

The relationship between the outside financing and the quality of financial reporting: evidence from Iran

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Abstract

Purpose – *This study aims to investigate the impact of outside financing (equity and debt financing) on the quality of financial reporting in Iran.*

Design/methodology/approach – *Sample includes the companies listed on the Tehran Stock Exchange – 152 companies in a period of four years during 2010-2013. Data were analyzed by using multiple linear regressions with the benefits of the combined data.*

Findings – *The results indicates that there is a positive relationship between the quality of financial reporting based on the qualitative characteristics of the theoretical principles of the Iranian Financial Accounting Standards Board and debt financing. Moreover, there is a negative relationship between the quality of financial reporting based on the Dechow and Dichev (2002) model and debt financing. Additionally, there is a negative relationship between the quality of financial reporting (based on the qualitative characteristics of the theoretical principles of the Iranian Financial Accounting Standards Board as well as the Dechow and Dichev models) and equity financing.*

Originality/value – *Financial statements as the output of the accounting system has always been considered by the investors, the creditors and the government; nonetheless, its dependability in making decisions has always been doubted because of using the accrual principle in the calculation of the reported figure in the statements and, consequently, the possibility of being manipulated by the managers as well as the likelihood of conflict of interest among the managers and the shareholders.*

Keywords *Capital markets, Financial markets, Financial system*

Paper type *Research paper*

1. Introduction

Enterprises and organizations increasingly need correct and timely information for use in the decision-making process. In general, accounting information is a qualitative characteristic that can be used in the decision process. Having formed a separation between the ownership and the management and forming the conflict of interest among the owners and managers, providing financial statements for external financial reporting purposes and evaluating the quality of the intended statements are among the interesting matters for the creditors, the owners, the governments and even the managers. The main objective of the financial statements is to provide the appropriate information regarding financial and operating position to make sound decisions by the investors and creditors. If the financial statements truly meet such objectives, they will have the required quality (Aboody *et al.*, 2005); nonetheless, two factors including the conflict of interest and the information asymmetry among the managers and owners would make the managers to distort the information included in the financial statements (Rajgopal and Venkatachalam, 2011). Therefore, the managers attempt to manage earnings and report the shareholders' expected earnings to maintain their job security as for increasing their own salaries and advantages. Applying the earnings management does not disclose the financial statements of the company's real status, making it impossible to appropriately decide based on such statements. Consequently, the financial reporting quality will be decreased,

Received 9 April 2014
Revised 7 February 2015
15 May 2015
Accepted 8 July 2015

bringing about a decrease in the quality of financial reporting (Habib *et al.*, 2011). A growing body of accounting research concludes that higher financial reporting quality reduces the negative effects of financing constraints on investment by mitigating information asymmetry (Biddle *et al.*, 2009; Biddle and Hilary, 2006; Verdi, 2006; Hope *et al.*, 2009).

Bushman *et al.* (2004) states that financial reports can affect the stock market brought in three ways:

1. It helps financial results; good or bad investments is recognized that this risk assessment and therefore reduces the cost of capital.
2. Higher-quality financial reports provided to investors distinguish between good and bad managers, thus helping reduce agency costs and capital cost.
3. Obscure accounting reports and economic realities undermines the relationship between accounting figures, and information asymmetry is inevitably increased.

Ghosh and Moon (2010) state that debt financing is among the factors which influence earnings quality. Concerning the relationship between debt financing and earnings quality, various viewpoints have been proposed, including the direct linear relationship, the reversed linear relationship and the non-linear relationship. The direct linear view indicates that, as the debt level increases, the quality of the financial statements increases due to the fact that the creditors require audited financial statements for providing credits and as the quality of the required information goes higher, providing credit will be done easier, accordingly. In this way, a considerable control is applied on the debtors, making them to provide accurate and high-quality information (Armstrong *et al.*, 2010). The reversed linear view suggests that the managers are inclined to manipulate the companies' financial information, as well as display more optimum financial position to receive credit. Consequently, with the increase of the debt level, the quality of the information falls (Dichev and Skinner, 2002; DeFond and Jiambalvo, 1994). The non-linear view suggests a kind of share-like relationship between the debt financing and the quality of financial reporting which is a combination of the two views of the direct linear and reversed relationships (Ghosh and Moon, 2010). In this study, the relationship between outside financing (equity and debt) on the quality of financial reporting of the manufacturing companies listed on the Tehran Stock Exchange was examined to explore the relationship between debt financing and the quality of financial reporting which is observed in three modes in Iranian stock companies, by making use of the Dechow and Dichev (2002) scale of measuring quality as well as examining the quality based on theoretical concepts on the quality characteristics of the Iranian financial accounting standards based on the timeliness and dependability. Additionally, this research was aimed at exploring whether there is any relationship between the quality of financial reporting and equity financing.

2. Theoretical issues and literature

2.1 Hypotheses development

There are various theories concerning the selection of financing resources (debt and equity) proposed by the researchers. They can be listed as follows.

2.1.1 *The traditional theory.* This method revolves around the existence of an optimum structure of the capital company's value using the leverage. In fact, the method suggests that the capital cost, first, decreases due to the higher use of debt and then it would rise due to the increase of equities' cost (Mollanazari *et al.*, 2009).

2.1.2 *Modigliani and Miller's theory with the assumption of lack of tax.* Modigliani and Miller (1958), the two thinkers who introduced the modern theory of capital structure in their research (the MM theory), rejected the traditional theory while pointing out that the company's capital cost would not change under certain circumstances (the nonpayment of the income tax and the lack of tax costs) with the company's change of the capital

structure, and the favorable impact of substituting the debt with the lower financing in the company's financial structure will be compensated by the decrease of the company's common stock. In other words, due to the increase of the debt financing percentage, shareholders will endure higher financial risk, and the shareholders' expectation will be increased with the increase of the financial risk of the output rate. Therefore, the capital cost is independent of the company's financial structure while taking into consideration the MM theory; the decision-making on how to finance in this regard has minor importance.

2.1.3 MM theory with the impact of tax on the company. Modigliani and Miller (1963) modified their primary theory with the assumption of the existence of tax. In this new theory, which is renowned as the second theory of Modigliani and Miller, they reasoned that, in respect of the fact that loaning brings about the tax shield (advantage), logically, we should expect that the companies would preferably use loaning among diverse financing resources because higher use of loaning increases the company's value. In other words, when loaning brings financial advantage for the company, the company value will be directly dependent on the loaning rate or its financial leverage.

2.1.4 The Pecking order theory. This theory suggests that the companies pass certain hierarchy in providing the necessary financial resources. The formation of such a hierarchy is the result or consequence of the information asymmetry. According to the theory, in the case that the information asymmetry exists among the extra-organizational managers and investors, the managers prefer inter-organizational resources instead of the extra-organizational ones for financing, that is, first, they do financing from the accumulated earnings or accumulations, then if the internal resources are not enough, they resort to issue the lowest risk stock, namely, the savings bond (loaning) from the extra-organizational resources. If the loaning is not enough while more financial resources are needed, they attempt to issue stock (Frank and Goyal, 2007).

