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Investigation of the Quality of Accounting Information and Capital Cost According to the Adjusting Role of Financial and Environmental Characteristics in the Iran Capital Market in Companies Listed on the Tehran Stock Exchange

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ABSTRACT

The purpose of the present study is to investigate the quality of accounting information and capital cost according to the adjusting role of financial and environmental characteristics in the Iran capital market in companies listed on the Tehran Stock Exchange. This research is included in the category of exploratory researches in terms of scientific value, depth, extreme limit of research, fundamental and the goal of the research, and it is in descriptive research category according to its research method. The statistical population is the companies listed on the Tehran Stock Exchange that have been listed on the Tehran Stock Exchange from 2009 to 2018. Based on the method of systematic elimination, 120 companies listed on the Tehran Stock Exchange were selected as the statistical sample. In order to test the research hypotheses, at the first the independent and dependent variables of each year were calculated. Then, the econometric method of data integration and structural equations was used. Chav test was used to determine the appropriate method for estimating the regression model. In order to test the significance of the research hypotheses; the fixed effects method that was the result of the mentioned test, was used. In the next step, using structural equations, the relationship and intensity of correlation and relationships between variables were investigated. The results showed that the effect of audit quality, operational diversification and speed of capital structure amendment on pricing of accounting information quality has been confirmed. The results also showed that audit quality led to difference in the cost of capital between companies with high quality accounting information and companies with low quality accounting information. Also, operational diversification and quality of accounting information led to change in the cost of capital.

Keywords:

Audit Quality, Operational Diversification, Speed of Capital Structure Amendment, Capital Cost

1. Introduction

Accounting information can be examined and investigated from two aspects of pricing (through the influencing on the cost of capital and stock prices) and leadership (by influencing on the investment and control decisions). By increasing the quality of accounting information, the cost of capital is reduced as a result of facilitating the organizational external financing. Because by the transmission of transparent information, information asymmetry between beneficiary persons is reduced and the opportunistic behaviors of managers are limited.

In this situation, by increasing the quality and reliability of information, the possibility of optimal decision-making and effective investment increases and leads to the elimination of defects in contracts between the owner and investors. Auditing reduces information asymmetries between investors and managers by improving the reliability of financial statements. In this regard, the higher quality of auditing increases the confidence of investors in financial statements. In accordance with the financial literature, improving the reliability of financial statements leads to different reactions in investors. Higher confidence in financial information leads to a net reduction in the benefits of collecting private information, thereby reducing the collection of private information, which has the limiting effect. Also, higher quality audit and financial information reliability lead to increased transparency and reduced cost of collecting private information. Investors use public information (including financial statements) to achieve the expected output and use private information (including profit fluctuations) when financial transparency is relatively low. (Jiambalvo et al., 2002) state that increment of the quality of accruals items leads to reduce the access to private information and thus reduces fluctuations in outputs due to private information. In other words, by increasing the quality of the audit, the effort to obtain the private information decreases and moderate fluctuations in the efficiency. This result obtained because of this fact that higher quality auditors are more likely to detect errors and maintain their independence against management's insistence on adjusting the report. Also, in case that the auditor has high credibility and quality, managers, in order to protect their interests and attract the opinion of the owners (before submitting the audit report), establish the appropriate accounting methods, improve accruals items and thus the quality of profits and financial information. By Increasing the quality of related information about future cash flows reduces the company's decrement rate and thus reduces fluctuations in abnormal stock returns in the future. In case of using expert auditors with high quality work, demand will be increase for establishment of systems of internal control efficient and corporate leadership for transparency of disclosed financial information. As the quality of published information improves, so does the information asymmetry decrease. Information asymmetry reduces the liquidity of the share by increasing the risk of incorrect selection. In this situation, in order to avoid recession of resources and reduce the cost of capital, investors take out of shares with lower returns and increase the fluctuation caused by buying and selling with incomplete information.

In the present study, pricing modeling of information quality as a feature of the information environment, according to the economic concepts of information can enter a new field in the accounting and financial literature. On the other hand, it seems that policy making about the quality of accounting information is influenced by the type of market. Therefore, it is necessary to examine whether the quality of auditing, diversification and speed of amendment of the capital structure can affect the quality of accounting information and the cost of capital. Also, various features of the accounting information environment have also been extensively studied in research, but so far there is not any criterion for this information environment that comprehensively encompasses all environmental features. Therefore, it is necessary to provide a comprehensive view of the accounting information environment that can be a guide future research. Accordingly, the purpose of this study is to investigate the quality of accounting information and capital cost with respect to the moderating role of financial and environmental characteristics in the Iran capital market in companies listed on the Tehran Stock Exchange.

2. Theoretical Foundations of Research

2.1. Quality of Accounting Information

(Lambert et al., 2012) proved that the quality of accounting information can affect the cost of capital both directly and indirectly. They considered the

company's accounting reports as noise information about future cash flows, which well illustrates the actual reporting behavior. They demonstrated and proved that accounting information affects the cost of the company's capital in two ways:

Direct effects - where high-quality accounting information has no effect on cash flows but effects on market participants' assessment of the distribution of cash flows. In this first category, they showed that high quality accounting information reduces the estimated covariance of the company's cash flow. However, similar to the nature of CAPM, these researchers have shown that this effect can be diversified in large economies. In addition, the increase in the quality of the company's disclosure of its future cash flows has a direct effect on the evaluated covariances with the company's other cash flows.

