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Demographic characteristics of the board of directors' structure and tax avoidance

Evidence from Tehran Stock Exchange

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Received 3 November 2017
Revised 4 May 2018
Accepted 27 June 2018

Abstract

Purpose – The structure of corporate governance, as one of the important elements to be considered based on the different characteristics than other companies, such as women, expertise, tenure and management is different. But two measures for the presence of women in the board of directors and the size of director's board are considered as corporate content characteristics that can affect corporate tax strategies in avoiding tax or taxes timely pay off. The purpose of this paper is to understand the demographic characteristics of the board of directors structure on the board and tax avoidance in Tehran Stock Exchange (TSE).

Design/methodology/approach – Sample includes the 505 firm-year observations from companies listed on the TSE during the years 2012–2016 and research hypothesis was tested using multivariate regression model based on panel data.

Findings – The results indicate that female presence on the board of directors reduces the corporate tax avoidance. Additionally, firms with a larger size of board of directors are associated with more tax avoidance.

Originality/value – The current study is almost the first study which has been conducted in Iran, so the findings of the study not only extend the extant theoretical literature concerning the tax avoidance in developing countries including emerging capital market of Iran, but also help investors, capital market regulators and accounting standard setters to make informed decisions.

Keywords Demographic characteristics, Board of directors size, Female board of directors, Tax avoidance.

Paper type Research paper

Introduction

After the Industrial Revolution in the nineteenth century, with the development of corporations, there were masses of investors who did not have a direct involvement in the management of the economic units and, by choosing the board of directors and supervising them, were struggling with the management of their economic unit. The result of this process was the separation of ownership from corporate governance. The separation of ownership led to the emergence of a representation theory. This theory relates to the case where a person (the owner) assigns responsibility to a decision on the distribution of financial and economic resources or the performance of a service under a specified contract to another person (Tanayee and Rajabi, 2014, p. 87). The primary concept of governance bodies in a wide range is defined as a network of relationships that includes not only a company and its owners, but also all stakeholders, including employees, customers, people, society, etc. (Nazemi *et al.*, 2014, p. 160). The most important part of this system is the presence of a dynamic and coherent board of

International Journal of Social Economics
Vol. 46 No. 2, 2019
pp. 199-212
© Emerald Publishing Limited
0306-8293
DOI 10.1108/IJSE-11-2017-0507

The authors of this paper have not made their research data set openly available. Any enquiries regarding the data set can be directed to the corresponding author.

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directors, whose decisions can have a broader impact on corporate functions and should also be responsive to a wide range of interest owners (Bryant-Kutcher *et al.*, 2013, p. 476). But a board of directors can be successful at the same time as agility, with detailed views, based on clear and logical responses to market changes, in which case they will be able to gain competitive advantage. In this regard, the size of director's board as a measure of agility (Minnick and Noga, 2010, p. 706) and gender diversity (Williams and O'Reilly, 1998, p. 79) such as the presence of women in the type board, is considered as a measure of the breadth of their views on their decisions (Armstrong *et al.*, 2013). The extant literature on board gender diversity has concluded that the presence of women on corporate boards can increase firm value. Nevertheless, empirical studies have proposed contradictory ideas in this regard. Some studies revealed that firms with gender diversity on their boards show better performance as women bring about significant changes in human resources and business, while some concluded differently and some other studies reported no relationship. The issue of women on corporate boards can be considered either socially or economically. Socially speaking, like men, women are deserved to occupy managerial roles. The economic insights also require organizations to select qualified individuals for managerial positions regardless of their gender. Gender discrimination prevents organizations from making optimal use of their human resources. Studies indicate that women are equipped with valuable skills that can improve corporate performance, thereby increasing firm value. On the other hand, corporate tax policies such as tax avoidance exert a negative impact on governments' performance. However, taxpayers, especially firms, believe that tax is a burden of responsibility for both firms and stakeholders. Since people are skeptical about paying a lot of taxes to tax authorities, they employ tax strategies to minimize, remove or postpone their due tax liabilities. According to the social responsibility theory, since societies allow companies to continue their operations, they consider themselves committed to their societies, thus tending to pay tax on the compensation. These companies believe that paying tax is a major factor that contributes to the development of a society. Following the agency theory, on the other hand, owners mostly focus on the wealth and interests of the companies under their control, thereby avoiding paying tax. Therefore, the amount of tax paid is correlated with the type of ownership (Beasely, 1996). Attempts made to make a balance between these two veins in the corporate governance system have resulted in an ever-increasing emphasis on the role of female directors on corporate boards because women are believed to be more effective in monitoring the process of making a balance between shareholders' and society's interests than men (Hillman and Dalziel, 2003, p. 386). Tax avoidance has received a great attention to the academicians and several studies have been carried out both in developed and developing countries. However, little attention has been devoted to the emerging countries in general and Iran in particular. The capital market in Iran is very new and somewhat inefficient. Furthermore, the presence of the government in the ownership structure of Iranian companies, ownership concentration, and other external and political factors such as trade and economic sanctions against Iran that distinguish it from other countries, make this country a good sample for research. As such, the focus of the study is to acquire an understanding of whether the demographic characteristics of the board of directors affect the level of tax avoidance amongst Iranian public-listed companies. This study also aims to provide additional evidence that supports or rejects prior research findings in developed countries and to determine whether the findings can be generalized in Iranian market. For this reason we selected a sample of 505 firm-year observations from companies listed on the Tehran Stock Exchange (TSE). The availability of data restricted our research horizon only on a five-year period from 2012 to 2016. We find that female presence on the board of directors reduces the tax avoidance. In addition, we find that the tax avoidance increases if the

