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Salehi, Mahdi; Jamalikazemini, Bahman; Farhangdoust, Shayan
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Board compensation and disclosure quality: Corporate governance interference

Compensación de la junta y calidad de la divulgación: interferencia del gobierno corporativo

Mahdi Salehi[1]*, Bahman Jamalikazemini[2], Shayan Farhangdoust[2]

[1]*Ferdowsi University of Mashhad, Iran*
[2]*Imamreza International University of Mashhad, Iran*

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Abstract

This paper investigates the impact of financial information disclosure quality on board compensation in various corporate governance mechanisms in Iran. A unique data set from a sample of 176 Iranian listed firms over the period 2010-2016 is used in order to address the following questions: as an incentive mechanism for managers, is there any relationship between compensation and disclosure quality of financial information while some corporate governance factors are interfered? Duality on board, educated members, females, and independent members are the aspects that are considered as corporate governance interference. Along with these issues, we investigate whether firm complexity is likely to affect the mentioned relationship. We find that corporate governance mechanisms including educated board members, independent members, females, and board members duality are not some reward-enhancing methods. This lends support to the conjecture that directors neglect the quality of information they provide, and as a consequence, they adjust their bonuses via other methods. Our findings indicate that there is a significant and positive relationship between board compensation and disclosure quality in firms which have complex activities and foreign sales. Finally, we indicate that disclosure quality has no significant impact on compensation in firms which have complex activity of controlling some subsidiaries.

JEL classification: J30, G30, G34, M12.

Keywords: Board Compensation; Disclosure quality; Corporate governance; Tehran stock exchange.

*Corresponding author.
E-mail address: mehdi.salehi@um.ac.ir (M. Salehi)
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Resumen

Este documento investiga el impacto de la calidad de divulgación de información financiera a bordo de la compensación en varios mecanismos de gobierno corporativo en Irán. Se utiliza un conjunto de datos único de una muestra de 176 empresas iraníes incluidas en la lista durante el período 2010-2016 para abordar las siguientes preguntas: como mecanismo de incentivos para los gerentes, ¿existe alguna relación entre la compensación y la calidad de la información financiera revelada mientras que algunas empresas factores de gobernanza son interferidos? La dualidad a bordo, los miembros educados, las mujeres y los miembros independientes son los aspectos que se consideran interferencia de gobierno corporativo. Junto con estos problemas, investigamos si es probable que la complejidad de la empresa afecte la relación mencionada. Encontramos que los mecanismos de gobierno corporativo, incluidos los miembros del consejo educado, los miembros independientes, las mujeres y la dualidad de los miembros del consejo, no son algunos de los métodos que mejoran la recompensa. Esto respalda la conjetura de que los directores descuidan la calidad de la información que brindan y, como consecuencia, ajustan sus bonificaciones a través de otros métodos. Nuestros hallazgos indican que existe una relación significativa y positiva entre la remuneración de la junta y la calidad de la divulgación en las empresas que tienen actividades complejas y ventas en el extranjero. Finalmente, indicamos que la calidad de la divulgación no tiene un impacto significativo en la compensación en las empresas que tienen una actividad compleja de controlar algunas subsidiarias.

Códigos JEL: J30, G30, G34, M12.
Palabras clave: Compensación de la Junta; Calidad de divulgación; Gobierno corporativo; Bolsa de Teherán.

Introduction

With the emergence of large enterprises and the boom in economic activities, owners handed the duty of controlling companies' resources to professional managers. If managers receive appropriate feedback from their efforts, they will exert their maximum efforts in line with companies' activities – the owners' resources –. Therefore, in order to maximize their own benefits, owners had to compensate managers' efforts (Duong & Evans, 2015; Feng et al., 2015). According to the agency theory and findings of Mirrlees (1976), Grossman & Hart (1983), and Duong & Evans (2015), if conflict of interest exists, managers usually put high priority on their own interests and neglect the shareholders'. Therefore, shareholders face some difficulties here: how to provoke managers to do their work better, and how to plan to conduct these activities in line with the firm's benefits. In order to address these issues, suitable criteria should be considered to gauge the managers' performance. Then, appropriate incentive schemes need to become connected to these criteria to align the managers' benefits and the owners'. If we consider the managers' performance and owners' benefits, it is in a way that adequate compensation is paid to the managers based on their efforts, and consequently, both groups' interests are increased. To pay sufficient rewards to the managers, their performance and efforts should be precisely evaluated (Hui & Matsunaga, 2015). Taking into account the financial resources which are given by the owners to the managers for the firms' activities, and considering the financial statements of firms as the indicator of their performance results, Hui & Matsunaga (2015) are of the opinion that financial statements and their quality are some of the most important and determining factors for the users. Also, they are suitable standards by which managerial efforts could be compensated. As noted by Bouckova (2015), the main

role of financial reporting is the transfer of information to external users in an efficacious way. Timeliness, reliability, transparency, and comparability of information are the most important elements for informed economic decisions. Therefore, an effective decision is the one which is based on correct predictions. In this regard, the quality and the quantity of information reported in financial statements or in the explanatory notes – which are used to help decision makers – are set to be the disclosure quality of financial information. These vital information provides a detailed description of financial condition and performance results of firms (Bouckova, 2015). As agency theory argues that conflict of interests is resulted from the separation of ownership and management, the managers' compensation creates a balance between the managers' benefits and the shareholders' (Kapopoulos & Lazaretou, 2007; Bouckova, 2015). Although observations show that firms profits – as a measure for paying compensation – have diminished, but the bonuses are still being paid continuously.

Although growing literature on the board compensation and its effects on various aspects of corporations is seen, there is hardly any evidence on the relationship between board compensation and disclosure quality in various corporate governance mechanisms, especially in developing countries. By using data from Iranian listed firms, we look into this argument. Iran has some interesting aspects to explore this research. First, there is a notable method for categorizing firms in Iran; all listed firms are scored and ranked according to the timeliness and reliability of their information. Second, the mechanisms by which rewards are paid are varied and twisted in some ways. Third, the economic and financial situation of Iran in the Middle-East and especially among developing countries make our sample truly engrossing. Among many identified criteria in Iran and in most countries, the quality of financial information is introduced and examined in this study. Although many people tend to buy and sell shares based on the financial statements, some detailed information such as corporate governance mechanisms are reported voluntarily. However, for a better information divulgence needed by the users, all specific data in every aspects should be included. We aim to investigate the relationship between board compensation and disclosure quality in the presence of various corporate governance mechanisms: duality, education degree and level, female on board, and independent executives. Last, but not the least, we will conclude our study on the mentioned relationships by including export and segment variables.

We contribute to the literature in several ways. We add to the corporate governance literature, compensation and disclosure quality research. Common belief has considered the use of routine criteria to compensate managers' endeavor. But it has not considered disclosure quality as a vital-determinant criterion, especially among different corporate governance conditions. Moreover, to our knowledge, the evidence on the relationship between disclosure quality and board compensation under various corporate governance mechanisms is still lacking in developing countries, and, consequently, we aim to fill this gap in the literature. Finally, some policy implications are provided by our study with respect to legislators' focuses on disclosure quality in that we argue that firms do not pay rewards based on the quality of reported information although they are of interest to shareholders. Hence, our study provides new insights into how disclosure quality is neglected in developing countries.

The remainder of the paper proceeds as follows: next part is the literature review and hypotheses development. Then comes the research design and sample selection process. The descriptive statistics are presented subsequently. The next section includes test results. And the final part concludes the paper.