Indirect Effects - High quality accounting information influences on a company's actual decisions, which in turn affects the expected value and covariance of cash flows. In this category, they showed that the quality of accounting information influences on the cost of capital of the company through its effect on the actual decisions of the company. In this category, they showed that the quality of accounting information influences on the cost of the company's capital through its effect on the company's actual decisions. Another important characteristic of the quality of accounting information is the size that cash flows accrue. Poor mapping of accruals to cash flows reduces the information content of reported profits and leads to lower quality profits. Investors have different abilities to process information related profits, so poor profits quality can lead to different informed investors and thus increases information asymmetry in financial markets.

2.2. The Effect of Audit Quality on Information Environment Quality Pricing

High quality auditing improves the quality of financial reporting by creating motivation in managers and binding them to detect errors and irregularities. Simonick (1980) states that larger auditors are at greater risk of litigation and loss of credibility if they fail to audit. In this regard, auditors who have a higher share of the market of a particular industry (auditors specializing in the industry), in case of negligence and failure to detect significant errors, lose most of their employers and face major losses. Therefore, the audit team allocates more resources to the relevant level in order to control the relevant risk at an acceptable level and performs the audit planning more accurately. (FAKHARI & REZAEI, 2017) by examining and measuring the company's information environment, they modeled its score based on expert opinions and Shannon entropy method. And found that providing a comprehensive index for measuring the information environment, in addition to introducing new tools for ranking the companies' information environment, could help the investors to choose the right portfolio, which can ultimately reduce the representation cost and capital market dynamics and increase information symmetry.

2.3. The Effect of Capital Structure Amendment Speed on Pricing the Quality of Information Environment

The ability of the changing the structure of the capital depends on the adjustment costs that the firm faces them. In this regard, companies may use short-term strategies to avoid the costs of capital structure amendment, but these strategies are effective, only if they do not create the costly consequences (including reducing the company's credit rating in the capital market) for the company. Falkander et al. (2012) concluded that firms that pay dividends improve their capital structure faster than other firms. This approach stems from the company's goal of maintaining low-risk financing capacity as well as the incentive to access low-cost capital markets. (Bhattacharya et al., 2013) focused on the quality of accounting, and in particular on the quality of profits, as a resource variable that mediated by information asymmetry, both because it has a natural, neutral proposition as a measure of information risk; and because of its direct relationship to cash flows, the goal is to benefit the default investor. Because the quality of profit is determined by the reporting unit business model, operating environment, and implementation of approved accounting guidelines, this variable is not in itself a characteristic of the capital market.

2.4. The Effect of Operational Diversification on Information Environment Quality Pricing

Diversifying and creating new business lines leads to various benefits including creating strategic assets (Hey, 2009), reducing capital cost and increasing capital attraction by creating cash flows (Hutchel, Smith, Walter & Yarmark, 2012) and limiting problems resulting less investment through the effective sharing of available assets (Tan, 2017). Competitor's hypothesizes state that diversification, despite its benefits for the organization, leads to the loss of shareholder wealth (Smith & Valter, 2009). From the point of view of representation, managers diversify in order to achieve their personal interests (Agrawal & Samovik, 2003). By increasing diversification, managers increase the size of the company and thus increase their credibility and power. In these companies, managers have the ability to share personal costs and operational inefficiencies between different departments, as a result of which it is possible to use the company's free cash flows personally (Kampa & Kadia, 2002). In examining the pricing models of accounting information, it is necessary to simultaneously pay attention to the three latent variables of quality, distribution and asymmetry. According to Verchia (2012), political considerations and the cost of capital cannot be separated from the nature of the market situation. What may be true in a complete quality condition such as CAPM may have nothing to do with an incomplete quality condition and vice versa. Therefore, quality is effective in examining the price effect of the information environment and should be considered in research. On the other hand, it should be noted that these three features have interactive effects on each other. For example, according to research by (Easley & O'hara, 2004), quality reduces the risk of information asymmetry for uninformed investors, this is because group transactions made by informed investors lead to more information being reflected in the equilibrium price. Contrary to the claims of (Lambert et al., 2012) and (Armstrong et al., 2011) who point out that at the situation of the incomplete markets, the cost of capital is merely a subordinate of the average of investors awareness and information asymmetry when the quality is high, after moderately controlling of the investors awareness, the problem is not so much, the researcher claims that even with high quality, the effect of asymmetry of information will still be present by intensifying or weakening the determinants in information quality. In other words, information asymmetry will show part of its effect through a different interpretation of the quality of information by investors (an example of this is given in the section on the interpretation of accruals). Obviously, the delay in the reflection of quality price in the share price has been interpreted in part due to the asymmetry of the information. Of course, if according to the hypothesis of) Lambert et al., 2012(, we accept that investors have homogeneous beliefs about the company's outlook (for example, investors have a homogeneity surface of information); again, the cost of company capital, in addition to the average information accuracy of investors, is also affected by time information asymmetry, but its economic significance may be different. As (Bhattacharya et al., 2013) found, profit quality directly affects the cost of capital and by focusing on the distribution of information, the effect of profit quality is indirect, and this indirect effect is not statistically significant in a competitive situation, but in terms economics significance was not tested. However, researchers such as (Akins et al., 2012) used criteria based on information quality accounting as an indicator of information asymmetry to control information accuracy. When such a controlled indicator is used, a hidden relationship between quality and asymmetry is already accepted, that is, poor information quality is associated with more information asymmetry. Therefore, if an indicator is used to evaluate an environmental feature of accounting information (for example: information asymmetry) that itself reflects another environmental feature (for example: information quality). Denying this matter does not mean omitting of the property, but rather uses a kind of combined structure that simultaneously tests two variables, although there are drawbacks to not modifying the resulting structure. For example, (Akins et al., 2012) state that higher information quality reduces information asymmetry. In this research, has been used which has played the role of cause and effect at the same time. Therefore, the indicator should be adjusted to test only the asymmetry part, and since this is difficult and impossible in some variables, the researcher is testing two variables at the same time, not controlling one variable for check another variable. Another fact is