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board size increases. Our paper contributes to the existing accounting literature written on the topic, in the following ways.

First, the results of the study can advance theorizing about tax avoidance in the emerging capital markets in the developing countries like Iran. Second, the evidence points to the extent to which demographic characteristics of the board of directors can influence corporate tax avoidance. These findings provide valuable insights for managers, investors, capital market regulators, accounting standard setters and tax authorities. In closing, the findings can raise novel ideas for further study in the domain of corporate tax avoidance.

Theoretical foundations

Tax avoidance

Tax avoidance refers to using tax laws in a way which is not intended by the government. It is a way of avoiding tax or minimizing the amount of tax to be paid. In accounting literature, tax avoidance has broad and narrow definitions. Broadly speaking, tax avoidance is defined as the ability to pay a low amount of tax per dollar of reported pre-tax financial accounting income. According to this definition, all transactions that affect corporate tax liabilities are a kind of tax avoidance. This definition does not make any differences between actual activities and tax utility on the one hand, and reducing tax via avoidance activities and lobbying for obtaining tax benefits, on the other hand (Jahromi, 2012, p. 22). Following this definition, tax avoidance can be considered as a continuum of tax planning strategies on which legal tax avoidance (like investment on bonds) is located on one end and illegal tax avoidance occupies the other end (Hanlon and Heitzman, 2010, p. 129). Some defines tax avoidance as a legal activity for reducing tax liabilities. In the narrow aspect, the conceptual distinction between tax evasion and tax avoidance seeks its root in the legal activities of taxpayers. Tax evasion is an illegal activity, whereas tax avoidance occurs in accordance with tax laws, and thus leaving no space for taxpayers to be concerned about being discovered (Ibrahimi *et al.*, 2017, p. 153).

Women on corporate boards

Among various functions that board of directors perform, its monitoring role is of paramount importance to analysts and decision-makers. In fact, they alter corporate actions and behaviors in response to corporate operational environment (such as market needs and competitive pressure). Regarding the opportunistic behaviors or development of corporate activities, these changes can increase or decrease the information asymmetries and agency problems (DiMaggio and Powell, 1983, p. 151). Upper echelon theory believes that organizations consider various characteristics like age, gender, educational level, socioeconomic background and job experience to employ their CEO and members of the board since they believe that board of directors have to operate in line with corporate goals and policies (Hambrick and Mason, 1984, p. 199). Among the mentioned characteristics, gender plays a major role in corporate decision-making process (Lee and James, 2007, p. 229). It is believed that CEO gender has a significant effect on his/her function in the firm. Despite rare conclusive findings in the field, some scholars like Ng (2008, p. 61), Litzky and Greenhaus (2007, p. 639) and Sealy and Singh (2010, p. 288) maintained that the presence of women on corporate boards implies the organizational concerns about human resource, timely disclosure, accountability to shareholders, higher flexibility to environmental changes, etc., which all suggest changes in corporate trends and policies in comparison to past. The results of studies indicate that gender bias against women in different countries prevents corporates from employing women in the board of directors, particularly as a CEO (Adler, 1994, p. 25; Tung, 2004, p. 243). As such, Brockfield *et al.* (2015) documented that although women constitutes 50 percent of labor force in

