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Corporate sustainability disclosure and market valuation in a Middle Eastern Nation: evidence from listed firms on the Tehran Stock Exchange: sensitive industries versus non-sensitive industries

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ABSTRACT

This article has received the considerable critical attention that seeking to enhance sustainability disclosure may essentially make progress firms' market valuation. It aims to provide the corporate sustainability disclosure level organized according to the '7 + 1', seven core subjects of the International Organization for Standardization (ISO) 26000 and the energy disclosure items, then set out to assess the effectiveness of sustainability reporting on the listed firms' market valuation during the period 2010–2015. To achieve this objective, data were collected from a sample of 98 Iranian manufacturing and service organizations from various industry sectors at the Tehran Stock Exchange and generalized method of moments (GMM) approach was conducted for a dynamic panel data to evaluate the effect of the sustainability reporting level on the listed firms' market valuation. As can be seen from the results, the overall extent of sustainability disclosure arranged in accordance with the low rate of sustainability reporting for listed firms in TSE. It was also found that the sensitive firms have a greater level of corporate sustainability disclosure than the other firms. Moreover, sustainability reporting has been shown to be related to market valuations in which firms activating in sensitive industries environmentally with sustainability reporting had higher market valuations than firms activating in non-sensitive industries with sustainability reporting. Our '7 + 1' sustainability disclosure practice aspects all together with their basic measurement items can be applied as a checklist for assessing how well sustainability disclosure practices are performed at TSE.

1. Introduction

The current global tendencies have been close to the environmental protection and ecology values as well as anticipating enterprises for fulfillment attainment in social

responsibilities associated with environmental issues. Over the years, the disclosure of Environmental and Social by large listed firms in many nations all over the world have expanded phenomenally to the extent that growing from almost a page dedicated to employee related disclosure in the 1970s (Gray et al., 1995) to specified stand-alone sustainability reports released by a lot of listed firms more recently (Qiu et al., 2016). This tendency is in accordance with the developing interest in environmental and social issue as part of a corporate stakeholder diversity comprising socially responsible investors, employees, customers, regulators, government (Clarkson et al., 2011; Clarkson et al., 2008; Deegan, 2004; Qiu et al., 2016).

The Klynveld Peat Marwick Goerdeler (KPMG) surveys provide evidences via the expansion of sustainability reporting through industries. It is rather than it only presence the preserve of heavy-impact/high-polluting firms (e.g. gas, mining, and oil, paper, and pulp) as well as those have suffered some reputation challenges (e.g. tobacco and banks). However, the sustainability reporting is currently assumed through significantly numerous organizations (Higgins et al., 2015; KPMG, 2011). It may consider where the amount of 35% of the worldwide largest firms provided a sustainability report by 1999, while the amount of 95% was reported by 2011.

The economic growth strongly depends on the successful corporations, while the performance of the company will be improved through the high quality of corporate financial and social disclosure. By developing a sustainability disclosure level, an organization is able to notify all enthusiasts' parties about its economic, social and environmental activities (Habek, 2014). The social dimension of sustainable development concerns about the firm that possibly will have an impress on public arrangements where it activates. However, the economic aspect of sustainable expansion deals with the organization may have the impression on the economic situations of its investors and on economic structures at the level of local, national, and universal (Global Reporting Initiative, 2011; Reverte, 2016). The Financial Accounting Standards Board (Financial Accounting Standards Board, 2001) reasoned that the new model of corporate financial reporting should reveal the formation of firm-value, involving non-financial data for example environmental data and value-creating indexes.

A vital role in emerging and developing nations may have played by enhancing clarity and disclosure of non-financial data due to fact that Institutional investors (local and foreign) are doubtful in capitalizing in emerging nations by reason of lack of transparency and lack of acceptance with internationally recognized reporting standards (Jahangir et al., 2004). The disclosure of environmental information expands a firm's financial data clarity as well as helping people in evolving the environmental protection policies, assessing the profits and costs of source usage, followed by directing industries, corporations, and people to sustainable development (Berthelot et al., 2003; Wang, 2016).

Recently, investigators have examined the effects of the connection between financial and environmental/social performance, but there is a current paucity of document-based literature on the experiences of financiers' value more those corporations more engaged in the clarity regarding Corporate Social Responsibility (CSR) disclosure. The majority of research studies on the corporate sustainability and social

responsibility are adapted to studying the methods accomplishment by firms in industrialized nations. The restricted CSR surveys dedicated to firms in emerging nations as far as this propose variations in geographic, political, and economic settings be present in developing nations that reason distinctions in the perception of CSR and therefore the enhancement of CSR methods in various practices compared with their industrialized nation counterparts (Griesse, 2007; Zhu et al., 2016).CSR has gained the increasing attention to the academicians and many surveys are done both in developed (Adams et al., 1998; Barth & McNichols, 1994; Berthelot et al., 2012; Cardamone et al., 2012; Gray et al., 1995; Perez-Ruiz & Rodriguez-del Bosque, 2012) and developing countries (Choi & Jungh, 2008; De Klerk & De Villiers, 2012; Griesse, 2007; Kong, 2012; Kucukusta et al., 2013; Zhu et al., 2016), however, a very few attention is done in the Middle East (Alfaraih & Alanezi, 2011; Al-Khater & Naser, 2003; AlNaimi et al., 2012; Katsioloudes & Brodtkorb, 2007; Nobanee & Ellili, 2016; Rizk et al., 2008) in general and Iran in particular.

In this context, the current article conducts to determine the possible effects of the value relevance of corporate sustainability disclosure for financiers in a setting except for the traditional US and UK institutional surroundings. This study seeks to obtain data from Iran as an emerging equity market in a Middle Eastern country which will help to address these research gaps regarding many experts, the economy of Iran has many investment opportunities, particularly in its stock exchange therefore, high quality of financial and non-financial disclosure can increase to attract foreign capital (Dad Mohammadi & Ali Khan, 2016). Iran possesses a new functional market (Yaftian & Mirshekary, 2009)and is classified as a code-law country, a poor stock market, having a deficit of safety in investment, legal difficulties, inefficient implementation procedures and a poorly prepared of financial and non-financial reporting (Chatterjee et al., 2010; Mashayekhi & Mashayekh, 2008). One of the most noticeable factors of CSR growth in Iran is the increasing pressure from the fiercely competitive market. Accordingly, it is used as a strategic tool by the most firms in different industries, enhances the corporate identity as well as tend to be used it as a strategic tool (Valmohammadi, 2011). The present study has used a multi-theoretical framework for the exploration of a number of alternative theories can be clarified in the corporate sustainability reporting. The stakeholder theory, the legitimacy theory, and the agency theory are the greatest mentioned ones among other theories.