2.1.5 The static tradeoff theory. In this theory, the optimum structure of the capital can be considered as the balance among the tax advantages of debt and the financial crisis costs as well as possible bankruptcy (from debt) and representation. According to the theory, the company should change and substitute debts with the stock and the stock with debt so that its value would be maximized. The important point here is the existence of the cost of adjusting the debt ratio. Moreover, adjusting the debt ratio to the optimum level is done slowly. Based on the theory, there is an optimum level of the debt ratio for each company, while any deviation from the level decreases the stock price, consequently diminishing the stock turnover (Cai and Zhang, 2006).

2.1.6 The market timing theory. The market conditions form the basis and foundation of this theory. This implies that the managers evaluate the market conditions for both financial resources, namely, loaning and stock issuance and if they need financing, they would use the resource whose market conditions are suitable. If the market conditions of both financing are not suitable, they would postpone financing but if the market conditions go well, they will do financing even if they do not need the financial resources (Franc and Goyal, 2007).

Accounting literature has introduced various factors as the factors affecting the quality of earnings and some of such factors are introduced as follows.

2.1.6.1 The company's operating cycle. The longer operating cycle indicates higher distrust in future and higher error in the estimation of accruals which consequently results in lower earnings quality.

2.1.6.2 The company size. The persistence and predictability of the operation in larger companies is higher; therefore, the error estimation of the accruals is lower, while the earnings quality is more optimal in comparison with the other companies.

2.1.6.3 Sales fluctuations and cash flows. Selling fluctuations and cash flows indicate the fluctuations and distrust in the company's operating environment. Higher fluctuations in the

operating environment increase the predictions error and the estimations as well as affecting the earnings quality negatively.

2.1.6.4 The company loss. The loss report indicates intense changes in the company's operating environment which decreases the stability of the company's operating environment. Indeed, the accruals made in such conditions probably include considerable estimation errors. Consequently, the frequency of the loss report indicates a low quality of the accruals (Dechow and Dichev, 2002).

2.1.6.5 Financial crisis. The company's level of financial distress and crisis can affect the earnings quality because it is possible for the companies to manipulate the earnings for showing an optimum image of their financial status, while this might lower the earnings quality (Francis *et al.*, 2005).

2.1.6.6 The company growth. Creating accruals in the growing companies is higher, while it consequently results in the error possibility of the estimation of the accruals (Francis *et al.*, 2005).

2.1.6.7 Debt financing. Another factor affecting the earnings quality is debt financing (Ghosh and Moon, 2010). Accounting literature has suggested three different views concerning how financing affects the earnings quality through debt. The first view is based on the positive impact of debt financing on the earnings quality. According to this view, the creditors control and monitor the loan-receivers by the application of the trusted audited financial statements for evaluating their statuses. Due to the increasing control exerted by the creditors, it is expected that, with the increase of debts, the reported accruals and earnings would have more information regarding the future cash flows, having higher quality. On the other hand, the creditors react to the loan-receivers' accounting information quality in the sense that, as the credit-receivers' accounting information quality is better, they consider fewer limiting conditions and lower interest rate in their loan contracts and vice versa. Consequently, the credit-receivers try to decrease the interest cost and the other limiting conditions of the debt contracts through reporting high-quality information (Armstrong *et al.*, 2010). The second view deals with the negative impact of debt financing on the earnings quality. Two reasons are suggested for the negative impacts of debt on the earnings quality in the view. The first is that due to the representation conflicts among the creditors and managers, the creditors make a contract with the loan-receivers for maintaining their wealth and interests embodying conditions and limitations in the contract which impose costs on the credit-receivers if such conditions are violated (Dichev and Skinner, 2002). Therefore, the opportunist managers are motivated for manipulating the earnings to decrease the possible violation of the conditions of the debt contacts which such an act would lower the earnings quality. The second reason is that the creditors depend on the companies' financial statements for evaluating the payoff ability of the principal and interest. Consequently, companies' managers might manipulate the earnings for attracting the creditors' attention to display an optimum image of the company's profitability as well as attracting the needed capital (DeFond and Jiambalvo, 1994). Consequently, it can be said that the debt has a negative impact on the earnings quality (Amiri and Khorzoqi, 2009). Ghosh and Moon (2010), with respect to the two contradictory views on the impact of debt on the earnings quality, suggest the third view. They believe that the suggested reasons in both of the abovementioned views seem logical. Thus, the relationship between debt financing and the earnings quality cannot be expected to be direct or reversed linear, but it is a kind of a non-linear relationship (Type II). They believe that when the companies' debt level is low, it is expected that the limiting conditions in the debt contracts are lesser or even there will be no limiting conditions. As a result, the risk of the violation of the contract is reduced and the managers will be less inclined to manipulate the interests and lower its quality. In return, they are inclined to reduce the interest cost and the other limiting conditions of the contract through reporting high-quality interests. On the contrary, when the companies have a considerable debt, the relationship between the debt and the earnings quality will be reversed. In this mode, the managers are

also inclined to reduce the interest cost and the other limiting conditions of the debt contract through reporting high-quality interests, but they will experience high risk regarding the violation of the conditions of the debt contracts. Thus, managers are expected to use their authorities in the estimations and the selection of the accounting procedures as well as manipulating the interests to avoid the violation of the conditions stated in such contracts.

To this end, the current research is interested in finding whether the commercial units lower the quality of financial reporting once they need financing (debt or equities). In respect to the theoretical principles concerning the relationship between the accounting quality and debt financing, the research hypotheses are established as follows for exploring the relationship between financing (stock issuance and debt) and the quality of financial reporting:

- H1.* There is a significant relationship between debt financing and the quality of financial reporting.
- H2.* There is a significant relationship between increasing the capital and the quality of financial reporting.

3. Related literature

Today, the discussion of the capital structure and the method of financing resources and their impacts on the shareholder's interests, as well as the impact of the quality of financial reporting on the company's different dimensions, are taken into account by the researchers, and what follows is a succinct overview of such studies.

[Nikbakht and Azimi \(2013\)](#) studied the impact of conditional conservatism on information reliability, and timeliness of disclosure demonstrated a negative association between conditional conservatism level and the reliability and quality of financial reporting.

[Poor Heydari and Ghfarloo \(2011\)](#) examined financing and the changes of the provisional conservative level of accounting. Their results indicated that the companies that make financing by the long-term debts would neither reduce the provisional conservatism level in the financing period nor the period before that. Nonetheless, the companies that make equity financing would expectedly reduce the provisional conservatism level in their financial reporting not only in the financing period but also the period before that.