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Canada, less than 20 percent of them works in middle-level positions, only 8 percent is members of corporate boards, and, disappointingly, only 3 percent occupies CEO position since women are believed to be unable to solve problems within complex competitive industries. Other studies reveal that firms with women on their boards are more transparent (Alhejji *et al.*, 2016). Also, Insch *et al.* (2008) suggest that the unequal ratio of men to women in boards' composition has contributed to the intensity of information asymmetry in these firms. Few theories have considered the issue of gender diversity in board of directors. One of the most famous theories which has examined the issue is the socio-psychological theory (Sepasi and Abdoli, 2016), which aims to explore the condition and impact of minors (like women) within a social matrix (Westphal and Milton, 2000, p. 368). Some evidence indicates that minor members of corporate boards can create motivation and encourage diverging thinking among other members to be able address a wider range of problems (Moscovici and Faucheux, 1972, p. 152; Nemeth, 1986, p. 25). The socio-psychological theory predicts that majorities can exert too much influence on decision-making process and mostly resist against the influence of minorities (Tanford and Penrod, 1984, p. 193). Williams and O'Reilly (1998) asserted that members of heterogeneous groups typically cooperate less, yet experience more emotional challenges. These arguments reveal that the minor presence of female directors on corporate boards is associated with consuming more time and exerting negative effect on firm value. For example, Westphal and Milton (2000) concluded that minor directors have more significant effects on corporate decision making than major directors. About the presence of women in less developed countries, such as Africa, Asia, and so on. Usually, the field of research is based on various reasons such as the lack of disclosure of accurate information, the absence of women in the board of directors, the lack of equitable and equitable gender structures, and so on. It is limited and can be rooted in the cultural dimension of these countries. But researchers in these countries have paid some attention to research, given the constraints expressed. For example, Arayssi *et al.* (2016) in research examined the role of women on boards, sustainability reporting and firm performance. In this research, the firms studied are all listed in the Financial Times Stock Exchange 350 index between 2007 and 2012. Bloomberg social disclosure score is used and panel data through a regression model are applied. The results reveal that the presence of women directors on corporate boards (WDOCBs) favorably influences on firm's risk and performance through promoting a firm's investment in effectual social engagements and reporting on them. The desirable effect of WDOCB on the environmental, social and governance–performance relationship leads to increased risk-adjusted and buy-and-hold abnormal returns and reduced firm risks, measured by both volatility of returns and systematic risk. Also in another study, Fakhih and Ghazalian (2015) examine the implications of firm-related and national factors for female employment in manufacturing firms located in the MENA region. The results reveal significant implications of firm-related factors, such as private foreign ownership, exporting activities, firm size, and labor composition, for female employment. They also show that national factors, such as economic development and gender equality, promote female employment. There are considerable differences in the estimated marginal effects across female employment categories. But this is somewhat more attractive in Iran, due to social changes in recent years, and the growing presence of women and in general the changes and gender balance in the region, such as Saudi Arabia and other Arab countries, about the role of women. For example, Sepasi and Abdoli (2016) sought to answer the question of whether women on the board would bring economic benefits to the company? In order to clarify this issue, this study examined the direct and indirect effects of women on the board of directors on the value of the company, and examined the company's value and financial performance by using a multivariate regression model on the board's board of directors. There was no

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direct evidence that the presence of a female representative on the board directly affects the value of the company. However, indirect effects were found, indicating that women on the board positively influenced financial performance (measured by asset yields and sales), which suggests that women in the board of directors influence financial performance (which in turn are related to the value of the company) and thus affect the value of the company.