The aim of this article is to present the corporate sustainability disclosure level after that set out to assess the effectiveness of sustainability reporting on the listed firms' market valuation based on the '7 + 1', seven core subjects of ISO 26000 and the energy disclosure items. The study sought to answer the following specific research questions: Initially, what is the level of Iranian listed firms disclosed their sustainability issues? Then, is there any important differentiate between firms activating in environmentally-sensitive industries and companies activating in other industries in the sustainability disclosure? Finally, does market valuation get any significant influence of the sustainability disclosure regarding differences between the listed firms employing in sensitive and non-sensitive industries?

With the consequence of this study, the regulatory organizations, such as the Audit Organization, Tehran Stock Exchange would be capable of making certain the

level of the corporate sustainability disclosure. This will have facilitated them to develop a better understanding of the structure of corporate sustainability and instructions of sustainability disclosure regarding decreasing the information asymmetries and improving the clarity.

As far as we know, there is a current paucity of empirical research focusing specifically on Iran that has been conducted to determine the possible effects of the corporate sustainability disclosure on the market valuation or about the firms activating in environmentally-sensitive industries differ from companies operating in other industries. Consequently, our investigation presents the first insight concerning this issue as much uncertainty still exists about the relationship between the corporate sustainability disclosure level and the market valuation in mutually sensitive and non-sensitive industries.

GMM estimation and the moment conditions are conducted to attend more about any endogeneity matter for a dynamic panel data in which evaluate the effect of the corporate sustainability reporting level on the market valuation as suggested by Wintoki et al. (Wintoki et al., 2012), which evidences to be a valid methodology. Empirical research has shown that sustainability disclosure in Iran is still a relatively new phenomenon and the outcomes reveal that firms working in sensitive industries have become available much more information on corporate sustainability reporting than the other firms. These results can serve the Iranian listed firms now have an instrument and an index that measures their sustainability disclosure level and initiatives in order to improve these.

The rest of the paper is organized through an introduction about corporate sustainability disclosure and challenges related to it between corporate reporting in Iran. Section 2 identifies the review of the literature through the value relevance in disclosure practices of corporate sustainability followed by the relationship among the corporate sustainability reporting and the market valuation. The third section is concerned with the methodology, the empirical models employed for this study and analyses the data gathered and addresses each of the research questions in turn. Section 4 begins by laying out the empirical results and lastly, Section 5 will consider both the discussion and conclusions of the research.

2. Literature review

The most nations around the world have paid attention to matters of social responsibility and sustainability (Lee et al., 2013; Wu & Shen, 2013), it is used diversely throughout various social, economic, cultural, legal and political settings, that are proposed by some researchers (Ertuna & Tükel, 2010; GjØlberg, 2009; Kuznetsov & Kuznetsova, 2010). Sustainability is used to talk about the societal and ecological aids and outcomes of the business activity which can be defined as community reports by firms to make available internal and external shareholders or interested party with the company position image and the economic actions, social and environmental aspects (Nobanee & Ellili, 2016).It arranges the main purpose of sustaining continually our economies viabilities, the social order where they occur and the physical environment that they totally depend (Jenkins, 2009).

The preliminary studies on the content of the annual reports' social and environmental dimensions were carried out in the United States (US) (Ernst & Ernst, 1978; Guthrie & Parker, 1990); Australia (Deegan & Gordon, 1996; Trotman, 1979); the UK (Gray et al., 1995; Gray et al., 1987); and western Europe (Adams et al., 1998). In addition, drawing on an extensive range of sources, the authors have considered the disclosure of corporate sustainability differ broadly even within a nation (Cormier et al., 2005; Habek, 2014; Mio & Venturelli, 2013; Sierra et al., 2013; Skouloudis et al., 2010). According to research conducted by Fifka (Fifka, 2013), this study set out to vastly review in detail the available information on corporate sustainability disclosure, in which the researcher assessed whether the methods of study with respect to responsibility reporting vary across nations or regions. The level of corporate sustainability reports is also different due to the country-specific differences as proposed by some researchers (Chen & Bouvain, 2009; Muhammad et al., 2013; Noronha et al., 2013). Cultural differences are one of the major factors that corporate sustainability reporting varies across different countries (Fifka, 2012; Habisch et al., 2010). A considerable amount of literature of corporate sustainability disclosure has been published on environmental matters (Al-Tuwaijri et al., 2004; Clarkson et al., 2013; Cormier & Magnan, 2007; Hassel et al., 2005; Moneva & Cuellar, 2009; Reverte, 2016). Some of the research papers have focused on identifying and evaluating the environmental performance and responsibility of firms by using the index of independent institutions such as the Dow Jones Sustainability Indices (DJSI) or Kinder, Lydenberg, Domini Research & Analytics (KLD). However, such studies remain narrow in focus dealing only with the level of environmental disclosure by firms (Reverte, 2016). This study investigates both social and environmental performance.

In a research, which set out to determine the association between environmental performance, and economic performance of firms which are operating in chemical or polluting manufacturing, Al-Tuwaijri et al. (Al-Tuwaijri et al., 2004) found that a strong positive relationship with the environmental functioning of companies on the basis of the toxic ration waste recycled to the entire toxic waste proxy, which is inferred as a sign that environmental data effects on investors' policymaking in the investing activity. Hassel et al. (Hassel et al., 2005) show how, in the past, research into environmental performance was mainly concerned with the market value of equity for Swedish corporations. These findings suggest that the lowering of the market value to extended costs may relateto the growth in disclosure. Reverte (Reverte, 2016) tested the association between corporate social responsibility disclosure and stock value applying the Madrid Stock Exchange General Index (IBEX 35 index). Results from this study demonstrated a strong and consistent association among stock prices and CSR reporting through modifying the equity book value and earnings value. Rhou et al. (Rhou et al., 2016) assessed in the context of the restaurant industry whether CSR awareness, measured by CSR media coverage, moderates the relationship between the social and financial performance. Their results support the notion that stakeholders' CSR awareness affects the manner in which CSR initiatives can resulting financial gain.