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Theoretical framework

Transparency and quality of financial information

In order to make proper investment decisions, the users of financial information need accurate and timely data (Behrouzi et al., 2013). When firms report information which lacks transparency, they encounter credit risk and lose shareholders' faith. This situation substantially lessens the liquidity and reliability in the capital market. Indeed, the main reason behind capital markets' boom in long term is the environment in which divulged information is transparent (Madhani, 2009). Appropriate disclosure and information transparency have more positive impacts including information asymmetry reduction (Petersen & Plenborg, 2006; Barth et al., 2013), stock liquidity increase (Bloomfield & Wilks, 2000; Goh et al., 2008), firm values enhancement (Hassan et al., 2009), and earnings management reduction. Disclosure on dictionary means unfolding the information. By means of Kohler's dictionary, a clear show of a fact or condition on financial statements, explanatory notes, and audit reports is considered as disclosure. Market participants are always seeking high quality information because of their capabilities in reducing the information asymmetry between managers and investors. Several studies in the accounting literature illustrate that higher disclosure quality alleviates the information asymmetry. According to the findings of Francis et al. (2005), extensive disclosure policy is a mechanism for diminishing information asymmetry. Glosten & Milgram (1985) argue that the higher disclosure quality results in the lower information asymmetry. Welker (1995) declare that in proportion to the disclosure level, information asymmetry and market liquidity go lower and higher respectively. Lang & Lundholm (1996) contend that firms pursuing informative disclosure strategies are more followed by consistent analysts, have less variances in analysts' forecasts, and have more accurate profit forecasts. Also, according to the findings of Kim et al. (2008), there is a negative relationship between information asymmetry and disclosure quality andan increase in disclosure transparency can aid investors to evaluate earnings management.

The financial information disclosure may palliate agency costs. Information which is gathered by directors for their own use and had put little costs on them (Jensen & Meckling, 1976). The mechanical theory which was introduced in the 1960s suggest that except for the firms' financial statements, the users of financial information do not use other source of information, and investors merely make their decisions based on the values which are reflected in the financial information. Based on this theory, Welker (1995) argues that investors may be systematically misled by the options and the accounting methods. On the other hand is the efficient market theory which indicates that all of the available information are fully reflected by the market values. In the semi-strong form of the efficient market theory, Welker (1995) demonstrated that fake accounting changes could be detected by the market, and managers cannot systematically mislead the market by using such changes. Ball et al. (2000) and Kothari (2000) perceive the transparency as a combination of timeliness and conservatism aspects. Lang & Lundholm (1996) argued that higher disclosure quality via information asymmetry diminishes the surprises about a firm's performance, decreases stock price volatility, increases stock exchange rate, and enhances firms' performance. Bushman & Smith (2003) also carried the conviction that reliable and effective accounting information facilitate shareholders' monitoring condition and law enforcement that protect shareholders' interests.

One of the most underlying factors behind sustainable economic development in any

country is the provision of basic infrastructure for attracting domestic and foreign investments. This is acquired by a healthy-competitive environment having transparent and timely information where all the users have access to this information (Billings & Capie, 2009). Nowadays, information transparency and disclosure quality are the main concerns of capital market participants all around the world (World Bank, 1998). Barth & Schipper (2008) are of the opinion that transparent financial reporting is about the financial reports which unfold firms' main economic affairs in a way that users can easily understand them. Bushman et al. (2004) contend that in different economies, information transparency is considered as the power of extensive access to relevant and reliable information related to financial performance, investment opportunities, sovereignty, value, and risk taking of firms.

In the wake of the financial crisis in the Iran's capital market in early 2004, investors focused more on information transparency of the listed firms. In this regard, in addition to creating a balance between national and international standards, the Tehran Securities and Exchange Organization (TSEO) has exerted some efforts to enhance disclosure procedures. The provision of disclosure guidelines and introduction of a disclosure ranking system can be named as examples of these efforts.

On the one hand, disclosure quality and information transparency assure minor shareholders about receiving reliable information, and also assure them that the major shareholders are not trying to violate their rights. On the other hand, they provoke directors to attempt to improve corporate value instead of increasing their short-term self-interests. If directors keep private information for themselves, this will lead to information asymmetry and moral hazards (Barnea et al., 1985). Healy & Palepu (2001) argue that firms are able to palliate agency conflicts and information asymmetry by financial reporting and divulging information. Therefore, the quality of investment decision is affected by disclosure quality. The potential benefits of disclosure and transparency consist of lower capital expenditure (Botoson, 1997; Diamond & Verrocchia, 1991), agency costs reduction (Leftwich et al., 1981), stock price enhancement (Lang & Lundholm, 2000; Gelb & Zarowin, 2002) and firms' value augmentation. Sufficient information disclosure by firms helps users in finding suitable investment positions, and as a result, capital flows to the most productive firms. Navissi et al. (2016) examined the impact of various business strategies on managers' compensation and investment decisions. They showed that defensive or active strategies lead to different kinds of decisions, monitoring and investment level which have an impact on the managers' decisions and their bonuses. The results illustrated that firms with active (defensive) strategies have high (low) investment level. They also indicated that the pursued strategies by firms resulted in poor performance. Moreover, the high (low) level of investments are intensified in the presence of stock- (cash) based compensation and an active (defensive) policy employment. Choi (2014) investigated if the labor market competitiveness makes compensation contracts being adjusted. He found out that compensation offers will create confidence in employees and increase their efforts. He also showed that the initial outcomes of compensations are immense, and with the passage of time, these effects and the level of mutual trust will be different. Chen et al. (2015) examined the directors' concerns about their future rewards. They came to a conclusion that since directors can exert more efforts to prove their abilities, they are able to have an effect on rewards. They also showed that managers are very concerned about their fame. Boo et al. (2016) examined the impact of business connections and incentive schemes on the auditors biased reports. They concluded that with the presence of an incentive scheme, auditors' discrimination is likely to be reduced.

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Bratten & Xue (2016) examined the relationship between institutional ownership and stock-based rewards. They found that firms with high institutional ownership have high abnormal incentives, experience noticeable decrease in rewards given to the CEOs. Cadman & Sunder (2014) studied the relationship between CEOs' bonuses and shareholders' investment viewpoint. They declared that by the time shareholders are eager to sell their shares, they trigger short-term motivations in directors to maximize current share values. Kelly & Seow (2016) investigated the pays to CEOs in comparison with the industries' median. They demonstrated that too high disclosure in industries cause marginally reductions in the understanding of rewards' fairness. Bushman et al. (2016) investigated the variance of directors' rewards and performance. They found out that when the dispersion of bonuses is very low (high), performance is improving (deteriorating). Pfeiffer & Shields (2015) examined the reflected reaction of stock price to compensation contracts. They concluded that contrary to the expectations, directors choose contracts according to their private information and these choices have an effect on stock prices. Hogan & Jonas (2016) examined the structure of compensation payment and transparency of financial statements restatement. The results illustrated that the growth in bonus paid to the managers in form of stocks reduces the transparency of disclosure quality. Their findings totally demonstrated that the compensation payment structure has an effect on information transparency. Brown & Popova (2016) studied the relationship between managers' incentives and audit committee connections and its impact on auditors' decisions. They proved that the more directors' bonuses are, there will be more additional and unconventional relationships of audit committee and it will have greater impact on auditors' decisions.