Size of director's board

The board size is considered as an important element in the board of directors' characteristics. The optimal number of members of the board of directors should be determined in such a way as to ensure that enough members are present to respond to the duties of the board of directors and perform various functions of the board of directors. Therefore, a large number of board members reduce decision-making speed. As the members of the board of directors become smaller, it is possible to discuss and use the opinions of others about the problems and solutions to solve them in the company and increase the efficiency of the company (Mashayekhi and Seyedi, 2015, p. 86).

Women on corporate boards and tax avoidance

The presence of women on corporate boards has gained a lot of importance due to their effective role in monitoring managerial performance. Female directors do their best to balance the responsible behaviors of firms toward society and shareholders. Adams and Ferreira contend that the presence of women on corporate boards has managed to contain managerial opportunistic behaviors and prevent their false benevolence with the intention to avoid tax to maximize shareholders' interests. Baldry (1987) also showed that women make better decisions than men to promote the transparency of financial reports. Ruegger and King (1992) found that the presence of women on corporate boards will enhance corporate social responsibility due to more dependency on ethics, thereby contributing to attitudinal changes in tax ethics and timely payment of tax. Moreover, Fallan (1999) maintains that the spiritual values of firms will be increased via women presence on corporate boards, thereby resulting in a reduction in tax avoidance.

A substantial part of prior studies on women's role on corporate boards is dedicated to investigating their role in increasing firm value and decreasing information asymmetry, yet few studies have considered their role in reducing tax avoidance. Richardson and Lanis (2016) selected 300 Australian firms during the years 2006–2010 to examine the impact of women's presence on corporate boards on reducing tax avoidance. To do so, they chose 16 firms with external ownership, 11 firms with state ownership and 18 firms with family ownership, among which no one had a female director on its board. However, other 255 firms had at least one female director in their board compositions. The results of their study revealed that women's presence on corporate boards can exert a significant influence on reducing tax avoidance. Srinidhi *et al.* (2011) investigated 94 firms with female directors in their board compositions and concluded that the presence of women on corporate boards will considerably promote the transparency of financial statements and reduce the risk of corporate tax avoidance, thereby leading to a fall in information asymmetry. Peni and Vahama on the other hand, reported that the presence of female directors on corporate boards will minimize the likelihood of frauds and incomplete disclosure of financial statements. Carter *et al.* documented that decisions made in firms with women on their boards are more independent than those made in firms without female directors, thus improving the quality of corporate decision making. Sepasi and Abdoli sought to answer whether the presence of women on corporate boards can bring economic benefits to companies. Their findings indicate that women on corporate boards positively affect the financial performance, thereby improving firm value.

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Size of director's board and tax avoidance

Some research findings show that the size and size of the board can be reduced by making decisions and implementing management tasks. In fact, a board of directors can play its role effectively so that it can properly review and limit the views of those who play a key role in board decisions, because otherwise, there are multiple views due to The large size of the board reduces the functional effectiveness of managers in different programs and strategies (Richardson and Lanis, 2011, p. 53). In other words, the board's control, in the event of the board being large, is placed by individuals and groups that are more influential, and this is a serious impediment to playing the role of the board of directors. In these situations, if these managers have a higher degree of risk aversion due to their self-interest incentives or the like, they will direct the policies and strategies of the companies to the point they are considering. One of these strategies is to avoid paying taxes. Because of personal incentives, they are likely to make decisions that reduce tax payments through accounting procedures and the existence of legal gaps. In fact, the size of the board of directors increases the probability of influence and influence of the members of the board of directors, and, based on the theory of representation, the interests of the shareholders are at stake. A tax avoidance is also considered as one of the same information gap between executives and shareholders, which members of the board of directors can by their decisions, by avoiding tax, increase the issue by increasing the cost of representation (Zahra and Pearce, 1989, p. 294).