There are a few types of research considering whether financiers allocate value relevance to either corporate sustainability disclosure or corporate sustainability

performance (De Klerk & De Villiers, 2012; Lourenco et al., 2012; Lourenco et al., 2014; Moneva & Ortas, 2008; Murray et al., 2006; Schadewitz & Niskala, 2010).

In relation to the research concentrating on corporate sustainability disclosure, the level of social and environmental disclosure formed the central focus of a study by Murray et al. (Murray et al., 2006) in which the author using a case study from UK firms. The researchers do not find any association between stock returns and corporate social responsibility release. Jones et al. (Jones et al., 2007) set out to review in detail the available information on the association between corporate sustainability reporting and company's share returns. The most obvious finding to emerge from this study is that there is a strong association among disclosure of sustainability and several firm financial implementation actions. In a study conducted by Schadewitz and Niskala (Schadewitz & Niskala, 2010) test the value relevance of corporate sustainability disclosure based on the Global Reporting Initiative (GRI) guidelines by using the Ohlson (Ohlson, 1995) model in Finnish firms. The results indicate that sustainability report can play an important explanatory role in addressing the company's market value. The corporate social responsibility disclosure level of the top 100 South African firms by employing a KPMG dataset was carried out by De Klerk and De Villiers (De Klerk & De Villiers, 2012). Their findings reveal that CSR disclosure is significantly and positively related to share prices.

According to concentrate on corporate sustainability performance, Moneva and Ortas (Moneva & Ortas, 2008) do not achieve a direct association, with the DJSI Index, between sustainability performance and stock valuation in which the area of study was chosen for 142 European firms. Lourenco et al. (Lourenco et al., 2012) reveal that corporate sustainability performance has the substantial explanatory power not only in stock prices but also in the old-style summary accounting evaluates like earnings and book value of equity. It can be seen from the data of Lourenco et al. (Lourenco et al., 2014) that the companies' net income reported significantly more sustainability disclosure than the other with a less sustainability release have a greater valuation by the marketplace in which employing the DJSI indicator as a proxy for sustainability reporting leadership.

Despite the increased interest and understanding regarding sustainability reporting in Iran, which is obvious from the expanding organizations' number contributing in publications (e.g. assisting sports activities, charity, and fund-raising programs, etc.), sustainability reporting is still at its beginning steps in the nation, so far, there have been very few systematically used practices of corporate social responsibility by Iranian firms. There is a relatively small body of literature that is concerned with corporate sustainability disclosure in Iran. Up to now, far too little attention has been paid to the CSR disclosure by Iranian firms. However, in recent years, a few industries have tended to use it as a sort of strategic tool regarding enhancing valuation of their market. However, the research by Talaei and Nejati (Talaei & Nejati, 2008) suggests indexes for the evaluation of CSR in Iranian auto industry, it does not prepare empirical information to survey the social responsibility reporting' status in the nation. To compare the actual with expected extent of corporate social responsibility, Salehi and Azary (Salehi & Azary, 2009) carried out a number of investigations into the Iran environment. They analyzed the data from internal and external auditors,

accountants, bankers, financiers, and academicians. It has been reported that anticipation level of CSR was higher than the actual level.

Returning to a multi-theoretical framework posed at the beginning of this study, it is now possible to state that the stakeholder theory, the legitimacy theory, and the agency theory are the greatest mentioned ones among other theories. The stakeholder and legitimacy theories are maintained and categorized in socio-political theories while the last one is according to the perspective of capital markets (Reverte, 2016). The firms' decisions on whether or not to take on corporate sustainability practices are impacted by the pressure of stakeholders (Surroca et al., 2013). The stakeholder theory proposes that companies can origin side effects to someone else (the stakeholders), in which their operations can effect on different parties such as employees, customers, competitors, dealers, government. These externalities lead to force on firms from investors in order to diminish their harmful exterior damages produced such as pollution and develop the positive parts such as charity (Zhu et al., 2016). In accordance with this theory, the firms have to report all their sustainability issues with the purpose of preserving a sustainable connection with its stakeholder (Freeman, 1994). With regard to the overlap between stakeholder and legitimacy theory, both theories intellectualize the organization as part of a wider societal structure in which the organization is affected by, other parties in society (Deegan, 2002).

According to the legitimacy theory (Cho & Patten, 2007; Patten, 2002), prior studies that have noted the importance of industries with respect to clarifying the content and the level of social and environmental release in the corporate sustainability reporting area (Adams et al., 1998; Gray et al., 1995). Legitimacy theory postulates that a company's disclosure level is also a consequence of the company's disclosure to community force from investor parties in social, regulatory, and political context. Findings of previous research indicated that manufacturing firms, signified as sensitive industries, appear to be negatively related to the environment and disclose much more sustainability data than corporations from other industries. The level of pollution causing from industries' actions, the predominant use or extraction of natural resources, waste creation, or the producing of environmentally harsh products are the important determinant of industries as sensitive or non-sensitive industries (Li et al., 1997). Generally, manufacture industries for instance those manufacturing the cement, plastic and rubber, paper, power generation, metals, water, oil, mining, steel, and chemical industries, including the industries by huge quantities of generating hazardous wastes, emissions, and other possibly damaging influences on natural environment (Bowen, 2000; Clarke & Gibson-Sweet, 1999; Clarkson et al., 2008; Jenkins & Yakovleva, 2006; Line, Hawley, & Krut, 2002). More widespread disclosures can further decrease information asymmetries and the risk of adverse selection for financiers in firms working in sensitive industries. As a result, it is anticipated that corporations' market values will be incrementally superior when a higher extent of corporate sustainability disclosure is released by companies that work in sensitive manufacturing.