Compensation vis-a-vis disclosure quality

With the emergence of big enterprises and booming businesses, shareholders put the burden of controlling firm's resources on expert directors. If the directors get valuable feedbacks on their efforts, they will exert their maximum efforts in order to maximize shareholders' wealth and enhance firms' performance. Thus, at least, shareholders are necessarily forced to consider some kind of bonuses to compensate managers' efforts and consequently, heighten their own benefits (Duong & Evans, 2015; Feng et al., 2015). Since stock-based benefits given to the directors' act as some motivational factors to improve firm's value (Core & Guay, 1999), agency theory shows that efficient bonus contracts which are based on firm performance criteria reduce the risk cost (Banker & Datar, 1989; Bushman & Indjejikian, 1993; Sloan, 1993). An effective performance criteria demonstrates the appropriateness of the managers' activities; activities that are related with the given compensations. Traditional agency theory considers that an efficacious market performs under the condition in which directors earn salaries based on the final output of their firms' activities. Labor market considers managers' abilities to determine their salaries. If firms consider their final output – products – as a criterion for managers' performance, salaries are adjusted based on that criterion. If preparation and diffusion of financial information are costly for firms, then, managers' bonus should be based on the disclosure quality of financial information. Regarding that all firms' forces – internal and external – can aid managers enhancing the quality of financial information disclosure.

Prior studies consider that high disclosure quality makes firms' values increasing by capital cost decrease (Botoson, 1997; Easley & O'hara, 2004; Franciset al., 2008), litigation risks decrease (Franciset al., 1994) and investments development (Bushman & Smith, 2001;

Biddle & Hilary, 2006). Diamond & Verrocchia (1991) contend that regarding the correlation between disclosure quality and firm value, higher disclosure quality through an increase in stock liquidity leads to capital cost reduction. Botoson (1997) offered some evidence showing that high quality disclosure – via annual financial statements – decreases a firm's cost of capital. There is also some more evidence showed by Francis et al. (2004) declaring that there is a negative relationship between the quality of discretionary accruals and capital cost. In another study, Easley & O'hara (2004) indicated that information risk is costly and it is related with high expected returns. Moreover, high quality disclosure results in an increase in cash flows by higher efficacious investments (Bushman & Smith, 2001; Biddle & Hilary, 2006). This has happened due to the additional transparency offered to external users which leads to better understanding of poor investments. Furthermore, monitoring a firm's performances may lead to agency costs reduction and may encourage directors to investment better.

The provision of high quality information is dependent on the managers' high understanding of economy, environment and competitive infrastructure of companies and industries, and also to the forthcomings which companies need to succeed in. Due to the high importance of directors' capabilities in following strategies, the financial information disclosure quality would be a demonstrative factor of administrative skills in promoting a firm's value (Chang et al., 2010). Actually, disclosure quality of financial information causes directors' salaries being adjusted in the labor market, representing a positive relationship between the two-mentioned variables. Adams & Hossain (1998), and Cheng & Courtenay (2006), declared a positive relationship between board compensation and voluntary disclosure. Also, a negative correlation was found between the variables by Abdelsalam & Street (2007), and Eng & Mak (2003). Since the provision of high quality information is costly for directors, and in case they may not have enough incentives, they will not exert sufficient effort in order to improve the information quality. Consequently, information with the quality of lower than normal will be produced. The cost by which information is produced include collecting, analyzing and transmitting. Higher disclosure quality via transparency augmentation makes directors being close to each other, therefore, they adjust the provision of information spontaneously. For instance, high quality disclosure decreases the directors' desires about following self-interest policies via disclosing adjusted information (Aboody & Kasznik, 2000). Therefore, better disclosure quality reduces directors' opportunistic behavior on financial reports, and particularly, in the expropriation of wealth to themselves.

Hypotheses development

Corporate governance stands alone as a resolution to the conflict of interests. Shleifer & Robert (1997) regard corporate governance as a guarantee for investment profitability of capital suppliers. The importance of corporate governance came up when the separation between directors and owners appeared (Epps & Cereola, 2008; Zubaidah et al., 2009). The provision of high-quality information needs directors' deep conception of the economic and competitive environment in which a firm is performing and striving to be successful. According to the skills needed in following various policies, disclosure quality represents directors' abilities in enhancing firms' values (Chang et al., 2010). Managers, who are in the limelight, attempt to relieve the agency costs by publishing financial information. But in terms of tunneling, some directors use earnings management leverage to distort firms' actual operations and transfer

shareholders' wealth to themselves (Shin & Park, 1999; Chang & Hong, 2000; Johnson et al., 2000; Bazrafshan et al., 2015). They do this either for receiving compensation or maintaining their desired niche (Biedleman, 1973; Tucker & Zarovin, 2006).

To date, there has been a large body of research on the impact of corporate governance and managerial incentives on disclosure quality (Bushee & Noe, 2000; Nagar et al., 2003; Ajinkya et al., 2005; Karamanou & Vafeas, 2005; Anderson et al., 2009; Lee et al., 2012). According to Bear et al. (2010), many researches are conducted on the alternative or complementary role of corporate governance and disclosure quality, which some of them illustrated that in order to get higher disclosure quality, higher bonuses are paid by firms with stronger corporate governance structure (Armstrong et al., 2010; Hui & Matsunaga, 2015). Moreover, this kind of firms are highly expected to design an incentive scheme based on non-financial measures (Ittner et al., 1997). It is highly probable that powerful boards realize the vitality of financial information and put their maximum time and effort on to receive great rewards. This is in line with the findings of Ajinkya et al. (2005) and Karamanou & Vafeas (2005), who found that higher corporate governance leads to greater disclosure quality. In this regard, Ittner et al. (1997) declared that non-financial performance criteria are related to directors' power. Also, board characteristics is considered as the most determining factor in implementing reporting policies (Chen & Jaggi, 2001; Chau & Gray, 2010; Khlif & Samaha, 2014). Estelyi & Nisar (2016) consider a board as the core of a firm in decision making process and in pursuing different policies. They investigated the nationality of board members and its effects on firms' power and performance. The results demonstrated that national diversity of board members acts as the board strength and has a correlation with performance. Sariol & Abebe (2017) examined the impacts of board power on firms' innovations and found a significantly positive relationship between the variables. Haque (2017) investigated the board characteristics and bonus plans and concluded that the gender of board members and their independence are not related with directors' incentives.

Based on the empirical findings reported above, previous studies have failed to consider the fact that the relationship between compensation and the quality of disclosed information could be moderated by some specific characteristics of board members including their educational condition, their independence, the presence of female members on board, or their duality. Accordingly, the present study aims to fill this gap in the literature.

Duality on board

In corporate governance literature, duality represents a board member who has the position of CEO simultaneously. Fama & Jensen (1983) argue that the separation of control from ownership is an appropriate deterrent factor for conflict of interests and an improver of firm's values. In developing economies, duality has become increasingly popular in firms and family groups. The reason behind why firms are eager in duality is that they focus on leadership more. Gordon et al. (2005) indicate that duality may attenuate the board's independence and affects performance in a negative way. Also, duality may facilitate managerial entrenchment (Pfeffer, 1981), and may strengthen conflict of interests (Kim et al., 2008). Agency framework of Fama & Jensen (1983) declares that the structural integrity of leadership decreases the importance of the separation between decision management (CEO) and decision control (chair of the board). Thus, duality alleviates monitoring and improves board compromise and balances (Cerbioni & Parbonetti, 2007; Samaha et al., 2012; Khlif & Samaha, 2014). On the other hand, a CEO

has access to the most fundamental and private information and his duality may restrain the full transformation of information between CEO and board members and results in voluntary disclosure decreases (Kim et al., 2008). However, Anderson & Anthony (1986), believe that duality causes the emergence of an outspoken and powerful leadership in a firm's strategic structure and leads to productivity consolidation. They argue that a unified leadership structure reduces the cost of sharing information, and also, lessens the conflict of interests between the CEO and the chairman. Supporters of duality are of the opinion that leadership clarity and unity of command palliate agency conflicts and improve decision making's process (Rhoades et al., 2001).

