as a natural log of firm's total assets.

Empirical Models

The central idea of this study is to examine the effect of managerial overconfidence on firm performance of sharia-compliant firms (SCF) and non-sharia compliant firms. Using firm performance (perf) as dependent variable, the study has regression model 1 as follows;

$$\text{Perf}_{it} = \beta_0 + \beta_1 \text{Overinvest}_{it} + \beta_2 \text{RO}_{\text{PERF}_{it}} + \beta_3 \text{LEV}_{it} + \beta_4 \text{Payout}_{it} + \beta_5 \text{PROFT}_{it} + \beta_6 \text{Tang}_{it} + \sum \beta_i \text{year}_i + \sum \beta_{t\beta} \text{Industry}_t + \text{it} \quad (1)$$

Where perf is the firm performance, subscript I and t represent the firm and time, respectively. Year_i =Year dummy; Industry_t = industry dummy; ε_{it} is error term. B, 1-6, are coefficients of the respective independent and control variables.

The study has explored the interaction between CEO compensation and overconfidence on firm performance consistent with the predictions. The study has added CEO compensation as interactive term in Model 1 and used the following regression model.

$$\text{Perf}_{it} = \beta_0 + \beta_1 \text{Overinvest}_{it} + \beta_2 \text{RO}_{\text{PERF}_{it}} + \beta_3 \text{compit} * \text{over_confid} + \beta_4 \text{LEV}_{it} + \beta_5 \text{Payout}_{it} + \beta_6 \text{PROFT}_{it} + \beta_7 \text{Tang}_{it} + \sum \beta_i \text{year}_i + \sum \beta_{t\beta} \text{Industry}_t + \text{it} \quad (2)$$

The estimation of the proposed models is conducted on a panel data. According to Baltagi (2005), panel data gives multiples solutions to many problems related to cross-sectional

specification like unobserved heterogeneity, degrees of freedom, dynamics, and collinearity among the explanatory variables.

RESULTS AND DISCUSSION

This section has presented the aggregate sample for the empirical study variables and univariate result. In panel B, the study has presented means, median, and standard divisions for the variables. The study has further separated the sample into sharia compliant firm versus non-sharia compliant firm. The first three columns presented descriptive statistics for non-sharia compliant firms and the next three columns report descriptive statistics for sharia compliant firms. The study has observed Debt ratio (Leverage), which is higher for non-sharia compliant firms than sharia compliant firms. It is identified that higher levels of debt will cause a decrease in firm performance and this is consistent with Dow Jones Islamic index requirement for a firm to be sharia compliant (Leverage less than 33%).

Table 3 presents the correlation coefficient matrix between the two-overconfidence measure, performance indicator, and control variables. The study has found a positive correlation between Q (performance measure) and two proxies of overconfidence. On the other hand, a negative correlation between ROA (performance measure) and RO_PERF (overconfident measure) was found. It is essential to analyze multivariate regression result, before drawing statistical inference in this regard.

To ensure there is no multicollinearity among variables, Pearson correlation analysis is conducted. The results of the correlation analysis examining the degree of multicollinearity among the regressors are shown in Table 3. Furthermore, the values of correlation coefficients are all below 0.6 in absolute terms indicating that there is no evidence of multicollinearity among the variables. Furthermore, the study has checked the variance inflation factors (VIF) test. If VIF is not bigger than 10 this means that there is no problem with multicollinearity (Hair et al 2006). Hence, multicollinearity is unlikely to affect the main result and no variables should be excluded from the multivariate analysis (Irene Wei Kiong Ting et al, 2016).