Along with many national and international parties have expanded structures to organize them with direction on corporate sustainability information disclosure, corporations are turning increasingly pledged to release sustainability reports (Du et al.,

2011). The useful examples of guidelines which are commonly employed to environmental reporting and corporate social are obtained in the GRI Guidelines (Global Reporting Initiative, 2011), the ISO 26000 Guidance on Social Responsibility, the World Business Council for Sustainable Development Guidelines (World Business Council for Sustainable Development, 2002), and the Institute of Social and Ethical Accountability Guidelines (Institute of Social and Ethical Accountability Guidelines, 2008). GRI and ISO 26000, among other organizations, have concentrated on expanding systems and processes to help and guide firms in providing corporate sustainability reports. Reporting on economic, environmental, and social impacts and risks of corporations are prepared with guidelines of GRI. Contrasting GRI, ISO 26000 does not purposely a series of guidelines for CSR reporting, but rather arranges direction to bodies on organizing their environmental, social, and economic activities, which can then be controlled, computed, and reported to reveal a distinct image of the reporting organization's performance on corporate social responsibility to its different stakeholders (Moratis & Cochius, 2011; Murphy & Yates, 2009) in accordance with the sustainability reporting principles set out by the seven dimensions that cover the major investor concerns of originalities, containing (1) organizational governance, (2) human rights, (3) labor practices, (4) the environment, (5) fair operating practices, (6) consumer issues and (7) community participation and enhancement (Balzarova & Castka, 2012; DuckWorth & Moor, 2010).

The aforementioned research studies stand out an overview of existing practices of sustainability reporting are differently applied across nations, or even in a country, they might not be completely realizable and need improvement. The findings can recoup for the work limitation on this problem and provide a direction for development and promotion of social and environmental corporate disclosure of data processes and the related environmental and social accounting in Iran. The environmental disclosure has been intensively investigated recently due to its a superior necessity from the stakeholders and financial analysts (Nobanee & Ellili, 2016). However, in this research, the disclosure sustainability index has emphasized the importance of energy disclosure items by reason of the climate change and global warming, there is a higher demand in Iran from the stakeholders and financial analysts on challenging the climate change and adopting a Green Economy.

3. Research methodology

3.1. Data

The unique sample in this article was chosen to determine the corporate sustainability disclosure level after that to evaluate the effectiveness of sustainability reporting on the listed firms' market valuation, using purposeful sampling. Purposeful sampling is a non-random method of sampling, where the researcher chooses information-rich cases, those which permit one to concentrate on matters which would not be represented adequately in a more general sample (Patton, 2001). For the reason that mainly Iranian firms do not present sustainability reporting properly, a more general sample would identify only very few cases of sustainability reporting. The next purpose of employing this method is because of difficulties in obtaining annual reports of the

companies such as a lack of easy access to their annual reports, a lack of legal support of on time published annual reports. These difficulties rooted in bureaucratic problems and cultural features of developing nations, it was really hard for a copy of the latest published annual reports. This study seeks to obtain hands-collected data which will help to overcome a lack of easy access to annual reports the listed companies in the TSE that had contributed in several levels of gaining Iranian Excellence Award (INP&EA) and National Productivity according to the European Foundation intended for model of Quality Management (EFQM). It was selected purposefully because of the higher possibility of using and making some programs and initiatives of CSR in mentioned corporations (Valmohammadi, 2011). It has commonly been assumed in this kind of research that financial firms such as banks and insurance firms were excluded from the study on the basis of the specific features of their accounting method. The annual and audited reports of financials during 2010 to 2015 were obtained from the official website of Tehran Stock Exchange and listed firms' website. A total of 98 manufacturing and service organizations from various industry sectors were included final samples from listed on the Tehran Stock Exchange in which exist sensitive and non-sensitive industries. In this research, sensitive industries are considered to be those with more risk of being criticized in CSR matters because of their activities involving higher risk of environmental impact. Based on prior literature, the following sensitive sectors are identified: mining, oil and gas, chemicals, paper products, petrochemical products, steel and other metals, rubber and plastic, electricity, and gas distribution. All others are considered as less or non-sensitive sectors included: agriculture and related services, textile, wood products, sugar industry, publishing, printing and reproduction, food and drink, computer and related activities.

3.2. Hypotheses

ISO 26000 is a standard identifying the normative CSR field. ISO 26000 is a well-accepted voluntary international standard publicized by the International Organization for Standardization on November 1 of 2010, and it involves inputs from multiple stakeholders involving industry, governments, consumers, labor, non-governmental organizations and service, support, research and others (Balzarova & Castka, 2012). The hypothesis that will be tested is that firstly, we will assess the corporate sustainability level for the listed companies in Iran. We suppose that the sustainability disclosure is ascertained by seven criteria (core subjects of ISO 26000), comprising (1) labor practices, (2) human rights, (3) organizational governance, (4) fair operating practices, (5) the environment, (6) consumer issues, (7) community participation and expansion and their interrelated objects of a disclosure index which were identified from the Balzarova and Castka (Balzarova & Castka, 2012), Zhu et al. (Zhu et al., 2016) and according to the ISO 26000 guideline and energy's related items specified by Sobhani et al. (Sobhani et al., 2012) and Nobanee and Elilli (Nobanee and Ellili, 2016). Secondly, this study set out to determine whether there is any important differentiate between firms activating in environmentally-sensitive industries and companies activating in other industries in the sustainability disclosure. Finally, it will be focused on exploring relationships among the market valuation and sustainability

disclosure regarding differences between the listed firms employing in sensitive and non-sensitive industries.

3.3. Variables

In our model (using a modified Ohlson (Ohlson, 1995) model), we evaluate the sustainability release on the items of seven core subjects of ISO 26000 and the energy disclosure items (Table 1). Table 2 reveals the market valuation measure of the listed companies.

Table 1. '7 + 1' core subjects and items of disclosure.