The aforementioned studies allow the conclusion to be made that conditional conservatism level is negatively associated with the reliability and quality of financial reporting. Hence, long-term debt financing is presumably done when financial reporting quality is poor. By contrast, equity financing is supposed to be done in the context of high-quality financial reporting.

[Costello and Wittenberg-Moerman \(2011\)](#) examined the impact of the quality of financial reporting on the selection of type of limiting conditions in the debt contracts by the creditors and found that when the internal corporate controls suffer major weaknesses, the creditors reduce using the conditions based on the financial ratios while using more choices such as security, interest and evaluating the performance based on the rating of the customers' credits. Therefore, it can be concluded that internal controls' weakness brings about poor financial reporting quality which consequently leaves investors with no alternatives but to choose another option to ensure the return of capital (i.e. principal and interest).

[Park et al. \(2012\)](#) investigated the impact of the earnings predictability on the banking debt contracts. They concluded that the companies with higher earnings predictability have more favorable loan terms' lower interest rate, longer maturity, less covenant restrictions and collateral. It is obvious that high-quality financial reporting is a prerequisite for earnings predictability, and the higher financial reporting quality a given company provides, the more favorable loan terms it gains.

Resaiyan and Hosseini (2008) investigated the impact of the accruals on the companies' capital cost. The results indicated that the companies' capital cost was not affected by the accruals quality and its components; nonetheless, the research with the same topic by GarciaTeruel *et al.* (2010) revealed that the companies with lower accounting quality have higher debt costs as compared with the companies with higher accounting quality. They also indicated that the accounting quality reduces the information asymmetry and improves the management monitoring.

ArabeMazarYazdi and Talebiyan (2005) examined the impact of the quality of financial reporting and information risk on the capital cost of the companies listed on the Tehran Stock Exchange. The results showed that the companies' capital cost with low accruals quality is lower than the companies' capital cost with high accruals quality. Furthermore, according to the findings of the mentioned research, the impact of voluntary accruals quality on the capital cost is higher than the impact of involuntary accruals quality on the companies' capital cost.

Minnis (2011) examined how the financial statements' verifiability affects the debt interest rate. He scrutinized the US private companies for which auditing the financial statements was not obligatory and concluded that the companies whose financial statements were audited had significantly lower debt cost because the creditors would value the audited financial statements more as for determining their interest rates.

Li (2010) studied the conservational impact of accounting on the capital cost at the international level and concluded that the countries with conservationist accounting approach have lower capital cost than the other countries.

By examining the measurement method of the accruals quality, Francis *et al.* (2005) showed that, as the companies' accruals quality is lower, the debt and the capital cost rate stand higher in such companies.

Bharath *et al.* (2008) studied the quality of financial reporting and the debt contract and found that the companies whose accounting qualities are low would refer to private banks for loan with higher interest rate; contrariwise, the companies with better information quality act through the capital market for loan. Their results indicated that as the accounting information quality increases, the information asymmetry among the creditors and companies' managers will be reduced. Also they find that firms with poor accounting quality have to pay higher interest rates. Most recently, Hope *et al.* (2009) investigate the relationship between financial reporting transparency and firms' ability to access capital. They identify a sample of privately held firms with cross-sectional variation in whether an audit has been conducted, and find that audited firms with more transparent financial statements have better access to external financing. Their results imply that financial transparency influences information asymmetries, and thus influence firms' access to capital from traditional debt markets. Thus, firms with lower-quality accounting are inefficient (have lower investment efficiency).

Beatty *et al.* (2010) analyzed the relationship between the quality of financial reporting, private information, monitoring and the decision of capital lease instead of purchasing the assets. Their research results showed that, due to their poor accounting quality, the companies would probably quit purchasing assets while lease them when they are encountered with cash limitation. Also they find that low accounting quality firms have a higher propensity to engage in operating lease financing rather than purchasing assets. In addition, several studies show that reporting quality serves a monitoring role that mitigates moral hazard problems associated with over-investment (Francis and Martin, 2010; Hope and Thomas, 2008; McNichols and Stubben, 2008).

Francis *et al.* (2004) stated that, on the one hand, conservatism decreases the expectations from the future performance, whereas on the other hand, it decreases the company's total risk with the increase of the quality of financial information. Thus, they find that firms with better accounting quality bear lower cost of equity.

Singh and Hamid (1992) investigated financing methods of 50 developed and developing countries. Their main results can be summarized as follows:

- Companies in developing countries have higher use of foreign resources for financing.
- Companies in developing countries mostly resort to new stock issuance for increasing their net assets.

In another research by Myers (1984), the determining factors of the capital structure were investigated from the viewpoint of the information asymmetry assumption. In the research, it is claimed that in the case of information asymmetry between the company and the capital market, the profitable companies would prefer the domestic financing resources to the foreign ones; nonetheless, in case the company needs more resources, it primarily resorts to loaning and finally to stock issuance.

Barth *et al.* (2008) also examined the relationship between accounting standards and accounting quality using a sample of firms from 21 countries. The results provided evidence that firms applying international accounting standards (IASs) showed less earnings management, more timely loss recognition and more value relevance of accounting amounts than matched sample firms applying non-USA domestic accounting standards. Ewert and Wagenhofer (2005) developed a rational expectations model that showed that accounting standards that limit opportunistic discretion result in accounting earnings that are more reflective of a firm's underlying economics, and therefore, of higher quality. Finally, Christensen *et al.* (2008) also examined whether the adoption of IFRS led to accounting quality improvements. Consistent with prior literature, they find that voluntary adoption of IFRS was associated with decreased earnings management and more timely loss recognition. In contrast, they find no evidence of such accounting quality improvements for firms that are forced to adopt IFRS. Another study which suggests no relationship between adoption of accounting standards and quality of financial reporting is by Jeanjean and Stolowy (2008). They analyzed the effect of the mandatory introduction of IFRS standards on earnings management focusing on Australia, France and the UK. They found that the pervasiveness of earnings management did not decline after the introduction of IFRS, and, in fact, it increased in France.

Chen *et al.* (2011) examine the role of Financial Reporting Quality in private firms from emerging markets. They find that the relation between Financial Reporting Quality and investment efficiency is increasing in bank financing and decreasing in incentives to minimize earnings for tax purposes. Such a connection between tax-minimization incentives and the informational role of earnings has often been asserted in the literature.

Thornton and Belski (2010) investigated financial reporting quality and price competition among nonprofit firms. They find that donors reward nonprofit firms for investments in more accurate financial reporting. Additionally, higher-quality financial information sharpens the ability of donor markets to discipline nonprofit firms by increasing price sensitivity. The primary implication of this study is that regulatory improvements in reporting quality could increase the ability of donor markets to serve as a viable governance mechanism for improving nonprofit efficiency.