Table 3: Summary Statistics

Panel A full sample (N = 207 observations)					
Variables	Mean	St. dev	Median	Max	Min
Tobin-Q	0.422	0.485	0.000	1.000	0.000
Return on assets	0.012	0.022	0.010	0.090	-0.070
Overinvestment	0.433	0.494	0.000	1.000	0.000
Recent organization performance	0.228	0.418	0.000	0.930	0.003
Total compensation	6.689	0.688	6.001	6.800	0.000
Cash compensation	5.699	0.962	4.237	5.000	0.000
Debt ratio (leverage)	0.474	0.215	0.483	1.136	0.044
Dividend payout rate	0.654	0.454	0.200	2.201	0.000
Profitability	1.056	0.914	0.840	5.856	0.123
Tangibility	1.056	0.912	0.838	5.000	0.134

Panel B: Sharia compliant firm versus non-sharia compliant firm

	Non-sharia compliant firm (N =64)			sharia compliant firm (N =143)		
Variables	Means	Median	Std. Dev	Means	Median	Std. Dev
Tobin-Q	0.163	0.067	0.247	0.194***	0.085	0.274
Return on assets	0.253	0.161	0.289	0.292***	0.193	0.305
Overinvestment	0.353	0.269	0.315	0.329***	0.016	0.313
Recent organization performance	0.465	0.400	0.329	0.665**	0.600	0.528
Total compensation	0.161	0.141	0.121	0.152	0.132	0.111
Cash compensation	0.121	0.120	0.001	0.110	0.100	0.020
Debt ratio (Leverage)	0.147	0.149	0.117	0.170	0.158	0.133
Dividend payout rate	0.310	0.016	0.331	0.470**	0.120	0.391
Profitability	0.114	0.090	0.119	0.111*	0.094	0.116
Tangibility	0.477	0.483	0.263	0.666	0.727	0.209

*** Denotes statistically significant at the 1% level. ** Denotes statistically significant at the 5% level. * Denotes statistically significant at the 10% level.

Table 4 reports correlation coefficient between the main variables which are defined in Table 2 and variance inflation factors (VIFs). The study has found that the two proxies of managerial overconfidence measures are positively correlated with each other.

Table 4: Correlation Analysis

	Q	ROA	Over-invest	RO_PERF	LEV	PAYOUT	PROF	Tang	VIF
Q	1.000								3.52
ROA	0.075	1.000							2.75
Over-invest	0.040	0.049	1.000						2.66
RO_PERF	0.025	-	0.2234	1.000					1.50
		0.036							
LEV	-0.016	0.058	-0.057	0.060	1.000				2.78
PAYOUT	0.782	0.085	0.8000	0.752	0.696	1.000			1.46
PROF	0.040	0.050	0.096	0.020	0.030	-0.040	1.000		3.22
Tang	0.0210	0.054	0.038	0.443	0.155	0.085	0.128	1.000	1.54

The study has examined a positive impact of sharia compliant firms' managerial overconfidence on firm performance. Moreover, the study has shed a light on the relationship between CEO compensation and overconfidence with firm performance of sharia compliant firms versus non-sharia compliant firms. Fee et al (2013) raise the question as to whether CEOs imprint their own desires on the firm or are chosen to integrate the desires of the board. Therefore, it is essential for identifying whether the CEOs have different financial styles than to those who shift from a non-sharia compliant firm. The dependent variable was regressed against fixed effects control variables and other fixed effects in equation 1 for capturing the fixed effects of the CEO. This study then computed the residuals for the sharia and non-sharia compliant firms. It should be noted that these residuals reflect the fixed effect of CEOs.

Table 5: Impact of CEO Overconfidence on Firm Performance

Variables	Tobin-Q	Return on assets (ROA)
Intercept	0.0191(1.621)	0.0152 (0.010)
Over-invest	0.685*** (0.839)	0.682*** (0.840)
RO_PERF	0.401*** (0.597)	0.432*** (0.588)
LEV	-0.051** (0.001)	-0.058** (0.001)
PAYOUT	0.665* (0.014)	0.669* (0.097)
PROF	0.552 (0.020)	0.444 (0.011)
Tang	0.004 (0.194)	0.008 (0.705)
Year fixed effect	Yes	Yes
Industry fixed effect	Yes	Yes
Adjusted. R2	0.633	0.621
Observation	207	207

*** Denotes statistically significant at the 1% level. ** Denotes statistically significant at the 5% level. * Denotes statistically significant at the 10% levels for a two- tailed test.