There have been many contradictory empirical evidence about the relationship between duality and voluntary disclosure. Li et al. (2008) reported a significant and negative relationship between the two-mentioned variables, while Cheng & Courtenay (2006) and Haniffa & Cooke (2002) found a positive relationship. Wang & Dewhirst (1992) contend that boards' characteristics such as duality or the ratio of external directors may have an impact on shareholders diversity structure, and as a result, affect the way by which information are disclosed. Findings of Samaha et al. (2015) illustrate that in the relationship between board's size, bonus and duality with the information that are disclosed voluntarily, a country's location is a vital and determining factor. Lim et al. (2007) conclude that board's aspects have an impact on information disclosure in various ways. Because it is widely believed that audit committee and board members insist on protecting the shareholders' interests (Ayuso & Argandoña, 2007), they always care about shareholders' benefits and focus on strategic financial information. On the other hand, a CEO who has a position on board may disclose less information. Furthermore, the proprietary costs theory argues that in short-term periods, directors tend to boost firm's performance and augment their bonuses by disclosing less environmental information about the firm. Taken together, we base our conjecture upon the previous arguments and present the first hypothesis as follows:

H1: There is a significant relationship between board compensation and disclosure quality in firms with duality on board.

Education level & degree

Directors' role in firms' performance is a debatable subject amongst many researchers. On the one hand, organizational ecologists address the directors' importance for a firm. Their belief lies in the fact that a firm's success is based on the products quality, life cycle, firm's competency, and even luck; not the directors' skills or expertise (Cohen et al., 1972; Hannan & Freeman, 1977). On the other hand, the up upper echelon theory argues that directors are the ones who have an impact on a firm's performance (Hambrick & Mason, 1984; Harris & Helfat, 1997; Hayes & Schaefer, 2000). The main purpose of the theory is to demonstrate that it is a firm's output which shows the knowledge and ability of the directors (Becker, 1962; Amit & Shoemaker, 1993; Coff, 2002). Directors' experiences and background form the decisions they make (Hambrick and Mason, 1984; Hitt and Ireland, 1985). Prior researches declare that directors with operational background are able to identify and tackle relative issues in a more efficient way. Koyuncu et al. (2010), For instance, indicated that directors with operational background can handle production line issues in a more appropriate way. While, directors with business experiences can aid in marketing difficulties (Boyd et al., 2010). Managerial ability is the directors' substantial expertise in different industries by which they maximize

firms' earnings and profitability (Krishnan & Wang, 2015). Firms managed by financial experts experience development in both financial strategies (Custodio & Metzger, 2014), and disclosure procedures (Matsunaga et al., 2013). Moreover, because financial experts enhance earnings quality, they pay lower audit fees as well (Kalelkar & Khan, 2016). Directors' financial abilities can create value in various ways such as efficient use of cash resources and better investment decisions (Custodio & Metzger, 2014). Because directors formulate final strategies about internal decisions, when they have financial expertise, they will have a far more fundamental role (Kalelkar & Khan, 2016). Matsunaga et al. (2013) indicate that firms employing financial specialists report conservatively. They specifically illustrate that due to the high association between fiscal policies and financial managers, they are able to monitor the financial reporting quality in a more appropriate way.

Based on the corporate governance mechanism, board members are able to use their educational capabilities in order to provide services (Dalton & Daily, 1999; Rindova, 1999; Westphal, 1999), depend on resources (Collins, 1971; Pfeffer, 1972; Hillman & Dalziel, 2003), control (Fama & Jensen, 1983), and monitor firms' current decisions (Johnson et al., 1996; Young et al., 2001). Board members' education level have an impact on business policies followed by the directors (Forbes & Miliken, 1999; Rindova, 1999). Also, it enables them to provide services in terms of strategic consultations (Dalton & Daily, 1999; Westphal, 1999). directors' education level and abilities can be considered as business services provided for firms (Rindova, 1999). Academic education and background of board members represent their participation in socio-economic areas and illustrate their capabilities in development and growth of external business activities (Collins, 1971; Pfeffer, 1972; Hillman & Dalziel, 2003; Stevenson & Radin, 2009). Nanda & Onal (2016) came to a conclusion that various methods for paying bonus will be applied and less stock-based compensations are paid when there are expert managers in different industries, and also when they are aware of environmental issues of the industries. Of course, there have always been various criteria for gauging managers' education level from "unskilled worker" to "professor" (Almus, 2002), "college education" to "higher education" (Barringer et al., 2005), and "primary school" to "long higher education" (Senderovitz et al., 2016). According to preceding studies and discussions, we conjecture that educated members may increase profitability and have accurate profit forecast; they make better investment decisions, create value for their firm, and pay less audit fees to auditors. Thus, we formulate our second and third hypotheses as follows:

H2: Board members' education level has a significant impact on the relationship between board compensation and disclosure quality.

H3: Board members' education degree has a significant impact on the relationship between board compensation and disclosure quality.

Female on board

Firstly, because of the various and nontraditional views toward different issues, gender variety may have an impact on the decision making process (Adams et al., 2015). A diverse board illustrates the conception it has of the business environment (Miller & Triana, 2009; Triana et al., 2013). It may also have a deeper understanding of the shareholders' range of interests (Harjoto et al., 2014). Furthermore, it can help firms by using individuals' skills such as prestige, financing, knowledge, legitimacy and diversity (Terjesen et al., 2009). Secondly, female managers are distinct from the peer males and have different priorities in mind (Adams

& Ferreira, 2009; Adams & Funk, 2012). Female directors have different leadership styles (Bear et al., 2010), and support responsibility projects and social communities (Hillman et al., 2002). Presence of some females on board makes interaction mechanism with shareholders being supported and causes financial reports being validated (Manetti & Toccafondi, 2012). Moreover, female directors are truly distinct in personality, education background, professional experience, and dialogue style (Liao et al., 2015). Female managers are more averse to loose legitimacy and reputation (Srinidhi et al., 2011). According to these differences, a diverse board may have an impact on the sustainability of financial reporting quality. Thirdly, women show eagerness toward making risk averse decisions, they focus on shareholders' interests more, and they are more accountable in behavioral and ethical issues (Carter et al., 2003; Adams & Ferreira, 2009). It should be noted that the effects of gender may be derived from other board characteristics (Srinidhi et al., 2011). The Davies Report (2011), and the Higgs Report (2003) stated that a board and its members may have a wide range of backgrounds and viewpoints. Likewise, European Commission (2012; 2014) declared that females have various goals and intentions. Their report about females' decisions demonstrated that the quality of ethical behavior in firms is affected by the ratio of females on board. Higgs Report (2003), discussed about the independent directors' roles and declared that gender diversity may boost their performance.

Based on the preceding discussions, we hypothesize that females, in comparison to men, have different priorities, style, prestige and a better understanding of their environment. Moreover, when a female member is on board, there is less tension during the meetings and financial reports are more validated. All in all, we expect that the presence of females on board may have a significant and positive impact on the relationship between board compensation and disclosure quality. This leads us to our fourth hypothesis as follows:

H4: There is a significant relationship between board compensation and disclosure quality in firms with females on board.