that companies may prefer information asymmetry to information quality because the costs of reducing information asymmetry is more than the benefits of increasing quality. So, in some cases, one of these two characteristic falls victim to the improvement of the other characteristic. In the model of (Lambert et al.), it is claimed that when some investors get more information, it means that they have more accurate information and this additional information is obtained some extent through price, which reduces the ambiguity of other investors. On the other hand, providing more information to more investors affects the cost of capital, simply because additional information increases the average level of information accuracy, not decreases the asymmetry, and is therefore the only environmental variable that should be considered in the cost of capital, is the quality of information. According to the author, therefore, in evaluating the environmental characteristics of accounting information, the following questions arise: 1) What are the determinant factors (obvious variables) in evaluating the environmental characteristics of accounting information and what are their presumed effects on predicting theory? (2) What are the dominant indicators for measuring the environmental characteristics of accounting information, in particular the quality, asymmetry and structure of information capital, and what is the correlation between them? Finally, (3) Is it possible to define a composite indicator to evaluate the characteristics of the accounting information environment through which the economic consequences of the characteristics of the information environment can be evaluated? In other words, by combining the indicators used in the researches, can a combined structure of the accounting information environment be extracted that be used to assess the risk of accounting information and reduce the measurement error due to the interactive effects of determinants factors and the infrastructure accounting information environment and lead to more reliable estimates?

The theoretical design of the research problem was presented based on the basic concepts of environmental characteristics of accounting information including audit quality, operational diversification and the speed of capital structure amendment in the form of a conceptual model. In order to detect the relationships between concepts, relying on the theories of support as well as the literature of previous research and related theoretical foundations, relationships were discovered. The following index summarizes the theoretical model of the research.

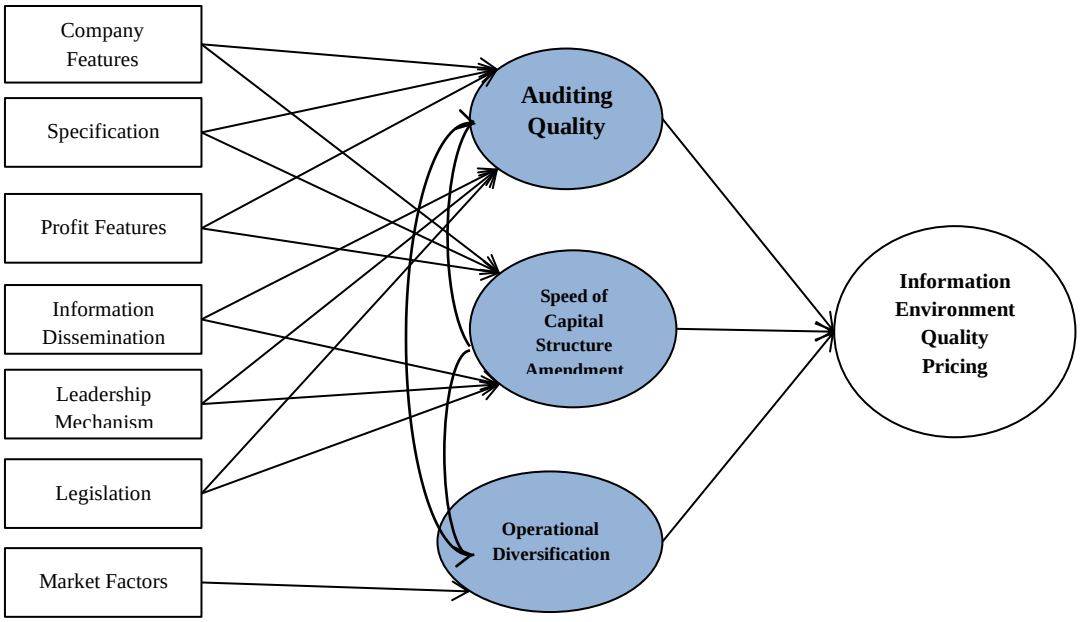

Figure 1. Theoretical Model of Research.