Research hypotheses

Ownership mechanism is a major controlling tool in corporate governance. Some of the owners' incentives are influenced by stakeholder theory. Accordingly, since societies pave the way for firms to continue their operations for an indefinite period of time, they decide to compensate for this advantage by paying their taxes. On the other hand, agency theory states that owners pay particular attention to the wealth and interests of the companies they own and consider tax payment worthless to their companies. Therefore, the level of tax avoidance is associated with type of ownership (Beasley, 1996). Since boards of directors play major roles in monitoring and supplying necessary resources (Hillman and Dalziel, 2003, p. 386), the presence of women on corporate boards are claimed to promote these two managerial functions, thereby increasing the efficiency of monitoring corporate boards (Terjesen *et al.*, 2009, p. 322). The results of study carried out by Lanis and Richardson (2011) and Adamz and Ferriera (2009) confirm that the presence of women on corporate boards, like the presence of external directors, can reduce firm's tax avoidance as a result of better surveillance on financial performance. Therefore, the first hypothesis will be designed as follows:

H1. The presence of female directors on corporate boards is significantly associated with tax avoidance.

On the other hand, the separation of ownership and management explains that if tax avoidance is a valuable and valuable activity, managers should provide a good structure to ensure that managers make efficient tax decisions. But when corporate decision-making structures are built up because of the large size of the board of directors and the existence of multiple perspectives, and possibly with various motives such as interest-seeking, political, and party, etc., it is not expected that directors' tax decisions will necessarily be more efficient to be accompanied. Those tax decisions are among the efficient and effective decisions that, due to the dynamics of the board of directors (small and specialist), the amount of company taxes over the past years, the amount of tax arrears, and the determination of tax exemptions. As well as tax planning through the adoption of comprehensive policies and their performance in the future, proper management for

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timely payment of taxes in order to be able to take advantage of tax breaks. Researchers also Armstrong *et al.* (2013); Setayesh *et al.* (2014); Mashayekhi and Seyedi (2015) found that the size of the board's size affected corporate tax avoidance. Of course, depending on the capital markets examined, the existence of board functions such as expertise and knowledge, the perception and understanding of the board of directors, the concentration of ownership and institutional shareholders may change. Therefore, the second hypothesis will be designed as follows:

H2. The size of director's board is significantly associated with tax avoidance.

Research methodology

Sample selection

We select all publicly listed companies in TSE over the entire duration of the estimation time period (2012–2016) as initial samples. Of these initial samples, companies with long periods without transactions (more than three months) and firms that are either missing financial variables or that have insufficient data are eliminated. Financial institutions, banking, finance and investment firms are also eliminated, since their accounting and reporting environments differ from those in other industries. This gives a final sample of 505 firm-year observations from the fiscal years 2012–2016. Table I discusses the breakdown of sample procedure (Panel A) as well as the number of sample per industry (Panel B).

Variables measurement

The following multivariate regression model has been adopted to test the research hypothesis:

$$TAX_{it} = \beta_0 + \beta_1 FEMALE_{it} + \beta_2 BOSIZE_{it} + \beta_3 SIZE_{it} + \beta_4 LEV_{it} + \beta_5 ROE_{it} + \beta_6 GWTH_{it} + IND\,FE + YEAR\ FE + \varepsilon_{i,t}$$

Dependent variables. The dependent variable of the current study is the tax avoidance (*TAX*), which, similar from the work of Richardson and Lanis (2016) and Arabsalehi and Hashemi (2015),

Panel A: Sample selection procedure

Explanation	Observations
Initial sample from 2012 to 2016	1,570
Less: Firm-years with long periods without transactions	305
Less: Firm-years with insufficient or missing data	510
Less: Financial institutions	250
Final sample	505

Panel B: Industry distribution

Industry	Observations	Percent
Automotive	80	15.85
Mining and metal products	65	12.87
Cement and plaster	55	10.88
Metals	55	10.88
Rubber and plastic	45	8.91
Machine tools	45	8.91
Oil, gas and petrochemicals	50	9.91
Food	50	9.91
Pharmaceuticals and healthcare	60	11.88
Total	505	100

Table I. Sample selection process

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is proxied by two measures. The first measure is book-tax difference (*BTD*) which is obtained through subtracting pre-tax book income from taxable income, which is in turn obtained from dividing total tax expense by statutory tax rate. In order to homogenize the collected data, this variable will be divided by book value of total assets. The second measure of tax avoidance is effective tax rate, which is calculated as follows:

$$ETR_{i,t} = \frac{TTE_{i,t}}{PTE_{i,t}}$$

where *ETRi,t*: the effective tax rate of firm *i* in year *t*; *TTEi,t*, total tax expense of firm *i* in year *t* and *PTEi,t*: pre-tax book income of firm *i* in year *t*. Since decreased effective tax rate leads to a rise in the level of tax avoidance, the calculated tax rates are multiplied by −1 to obtain a direct measure for tax avoidance.