Non-executive on board

Agency theory suggests that non-executive directors may have an enormous effect on the efficaciousness of boards' monitoring procedures (Fama & Jensen, 1983). Samaha et al. (2012) and Patelli & Prencipe (2007) contend that by voluntary disclosure, external directors may achieve greater public reputation as expert supervisors in the market. Moreover, Meca & Ballesta (2010) argue that non-executive directors are eager to put pressure on internal directors to improve financial disclosure policies via voluntary disclosure. On the other hand, Patelli & Prencipe (2007) demonstrated that because external directors are chosen by the majority of shareholders, the monitoring role of minor shareholders is restricted (Demb & Neubauer, 1992). In this situation, high proportion of external directors can have an impact on voluntary disclosure quality negatively. It is also argued that external managers are not completely independent and have deep interactions with major shareholders. These statements may be compatible with the boards and the audit committees' role in improving financial disclosure strategies. When directors are not truly independent, CEO acts in a more comfortable environment and takes the initiatives about financial reporting and related strategies (Barako et al., 2006). We are if the opinion that when independent directors are on board, more efficacious monitoring roles are implemented. We argue that independent managers put pressure on the executives to disclose

voluntary information, and to improve their disclosure strategies; we believe that they actually care about seizing reputation by this. Moreover, participation of the non-executives may alleviate conflict of interests and more risky-innovative policies may be pursued. Altogether, we anticipate a significant positive relationship between board compensation and disclosure quality when there are independent directors on board:

H5: There is a significant relationship between board compensation and disclosure quality in firms with non-executives on boards.

Export & segment

Based on the findings of Kalelkar & Khan (2016), the number of a firm's subsidiaries along with its foreign activities are some of the most determining factors for evaluating the complexity of a firm performance. Ma et al. (2014) also argue that internationalization is a condition in which market research is conducted in the overseas, distribution channels are improved, foreign demands are adapted, export licenses from destination markets are acquired, and manufacturing facilities are set up. Bushman et al. (2016) and Sanders & Carpenter (1998) indicate that the more a firm is internationalized, the higher complexities its directors are going to struggle with. Carpenter & Sanders (2004) are of the opinion that the complexity which multi-national firms have inherited puts a huge burden on the directors' shoulders, it augments their responsibility, and requires higher exerted efforts. researches in the audit fees field shows that complexity is one of the key aspects of a firm's characteristics (Simunic & Stein, 1996; Gul & Tsui, 2001; Ferguson et al., 2003; Vafeas & Waeglein, 2007; Hay et al., 2008). Moreover, complexity is related to the various firm activities. Rose & Shepard (1997), came to a conclusion that when firms have more segments, they assign more tasks to the directors and heighten their bonus either. If the number of segments is grown, a director has to cope with more employees, and manage, analyse and evaluate the results and outcomes of their works (Balsam et al., 2012). According to the preceding discussions, we envisage that complex firms – which have foreign sales and control some subsidiaries – have to struggle in many different aspects including financial and operational issues. They also need to report their statements vividly and compensate their directors' exerted efforts to maximize the firms' outcomes if they want to survive in a cut-throat market. In this regard, we hypothesize that in firms which have export and subsidiaries, board compensation and disclosure quality have a significant and positive relationship:

H6: Export levels have a significant impact on the relationship between board compensation and disclosure quality.

H7: Segments have a significant impact on the relationship between board compensation and disclosure quality.

Research design and sample selection procedure

Regression models

To test our hypotheses, we employ two sets of regression models with disclosure quality as the independent variable and compensation as the dependent variable. We also include a relevant set of control variables along with some mediator variables. The initial model focuses on the financial information disclosure quality and turns it into a quantitative variable. We examine this model by employing the following equation:

$$Disclosure\ Quality_{it} = \beta_0 + \beta_1 LnAsset_{it} + \beta_2 Market\text{-}to\text{-}Book_{it} + \beta_3 ROA_{it} + \beta_4 InstitutionalOwn_{it} + \beta_5 Leverage_{it} + \beta_6 Loss_{it} + \beta_7 ROAVolatility_{it} + \beta_8 Earn_{it} + \beta_9 ForeignSales_{it} + \beta_{10} InsiderOwn_{it} + \beta_{11} Segments_{it} + IndustryDummies + YearDummies + \varepsilon_{it} \quad (1)$$

The residual term of model (1) is the measure of disclosure quality that will be used in the next equation. Our second regression model focuses on the relationship between compensation and disclosure quality. We employ the following equation to examine the mentioned relationship:

$$\Delta Compensation_{it} = \beta_0 + \beta_1 Disclosure_{it} + \beta_2 (HiQuality_{it} * \Delta ROA_{it}) + \beta_3 \Delta ROA_{it} + \beta_4 (HiQuality_{it} Return_{it}) + \beta_5 Return_{it} + \beta_6 (HiQuality_{it} * \Delta Misses_{it}) + \beta_7 \Delta Misses_{it} + \beta_8 (HiQuality_{it} * \Delta Declines_{it} + \beta_9 \Delta Declines_{it} + \beta_{10} Duality_{it} + \beta_{11} (Duality_{it} * HiQuality_{it}) + \beta_{12} EduLevel_{it} + \beta_{13} (EduLevel_{it} * HiQuality_{it}) + \beta_{14} EduDegree_{it} + \beta_{15} (EduDegree_{it} * HiQuality_{it}) + \beta_{16} \Delta Female_{it} + \beta_{17} (\Delta Female_i * HiQuality_{it}) + \beta_{18} NonExe_{it} + \beta_{19} (NonExe_{it} * HiQuality_{it}) + \beta_{20} Export_{it} + \beta_{21} (Export_{it} * HiQuality_{it}) + \beta_{22} Segments_{it} + \beta_{23} (Segments_{it} * HiQuality_{it}) + IndustryDummies + YearDummies + \varepsilon_{it} \quad (2)$$

In model (2), ΔCompensation (board compensation) is our variable of interest and used as the dependent variable. Disclosure quality of financial information is our independent variable which is derived from the model (1). Regarding the moderator variables, we use a series of corporate governance variables including board members' education level (EduLevel); board members' education degree (EduDegree); if CEO has a position on Board (Duality); females on board (Female); independent directors on board (NonExe); foreign sales (Exports); and the number of subsidiaries (Segments). The information shown in table (1) is a succinct description of variables used in our models.

Table 1. Variable Definitions

Variable	*Measure*
Disclosure Quality	Disclosure quality rankings of Iranian listed firms distributed by Tehran Securities and Exchange Organization
LnAsset	Natural log of total assets which represents firm size
Market-to-Book	Market value of equity divided by the book value of equity
ROA	Net income divided by total assets
Institutional Ownership	Total percentage of shares owned by governmental firms, banks, investment firms, and insurance firms
Leverage	Total liabilities divided by total assets
Loss	Equal to one if the firm reported a loss and zero otherwise
ROA-Volatility	Standard deviation of the annual return on assets for the four-year period prior to current year
Earn	(Earnings Sustainability) Derived from the model developed by Dichow & Dichev (2002)
Insider Ownership	Total percentage of shares owned by board members
Segments	Total number of business segments that the mother firm owns at least 50% of their shares
ΔCompensation	(Bonus Growth) Measured by the natural log of total compensation of year t minus the year t-1

Disclosure	Residual term of the first model of disclosure quality; We utilized the data on disclosure scores disclosed publicly by the TSE on an annual or quarterly basis to calculate the financial disclosure quality of TSE listed companies. This score is calculated as the sum of reliability and timeliness scores of financial disclosure.
HiQuality	If the residual from the first regression model for year t is above the sample median, it takes the value of one, and zero otherwise
ΔROA	Return on assets for year t less return on assets for year t-1
Return	Annual stock return for year t
ΔMisses	Deviation between management forecast and realized earnings
ΔDeclines	Earnings-per-share for year t less the earnings-per-share for year t-1
Duality	If CEO has a chair on board, it takes the value of one, and zero otherwise
Education Level	Education level of board members which represent the highest value respectively: 1=Ph.D., 2=master, 3=bachelor, and 4=associate
Education Degree	Education degree of board members which represent the highest value respectively: 1=finance, 2=management, 3=economics, and 4=engineering
Female	Total number of females on board
Non-Executives	Total number of non-executive managers on board
Export	Total export sales divided by total assets in year t

Sample selection procedure

We obtain our required data manually from the hardcopy financial statements held in the TSE library (i.e. Codal1 and its supplementary software known as Rahavard Novin) for the sample 2010 to 2016. We then exclude firms with non-calendar fiscal year end, firms with missing or insufficient variable data and firms with fiscal year change during 2010-2016. We also exclude firms operating in banking industry as well as financial and investment institutions to measure the variables used in our equations, primarily because financial institutions and banking industry have different reporting requirements that could influence the figures associated with dependent variables. This leaves us with a primary sample of 1232 firm-year observations (see Table 2). The distribution of sample among industries is displayed in Table 2, indicating that the at top of the table are minerals & mining and the automotive & parts manufacturing industries with 23.86% and 17.05% of the whole sample observations, followed by the machinery & equipment, chemical, pharmaceutical, food & beverage, and metal industries with 14.2%, 12.5%, 11.93%, 10.23% and 10.23% of the sample observations respectively.