Gomariz and Ballesta (2014) investigated financial reporting quality, debt maturity and investment efficiency. The results show that financial reporting quality mitigates the overinvestment problem. Likewise, lower debt maturity can improve investment efficiency, reducing both overinvestment and underinvestment problems. We further find that financial reporting quality and debt maturity are mechanisms with some degree of substitution in enhancing investment efficiency: firms with lower (higher) use of short-term debt, exhibit higher (lower) financial reporting quality effect on investment efficiency.

Huang *et al.* (2012) examine the CEO age and financial reporting quality. They find a positive association between CEO age and financial reporting quality. Specifically, they find that CEO age is negatively associated with firms meeting or beating analyst earnings

forecasts and financial restatements. Their study, therefore, extends the corporate governance and financial reporting quality literature by identifying CEO age as a determinant of financial reporting quality.

[Kim and Yang \(2014\)](#) study investigates the relationship between director tenure and financial reporting quality. Their results show that the absolute value of discretionary accruals decreases when the tenure of directors increases. Also, persistence and ERC of earnings have positive relation with the length of tenure of directors.

[Robb and Robinson \(2010\)](#) examined the decision policy regarding the capital structure in the newly founded companies. Their results indicated that financing in this type of companies has been seven times greater than the other financing methods; moreover, it was indicated that the average of the companies which made financing through extra-organizational resources has been two times greater than the ones making it through intra-organizational ones.

[Modarres and Hesarzadeh \(2008\)](#) investigated the relationship between the quality of financial reporting and the investment efficiency. Their results showed that the financial reporting quality level had a positive significant relationship with the investment efficiency level. The results also indicated that there was a negative significant relationship between the overinvestment and financial reporting quality. Thus, the results suggested that the quality of financial reporting can enhance the investment efficiency through reduction of overinvestment.

[Biddle *et al.* \(2009\)](#) also found that the quality of financial reporting in companies inclined to overinvest (underinvest) in the commercial areas had a negative (positive) relationship with the investment. In other words, higher reporting quality prevents from overinvestment (underinvestment).

[Khodayi Vale and Yahyaie \(2010\)](#) investigated the relationship between the quality of financial reporting and the investment efficiency in 210 companies listed on the Tehran Stock Exchange. The results indicated that there was a negative significant relationship between financial reporting and underinvestment. Additionally, there was a negative but insignificant relationship between the quality of financial reporting and overinvestment.

[Bhattacharya *et al.* \(2003\)](#) and [Biddle and Hilary \(2006\)](#) found that higher quality of accounting information enhances the investment efficiency by reduction of the information asymmetry among managers and foreign capital providers. They also stated that in countries that financing is mainly made through transactions in the normal conditions (capital market) in comparison with those wherein financing is made through creditors (such as state banks), the relationship between accounting quality and investment efficiency will be higher.

Having investigated the quality of financial reporting and the investment efficiency, [Verdi \(2006\)](#) found that higher quality of financial reporting has a negative relationship with the overinvestment and underinvestment. Moreover, he showed that the relationship between the quality of financial reporting and underinvestment in companies that are faced with financing limitations is stronger and the relationship between the reporting quality and overinvestment in companies that have chief cash leftover is similarly stronger. He stated that the relationship between the quality of financial reporting and the investment efficiency is stronger for the companies having poorer information environment.

In a research on the relationship between debt financing and the quality of interests, [Ghosh and Moon \(2010\)](#) showed that there is a kind of nonlinear (Type II) relationship between the debt and earnings quality using the accruals quality as the index for the earnings quality so that by having an increase in the debt, the earnings primarily increased but later it experienced a fall.

[Iatridis \(2010\)](#) investigated the impact of accepting the IFRS on the quality of the reported accounting figures; the results showed that applying the IFRS improves the quality of the

accounting figures as well as reducing the freedom in the management of the interests. In this research, it is suggested that lower information asymmetry and manipulation of the interests result in disclosing the financial information with a higher quality which consequently helps the investors to judge consciously and non-tendentiously.

A large body of literature has investigated the effect of accounting quality, earnings quality and financial reporting quality on various aspects of the firms in Iran. Consistent with prior literature providing three different views regarding the relationship between debt financing and the quality of accounting information (direct linear relationship; [Armstrong et al., 2010](#); [Jensen, 1986](#)), reversed linear relationship ([DeFond and Jiambalvo, 1994](#); [Jafari et al., 2010](#)) and non-linear relationship type II ([Ghosh and Moon, 2010](#); [Amiry and Khorzoghi, 2009](#)), we examine the relationship between debt financing and stockholders' equity. "Pecking order theory" proposed by [Myers \(1984\)](#) argues to minimize the firm's insiders-outsiders issues related to information asymmetry by following a particular financing hierarchy. The theory gives a clear idea that the managers first prioritize the retained earnings to finance their activities and if they need more funds, they choose to issue debt, and lastly when issuing more debt makes no sense, equity is issued. Following [Nikbakht and Azimi \(2013\)](#), [Poor Heydari and Ghfarloo \(2011\)](#), [GarciaTeruel et al. \(2010\)](#), [Costello \(2011\)](#), [Park et al. \(2012\)](#), [Resaiyan and Hosseini \(2008\)](#), [Minnis \(2011\)](#), [Li \(2010\)](#), [Francis et al. \(2005\)](#), [Bharath et al. \(2008\)](#) and Pecking order theory suggested by [Myers \(1984\)](#), we posit our hypotheses as follow:

- H1.* There is a significant relationship between debt financing and financial reporting quality.
- H2.* There is a significant relationship between equity financing and financial reporting quality.

4. Population and the statistical sample

The companies were required to have the following characteristics to be selected for the sample:

- To observe the comparability, their financial period should be ended on March 20.
- They should not change their fiscal year from 2010 to 2013.
- They should not be a member of the banks and financial institutes.
- Their information should be accessible.

Considering the above limitations, the statistical population of the research included 152 companies (332 year-company). Then, due to the limitation of the statistical population, all the companies of the statistical population were examined in this research. For processing the information and data and having accessed the sectional and time series information, we made use of the analysis of the combined data.