3. Methodology

The present study is included in the category of exploratory researches in terms of scientific value, depth, extreme limit of research, fundamental and the goal of the research, and it is in descriptive research category according to its research method. In this research, conceptualization was used by separate practical concepts. Thus, two concepts of phenomena were extracted: accounting information environment and pricing (evaluation) of accounting information environment. These concepts are realities of the decision-making process and the useful role of accounting information in decision making. After extracting the concepts, dimensions of each concept were identified. In the area of concept of three dimensions information environment, audit quality, operational diversification, and speed of capital structure amendment, and in the concept of information environment evaluation, dimension of reflection in decision were identified. For each dimension of the concept, components and indicators were identified. The statistical population is the companies listed on the Tehran Stock Exchange that have been listed on the Tehran Stock Exchange from 2009 to 2018. A statistical sample includes a hypothetical statistical population that is assumed with the following limitations:

1) Their fiscal year end on March 20.
2) Their trading symbol has not been closed for more than one third of the trading days of the year, during the years 2009 to 2018.
3) The company should not be one of the financial intermediation industries and leasing companies.

Based on these condition, 120 companies listed on the Tehran Stock Exchange were selected as a statistical sample. The library method used to collect information and theoretical foundations of research support and data needed for testing the hypotheses, information reflected in the financial statements as well as market information related to the stock from the stock market information site and the Iranian Financial Information Processing Center and Other intelligence data such as Rahvard Novin were also collected. Structural equations modeling is used to discover the research model.

In order to test the research hypotheses and to extract the variables required to build the model, the research variables are defined as follows. For the characteristics of the information environment of variables, information quality, audit quality, operational diversification, speed of capital structure amendment and also to evaluate the consequences of evaluating, these environmental factors in prices, two variables of return and cost of capital were used, that their operational definition is as follows.

In this research, the model of (Francis et al., 2004) has been used to evaluate the quality of accounting information due to the low error resulting of estimation with the following description:

$$TCA_{j,t}= \alpha_0 + \alpha_1 CFO_{j,t-1} + \alpha_2 CFO_{j,t} + \alpha_3 CFO_{j,t+1} + \alpha_4 \Delta REV_{j,t} + \alpha_5 PPE_{j,t} + \varepsilon_{j,t}$$

Where TCA is the total accruals of Company j in year t; CFO cash flow from corporate operations; ΔREV is the change in the company's sales revenue and the net EPP of fixed assets is obvious. The above model is considered for each year - industry estimate, and reverse 3-year standard deviation except error is considered as a variable of quality of accounting information. The auditor's expertise criterion is used to calculate the audit quality variable. In this study, market share has been used as an indicator to measure the industry expertise of the auditing institute (Palmerus, 1986):

$$MS_{ik} = \frac{\sum_{j=1}^{J_{ik}} TA_{ijk}}{\sum_{i=1}^{I_k} \sum_{j=1}^{J_{ik}} TA_{ijk}}$$

In the mentioned model; MS_{ik} is auditing institute's market share in k^{th} industry; TA is total assets of the owners; i is symbol of the auditing institute; j is symbol of the employer company; k is the symbol of the mentioned industry; J_{ik} symbolizes the number of auditors in k^{th} industry and symbolizes the number of auditing institute in k^{th} industry. In order to study and calculate the total diversity of a company, the following equation can be used (Palpo, 1985). It should be noted that the model is localized and has the comprehensive needed for use:

$$TD = \sum_{i=1}^{n} p_i \ln\left(\frac{1}{p_i}\right)$$

P is a part of sales of the business sector as a percentage of the company's total sales; N is the number of business sectors of the company. In order to

calculate the capital structure amendment, Fliers model (2019) is used. This model is localized in Iran and its effectiveness has been confirmed in Rashidi's research (2020). In the first stage, the following model is estimated for each year:

$$DR_{it+1} = \beta_0 + \beta_1 DR_{it} + \beta_2 PROFIT_{it} + \beta_3 MTB_{it} + \beta_4 EXPEND_{it} + \beta_5 TANG_{it} + \beta_6 TRET_{it} + \beta_7 SIZE_{it} + \varepsilon$$

DR debt ratio; PROFIT ratio of profitability to total assets; MTB ratio of market value to book; EXPEND ratio of investment expenditures to total assets; TANG total fixed assets to total assets; TRET two-year output; SIZE logarithm of total assets, show. The residual error of the above model (DR *) is first adjusted and normalized based on the error minimization method and then enters the following model:

$$DR_{it+1} - DR_{it} = \beta_0 + \beta_1 (DR*_{it} - DR_{it}) + \varepsilon$$

The coefficient B1 indicates the speed of amendment of the capital structure.

In this research, the three-factor model of (Fama & MacBeth, 1973) is used to measure the cost of capital:

$$R_{HT} = a_H + b_H MKT_t + s_H SMB_t + h_H HML_t + \varepsilon_t$$

MKTt: Market risk in month t is equal to the difference between market output in that month, and the risk-free rate of return.

SMBt: is the size factor of the company.

HML: is the ratio of book value to stock market in month t.

4. Results

Hypothesis 1: Audit quality has a significant effect on information environment pricing.

Hypothesis 2: Operational diversification has a significant effect on information environment pricing.