No.	Core subjects	No.	Items
1.	Organizational governance	1.	Establish the institutional and organizational structure
2.	Human rights	1.	Formulate rules and regulations to avoid infringement of employee rights
		2.	Guarantee employees' personal and political rights
		3.	Guarantee employees' fundamental rights at work
		4.	Care employees' living conditions, and effectively solve problems for employees
		5.	Keep labor regulations transparency
3.	Labor practices	1.	Satisfy conditions of labor and social protection
		2.	Establish public relations and the employee negotiation mechanism
		3.	Guarantee health and safety at work
		4.	Provide help for human development and training programs
4.	The environment	1.	Reduce waste emissions, prevent and treatment pollution
		2.	Recycle and reuse resources
		3.	Corporate environmental policies
		4.	Invest in environmental protection to improve technological processes
		5.	Protect and conserve the environment, biodiversity and restoration of natural habitats
		6.	Save energy use to mitigate and adapt to climate change
		7.	Environmental financing such as ecological credits
		8.	Undertaking tree plantation/afforestation programs
		9.	Initiatives to reduce greenhouse gas emission
5.	Fair operating practices	1.	Comply with laws and regulations
		2.	Establish anti-corruption policies and measures
		3.	Abide by market rules, do not involve in price fixing and unfair competition
		4.	Promote social responsibility in the value chain
6.	Consumer issues	1.	Implement marketing promotion fairly
		2.	Protect consumers' rights including those on health and safety
		3.	Produce energy-efficient or environmental products to promote sustainable consumption
		4.	Provide service for consumers, and resolve consumers' complaints and disputes
		5.	Protect consumer data and privacy
		6.	Guarantee consumers to access to essential services
7.	Community involvement and development	1.	Involve in community development plan
		2.	Promote community education and cultural construction
		3.	Maintain community environment and population health
		4.	Involve in Social and public welfare undertakings
8.	The energy	1.	Energy saving policies
		2.	Investing in energy projects
		3.	Investing in renewable energy
		4.	Information concerning energy consumption
		5.	Energy use efficiency
		6.	Initiatives to reduce energy consumption
		7.	Awareness building concerning energy consumption
		8.	Energy saving results
		9.	Other energy disclosures

Table 2. Market valuation of the listed firms.

Variable	Notation	Measure
Market Valuation (Share price of firm)	MV	Book value of equity per share of firm (BVPS)+ earnings per share of firm (EPS)

Table 1 shows one items of the organizational governance, five items of the human rights, four items of the labor practices, nine items of the environmental disclosure, four items of the fair operating practices, six items of the consumer issues, four items of the community involvement and development, nine items of the energy disclosure.

To employ the items' score of ISO 26000 seven core subjects and the energy disclosure items' score to Iranian firms therefore, this study adopts the original score through signifying those irrelevant items to the Iran environment were excluded. Due to achieve more information about Iran, this paper also provides a comprehensive review of recent research into the corporate sustainability disclosure centered on Iran (Kahreh et al., 2013; Salehi & Azary, 2009; Valmohammadi, 2014). Following, the instrument of this study was evaluated using four practiced auditors and two financial analysts as it's appropriate to the Iranian contexts. The methods for measuring sustainability disclosure scores have varied somewhat across this research area. An unweighted scoring method was used in previous studies (Chau & Gray, 2010; Chen & Jaggi, 2000; Ferguson et al., 2002; Wang, Sewon, & Claibone, 2008) which is a well-established approach in ascertaining disclosure scores. The unweighted scoring method is concerned with the methodology employed in this study in which disclosure scores were based on the disclosure index considered to award a score of 1 for disclosure and 0 for non-disclosure.

In previous studies on the sustainability disclosure, different variables other than the disclosure variable has been controlled to evaluate their impact on the market valuation of the firm measurements (Barth et al., 2008; Charles et al., 2010; Qiu et al., 2016). To determine whether and how control variables are affected, we controlled leverage, firm size, and profitability which influence is assessed as the entire debt categorized via the assets book value; size of the firm indicates the total assets natural logarithm, and profitability is proxied by return on equity.

Table 2 shows the market valuation of the listed corporations assessed by the share price of the firm. As mentioned in the literature review, the legitimacy theory is used to discuss the society's anticipations generally as bounded in social contract. However, the stakeholder theory makes a more sophisticated resolution through reference to specific parties in society, which is known as stakeholder groups (Deegan, 2002). Although disclosures may be focused by stakeholder or social pressure, such disclosures are likely to decrease information asymmetries and, hence, be rewarded by financiers with higher stock market valuations (Reverte, 2016). Following the conventional method in market-based accounting study (Alfaraih & Alanezi, 2011; De Klerk & De Villiers, 2012], we employed the following modified Ohlson (1995) model that relates market valuation (share price of firm) to book value and earnings per share as basis to evaluate the value relevance of accounting information (Cormier & Magnan, 2007):

3.4. Methodology

A single sample *t*-test that analyses the null hypothesis was undertaken to ascertain the level of corporate sustainability for the Iranian listed companies. With regard to

this research method, the median and range of corporate sustainability scores for each listed firm operating in different various of sensitive and non-sensitive industries are firmed in index value is ranging between 0% as no reporting sustainability and 100% as a full sustainability disclosure.

The aim of this section has been to identify a suitable functional form sought to answer our research questions in which set out a dynamic panel data model on exploring relationships between the sustainability reporting level and the market valuation regarding the difference between the listed firms operating in sensitive and non-sensitive industries. A market valuation is signified by MV and disclosure is indicated by DI and the remaining explanatory variables in a modified Ohlson (Ohlson, 1995) model are Leverage (LEV), Firm Size (FS), and Profitability (PROF). Following Ohlson (Ohlson, 1995), Cornett et al. (Cornett et al., 2008), It can therefore be assumed a linear parametric form designed for total of the descriptive variables through assessing Model (1):

$$MV_{it} = \alpha + \gamma MV_{it-1} + \beta DI_{it} + \delta 1 LEV_{it} + \delta 2 FS_{it} + \delta 3\ PROF_{it} + \varepsilon_{it}, \tag{1}$$

where MV is measured by BVPS and EPS. The BVPS denotes the equity book value per share; EPS represents the incomes per share; DI signifies our score of disclosure. Where LEV refers to firm leverage; FS refers to the firm size; PROF refers to the profitability, and ε refers to an error term.