Independent variable

(1) *FEMALE:* is a dummy variable, takes the value of 1 if women are present in boards' composition, 0 otherwise.

(2) *BOSIZE:* board size is defined as the number of board members.

Control variables. We include a set of control variables that prior research has found to be associated with the tax avoidance (Richardson and Lanis, 2016; Arabsalehi and Hashemi, 2015; Dianatideylami *et al.*, 2015) . *SIZE* is the logarithm of firm's total sales. *LEV* is financial leverage measured as the total debts divided by total assets. *ROE* is profitability calculated as dividing net income by market value of the corporate equity. *GWTH* is firm growth opportunities, defined as the market value divided by the book value of equity. In the regression model, we also control for industry and year effects. Table II summarizes the definition of variables used in this paper.

Since the present study employs two measures of BTD and ETR to compute tax avoidance, the mentioned model is estimated for each measure. To estimate the research models, the panel data technique is used since it is superior to time-series cross-sectional models with respect to the number of observations, less likelihood of multicollinearity among variables and decreased biased estimation and heterogeneity of variance (Gujarati, 2009).

Dependent variable	
BTD	pre-tax book income minus estimated taxable income scaled by total assets
ETR	total tax expense divided by pre-tax book income
Independent variable	
FEMALE	Dummy variable, equal to 1 if the women are present in boards' composition, and 0 otherwise
BOSIZE	Board size is defined as the number of board members
Control variables	
SIZE	Firm size measured as the logarithm of firm's total sales
LEV	Leverage measured as the total debts divided by total assets
ROE	Profitability calculated as dividing net income by market value of the corporate equity
GWTH	Firm growth opportunities, defined as the market value of equity divided by book value of equity
IND	Industry dummy to control for industry fixed effect
Year	Dummy variables to control for fiscal year effect

Table II.
Variable definitions

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Research findings

Descriptive statistics

Table III contains the descriptive statistics of the sample variables from 2012 to 2016. As can be seen, the average rate of effective tax is 11 percent, which, according to the statuary tax rate for listed firms (22.5 percent), point to the inconsistency between firms' tax status and tax policies. Also, the number of members of the board of directors is about five people. Moreover, approximately 61 percent of the firms' assets are financed with debt.

Regression results

F-limer is first used to clarify whether the collected data are pooled or panel. According to the results presented in Table IV, the significance level of the F-limer for either models is less than 0.05. Therefore, H_0 is rejected, and hence panel data were used to estimate the research models.

To explore the type of panel data (fixed or random effect methods), the Hausman test is used. As indicated in Table V, H_0 is rejected in the research models, and thus the models have to be estimated via fixed effects method.

The results of likelihood ratio test, which is conducted to examine the heterogeneity of variance among error terms, suggest a heterogeneous variance among them. To eliminate this problem, generalized least square method was employed to estimate the research models. Also, to ensure the lack of multicollinearity among the explanatory variables, the multicollinearity test was undertaken using variance inflation factor. The results pointed to the lack of collinearity among the mentioned variables since the values of the test were lower than 10. Finally, as indicated in Table VI, Durbin–Watson test was used to establish if there is a correlation among the error terms of the models. The results of testing the research hypotheses based on *BTD* and *ETR* as two measures for tax avoidance are represented in Table VI.