Hypothesis 3: The speed of capital structure amendment has a significant effect on the pricing of the information environment.

Hypothesis 4: The quality of the accounting information environment leads to differences in the cost of capital between companies with high audit quality and companies with low audit quality.

Hypothesis 5: The quality of the accounting information environment leads to differences in the cost of capital between companies with high operational diversification and companies with low operational diversification.

First, the correlation relationship between the research variables was tested. The results showed that there was no serious correlation between the independent variables of the research. Before estimating the model parameters, the reliability of the variables was investigated using two Levin, Lin and Chou and Phillips-Peron tests. Research variables are stable at 95% confidence level. The parameters can be estimated without worrying about their being fake .

In order to test the first to third hypotheses of the research, the following regression models have been used. In a way that fits individually for each hypothesis:

Pattern 1)

$$R_{i,t+1} = \alpha_0 + \lambda_1 AQuality_{it} + \varphi_1 AuditQ_{it} + \varphi_2 AuditQ_{it} \times AQuality_{it} + \varphi_3 TD_{it} + \varphi_4 TD_{it} \times AQuality_{it} + \alpha_1 LEV_{it} + \alpha_2 INST_{it} + \alpha_3 CO\_OWN_{it} + \alpha_4 GRW_{it} + \alpha_5 SIZE_{it} + \alpha_6 PR_{it} + \alpha_7 Tang_{it} + \varepsilon_{it}$$

Pattern 2)

$$R_{i,t+1} = \alpha_0 + \lambda_1 AQuality_{it} + \varphi_1 Structure_{it} + \varphi_2 Structure_{it} \times AQuality_{it} + \alpha_1 LEV_{it} + \alpha_2 INST_{it} + \alpha_3 CO\_OWN_{it} + \alpha_4 GRW_{it} + \alpha_5 SIZE_{it} + \alpha_6 PR_{it} + \alpha_7 Tang_{it} + \varepsilon_{it}$$

For estimating this model during the period 2009-2018 in the framework of composite data, first the bounded Chav test was used. This test determines the use of the Pooled model or the fixed effects model. If the F-statistic is significant at the 5% error level, the null hypothesis (Pooled model) is rejected and the fixed effects model is accepted. The results of the Chow test are presented in Table 1:

Table 1. F-Limer Test Results for Research Patterns.

Accepted Method	Error Level	Statistics	Research Pattern
Integrated Data	0.282	1.0841	Pattern 1
Integrated Data	0.262	1.082	Pattern 2

As can be seen in Table 1, the F-statistic at the 5% error level is not significant for the patterns; therefore, the Chow test strongly suggests that the width of the

origin is similar in all periods has not rejected. Therefore, the pooled method is accepted in this test.

Hypotheses 1 and 2: Audit quality, operational diversity, and information quality pricing

In the present study, the Watson-Woldrich camera-test was used to detect model autocorrelation. In addition, Fisher test was used to evaluate the significance of the whole model. Table 2 shows the results of estimating the research models.

Hypothesis 3: Capital structure amendment and pricing of accounting information quality

The results of Table 2 show that for the research model, the coefficient 3λ is positive and significant at the error level of 10%. This indicates that the quality of accounting information pricing is higher at higher audit quality levels. The results of this test show that due to the significance of the coefficient, the quality of auditing pricing affects the quality of accounting information. The results show that for the research model, the coefficient 4λ is negative and at the error level of 5% is significant. This indicates that the pricing of accounting information quality is lower at levels with higher operational diversification. The results of this test show that due to the significance of the coefficient, operational diversification of pricing affects the quality of accounting information.

Table 2. Results of Estimating the Pricing Model of Accounting Information Quality.

Variable	Coefficient	Statistics-t	Significance Level	VIF
Accounting Information Quality (AQuality)	0.061	4.219	0.000	1.06
Auditing Quality (Auditq)	0.003	0.118	0.906	1.12
AQuality × Auditq	0.109	1.890	0.059	--
Operational Diversification (TD)	-0.010	-2.522	0.012	1.17
AQuality*TD	-0.028	-7.234	0.000	---
Centralized Ownership	-0.014	-0.545	0.586	1.11
Company Growth	-0.023	-1.810	0.071	1.09
Institutional Ownership	-0.003	-0.217	0.828	1.06
Financial Leverage	-0.109	-2.422	0.016	1.08
Profitability	-0.053	-3.438	0.001	1.66
Company Size	0.000	0.016	0.988	1.07
Fixed Assets	0.019	0.940	0.348	1.04
Fixed Component	0.200	2.088	0.037	
Determination Coefficient	0.4669			
Adjusted Determination Coefficient	0.4496			
Wooldridge Statistics	(0.201) 1.501			
Heterogeneity Test	(0.216) 1.899			
Watson Camera Statistics	2.3215			
Statistics F	3.8651			
Statistical Probability F	0.0000			

Table 3. Results from Estimating the Pricing Model of Accounting Information Quality.