5. Methodology, models of hypotheses

To test *H1*, we made use of equation (1), while equation (2) was used for testing the *H2*. This model was primarily introduced by [Sharpe and Nguyen \(1995\)](#). In a study titled the quality of financial reporting, private information, monitoring and deciding to hire instead of buying the assets, [Beatty et al. \(2010\)](#) added other controlling variables to the abovementioned model, among which were Unrated and Rating. Nonetheless, the variables such as Rating (a rating granted by The S&P Association to the companies ranging from 1-4), Unrated (an index which is equal to 1 on the condition that the company has been assessed by the S&P Association during the sampling period; otherwise, it would be 0) and Mtr (the average of the final tax rate) were not applicable for this study in Iran because the tax rate is constant (25 per cent), while there is no association such as the S&P

to rank the companies. Therefore, they were eliminated from the model. Instead, we added variables such as Loan (financing from Loan) and Cap (financing from stock):

$$AccQual = \beta_0 + \beta_1 Loan + \beta_2 Nodiv + \beta_3 size + \beta_4 loss + \varepsilon \quad (1)$$

$$AccQual = \beta_0 + \beta_1 Cap + \beta_2 Nodiv + \beta_3 size + \beta_4 loss + \varepsilon \quad (2)$$

- *AccQual*: Accounting quality criterion.
- *Cap*: Demonstrator financing from stock, it will be 1 if the company has the capital increase from equity source; otherwise 0.
- *Loan*: Demonstrator financing from Loan, it be 1 if the company has obtained a loan (short and long term); otherwise 0.
- *Nodiv*: It is 1 if the company has no interest distribution during the sample period; otherwise 0.
- *Size*: Natural logarithm of the selling.
- *Loss*: It will be 1 if the company has a loss, otherwise 0.

The main used variables in this model include the quality of financial reporting (the dependent variable) and debt and equity financing (the independent variables). Various indices are used for the quality of financial reporting. In the research, we have used the quality criterion proposed by [Dechow and Dichev \(2002\)](#) (on the basis of the working capital accruals as the substitution of the quality of financial reporting) and quality on the basis of the Iranian Financial Accounting Standards Board.

Dechow and Dichev state that accruals (Acc) should be explained with the cash flows (CFs) of the previous, current and the next periods. Therefore, the errors resulted from the accruals fitting on the cash flows are due to the concept of nonblack of relationship between some parts of the accruals with the cash flows. Thus, the fewer errors (more) are as the higher (lower) quality:

$$Acc = \alpha + \beta_1 CFO_{t-1} + \beta_2 CFO_t + \beta_3 CFO_{t+1} + \beta_4 \Delta St + \beta_5 FA_t + \varepsilon Acc \quad (3)$$

- *Acc*: Accruals of the working capital (in this research, the calculative method of [Dechow and Dichev \(2002\)](#) which is presented in the third model is used for calculation of the accruals).
- CFO_{t-1} : The last year's operational cash flow.
- CFO_t : The current year's operational cash flow.
- CFO_{t+1} : The next year's operational cash flow.
- ΔS : Change in the selling income between the period of t and t-1.
- *FA*: Observable fixed assets.
- ε *Ac*: The remaining factor indicating the estimated error of the accruals.

$$ACC = (\Delta CA - \Delta C) - (\Delta CL - \Delta STD) - Dep \quad (4)$$

- *Acc*: The accruals of the working capital.
- *CA*: Total current assets of the end of the period.
- *C*: The cash of the end of the period.
- *CL*: Total current debts of the end of the period.
- *STD*: Received short-term financial facilities of the end of the period.
- *Dep*: The amortization cost of the period.

5.1 Method of calculating the research independent variables

- Debt financing:

$$Loat = Loan_t - Loat_{t-1} \quad (5)$$

In equation (5), Loan stands for debt financing (short-term and long-term), while $loan_t$ denotes debt financing (short-term and long-term) during the period t , and $loan_{t-1}$ demonstrates debt financing (short-term and long-term) during the period $t-1$:

- Equity financing:

$$Cap = Cap_t - Cap_{t-1} \quad (6)$$

In equation (6), Cap stands for equity financing and cap_t indicates the capital amount after the capital increase, while cap_{t-1} is the capital amount before the capital increase.

6. The findings

The descriptive statistics related to the research variables are presented prior to the analysis of the results associated with each hypothesis. In this section, the descriptive statistics related to each of the main variables of the research are discussed.

As it is evident in [Table I](#), the descriptive statistics for financial reporting quality variable (measured based on reliability and timeliness), particularly the mean parameter value, are indicative of an upward trend during the time period. In this regard, the average of this variable increased from 48 in 2008 to 80 in 2011. [Figure 1](#) illustrates this upward trend which is based on standardized statistics.

Furthermore, [Table I](#) shows no specific trend for quality variable based on the Dechow and Dichev model during the time period. [Figure 2](#) illustrates the trend regarding this variable based on standardized statistics and during the time period.

The average of equity financing variable displays 0 value in [Table I](#) during the time period which may be indicative of its negligible role in the process of finance. In contrast, the average of debt financing variable follows an upward trend.

The findings of descriptive statistics related to quality and financing in [Table I](#) are inconsistent with prior literature. In other words, based on the quality index which was proposed by Tehran Stock Exchange and the qualitative characteristics of the theoretical principles of the Iranian Financial Accounting Standards Board, equity financing has been rare in Iran, whereas an upward trend in debt financing has been observed. In addition, the quality of financial reports calculated using [Dechow and Dichev's \(2002\)](#) model is not consistent with debt and equity financing, which can be attributed to the low efficiency of Tehran Stock Exchange ([Roodposhty et al., 2012](#); [Salimifar and Shirzour, 2010](#); [Dariush and Mansoury, 2009](#)).

6.1 The calculation of the research dependent variable

6.1.1 Quality calculation based on Dechow and Dichev's model (2002). The dependent variable of the research was the quality of financial reporting which was calculated on the basis of Dechow and Dichev's model using equation (3). First the F-Limer and Hausman tests were used for the selection of the best fitting model.

6.6.1.1 The F-Limer test to select the panel model and OLS model

$$\begin{cases} H_0: \alpha_1 = 0 & \text{Preference of data method} \\ H_1: \alpha_1 \neq 0 & \text{Preference of panel data method} \end{cases}$$

As shown in [Table II](#), at the 5 per cent error level, the F-Limer test indicates that, out of the two methods, the panel data method should be used.

6.6.1.2 The Hausman test

$$\begin{cases} H_0: b_s = \beta_s & \text{Random effects model is better} \\ H_1: b_s \neq \beta_s & \text{Stabilized effects model is better} \end{cases}$$

The Hausman test indicated the preference in using the panel of random effects instead of the fixed effects model. At last, by using the F-Limer and Hausman tests, the panel of random effects model was selected as the final model of fitting. After fitting the final model, the operational cash flow of the year $t-1$ and the changes in the income were