Table 3 provides descriptive statistics of the variables used in the regression models. For Duality, the mean value of 0.8519 indicates that about 85% of the firms have a duality on board. Regarding Female, The mean and max values show that very few firms had females on board. The mean of EduLevel reveals that members who have Bachelor degree with 2.1282 are the most, followed by Master, Ph.D., and Associate with 1.7289, 0.8174, and 0.1485 respectively. Also, the mean value of EduDegree reveals that members who have Engineer degree with 1.3750 are the most, followed by Management, Finance, and Economy with 0.7565, 0.3458, and 0.0990 respectively. The mean value of NonExe is 0.6718, demonstrating that majority of sample firms approximately had 3 non-executive directors on board. Also, the means of Export and Segments indicate that our sample firms have operational complexities.

Table 2.Sample Distribution by Industry

Industry	Firms	Observations	%
Pharmaceutical	21	147	11.93
Machinery & Equipment	25	175	14.20
Automotive & Parts Manufacturing	30	210	17.05
Minerals & Mining	42	294	23.86
Chemical	22	154	12.50
Food & Beverage	18	126	10.23
Metal	18	126	10.23
Total	176	1232	100

Table 3.Descriptive Statistics

Variable		Mean	Median	SD	Min	Max
ΔCompensation		0.3391	0.0000	1.5894	-1.0000	8.0064
Disclosure		166.7970	65.2626	401.0160	-214.7653	3291.4181
ΔROA		-0.0113	-0.0094	0.1049	-1.9433	0.5305
Return		0.5465	0.2077	1.0643	-0.6573	8.5950
ΔMisses		-76.0883	-22.6575	1068.2767	-7432.6000	23270.9881
ΔDeclines		-31.9763	-6.0420	1042.1779	-6635.8600	13506.0000
Duality		0.8519	1.0000	0.3553	0.0000	1.0000
EduLevel	Ph.D.	0.8174	0.0000	1.1322	5.0000	0.0000
	Master	1.7289	2.0000	1.3355	5.0000	0.0000
	Bachelor	2.1282	2.0000	1.4649	7.0000	0.0000
	Associate	0.1485	0.0000	0.4785	3.0000	0.0000
EduDegree	Finance	0.3458	0.0000	0.6326	4.0000	0.0000
	Management	0.7565	0.0000	1.1658	5.0000	0.0000
	Economics	0.0990	0.0000	0.3173	2.0000	0.0000
	Engineering	1.3750	1.0000	1.5675	5.0000	0.0000
Female		0.0138	0.0000	0.0526	0.0000	0.6000
NonExe		0.6718	0.6000	0.1969	0.0000	1.0000
Export		7.2109	9.5024	5.5137	0.0000	16.8204
Segments		2.0707	1.0000	4.3225	0.0000	36.0000

Empirical results

We employ panel data approach in our analyses and present the results across Table 4-10 using the EFA (exploratory factor analysis). In using the EFA, the independent variable "Disclosure" remains constant, and step-by-step, other independent-insignificant variables are eliminated from the test. We exclude the independent variable with the highest coefficient

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in each step, and then, the significance of the remaining variables is evaluated. Initially, we calculated the residual term of disclosure quality in model (1). For the sake of brevity, we exclude reporting the equation and its results and then we put it in the second equation along with the other variables. Table (4) presents the first test result, including the first hypothesis (H1) in three columns. It includes compensation and disclosure quality in firms with duality along with the control variables. Table (5) presents the second hypothesis (H2) including moderating variable of EduLevel. As for the (H3), we examine the relationship between compensation and disclosure quality with the presence of EduDegree in Table (6). Table (7) indicates the fourth hypothesis (H4) including moderating variable of Female. We aim to examine if the participation of female members in board moderates the relationship between compensation and disclosure quality. Next comes Table (8) for our fifth hypothesis (H5). We include the moderating variable of NonExe here. Last but not the least, as for the sixth (H6) and seventh (H7) hypotheses, we consider Export and Segments to have a moderating role on the mentioned relationship.

Table (4) illustrates our first test results where we include duality on board (Duality) as the moderator variable. Unlike what we anticipated, we find that the coefficient on (Factor(H)1: Duality) is 0.5018, and duality has no significant impact on the relationship between board compensation and disclosure quality, meaning that when the bonuses are going to be paid, the presence of CEO on board does not moderate the disclosure quality in Iranian family firms.

Table 4. Compensation and disclosure quality in the presence of duality

Variable	H1		
	Coefficient	***t-statistic***	***Sig.***
(Intercept)	0.0000***	6.1060	1.1470
Disclosure	0.9489	-0.0640	0.0000
ΔROA	0.0703*	1.8110	1.1260
Return	0.0018***	3.1220	0.2194
ΔMisses	0.9486	-0.0640	0.0000
ΔDeclines	0.0896*	1.6990	0.0002
Duality	0.7744	0.2870	0.0398
Factor(ind)2	0.2912	-1.0560	-0.1802
Factor(ind)3	0.8972	-0.1290	-0.0214
Factor(ind)4	0.7623	0.3030	0.0523
Factor(ind)5	0.7634	-0.3010	-0.0524
Factor(ind)6	0.1354	-1.4940	-0.2097
Factor(ind)7	0.3146	-1.0060	-0.1576
Factor(year)2011	0.0000***	-5.5840	-0.9081
Factor(year)2012	0.0000***	-5.8630	-0.9602
Factor(year)2013	0.0000***	-6.1020	-1.0070
Factor(year)2014	0.0000***	-5.5180	-0.9709
Factor(year)2015	0.0000***	-5.6660	-0.9374
Factor(year)2016	0.0000***	-6.3380	-1.0460

Factor(H)1: ΔROA	0.0287**	2.1910	2.2650
Factor(H)1:Return	0.1017	-1.6380	-0.1400
Factor(H)1: ΔMisses	0.7504	-0.3180	0.0000
Factor(H)1: ΔDeclines	0.1859	-1.3240	-0.0002
Factor(H)1: Duality	0.5018	0.6720	0.0797

*Significant at the 0.10 level.; **Significant at the 0.05 level.; ***Significant at the 0.01 level.

Table (5) demosntares our second test results where we include education level (EduLevel) as the moderator variable. In contrast to what we expected, we find that the coefficient on (Factor (H)1: EduLevel) is 0.9080, and disclosure quality has no significant relationship with compensation in firms with members of high education level, meaning that the participation of these experts in boards is unlikely to affect the mentioned relationship.