Variable	Coefficient	Statistics-t	Significance Level	VIF
Accounting Information Quality (AQuality)	0.033	1.964	0.049	1.06
Capital Structure Amendment (Structure)	0.275	4.424	0.000	1.17
AQuality × Structure	0.117	3.542	0.000	--
Centralized Ownership	-0.029	-0.830	0.407	1.11
Company Growth	-0.023	-1.888	0.059	1.09
Institutional Ownership	-0.012	-0.428	0.669	1.06
Financial Leverage	-0.164	-1.545	0.123	1.08
Profitability	-0.018	-0.460	0.645	1.66
Company Size	0.019	-0.733	0.084	1.07
Fixed Assets	0.009	0.280	0.780	1.04
Fixed Component	0.374	4.205	0.000	-
Determination Coefficient	0.4512			
Adjusted Determination Coefficient	0.4388			
Wooldridge Statistics	(0.310) 1.356			
Heterogeneity Test	(0.372) 1.241			

Variable	Coefficient	Statistics-t	Significance Level	VIF
Watson Camera Statistics	2.0766			
Statistics F	4.1168			
Statistical Probability F	0.0000			

The results of Table 3 show that for the research model, the coefficient 3λ is positive and is significant at the error level of 5%. This indicates that the quality of accounting information pricing is higher at levels with faster capital structure amendment. The results of this test show that due to the significance of the coefficient, the speed of amendment of the pricing capital structure affects the quality of accounting information.

Hypothesis 4: Test of the comparison of audit quality and quality of accounting information with the cost of capital

The test of the fourth hypothesis is actually a test of the cost of capital and the characteristics of the information environment. In order to test this hypothesis, companies are divided into five categories based on the audit quality index. Then, the companies are classified into five categories based on the degree of quality of accounting information. The results of each of these categories are as follows:

According to the above table, it can be said that with the increasing of audit quality, the coefficient of quality of accounting information has also increased so that in the first quintile (lower audit quality) the relevant coefficient is minimal. The results obtained from the surplus output pattern related to this hypothesis are as follows:

Table 4. Accounting Portfolio of Quality Accounting Information.

Secured Portfolio of Information Quality Using Auditing Quality		
		Information Quality (Q1-Q5)
Auditing Quality Quintiles	1st Quintile	-0.0109 *3.1241
	2nd Quintile	0.0124 **2.2516
	3rd Quintile	0.0213 **2.5748
	4th Quintile	0.0763 *3.6630
	5th Quintile	0.1054 *3.4926
*, **, *** represent significance at the error level of 1, 5 and 10%, respectively.		

Table 5. Surplus Output portfolio.

Quality of Accounting Information								
	Quintile	**Variable**	**Maximum (Q1)**		**Minimum (Q5)**		**Coverage**	
			Coefficient	**Statistic-t**	**Coefficient**	**Statistic-t**	**Coefficient**	**Statistic-t**
Auditing Quality	Q1	Fixed Component	0.0432	**2.0973	0.0979	**2.4557	0.0560	*3.2208
		Determination Coefficient	0.2754		0.4111		0.3567	
		Statistical Probability F	0.000		0.000		0.000	
	Q2	Fixed Component	0.1012	***1.9025	0.2104	1.4219	0.1236	1.5980
		Determination Coefficient	0.2413		0.3629		0.3217	
		Statistical Probability F	0.000		0.000		0.000	
*, **, *** represent significance at the error level of 1, 5 and 10%, respectively.								

According to the above table and also based on the first and last quantiles and their comparison, it can be stated that the fourth hypothesis of the research has been confirmed by using the criteria of audit quality and quality of accounting information. In other words, there is a significant difference between the high and low quantiles of the quality of accounting information in terms of cost of capital, and it can be said that changes in audit quality led to change in the cost of capital.

Hypothesis 5: A test of comparing operational diversification and the quality of accounting information with the cost of capital.

The test of the fifth hypothesis is actually a test of the cost of capital and the characteristics of the information environment. In order to test this hypothesis, the companies are divided into five categories based on the operational diversification index. Then, the companies are classified into five categories based on the degree index of quality of accounting information. The results of each of these categories are as follows:

Due to the above table, it can be said that with the increasing of the operational diversification, the coefficient of quality of accounting information has also decreased so that in the first quintile (lower operational diversification) the relevant coefficient is maximum. The results obtained from the surplus output pattern related to this hypothesis are as follows:

Table 6. Coverage Portfolio of Accounting Information Quality.

Secured Portfolio of Information Quality Using Diversification		
		Information Quality (Q1-Q5)
Auditing Quality Quintiles	1st Quintile	0.0250 *2.9717
	2nd Quintile	0.0102 **2.5998
	3rd Quintile	-0.0156 **2.463
	4th Quintile	-0.0544 *-2.4463
	5th Quintile	-0.1009 *-2.4011
*, **, *** represent significance at the error level of 1, 5 and 10%, respectively.		

Table 7. Surplus Output portfolio.

Quality of Accounting Information								
	Quintile	**Variable**	**Maximum (Q1)**		**Minimum (Q5)**		**Coverage**	
			Coefficient	**Statistic-t**	**Coefficient**	**Statistic-t**	**Coefficient**	**Statistic-t**
Auditing Quality	Q1	Fixed Component	0.1022	1.4806	0.1745	1.5130	0.0699	1.29`1
		Determination Coefficient	0.3714		0.2940		0.3239	
		Statistical Probability F	0.000		0.000		0.000	
	Q2	Fixed Component	0.0319	**2.2911	0.0671	**2.3810	0.0388	*3.0171
		Determination Coefficient	0.3162		0.3925		0.3607	
		Statistical Probability F	0.000		0.000		0.000	
*, **, *** represent significance at the error level of 1, 5 and 10%, respectively.								