Table I Descriptive statistics of the variables of the main model

Year	Variables	Quality based on theoretical principles of Iranian Financial Accounting Standards Board AccQual ₁	Quality index based on Dechow and Dichiv's model (2002) AccQual ₂	Selling algorithm Size	Equity financing CAPA	Debt financing LoanA
2010	Mean	45.8364	0.3244	5.5248	5.7771 × 10 ³	6.8623 × 10 ⁴
	Median	48.000	0.0964	5.5000	0.000	1.9806 × 10 ⁴
	Minimum	-8.00	0.000	3.98	0.000	55.00
	Maximum	95.00	6.89	7.56	3.20 × 10 ⁵	1.06 × 10 ⁶
	SD	2.45883 × 10	0.92897	0.58615	4.20299 × 10 ⁴	1.52587 × 10 ⁵
2011	Mean	58.3827	0.1967	5.6940	9.9379 × 10 ³	3.1328 × 10 ⁵
	Median	60.000	0.0778	5.6250	0.000	4.4982 × 10 ⁴
	Minimum	0.000	0.000	3.98	0.000	271.00
	Maximum	98.00	2.11	7.92	2.06 × 10 ⁵	6.45 × 10 ⁶
	SD	2.79140 × 10	0.32955	0.68854	3.06093 × 10 ⁴	9.33722 × 10 ⁵
2012	Mean	58.5375	0.3684	5.7262	3.8933 × 10 ³	8.5191 × 10 ⁵
	Median	55.5000	0.1385	5.6100	0.000	3.7716 × 10 ⁴
	Minimum	-1.00	0.000	4.29	0.000	93.00
	Maximum	97.66	6.89	7.99	2.00 × 10 ⁵	3.05 × 10 ⁷
	SD	2.33985 × 10	0.90167	0.65219	2.41656 × 10 ⁴	4.01816 × 10 ⁶
2013	Mean	69.1856	0.2444	5.8109	9.6280 × 10 ³	3.7641 × 10 ⁵
	Median	80.000	0.100	5.7500	0.000	8.1624 × 10 ⁴
	Minimum	7.000	0.000	4.26	0.000	178.00
	Maximum	99.36	4.03	7.73	1.88 × 10 ⁵	7.51 × 10 ⁶
	SD	2.53646 × 10	0.54956	0.60930	3.50749 × 10 ⁴	1.05890 × 10 ⁶
Total	Mean	58.7731	0.2779	5.6989	7.5070 × 10 ³	4.1533 × 10 ⁵
	Median	59.0000	0.1000	5.6100	0.000	4.2572 × 10 ⁴
	Minimum	-8.00	0.000	3.98	0.000	55.00
	Maximum	99.36	6.89	7.99	3.20 × 10 ⁵	3.05 × 10 ⁷
	SD	2.65459 × 10	0.69769	0.64337	3.29847 × 10 ⁴	2.14788 × 10 ⁶

Figure 1 The quality of financial reporting based on the qualitative characteristics of the theoretical principles of the Iranian Financial Accounting Standards Board

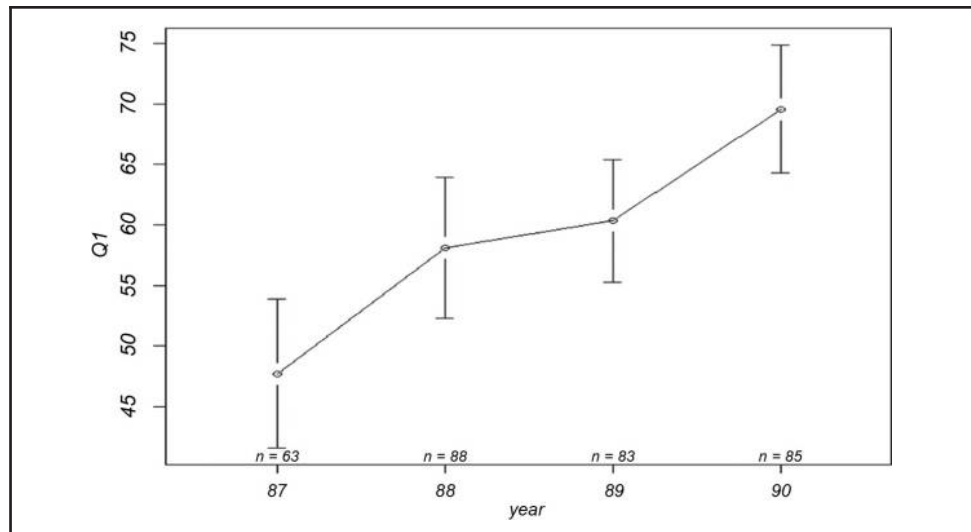


Figure 2 The quality of financial reporting calculated on the basis of the Dechow and Dichev (2002) model

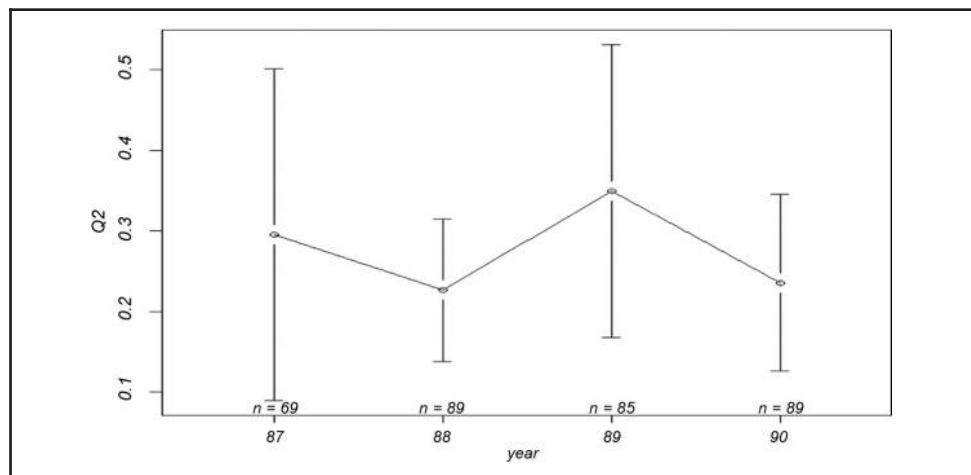


Table II The results of F-Limer and Hausman tests

Test	p-value	Result
F-Limer	$5.587 \times 10^{-0.6}$	Preference of panel data method
Hausman	0.9448	Preference of panel of random effects method

found not to be significant. Gradually, the highest p -values were eliminated one by one from the model, and in each stage, the model was fitted again and the significances of the other parameters were examined again. The results of the final model are exhibited in Table III.

Having obtained a positive coefficient for the current year's cash flow implies that there is a positive relationship between the current year's cash flow and the accruals of working capital.