Table 5. Compensation and disclosure quality in the presence of education level

Variable	***H2***		
	Coefficient	***t-statistic***	***Sig.***
(Intercept)	0.0000***	7.7510	1.2100
Disclosure	0.8363	0.2070	0.0000
ΔROA	0.0581*	1.8970	1.1700
Return	0.0021***	3.0770	0.2076
ΔMisses	0.9916	-0.0110	0.0000
ΔDeclines	0.0844*	1.7270	0.0002
EduLevel	0.6608	-0.4390	-0.0271
Factor(ind)2	0.2463	-1.1600	-0.1957
Factor(ind)3	0.8951	-0.1320	-0.0219
Factor(ind)4	0.7490	0.3200	0.0554
Factor(ind)5	0.7779	-0.2820	-0.0490
Factor(ind)6	0.1325	-1.5060	-0.2113
Factor(ind)7	0.3012	-1.0340	-0.1615
Factor(year)2011	0.0000***	-5.5890	-0.9080
Factor(year)2012	0.0000***	-5.8540	-0.9555
Factor(year)2013	0.0000***	-6.1090	-1.0050
Factor(year)2014	0.0000***	-5.5230	-0.9693
Factor(year)2015	0.0000***	-5.6760	-0.9387
Factor(year)2016	0.0000***	-6.3040	-1.0390
Factor(H)1: ΔROA	0.0299**	2.1740	2.2260
Factor(H)1:Return	0.1289	-1.5190	-0.1192
Factor(H)1: ΔMisses	0.7027	-0.3820	0.0000
Factor(H)1: ΔDeclines	0.1727	-1.3640	-0.0002
Factor(H)1: EduLevel	0.9080	0.1160	0.0101

*Significant at the 0.10 level.; **Significant at the 0.05 level.; ***Significant at the 0.01 level.

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Table 6 represents our third test results where we include education degree (EduDegree) as the moderator variable. Contrary to our primary expectations, we find that the coefficient on (Factor (H)1: EduDegree) is 0.4629, and disclosure quality has no significant relationship with compensation in firms with members of high education degree, meaning that the participation of these experts in boards is unlikely to have a significant impact on the mentioned relationship.

Table 6. Compensation and disclosure quality in the presence of education degree

Variable	***H3***		
	Coefficient	***t-statistic***	***Sig.***
(Intercept)	0.0000***	(Intercept)	0.0000***
Disclosure	0.8090	Disclosure	0.8090
ΔROA	0.0614*	ΔROA	0.0614*
Return	0.0020***	Return	0.0020***
ΔMisses	0.9823	ΔMisses	0.9823
ΔDeclines	0.0830*	ΔDeclines	0.0830*
EduDegree	0.6975	EduDegree	0.6975
Factor(ind)2	0.2611	Factor(ind)2	0.2611
Factor(ind)3	0.9135	Factor(ind)3	0.9135
Factor(ind)4	0.7415	Factor(ind)4	0.7415
Factor(ind)5	0.7701	Factor(ind)5	0.7701
Factor(ind)6	0.1334	Factor(ind)6	0.1334
Factor(ind)7	0.3151	Factor(ind)7	0.3151
Factor(year)2011	0.0000***	Factor(year)2011	0.0000***
Factor(year)2012	0.0000***	Factor(year)2012	0.0000***
Factor(year)2013	0.0000***	Factor(year)2013	0.0000***
Factor(year)2014	0.0000***	Factor(year)2014	0.0000***
Factor(year)2015	0.0000***	Factor(year)2015	0.0000***
Factor(year)2016	0.0000***	Factor(year)2016	0.0000***
Factor(H)1: ΔROA	0.0327**	Factor(H)1: ΔROA	0.0327**
Factor(H)1:Return	0.1235	Factor(H)1:Return	0.1235
Factor(H)1: ΔMisses	0.7174	Factor(H)1: ΔMisses	0.7174
Factor(H)1: ΔDeclines	0.1766	Factor(H)1: ΔDeclines	0.1766
Factor(H)1: EduDegree	0.4629	Factor(H)1: EduDegree	0.4629

*Significant at the 0.10 level.; **Significant at the 0.05 level.; ***Significant at the 0.01 level.

Table 7 presents our fourth test results where we include the presence of females on board (Female) as the moderator variable. In contrast to what we primarily expected, we find that the coefficient on (Factor (H)1: Female) is 0.1357, and disclosure quality has no significant relationship with compensation in firms which employed female members on board, meaning that when the bonuses are going to be paid, Iranian firms which have female members on board do not consider the quality of financial information reported by the directors.

Table 7. Compensation and disclosure quality in the presence of female

Variable	*H4*		
	Coefficient	*t-statistic*	*Sig.*
(Intercept)	0.0000***	7.7280	1.2080
Disclosure	0.9932	0.0090	0.0000
ΔROA	0.0642**	1.8530	1.1420
Return	0.0016***	3.1570	0.2131
ΔMisses	0.9748	-0.0320	0.0000
ΔDeclines	0.0870*	1.7130	0.0002
Female	0.3848	-0.8690	-0.9760
Factor(ind)2	0.2432	-1.1680	-0.1969
Factor(ind)3	0.8866	-0.1430	-0.0236
Factor(ind)4	0.7668	0.2970	0.0512
Factor(ind)5	0.7722	-0.2900	-0.0502
Factor(ind)6	0.1236	-1.5410	-0.2155
Factor(ind)7	0.3126	-1.0100	-0.1577
Factor(year)2011	0.0000***	-5.5780	-0.9055
Factor(year)2012	0.0000***	-5.8620	-0.9568
Factor(year)2013	0.0000***	-6.0370	-0.9938
Factor(year)2014	0.0000***	-5.5260	-0.9688
Factor(year)2015	0.0000***	-5.6450	-0.9323
Factor(year)2016	0.0000***	-6.3110	-1.0390
Factor(H)1: ΔROA	0.0316**	2.1520	2.2030
Factor(H)1:Return	0.1057	-1.6190	-0.1272
Factor(H)1: ΔMisses	0.7215	-0.3560	0.0000
Factor(H)1: ΔDeclines	0.1812	-1.3380	-0.0002
Factor(H)1: Female	0.1357	1.4930	2.4240

*Significant at the 0.10 level.; **Significant at the 0.05 level.; ***Significant at the 0.01 level.

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Table 8 indicates our fifth test results where we include the presence of independent directors on board (NonExe) as the moderator variable. Unlike what we expected, we find that the coefficient on (Factor(H)1: NonExe) is 0.1057, and compensation has no significant relationship with disclosure quality in firms which have independent members on board, meaning that when the bonuses are going to be paid, Iranian firms which have non-executives do not consider the quality of financial information reported by the managers.

Table 8. Compensation and disclosure quality in the presence of independent directors

Variable	*H5*		
	Coefficient	*t-statistic*	*Sig.*
(Intercept)	0.0000***	6.0380	1.3230
Disclosure	0.6334	-0.4770	-0.0001
ΔROA	0.0734*	1.7920	1.1090
Return	0.0007***	3.4060	0.2385
ΔMisses	0.8926	-0.1350	0.0000
ΔDeclines	0.0978*	1.6570	0.0001
NonExe	0.2367	-1.1840	-0.2743
Factor(ind)2	0.3441	-0.9470	-0.1608
Factor(ind)3	0.9083	-0.1150	-0.0191
Factor(ind)4	0.7505	0.3180	0.0549
Factor(ind)5	0.8208	-0.2270	-0.0394
Factor(ind)6	0.1246	-1.5370	-0.2149
Factor(ind)7	0.3197	-0.9960	-0.1554
Factor(year)2011	0.0000***	-5.6290	-0.9136
Factor(year)2012	0.0000***	-5.9360	-0.9686
Factor(year)2013	0.0000***	-6.1930	-1.0190
Factor(year)2014	0.0000***	-5.6320	-0.9894
Factor(year)2015	0.0000***	-5.6930	-0.9397
Factor(year)2016	0.0000***	-6.3390	-1.0430
Factor(H)1: ΔROA	0.0199**	2.3310	2.4170
Factor(H)1:Return	0.0424**	-2.0320	-0.1737
Factor(H)1: ΔMisses	0.8131	-0.2360	0.0000
Factor(H)1: ΔDeclines	0.1949	-1.2970	-0.0001
Factor(H)1: NonExe	0.1057	1.6190	0.2589

*Significant at the 0.10 level.; **Significant at the 0.05 level.; ***Significant at the 0.01 level.