According to the above table and also based on the first and last quantiles and their comparison, it can be stated that the fifth hypothesis of the research has been confirmed by using the criteria of operational diversification and quality of accounting information. In other words, there is a significant difference between the high and low quantiles of the quality of accounting information in terms of cost of capital, and it can be said that changes in operational diversification led to change in the cost of capital.

In order to test the comparison of capital structure amendment and quality of accounting information with the cost of capital, companies are divided into five categories based on the speed of structure amendment index. Then, the companies are classified into five categories based on the degree index of quality of accounting information. The results of each of these categories are as follows:

According to the above table and also based on the first and last quantiles and their comparison, it can be stated that the capital cost oscillation has been confirmed by using the criterion of speed of capital structure amendment and quality of accounting information. In other words, there is a significant difference between the high and low quantiles of the quality of accounting information in terms of cost of capital, and it can be said that changes in speed of capital structure amendment led to change in the cost of capital.

Table 8. Coverage Portfolio of Accounting Information Quality.

Secured Portfolio of Information Quality Using Capital Structure Amendment		
		Information Quality (Q1-Q5)
Capital Structure Amendment Quintiles	1st Quintile	-0.0245 *2.6422
	2nd Quintile	-0.0124 **-2.6542
	3rd Quintile	0.0314 **3.3511
	4th Quintile	0.0846 *2.9981
	5th Quintile	-0.1416 *-3.6351
*, **, *** represent significance at the error level of 1, 5 and 10%, respectively.		

Table 9. Surplus Output portfolio.

Quality of Accounting Information								
	Quintile	**Variable**	**Maximum (Q1)**		**Minimum (Q5)**		**Coverage**	
			Coefficient	**Statistic-t**	**Coefficient**	**Statistic-t**	**Coefficient**	**Statistic-t**
Auditing Quality	Q1	Fixed Component	0.1124	**2.6841	0.0219	**2.3541	0.0741	3.5412
		Determination Coefficient	0.3619		0.2870		0.3320	
		Statistical Probability F	0.000		0.000		0.000	
	Q2	Fixed Component	0.0812	1.4190	0.2014	1.3511	0.1197	1.5541
		Determination Coefficient	0.2910		0.3811		0.3519	
		Statistical Probability F	0.000		0.000		0.000	
*, **, *** represent significance at the error level of 1, 5 and 10%, respectively.								

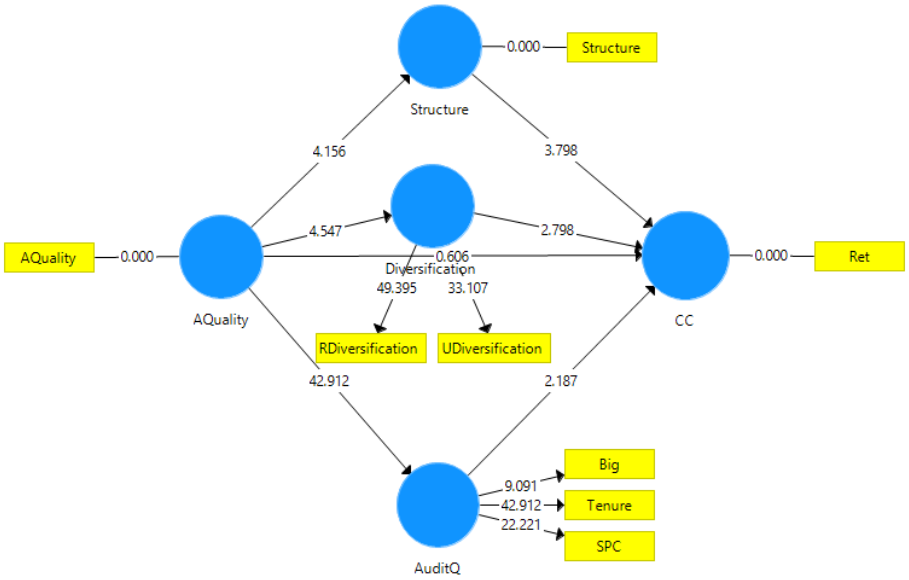

Figure 2. Software Output.

The results obtained of structural modeling of research hypotheses and variables are as follows:

Table 10. Results of Structural Equations.

Hypothesis		Regression Coefficient	Possibility	Result
Accounting Information Quality	Capital Cost	-0.08	0.00	Approved
Auditing Quality	Capital Cost	-0.31	0.04	Approved
Operational Diversification	Capital Cost	-0.39	0.20	Approved
Capital Structure Amendment	Capital Cost	-0.35	0.000	Approved

In accordance with the hypotheses and relationships between software outputs, the following equation is extracted. The coefficient of determination obtained for the model is 0.79, which means that the regression line could better attribute the changes of the dependent variable to the independent variable.

$$CC = -0.0779\ AQuality - 0.351\ Structure - 0.420\ AQuality * Structure - 0.313\ AuditQ - 0.888\ AQuality * AuditQ + 0.393\ Diversification + 0.493\ AQuality * Diversification$$

5. Discussion and Conclusions

In this study, the quality of accounting information and capital expenditure according to the moderating role of financial and environmental characteristics in the Iran capital market in companies listed on the Tehran Stock Exchange has been investigated. In order to test the research hypotheses, at first, the independent and dependent variables of each year were calculated. Then, the econometric method of combining data and structural equations was used by using a sample of 120 companies listed on the Tehran Stock Exchange between 2009 and 2018.