Table III The estimation result of the model's parameters using the stabilized effects method

Symbol	Coefficients	SD	Steve Dent statistic	p-value	Coefficients	SD	Steve Dent statistic	p-value
α	-0.114763	0.071247	-1.6108	0.1081963	Eliminated	Eliminated	Eliminated	Eliminated
CFO_{t-1}	-0.447182	0.279575	-1.5995	0.1106767	Eliminated	Eliminated	Eliminated	Eliminated
CFO_t	0.955043	0.252471	3.7828	0.0001845	0.867894	0.176894	4.9063	<0.001
CFO_{t+1}	0.056304	0.184280	0.3086	0.7578599	Eliminated	Eliminated	Eliminated	Eliminated
ΔSt	0.033595	0.044460	0.7556	0.4504339	Eliminated	Eliminated	Eliminated	Eliminated
FA	-0.475966	0.096563	-4.9291	$1.317 \times 10^{-0/6}$	-0.591776	0.079281	-7.4643	<0.001

Thus, a single unit change in accruals of working capital can result in 0/86 change in the current year's cash flow. The negative coefficient of fixed assets (FA) indicates the negative relationship between FA and accruals of working capital (ACC)

The F -statistic value was 75.779 and p -value is $p < 0.001$, confirming the model's efficiency at 5 per cent error level. Finally, the remnants from Dechow and Dichev's (2002) model was extracted, and the absolute value of the remnants was used as the criterion for the quality of financial reporting of a company every year. Henceforth, once the level of the deviation was observed to be smaller (greater), the quality of financial reporting remained higher (lower).

6.1.2 Quality of financial reporting based on the qualitative characteristics of the theoretical principles of the Iranian financial accounting standards board. As mentioned before, in the research, the quality was used as the dependent variable which was quantitatively provided by the stock organization based on the qualitative characteristics of the theoretical principles of the Iranian Financial Accounting Standards Board (timeliness and dependability) used for each company for each year. The grades given by the stock organization to the companies (except the financial brokers companies) consisted of two sections:

1. The first section was timeliness with the effective coefficient of 2.3 from the total scores.
2. The second section was dependability, with the effective coefficient of 1.3 from the total scores (Etemadi and Dehkordi, 2012).

6.2 Testing the hypotheses

The hypotheses to be tested in this research are as follows:

- H1.* There is a significant relationship between debt financing and the quality of financial reporting.
- H2.* There is a significant relationship between equity financing and the quality of financial reporting.

For testing *H1*, the first model was used.

The statistical hypotheses are suggested as follows:

- $$\begin{cases} H_0: \alpha_1 = 0 & \text{Lack of relationship between the independent and dependent variables} \\ H_1: \alpha_1 \neq 0 & \text{Relationship between the independent and dependent variables} \end{cases}$$

6.2.1 Testing H1 (the first section)

6.2.1.1 Examining the relationship between quality based on the theoretical concepts of the Iranian financial accounting standards board (dependability and timeliness) and debt financing. The F-Limer and Hausman tests were used for estimating the best model to fit the regression using the *R* software. Finally, the stabilized effect panel model was selected as the final model of fitting. The results related to the fit model are displayed in Table IV.

According to the results presented in Table V, some variables (Loan and Nodiv) were not significant in the model ($p > 0.001$) and were eliminated one by one from the model in the order of the greatest p -values, and in each stage, the significance of the other parameters

Table IV The results of F-Limer and Hausman tests		
<i>Test</i>	<i>p-value</i>	<i>Result</i>
F-Limer	$p < 0.001$	Preference of panel data method
Hausman	$p < 0.001$	Preference of panel of stabilized effects method

Table V The results of the estimation of the model's parameters using the stabilized effects method				
$AccQual = \beta_0 + \beta_1 Loan + \beta_2 Nodiv + \beta_3 Size + \beta_4 Lo[AC1] ss + \epsilon$ Model (1)				
<i>Symbol</i>	<i>Coefficients</i>	<i>SD</i>	<i>Steve Dent statistic</i>	<i>p-value</i>
Loan	2.2574	3.0128	0.7439	0.45475
Nodiv	15.1038	10.5226	1.4345	0.15304
Size	25.1633	11.3776	2.2116	0.02834
Loss	-1.8167	4.4104	-0.4119	0.68092

were examined again. It is necessary to note that because loan is the independent variable of the research, although its p -value was > 0.001 , it could not be eliminated and its existence in the model was indispensable.

Because of the p -value of the independent variable of loan (debt financing), in Table V, it is observed that there was a positive relationship between the quality of financial reporting quality (based on the dependability and timeliness) and debt financing. The F -statistic value is 3.91208 and the p -value is 0.021824 that confirm the model's efficiency at the 5 per cent error level. Therefore, it can be accepted that the selected final model can explain a part of the variances of the dependent variables caused by the independent variables.

We cannot omit loan from the model because the mode is a confirmatory regression model, as only one independent model is included in the model and the other right-hand-side variable is the control variable. If we exclude the independent variable from the model, we have no information about relation between the independent and dependent variables to claim about the hypothesis. Therefore, if the p -value of the hypothesis about the parameter of the independent variable is less than 5 per cent, it is clear that there is a significant relation between the independent and dependent variables. Therefore there is no relation.

6.2.2 Testing H1 (the second section). The relationship between the quality based on Dechow and Dichev's (2002) model and debt financing is examined.

For exploring this relationship, the remnants of Dechow and Dichev's model, which showed the deviation of the accruals of the working capital from the operational cash flow years $t-1$, $t+1$ and t , were used as the quality of financial reporting in the first model; yet, only the negative values of the remnants were symmetrized. In the model, F-Limer and Hausman tests were used in respect to the data types to determine the suitable estimation method. Table VI demonstrates the results of the tests. The random-effects model was selected as the final fit model, by taking into account the obtained results.

In Table VII, because of p -value $> \alpha$, no significant relationship was found between the independent variable of debt financing and the dependent variable of the quality of financial reporting. In other words, H1 was rejected. The rejection of H1 indicates that there is no significant relationship between debt financing and the quality of financial reporting

Table VI The results of F-Limer and Hausman tests		
<i>Test</i>	<i>p-value</i>	<i>Result</i>
F-Limer	0.006879	Preference of panel data method
Hausman	0.09433	Preference of panel of random effects method

Table VII The results of the estimation of the model's parameters using the random-effects method
$$AccQual = \beta_0 + \beta_1 Loan + \beta_2 Nodiv + \beta_3 Size + \beta_4 Loss + \epsilon \text{ Model (1)}$$

Symbol	Coefficients	SD	Steve Dent statistic	p-value
β	-0.141222	0.551146	-0.2562	0.797932
Loan	-0.032249	0.122291	0.2637	0.792171
Nodiv	0.122160	0.347322	0.3517	0.725276
Size	0.056605	0.093824	0.6033	0.546724
Loss	0.393513	0.145350	0.7073	0.007139

among companies listed on Tehran Stock Exchange during 2008-2011. Considering spatial and temporal differences, the findings on this relationship are in contradiction to those in previous studies.

6.2.3 Testing H2 (the first section)

6.2.3.1 The relationship between the quality based on the Iranian financial accounting standards board and equity financing is examined. To test H2, the second model (2) was used. In this stage also, the F-Limer and Hausman tests were used to determine the suitable estimation method consistent with the data types. Table VIII shows the results of the tests.

Using the F-Limer, the panel data method was selected as the fitting model. Afterwards, to select a better model out of the random and stabilized effects panel models, we made use of the Hausman test. Because the p -value of the Hausman test was smaller than 5 per cent, the stabilized effects panel model was then selected as the final fitting model.