Table 9 demonstrates our sixth test results where we include foreign sales (Export) as the moderator variable. Unlike what we anticipated, we find that at 5% margin of error, the coefficient on (Factor (H)1: Export) is 0.0846, and compensation has no significant relationship with disclosure quality in firms which have complex activities and export their products. But

at 10% margin of error, the variable is positive and significant, meaning that when the bonuses are going to be paid, Iranian complex firms which have a number of exported goods on their financial statements consider the quality of financial information reported by the directors.

Table 9. Compensation and disclosure quality in the presence of export

Variable	*H6*		
	Coefficient	***t-statistic***	***Sig.***
(Intercept)	0.0000***	7.3620	1.2260
Disclosure	0.7540	-0.3130	0.0000
ΔROA	0.0764*	1.7730	1.0950
Return	0.0007***	3.3990	0.2352
ΔMisses	0.9524	-0.0600	0.0000
ΔDeclines	0.0958*	1.6670	0.0001
Export	0.2763	-1.0890	-0.0105
Factor(ind)2	0.3367	-0.9610	-0.1630
Factor(ind)3	0.9187	-0.1020	-0.0169
Factor(ind)4	0.7125	0.3690	0.0637
Factor(ind)5	0.8557	-0.1820	-0.0316
Factor(ind)6	0.1310	-1.5110	-0.2113
Factor(ind)7	0.3296	-0.9750	-0.1523
Factor(year)2011	0.0000***	-5.6750	-0.9220
Factor(year)2012	0.0000***	-5.9070	-0.9633
Factor(year)2013	0.0000***	-6.1700	-1.0150
Factor(year)2014	0.0000***	-5.5940	-0.9815
Factor(year)2015	0.0000***	-5.7090	-0.9426
Factor(year)2016	0.0000***	-6.3680	-1.0480
Factor(H)1: ΔROA	0.0210**	2.3120	2.3720
Factor(H)1:Return	0.0459**	-1.9980	-0.1655
Factor(H)1: ΔMisses	0.7413	-0.3300	0.0000
Factor(H)1: ΔDeclines	0.1889	-1.3150	-0.0002
Factor(H)1: Export	0.0846*	1.7260	0.0192

*Significant at the 0.10 level.; **Significant at the 0.05 level.; ***Significant at the 0.01 level.

Table 10 indicates our last test results where we include subsidiaries (Segments) as the moderator variable. In contrast to what we expected, we find that the coefficient on (Factor (H)1: Segments) is 0.1755, and disclosure quality has no significant relationship with compensation in firms which have complex activities and control a few subsidiaries, meaning that when the bonuses are going to be paid, Iranian complex firms which have a few number of segments do not consider the quality of financial information reported by the managers.

Table 10. Compensation and disclosure quality in the presence of segments

Variable	*H7*		
	Coefficient	***t-statistic***	***Sig.***
(Intercept)	0.0000***	7.8750	1.2430
Disclosure	0.9986	-0.0020	0.0000
ΔROA	0.0686*	1.8230	1.1250
Return	0.0015***	3.1900	0.2165
ΔMisses	0.9320	0.0850	0.0000
ΔDeclines	0.0690*	1.8200	0.0002
Segments	0.1162	-1.5720	-0.0234
Factor(ind)2	0.2692	-1.1050	-0.1866
Factor(ind)3	0.8934	-0.1340	-0.0222
Factor(ind)4	0.7954	0.2590	0.0448
Factor(ind)5	0.8310	-0.2130	-0.0371
Factor(ind)6	0.1152	-1.5760	-0.2208
Factor(ind)7	0.2889	-1.0610	-0.1661
Factor(year)2011	0.0000***	-5.6640	-0.9213
Factor(year)2012	0.0000***	-5.9340	-0.9707
Factor(year)2013	0.0000***	-6.1250	-1.0110
Factor(year)2014	0.0000***	-5.5700	-0.9784
Factor(year)2015	0.0000***	-5.6960	-0.9415
Factor(year)2016	0.0000***	-6.3640	-1.0490
Factor(H)1: ΔROA	0.0249**	2.2460	2.3050
Factor(H)1:Return	0.0900*	-1.6970	-0.1346
Factor(H)1: ΔMisses	0.6498	-0.4540	-0.0001
Factor(H)1: ΔDeclines	0.1519	-1.4340	-0.0002
Factor(H)1: Segments	0.1755	1.3560	0.0260

*Significant at the 0.10 level.; **Significant at the 0.05 level.; ***Significant at the 0.01 level.

Conclusions

There has been a large body of literature on the impact of disclosure quality on earnings management, earnings quality, firm's performance, etc. However, we aimed to examine the relationship between disclosure quality and board compensation when corporate governance elements are interfered, and the lack of empirical evidence in this regard has restricted our comprehension toward the paid compensation based on disclosure quality, particularly when corporate governance moderators are involved. We have attempted to extensively develop this subject. We focused on disclosure quality of Iranian listed firms' financial information, because the reported data is a determining criterion by which many investors trade shares, and especially, directors compensations are paid based on them; not only in Iran, but also

in most developing countries. In this regard, we considered some of the most important and fundamental corporate governance factors along with two measures of firms' complexities. We truly believe that considering the unique financial situation and economic issues prevailing in the Middle East in the last couple of years, Iran would be a desirable sample for the study as a major developing country.

We carry out our empirical analyses by regressing disclosure quality on compensation when some important corporate governance factors are interfered. The findings indicate that disclosure quality is not associated with compensation when most of the mentioned factors are moderated, supporting the conjecture that when the bonuses are going to be paid, the presence of CEO on board does not heighten the disclosure quality in Iranian listed firms; the participation of educated board members, females, and independent members do not have any impact on the relationship. One of the most significant reasons behind this fact is that in contrast to what is applied in developed countries that disclosure quality improvement is the priority, some other criterion are priorities in developing countries like Iran. One leading cause of this issue could be the legislations enacted to disclose information. Along with this problem, another significant reason in comparison to the other international markets worldwide could be the emerging non-transparent capital market of Iran. In the Iranian stock market, connections and access to confidential data act as a key element toward the success in making tactical decisions. Moreover, we examined the relationship between disclosure quality and board compensation in complex firms. In this regard, we argue that foreign sales and subsidiaries may be reward-enhancing when high quality information is disclosed. We believe that the reason behind this is that these kind of firms are struggling in a cut-throat market and provide high quality information for the users. But this is not the fact for Iranian listed firms and even the international ones that tend to neglect this vital issue to compensate their directors' attempts. As for the moderator variable of segments, we found that when the bonuses are going to be paid, Iranian complex firms which have a few number of segments do not consider the quality of financial information reported by the managers. Finally, we considered whether complex firms which have foreign sales report information with higher quality and pay higher bonuses to their managers, but the results demonstrated the opposite results as there was no significant relationship between the variables. Nevertheless, at ten percent margin of error, the relationship was significant and positive, meaning that when the bonuses are going to be paid, Iranian complex firms which have a number of exported goods on their financial statements consider the quality of financial information reported by the directors.

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