Variable	Symbol	Mean	Median	Min.	Max.	SD
Boo-tax difference	*BTD*	0/082	0/068	−0/044	0/513	0/125
Effective tax rate	*ETR*	−0/111	−0/117	−0/414	0/000	0/092
Gender	*FEMALE*	0/092	0/000	0/000	1/000	0/301
size of director's	*BOSIZE*	5/114	5/000	3/000	7/000	0/366
Firm size	*SIZE*	12/102	11/937	9/865	14/563	0/701
Financial leverage	*LEV*	0/611	0/592	0/091	0/718	0/314
Profitability	*ROE*	0/086	0/081	−0/105	0/402	0/137
Growth opportunities	*GWTH*	2/714	2/051	−3/305	8/161	1/708

Table III. Descriptive statistics of the research variables

Model	Measure of tax avoidance	*F*-statistics	Sig.	Results
Model (1)	BTD	9/008	0/000	H_0 rejected
Model (2)	ETR	10/017	0/000	H_0 rejected

Table IV. The results of F-limer for the research models

Model	Measure of tax avoidance	Statistics χ^2	Sig.	Results
Model (1)	BTD	16/519	0/012	H_0 rejected
Model (2)	ETR	17/008	0/009	H_0 rejected

Table V. the results of Hausman test

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Considering *F*-statistics and level of significance, one can conclude that all fitted regression models are significant at the 5 percent level. In addition, the results of Durbin–Watson statistics also confirm the lack of autocorrelation among the error terms of each regression models. The research hypotheses can be explained as follows.

The first hypothesis states that board of directors' gender is significantly associated with tax avoidance. As can be seen in Table VI, the estimated coefficient and *t*-statistics of the *FEMALE* are negative and significant at 5 percent level for both models, revealing a negative and significant association between the presence of women on corporate boards and the level of corporate tax avoidance. Therefore, first hypothesis is accepted at 5 percent level.

The second hypothesis states that board size is significantly associated with tax avoidance. As can be seen in Table VI, the estimated coefficient and t-statistics of the *BOSIZE* are positive and statistically significant. Therefore, the second hypothesis is accepted at the 0.05 level.

Conclusion

One of the sources of government is collecting taxes from companies. Theoretical foundations and empirical evidence show that companies are trying to reduce or postpone their income tax. Tax avoidance activities may try to reduce their taxes. It seems that many companies are involved in tax avoidance, and for this reason determining the factors affecting the level of tax evasion in companies is very important. According to theoretical literature, one of the factors influencing tax evasion is the demographic characteristics of the board of directors. Therefore, in this research, was investigated the relationship between demographic characteristics of the board of directors and tax avoidance activities of companies. The present study is important in this regard, which is one of the first researches in Iran that addresses this issue and hence can help to expand the literature of tax and accounting in developing countries, including the capital market of Iran. To achieve this objective, a sample of 101 companies listed in the TSE was considered and were offered two hypotheses.

The findings of this study revealed that since boards of directors are set to make an informational balance between shareholders and managers, and promote the level of trust among shareholders, one can maintain that the presence of women on corporate boards help improve the performance of boards of directors, and, following agency and stakeholders theories, firms with female directors show lower tax avoidance because stakeholder theory suggests that the effective monitoring role of corporate governance via the presence of women on boards help firms make more informed and accountable decisions with regard to the

Table VI. The results of estimating the research model based on the measures of tax avoidance

	Tax avoidance			
	BTD		ETR	
Variable	Coefficient	statistics *t*	Coefficient	statistics *t*
C	0/418**	3/005	0/452**	3/218
FEMALE	−0/052*	−2/114	−0/058*	−2/405
BOSIZE	0/038*	1/982	0/034*	2/008
SIZE	−0/082**	−2/814	0/079*	−2/306
LEV	0/014	0/581	0/011	0/463
ROE	0/042**	2/741	0/047**	2/831
GWTH	0/018	0/704	0/052*	2/317
F-statistics	8/517**		*F*-statistics	8/902**
Adjusted R^2	0/584		Adjusted R^2	0/591
Durbin–Watson statistics	1/966		Durbin–Watson statistics	1/961

Notes: *,**Statistically significant at 5 and 1 percent levels, respectively

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societies in which they are operating and also pay their taxes to aid governments pave the way for them to continue their operations for an indefinite period of time. The agency theory, on the other hand, maintains firm owners always seek to maximize their interests at the expense of shareholders, thereby resulting in a gap between managers and shareholders. Managers attribute their tax avoidance behavior to their benevolent intentions and concerns about shareholders' interests, which is of course difficult to shed light on the trustworthiness of these ideas. Accordingly, one can come up with this conclusion that the presence of women on corporate boards can contain the selfish and opportunistic behaviors of managers and uncover their false intentions such as avoiding paying tax to maximize shareholders' interests. This leads to better monitoring of financial reporting disclosure, and hence reducing the gap between shareholders and firms. The results of this study conform to those obtained by Baldry (1987), Ruegger and King (1992) and Fallan (1999).