Having observed the results in Table IX, it can be concluded that there was no significant relationship between the independent variable of cap (equity financing) and the dependent variable of this study, implying that H2 of this study is to be rejected.

6.2.4 Testing H2 (the second section)

The relationship between the calculated quality based on Dechow and Dichev's model (2002) and equity financing

In this stage also the F-Limer and Hausman tests were used to determine the suitable estimation method according to the data types. Table X indicates the results of the tests. According to the results, the random-effects panel method was selected as the fitting model.

Table VIII The results of F-Limer and Hausman tests

Test	p-value	Result
F-Limer	1.936×10^{-13}	Preference in using the panel data
Hausman	3.365×10^{-11}	Preference in using the panel of fixed effects

Table IX The results of the estimation of the model's parameters using the stabilized effects method
$$AccQual = \beta_0 + \beta_1 Cap + \beta_2 Nodiv + \beta_3 Size + \beta_4 Loss + \epsilon \text{ Model (2)}$$

Symbol	Coefficients	SD	Steve Dent statistic	p-value
Cap	-3.6012	3.66	-0.9839	0.32670
Nodiv	14.2210	10.7903	1.3179	0.18951
Size	25.7035	12.0651	2.1304	0.03475
Loss	-1.8976	4.5348	-0.4185	0.67620

Table X The results of the F-Limer and Hausman tests

Test	p-value	Result
F-Limer	2.210^{-16}	Preference of panel data method
Hausman	0.2971	Preference of panel of random effects method

Considering [Table XI](#) and the p -value of the independent variable of Cap (equity financing) which was not significant, no significant relationship was observed between equity financing and the quality of financial reporting.

7. Conclusions

In the current study, according to the theoretical principles and the literature, there are three types of relationships between the quality and debt financing inspired by three other different relationships, and foreign financing has been suggested as one of the factors affecting the financial reporting. For measuring the financial reporting quality, [Dechow and Dichev's \(2002\)](#) model based on the qualitative characteristics of the theoretical principles of the Iranian Financial Accounting Standards Board (Dependability and timeliness) was used.

The results of $H1$ indicated that there was no significant relationship between the independent variable and the dependent variable (debt financing and quality based on the qualitative theoretical principles of the Iranian Financial Accounting Standards Board).

As it is suggested by the theoretical principles, there are three different views regarding the relationship between financing and the quality of accounting information. The first view is the direct linear relationship stating the positive impact of debt financing on the earnings quality ([Jensen, 1986](#); [Armstrong et al., 2010](#)). The second view is the reverse linear relationship stating the negative impact of debt financing on the earnings quality ([DeFond and Jiambalvo, 1994](#)). [Jafari et al. \(2010\)](#) found the reversed relationship between the two variables. The third view is a share-like relationship proposed by [Ghosh and Moon \(2010\)](#) and [Amiri and Khorzoqi \(2009\)](#).

As it is observed, the results obtained in the mentioned studies are in contradiction with the findings of the current study while our results are consistent with those of [Poor Heydari and Ghfarloo \(2011\)](#). [Poor Heydari and Ghfarloo \(2011\)](#) concluded that participating during periods in which financing is done through loaning does not lower the provisional conservatism level. Examining $H1$ and the subsequent rejection indicated that there is no particular difference between debt contracts of firms with different accounting information qualities ([Resaiyan and Hosseini, 2008](#)). Accordingly, it is expected that the managers do not take account of restrictive terms in debt contracts and just seek to put up collateral. This could lead financial statements providers to ignore the quality of these financial statements. Hence, it is rather unlikely that the managers of Iranian companies consider providing high-quality information to reduce interest costs and other restrictive terms in debt contracts. In other words, secured loans are rather common among these companies.

Table XI The results of the estimation of the model's parameters using the random-effects method

$AccQual = \beta_0 + \beta_1 Cap + \beta_2 Nodiv + \beta_3 Size + \beta_4 Loss + \epsilon$ Model (2)				
Symbol	Coefficients	SD	Steve Dent statistic	p-value
β	0.1894851	0.4492341	0.4218	0.6735
Cap	0.1660101	0.4524449	0.3669	0.7139
Nodiv	0.0967792	0.1303245	0.7426	0.4583
Size	0.0046389	0.0778150	0.0596	0.9525
Loss	0.0815139	0.0582614	1.3991	0.1628

Inattention to the quality of financial reporting could lead to information asymmetry between managers and creditors.

Testing *H2* indicted a lack of relationship between the quality of financial reporting and equity financing. There are various possible explanations for this finding, including:

- investors in Tehran Stock Exchange do not follow a special pattern based on technical and systematic methods;
- they lack the required technical expertise; and
- there are deep deficiencies in Tehran Stock Exchange's announcement system.

It seems that marketing trends of publicly held companies and their stockbrokers influence stock purchasing decisions of investors in Tehran Stock Exchange. However, the findings are in contradiction with Li (2010) as well as Arshich and Clarkson's results (2011), while it is consistent with Francis's findings (2004). In Iran also, Poor Heydari and Ghfarloo (2009) found that companies which make financing through equities during certain periods would identify bad (negative efficiency) news and signs in the accounting interests to a lesser extent and display an optimum image of their companies' financial status in this way to have more efficient financing. Thus, the result of the mentioned research is in contradiction with the result reported in the present research. The results of testing the hypotheses revealed that there was no significant relationship between outside financing and the quality of financial reporting. This means that the shareholders and creditors functioning in the investment market of Iran never pay attention to the quality of the accruals reported in the published financial reports while merely relying on the quantity of the accruals reported within.

7.1 Suggestions and limitations

Investors and creditors are required to taken into consideration the quality of financial reporting in their assessments owing to the fact that such consideration makes the producers of the financial reports to provide financial reports having more quality. If so, the information asymmetry existing between the investors and the managers will be reduced, resulting in an enhanced financial resource allocations.

Investors and creditors had better bear in mind more than one criterion for assessing the quality of financial reporting.

The most notable limitations in conducting this research which need to be considered while interpreting the results and generalizing them can be summarized as follows:

- Like other surveys, this research suffers spatial and temporal limitations. The period studied here was four years from 2010 to 2013, while its location was the Tehran Stock Exchange. Then caution should be taken while generalizing the results to other times and statistical populations.
- The most considerable limitation in this study is concerned with the data collection. To collect the required data, various sources have been utilized such as information software and the Web site of the Tehran Stock Exchange. In some instances, there was a contradiction in the data collected from diverse software, limiting the results.
- Lack of a commonly accepted method for measuring the quality of financing report was also another limitation. There is no consensus in defining the quality of financing report; as a result, there are diverse methods proposed that are consistent with various existing viewpoints, this brings some doubt in the research results.

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