Table 5 reports the regression result of managerial overconfidence and firm performance. The study has conducted a logistic regression to investigate whether there is a positive relationship between overconfidence and firm performance. Overinvestment is consistent with Duellman et al (2015) and recent organizational performance as proxies for overconfidence and two proxies (Tobin-Q and Return on assets) as firm performance indicators. Primarily, the study has found a positive and significant coefficient at the level of 1% between the two measures of firms across two indicators of managerial overconfidence. This finding indicates that CEO overconfidence positively influences firm performance, which accepts Hypothesis 1.

As shown in table 5, the coefficient of interaction term (0.017) is positively and significant at the 10% level, which supports Hypothesis 2. Such a result suggests that the effect of CEO compensation is favorable in sharia compliant firms and the effect is stronger for sharia compliant firms than non- sharia compliant firms. This suggests that CEO compensation might be considered an alternative device to motivate managerial overconfidence and as a result reflected on high firm performance.

With respect to the control variables, the finding shows a negative and significant coefficient on Debt ratio (Leverage) but a positive significant coefficient on payout at the 5% and 10% levels, respectively across two measure of performance. The coefficients of Leverage indicate that managerial overconfidence would lead to a lower level of leverage. Low leverage allows sharia firms to distribute high dividend. Profitability and tangibility are also positively significant across two performance measures (Table 6). The evidence from the correlation analysis shows, as expected, a strong positive correlation between the control variables size and firm age, and both potentially have an impact upon overconfidence.

Table 6: Impact of CEO Compensation on Overconfidence and Firm Performance

Variable	Tobin-Q			Return on assets		
	Sharia compliant	Non-sharia compliant	Total sample	Sharia compliant	Non-sharia compliant	Total sample
Intercept	0.183 (0.09)	-1.732** (0.02)	-1.501**	1.185 (0.88)	-0.125** (0.75)	0.145**
Over-invest	0.125*** (3.64)	0.151*** (3.10)	0.776 (5.66)	0.157** (3.29)	0.104*** (3.17)	1.256*** (5.20)
RO_PERF	0.297 (0.08)	0.110 (0.06)	0.444 (0.09)	1.056 (0.19)	0.098 (0.15)	1.054 (0.87)
Tot_comp			0.161*** (0.172)			0.166*** (0.185)
Cash_com			0.142*** (0.004)			0.140*** (0.006)
Copm*over_conf			0.017* (1.94)			0.017* (1.80)
LEV	0.032** (0.026)	-0.028** (0.028)	0.752** (0.021)	0.035** (0.32)	0.030** (0.22)	0.176** (0.29)
PAYOUT	0.030*** (0.02)	0.018** (0.03)	0.045** (0.06)	0.033** (0.03)	0.011** (0.01)	0.561** (0.08)
PROF	0.007*** (0.04)	0.109 (0.03)	0.111 (0.06)	0.005*** (0.04)	0.001*** (0.00)	0.018*** (0.11)
Tang	0.020** (0.02)	-0.015 (0.02)	0.070 (0.05)	0.151 (0.01)	0.165 (0.01)	0.199 (0.08)
Year fixed effect	Yes	Yes		yes	yes	
Industry fixed effect	Yes	Yes		Yes	Yes	
Adjusted. R2	0.76	0.73	0.70			
Observation	143	64	207	143	64	207

Brackets contain p-values and superscripts **, *, and * denote significance at 1%, 5%, and 10%, respectively.

The present study has shown that irrationality of management as the result of behavioral biases of executive managers is critical in corporate governance. A company's value is likely to get affected negatively due to managerial overconfidence. In accordance with the present study, previous studies have also confirmed that risk-taking motivation decreases costs for overconfident directors (Campbell et al. 2011; Gervais et al. 2011). These factors need to be controlled as overconfidence and non-compliance with Shariah laws may increase the conflicts between their interests and management's interests (Baccar et al. 2013).

The study has some important limitations suggesting directions for future studies, which should be considered. Firstly, the study has only investigated non-financial companies and financial companies have been excluded because firms in this sector are administered by a different set of instructions. Secondly, the study has only two proxies as indicators for managerial overconfidence though there are lots of measures used in literature (e.g., options-based measure introduced by Malmendier and Tate 2008).