In general, GMM approach has outstanding benefits in dealing with heteroscedasticity, autocorrelation, and heterogeneity, endogenous and predetermined explanatory variables (Alhazaimeh et al., 2014). This article provides a valuable insight into the endogenous associations between sustainability disclosure and a market valuation that have attracted considerable attention and several attempts have been made to carefully monitor it that is a notable point of our methodology. Endogeneity is an important concern when working any empirical estimation in company performance and market valuation as stated by a number of researchers such as Denis and Sarin (Denis & Sarin, 1999), and Coles et al. (Coles et al., 2008). In light of recent an important concern in endogeneity, it is becoming difficult to ignore the existence of it due to may have major effects for inference. The success of the GMM estimator in generating unbiased, consistent and efficient outcomes is highly dependent on the acceptance of the appropriate instruments (Alhazaimeh et al., 2014). Thus, with the purpose of examining our Model, the following steps were taken: initially, the instrumental variables were employed to avoid the possible problems in relation to the influence of simultaneity. It has been noted that well-founded instruments in the present method of market valuation, disclosure, and the other explanatory variables are originated from the obtained data about the company's history which are accessible and influentialintended for a dynamic GMM attitude (Pathan & Faff, 2013; Wintoki et al., 2012). Second, this research applies a model of dynamic fixed-effects panel associated with our standard regression conditions to create reliable parameter assessments that are strong to unobservable heterogeneity. Therefore, three diagnostic tests of Arellano & Bond (1991) tests AR (1) and AR (2) tests and also Hansen-J test are available. The AR (1) and AR (2) are employed to assess the first and second order autocorrelation in the first difference errors (Arellano & Bond, 1991). The first

difference errors of regression define auto-correlated once the regression errors are distributed independently and identically. It was utilized as complementary the GMM estimator validity in this study with respect to Hansen-J test of over-identification. The relationship among the market valuation measures, disclosure index, and all explanatory variables were tested using the Pearson and Spearman rank.

4. Results and discussion

The empirical analysis is employed using sys-GMM estimator for evaluating the influence of the level of corporate sustainability on the market valuation which accordingly we reveal our descriptive and estimation results with respect to disclosing the extents of sustainability of TSE-listed firms. Table 1 shows 33 items of the seven core dimensions and 9 items of the energy disclosure. Each item is a binary variable; it takes 1 if it is disclosed in the annual reports, 0 otherwise. The total sustainability disclosure index involved 42 disclosure items. Mean values, median values and standard deviations of the '7 + 1' sustainability disclosure index for all firms, and individually sensitive and non-sensitive industries are presented in Table 3.

It can be seen from the data in Table 3 that the sustainability disclosure index reported a high variability among Iranian listed firms in which the average sustainability release rating differs from 0.0183 to 0.3415. On average level, the entire sustainability disclosure index was shown to have 12% for all of the firms. The most

Table 3. Extent of sustainability disclosure of TSE firms.

Reporting Areas	Industry Type	Mean	Median	SD
Overall sustainability	All firms	0.1229	0.1676	0.1022
	Sensitive industries	0.1558	0.1806	0.1281
	Non-sensitive industries	0.0985	0.2283	0.0695
Organizational governance	All firms	0.2678	0.6341	0.2672
	Sensitive industries	0.3415	0.2403	0.2262
	Non-sensitive industries	0.2345	0.1669	0.1240
Human rights	All firms	0.0783	0.0863	0.4042
	Sensitive industries	0.1097	0.1310	0.6201
	Non-sensitive industries	0.0890	0.0937	0.5468
Labor practices	All firms	0.1397	0.2663	0.0948
	Sensitive industries	0.2490	0.1766	0.3871
	Non-sensitive industries	0.1859	03020	0.3981
Environment	All firms	0.0965	0.3014	0.1163
	Sensitive industries	0.1165	0.1935	0.1733
	Non-sensitive industries	0.0496	0.1043	0.1490
Fair operating practices	All firms	0.0976	0.0516	0.2683
	Sensitive industries	0.1428	0.1410	0.2608
	Non-sensitive industries	0.0840	0.0915	0.0568
Consumer issues	All firms	0.0784	0.1736	0.1268
	Sensitive industries	0.0824	0.1403	0.2099
	Non-sensitive industries	0.0647	0.1210	0.1451
Community involvement and development	All firms	0.0866	0.0513	0.2823
	Sensitive industries	0.1132	0.2430	0.2533
	Non-sensitive industries	0.0634	0.0793	0.0182
Energy	All firms	0.0485	0.1067	0.1041
	Sensitive industries	0.0772	0.1100	0.1324
	Non-sensitive industries	0.0183	0.0171	0.0032

The descriptive statistics regarding the level of sustainability disclosure in range of total listed firms, both sensitive and non-sensitive industries which listed in the TSE in period of 2010–2015. The index value is ranging among 0% and 100%, which the range of 0% demonstrates no reporting sustainability while the range of 100% acknowledges a full sustainability disclosure by the firm.

extensively reported sustainability disclosure category was Organizational governance (27% of all sustainability disclosures). It is noteworthy, Organizational governance disclosures were considered as the main dimension of sensitive firms' sustainability disclosure index (34%) in comparison with the other firms; however organizational governance matters were 23% of the sustainability releases. The labor practices reporting was considered as the second largest sustainability disclosure category with the overall percentage of (14%). The category of labor practices reporting consumed as a larger percentage of the sensitive firms' disclosure with 25% of disclosure index, while it was 19% in other firms. It is considerably that the other six categories consist of a little sustainability disclosure. The quantified disclosures are attained as the more even distribution among all firms, with the amount of 10% associated with the fair operating practices, the environment category consists of 10%, while 9% to the community involvement and development, followed by the amount of 8% to the consumer issues, and finally the human rights with the amount 8%. The sustainability disclosures of sensitive firms interrelated chiefly to the category of fair operating practices (14%) through a consistently lower depiction of the environment (12%) and community involvement and development (11%) category disclosures. Lastly, non-sensitive firms' disclosure index concerning less than 9% of disclosure index in the rest of the categories. The consequences signify that the whole sustainability disclosure by Iranian listed firms is low, but the energy reporting of '7 + 1' sustainability reporting index of nearly all disclosures in firms outside the non-sensitive firms. Besides, the current study is required to determine whether any vitally important difference existing in the entire sustainability reporting between sensitive and non-sensitive industries in which t-test has been placed here. It can be seen that the firms activating in sensitive industries have a greater mean score for overall sustainability disclosure than the other firms at 90% confidence level.

Table 4 provides correlations for each couple of '7 + 1' core subjects of sustainability reporting in our sample.

Table 4 further shows that the '7 + 1' sustainability reporting dimension of organizational governance is significantly associated with the dimension on community involvement and development, while two dimensions related to employees, human rights, and labor practices, are positively correlated. In addition, the labor practices category is positively related to environment and community involvement and development. The environment-related sustainability reporting is significantly correlated with the other one sustainability category on the energy along with labor practices. A

Table 4. Correlation among '7 + 1' core subjects of sustainability reporting.