Test results: the second hypothesis of the research shows that with increasing size of the board of directors, their tax evasion rate also increases. Empirical evidence suggests that there is no consensus on the optimal size of the board of directors. Goodstein *et al.* (1994) found that a smaller board of directors of between four and six members could be more effective, because they could be able to make more strategic decisions at a time. The number of members of the board of directors should be limited so that discussions can be made on the company's issues and problems. This is very important given the constantly changing environment of the competitive market and the existence of effective and influential factors in these factors, because the agility of the company's decisions and practices under these changing circumstances makes a significant contribution. It eliminates the conflict of views due to the greater number of members and increases the speed and decision-making power to solve problems. In other words, the board of directors is bigger than power. In such a board of directors, it is very difficult to reach an agreement on a specific topic. Since tax evasion is a corporate tax strategy, it can be said that the number of board members and the increase in the size of the board can increase tax avoidance because there are always beneficial incentives due to the large number of members of the board of directors; in decision-making sessions, it can shadow the company's tax performance. Beasley (1996) states that the possibility of accounting fraud increases with the size of the board of directors (Yermack, 1996). Similarly, it showed that the board of directors was more effective than the board of directors. Therefore, it is logical that a larger board of directors can increase the tax avoidance strategy.

As it was found out that the presence of women in the board of directors, due to the theories developed in the field of corporate finance decisions in the capital market to reduce the cost of representation and reduce the gap created between shareholders with corporate executives, reduce avoidance companies become taxed, because they, according to their personality traits, are likely to accept more reasonable and less risky decisions than men, and this may appear, in companies' tax decisions to pay more time to tax and the use of tax breaks. On the other hand, companies should pay close attention to the size of the board of directors and the diversity of decisions as a flexible and agile strategy, since this result has been identified in less developed and inefficient capital markets such as Iran, large size of the board of directors. It can reduce the speed and response of the company in times of crisis due to the multitude of decision-making perspectives. Tax avoidance as an indirect and intermediary can affect the performance of companies in a constantly changing environment, because the adoption of these decisions to avoid tax payments usually occurs in the board of directors. Due to various issues and problems, they try to make their decisions logically with a positive intention to increase the shareholder's share, while these decisions due to the size of the board may have adverse effects on the company's future and the value of the companies due to lack of transparency in the capital market. The point that should be noted is that women value responsible companies due to the characteristics of their identity, to give a commitment to norms and social rules, are much more responsible and more transparent likely than men act

المنارة للاستشارات

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and based on the theory of stakeholders, trying to bridge the gap between shareholders and corporate executives based on corruption and are motivated by self-interested reduced so that shareholders and investors invest with a margin of reliability and security safely more.

The findings suggest that firms give up their traditional viewpoints, reduce the gap between men and women and promote professional justice and equality. They are also recommended to follow socio-psychological theories and upper echelon theory to eliminate discrimination between men and women in the workplace since the presence of women on corporate boards have developed thriving companies. Additionally, The Stock Exchange is recommended to employ women in its monitoring committees to control firms' performance, and also reduce the discrimination between men and women to promote its quality through coordinating them. Also, investors are encouraged to pay attention to the number of board members when investing and purchasing shares. Because the research results indicate that companies with more members of the board have more tax avoidance activities in their management strategies and programs.

In conclusion, it should be noted that our study has several limitations. First, it analyzes only five years of data (2012–2016) which limits the generalizability of the results to other time periods. Second, the model used in this study may omit some variables correlated with tax avoidance. While we have added some control variables, we may not have successfully identified all potential correlated omitted variables. Despite the aforementioned limitations, our findings could be proved valuable to investors, managers and regulators since they have implications for all these related parties.

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