Robustness Checks

The regression outcomes for CEOs in Sharia and Non-sharia compliant firms were reported in Table 7. The findings based on a regression analysis were discussed for the movement of CEOs in sharia and non-sharia compliant firms. The residuals of new firms were regressed for checking the robustness of the findings for all decision variables. The findings have indicated that the decisions of CEOs are same in both firms who moved from one sharia compliant firm to another. This is because of the nature of the firms. The findings for CEOs who move from non-sharia to sharia compliant firms are statistically insignificant.

Table 7: Robustness Checks

	Coefficient	p-value
Sharia Compliant Firm (CEO)		
ROA	0.057	0.000
Over-invest	0.024	0.049
RO_PERF	0.052	0.000
LEV	0.061	0.011
PAYOUT	0.827	0.580
PROF	0.410	0.567
Tang	0.211	0.451
Non-Sharia Compliant Firm (CEO)		
ROA	0.023	0.000
Over-invest	0.054	0.000
RO_PERF	0.046	0.011
LEV	0.078	0.034
PAYOUT	0.231	0.043
PROF	0.567	0.056
Tang	0.125	0.231

MANAGERIAL IMPLICATIONS

The findings have important implications for managerial overconfidence and performance. Firstly, the study has proposed explanation for the overconfidence puzzle reported by other studies. According to Hirshleifer et al., (2012), it might be observed that overconfident CEOs are better innovators and can effectively interpret growth opportunities into firm value. The

findings have indicated that the relationship of overconfident CEOs with innovation positively influenced firm value in other industry segments. Furthermore, overconfident CEOs are able for contributing to firm value using their investment behavior.

Secondly, firms might be more inclined to emphasize their recruitment efforts particularly to attract overconfident managers if moderate and high overconfidence levels have a positive influence on firm value. Thirdly, the incentives of overconfident managers and shareholders should be aligned with option-based compensation for mitigating the detrimental effects of CEO overconfidence on corporate policies. In particular, overconfident managers are in favor to introduce additional mechanisms.

The results presented in this study would be helpful for the owners and investors in process of decision making considering various aspects. As it shows that the responsibilities of managers, capital expenditures, managerial overconfidence, and CEO compensation need more attention to evaluate the capability of listed companies to pay back the investment. The testing of internal controls of companies with Shariah laws compliance decreases on the effectiveness of corporate governance mechanisms to prevent managerial overconfidence.

The present study contributes to growing literature presenting several originalities, as it is more closely related to the literature that investigate the effect CEO overconfidence on performance. This study has complemented the literature by using performance in sharia compliant firms offering an attempt to fill the void and build for a better understanding of managerial overconfidence and firm future performance. Second, focusing on GCC listed firms, this study has explored the interaction between CEO compensation and overconfidence on firm performance consistent with the predictions. The study has also found that the performance was positively related to compensation and overconfidence. This suggests that CEO compensation might be considered an alternative device to motivate managerial overconfidence and consequently reflects on a high firm performance.

CONCLUSION

This study has examined the relationship between overconfidence and firm performance of sharia-compliant firms and non-sharia compliant firms of GCC listed firms as well as the effect of CEO compensation on this relation. The study has provided interesting insights for researchers and decision-makers for improving the understanding of managerial overconfidence and performance and enriching the literature on managerial overconfidence and firm performance. After controlling for monitoring proxies, the study has found that managerial overconfidence is significantly related to firm performance. CEO compensation and managerial overconfidence were also correlated positively with sharia-compliant firms' performance. This finding has suggested that CEO compensation might be considered an alternative device to motivate managerial overconfidence and as a result reflect on high-firm performance.

Nevertheless, this study is the first of its kind conducted on managerial overconfidence and performance of sharia-compliant firms' and non- sharia compliant firms in GCC listed firms. It is suggested that other overconfidence measures should be included in future studies and the managerial overconfidence and other variables should be examined using an additional sample with comprehensive statistical analysis including the moderating effects of demographic items.

Moreover, the results of present study should be replicated considering both financial and non-financial firms.

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