'7 + 1' core subjects	1	2	3	4	5	6	7	8
1. Organizational governance	1.000	0.085	0.024	0.057	0.091	−0.053	0.183*	0.085
2. Human rights	0.085	1.000	0.212*	0.122	0.027	0.012	0.007	−0.013
3. Labor practices	0.024	0.212*	1.000	0.163*	0.021	0.137	0.249**	−0.072
4. Environment	0.057	0.122	0.163*	1.000	0.094	0.140	0.011	0.195*
5. Fair operating practices	0.091	0.027	0.021	0.094	1.000	0.099	0.090	0.023
6. Consumer issues	−0.053	0.012	0.137	0.140	0.099	1.000	0.072	0.005
7. Community involvement and development	0.183*	0.007	0.249**	0.011	0.090	0.072	1.000	0.219*
8. Energy	0.085	−0.013	−0.072	0.195*	0.023	0.005	0.219*	1.000

**, * significant at 1% and 5% levels, respectively.

possible explanation for this result may have been attributed to Iran because of a series of policies not only in energy saving but also in pollution reduction. The core subject of sustainability disclosure on energy is positively correlated with the environment and community involvement and development.

Looking at Table 5 Pearson and Spearman correlation coefficients, it is apparent that the relationship between DI and market valuation dimensions was significant, at a p-value of 0.000.

Furthermore, significant positive Pearson (Spearman) correlations for DI were identified for two market valuation measures, including BVPS and EPS. It has been demonstrated that a high sustainability disclosure by corporations result in improving market valuation. This study has examined the extent of multicollinearity by assessment of the eigenvalues and condition index that ability to make the comparison. Condition index for this purpose was measured using the square root of the greatest level of eigenvalue divided by the least possible eigenvalue. The index indicates that the variable has a considerable multicollinearity problem if it is more than 30 (Gujarati & Porter, 2009). After testing for the degree of multicollinearity, the regression analysis was allowed to use due to no concern about multicollinearity.

The relationship between sustainability disclosure level and market valuation of all firms, sensitive firms, and other firms are presented in Tables 6–8. For each of these Tables, the tests on the AR (1) and AR (2) represents no autocorrelation confirmation at conventional levels significantly.The results in the Hansen-J experiment considers the p-value above 10%, which is shown in bottom of the Tables 6–8.It can be seen as well-confirmed instrumental variables which have been utilized at by following GMM approach. What stands out in these tables is quite revealing appropriate specification for a market valuation in the dynamic panel data model.

Tables 6–7 provide the results obtained from the intercorrelations among BVPS, EPS, and market valuation in which a significant positive correlation was found among them. Increased value in the sustainability disclosure corroborates the estimation in this study. The lagged dependent variable has conducted to determine the effectiveness of the previous period share price on the current period share price of the three different categories of our samples. It is apparent that the previous period share price has a significant positive impact on the current period share price for two groups of samples, namely all firms and sensitive firms. There was no statistically significant correlation was found between the overall sustainability disclosure index and

Table 5. Correlation Matrix (Pearson above Diagonal and Spearman below).

Variable	BVPS	EPS	DI	LEV	FS	PROF
BVPS	1.000	0.383*	0.151	0.328	0.137	0.284
EPS	0.635**	1.000	0.179**	0.352	−0.102	0.245**
DI	0.1754*	0.785**	1.000	0.069	0.034	0.162*
LEV	0.127	0.094	0.072	1.000	0.442	−0.071
FS	−0.143	0.090	0.085	−0.078	1.000	−0.138
PROF	0.212**	0.121**	0.144*	−0.313	−0.081	1.000

The demonstrated Pearson correlations in the above table identify the major diagonal while the Spearman correlations illustrated below recognize the diagonal. As it can be seen BVPS is identified as book value of equity per share; EPS shows the earnings per share; DI signifies each information category percentage score; Leverage (LEV) is dignified as the total debt distributed through book value of assets; Firm Size (FS) illustrates the natural logarithm of total assets; Profitability (PROF) defines proxied by return on equity. **, * significant at 1% and 5% levels, respectively.

Table 6. Regression analysis (the estimation results for the GMM model): disclosure and market valuation for all firms.

	BVPS	EPS
MV (t − 1)	3.084* (0.053)	2.474** (0.302)
DI	1.773 (0.019)	0.131 (0.007)
LEV	−7.267 (0.032)	4.350 (0.017)
FS	1.607 (0.013)	2.789 (0.011)
PRO	1.450 (0.039)	0.014* (0.053)
AR (1) test (*p*-value)	(0.065)	(0.119)
AR (2) test (*p*-value)	(0.449)	(0.375)
Hansen-J test (*p*-value)	(0.376)	(0.360)
No. of instruments	48	48

MV (t − 1) is identified as the one-year lag of the dependent variable. BVPS is distinct as book value of equity per share; EPS represents the earnings per share; DI denotes the percentage score intended for each information group; Leverage (LEV) is evaluated as the total debt which classified through book value of assets; Firm Size (FS) signifies natural logarithm of total assets; Profitability (PROF) is proxied through return on equity. The estimation results intended for the GMM model is attained from the table. In this table, the time (year) dummies are comprised in the regressions. Besides, the standard errors are stated in parentheses. **, * significant at 1% and 5% levels, respectively.

Table 7. Regression analysis (the estimation results for the GMM model): disclosure and market valuation for Sensitive firms.

	BVPS	EPS
MV (t − 1)	2.089* (0.071)	2.136** (0.178)
DI	1.547* (0.332)	1.437** (0.199)
LEV	10.376 (0.009)	−0.449 (0.021)
FS	1.218 (0.016)	0.549 (0.029)
PRO	1.034* (0.063)	1.568* (0.317)
AR (1) test (*p*-value)	(0.131)	(0.013)
AR (2) test (*p*-value)	(0.339)	(0.847)
Hansen-J test (*p*-value)	(0.119)	(0.296)
No. of instruments	48	48

The total explanations regarding the variables that listed above are demonstrated in the notes of Table 6. **, * significant at 1% and 5% levels, respectively.

Table 8. Regression analysis (the estimation results for the GMM model): disclosure and market valuation for Non-sensitive firms.

	BVPS	EPS
MV (t − 1)	0.213 (0.023)	0.127 (0.020)
DI	1.117 (0.026)	−0.027 (0.005)
LEV	−7.210 (0.011)	13.086 (0.035)
FS	0.027 (0.004)	4.737 (0.029)
PRO	0.791 (0.017)	2.121 (0.021)
AR (1) test (*p*-value)	(0.121)	(0.043)
AR (2) test (*p*-value)	(0.834)	(1.216)
Hansen-J test (*p*-value)	(0.617)	(1.067)
No. of instruments	48	48

The descriptions for all of the variables listed above are given in the notes to Table 6. **, * significant at 1% and 5% levels, respectively.

share price for two different types of samples, all firms, and non-sensitive firms, while the influence of total sustainability disclosure index was significantly positive on the share price of sensitive firms. These findings provide strong empirical confirmation that the growth of sustainability disclosure level leading to an increasing the share price of the Iranian listed sensitive firms. The results of the coefficient analysis obtained from the control variables can be seen in Tables 6–8 that generally match

those observed in Barth et al. (2008). The coefficients appear to be positively and significantly related to profitability, presenting that high-profit companies have a greater market valuation. The coefficients on firm size are all positive and insignificant. Similarly, the coefficients on leverage are also insignificant.

5. Conclusions

The present study was designed to determine the sustainability disclosure level and then set out to assess the effectiveness of sustainability reporting on the listed firms' market valuation using annual data of TSE's listed firms during the period 2010–2015. The evaluation of CSR practices is held using the method of content analysis of sustainability reports. On the basis of the theory of descriptive stakeholder, seven corporate sustainability reporting practices features developed in this study including the crucial stakeholders' concerns defined through the framework of ISO 26000. Although there are many reports in the literature on the outcome of the corporate sustainability disclosure, most are restricted to developed nations (Surroca et al., 2013; Zhang et al., 2013) because of that this study provides the comprehensive assessment of the acceptance and performance implications of sustainability disclosure practices in developing countries. A compound sustainability disclosure score is so generated and constitutes our most important independent variable. Control variables (leverage, firm size, and profitability) are added in our model. Data are attained for a five-year period employing one-year lag.

The development of sustainability reporting is inextricably involved in the historical, socio-economic, political, and organizational features of the society and time period under consideration. These are the institutional forces that seem to shape the concepts of what exactly that responsibility should be. Whatever condition exist; however, companies and organizations must consider their social responsibilities and act in accordance with the society welfare. Empirical research has revealed that sustainability disclosure in Iran is still a relatively new phenomenon. The research presented here confirms that on average, sustainability reporting score was shown to have a low level of disclosure (12%) for all listed firms. Besides, the average disclosure scores of firms operating in sensitive and non-sensitive industries were compared in which the firms operating in sensitive industries had a much higher the sustainability reporting level than the other firms. These results highlight the importance of sustainability reporting for sensitive industries due to firms in this kind of industries are characterized by enlarging risk deal with possible litigation and future environmental liabilities and causing for the higher levels of public concern that leading to the sensitive firms face more disclosure pressure (Cho & Patten, 2007; Cormier & Magnan, 2007; De Villiers et al., 2011).In this regard, sustainability disclosures prepare data that permits financiers to enhance evaluations of these risks that is resumed in higher market valuations of firms' shares. It is now understood that sustainability reporting and the consolidation of the environmental and ecological dimensions when are in keeping with the annual reports of listed firms play an important role in growing the clarity and reducing the information asymmetry. Consequently, high level of sustainability

disclosure has emerged as a powerful tool in raising the stock market valuations that be rewarded by shareholders.

By employing a modified Ohlson (Ohlson, 1995) model, it is evidently clear from the findings that significant associations between sustainability reporting and stock prices were identified for the Iranian listed firms indicating that firms with high extent of sustainability disclosure emerge to have much higher stock prices. In relation to the market valuation, there was no statistically significant correlation was found between the overall sustainability disclosure index and share price for two different types of samples, all firms, and non-sensitive firms, while the influence of overall sustainability disclosure index was a significant positive on the share price of sensitive firms. These results are in accord with those obtained by previous studies indicating that environmental and ecological information has a positive effect on market valuations of listed firms. It is now well established that corporate sustainability disclosure has gone some way towards reducing information asymmetries among investors and managers by indicating that sustainability reporting is generally a powerful communication tool in a company. Therefore, benefits companies since it can contribute to a reduced risk of adverse selection by investors and higher market valuations of corporations' shares (Healy & Palepu, 2001; Reverte, 2016). Our model reported that profitability as a control variable is positively concerning market valuation. Results indicate that profitability has a positive and significant effect on the relationship between the sustainability reporting scores and firm value.

With respect to the contribution of this paper, the regulatory organizations, such as the Audit Organization, Tehran Stock Exchange will be capable of making certain the level of the corporate sustainability disclosure. This assists them to evolve the structure of sustainability reporting and instruction of sustainability disclosure to enhance the transparency and decline the information asymmetries. In addition, it helps TSE to recognize their weakness about the sustainability efforts such as those on human rights and energy-related practices. Findings of this paper will compensate for the limitation of conducted studies on this issue and provide an orientation aimed at constructing and helping company disclosure of sustainability information and market valuation and also Iranian listed firms now own an instrument and an indicator that assesses their sustainability disclosure level and initiatives with the purpose of improving these.

The study has some limitations that need to be addressed. First, the sample considered was based on the Iranian non-financial sector. It has commonly been assumed in this kind of research that financial firms such as banks and insurance firms were excluded from the study on the basis of the specific features of their accounting method. This study needs to be expanded, and these scales developed to suit other organizations in different business sectors and also comparing the level of sustainability disclosure in financial and non-financial sectors. Second, the study is limited by the lack of information on primary data. we employed the secondary data for evaluating both sustainability disclosure level and market valuation of listed firms in TSE. An in-depth and more specific study can be conducted if primary data are obtainable to develop a deeper understanding of the sustainability reporting level and its impact on listed firms' share prices. Third, the study did not evaluate the use of corporate

governance factors such as the duality in position, the governmental ownership and the board of directors in which may have influenced the level of listed firms' disclosure. Besides, this study has concentrated on the '7 + 1' subject and items of CSR practices with emphasis on energy disclosure items for assessing the corporate sustainability efforts of listed firms in TSE. It would be interesting to assess the effects of other dimensions beyond the ISO 26000 framework such as supply chain and political obligation.

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