Chav test was used to determine the appropriate method for estimating the regression model. In order to test the significance of the research hypotheses; the fixed effects method that was the result of the mentioned test, was used. In the next step, using structural equations, the relationship and intensity of correlation and relationships between variables were investigated. The results of the first hypothesis of the research

based on the effect of audit quality on pricing the quality of accounting information have been confirmed. Lambert, Leuz, and Verrecchia (2011) proved that the quality of accounting information can affect the cost of capital both directly and indirectly. (Bhattacharya et al., 2013) state that poor financial

reporting quality is associated with higher information asymmetry in capital markets. (Bhattacharya et al., 2013) state that poor financial reporting quality is associated with higher information asymmetry in capital markets. These companies are likely to have characteristics such as imperfect competition among investors, in which expert investors are likely to have a greater information advantage over liquidity-motivated traders. Gal et al. (2018) show that the relationship between the quality of financial reporting and access to private information is related to the firm's information environment, and poor quality is more costly, especially for smaller companies.

The results of the second hypothesis of the research based on the effect of operational diversification on pricing the quality of accounting information have been confirmed. In this regard, it can be said that diversification, despite the benefits it brings for the organization, leads to the loss of wealth of the shareholders. In this regard, (Amihud & Mendelson, 1986) state that managers use diversification to reduce the risk of not changing of the human resources. In other words, based on researches performed by (Chen et al., 2008) and Ashlifer and Vishni (1989), it can be stated that diversification creates conflicts of interest between managers and shareholders. The results of the findings of the second hypothesis are consistent with the researches of Aoki (2010).

The results of the third hypothesis of research based on the effect of the speed of capital structure amendment on pricing the quality of accounting information have been confirmed. Companies adjust their leverage ratios, when they have the ability to supply outsource finance for the organization but the supplying of financing costs are high. Companies adjust their leverage ratios, when they have the ability to supply outsource finance for the organization but the supplying of financing costs are high.

The results of the findings of the third hypothesis are consistent with the researches of Fliers (2019). Accounting information can be examined and investigated from two aspects of pricing (through the influencing on the cost of capital and stock prices) and leadership (by influencing on the investment and control decisions).

The results show that companies may use short-term strategies to avoid the costs of capital structure amendment, but these strategies are effective, only if they do not create the costly consequences (including reducing the company's credit rating in the capital market) for the company. In other words, companies with high quality accounting information are reforming their capital structure faster.

In relation to the fourth hypothesis, audit quality leads to differences in the cost of capital between companies with high quality accounting information and companies with low quality accounting information.

. According to the rational expectations model, the cost of capital depends on the gap between the amount of public information and private information, as well as how information is disseminated. Increasing the information dissemination limits reduces the cost of capital by increasing stock price information. The results of this hypothesis are consistent with the research of (Lambert et al., 2012).

In relation to the fifth hypothesis, operational diversification and the quality of accounting information lead to changes of the cost of capital. The quality of accounting information can affect the output both directly and indirectly. Lower quality accounting information affects a company's actual decisions, which in turn affects the expected value of cash flows. (Chen et al., 2008) concluded that managers, in order to develop opportunistic behaviors in companies, increase the variety of products in order to hide the transmission of negative information and, on the other hand, by reducing the quality of accounting information, can reduce the risk of accounting information disclosure and inefficient decisions.

In this regard, Jensen (1986) states that diversification can lead to inefficient investment. This problem is due to managers' misuse of resources and over-investment in negatively valuable current projects for personal gain. The results of this hypothesis are consistent with the research of Chen and Kang (2018). According to the obtained results, it is suggested that by increasing information transparency due to the earlier usage of international standards, the ground for increasing the quality of information be provided. The Board of Directors should also be aware of the cost of adjusting the capital structure, the risks and opportunities associated with changes in supplying the finance, as there may provide an opportunity to improve the capital structure, reduce the risk, or delay the negative consequences of constraints in capital structure amendment. In other words, considering the

effect of fluctuations in the capital structure in the capital cost pattern increases the quality of the standard pattern. Based on the research results, it can be stated that operational diversification without the establishment of necessary controls can be an effective action by management to increase the complexity of operations and reduce information transparency. By increasing internal controls and improving corporate leadership, the conditions for abusing of diversification can be limited.

References

1) Byard, D., & Wang, Y. (2016). The Impact of Public Disclosure on Information Asymmetry between Sophisticated and Unsophisticated Investors: Evidence from an Investor Social Media Network. In: 2017 CAPANA Conference Paper.
2) Diamond, D., & Verrecchia, R. (1991). Disclosure, liquidity and the cost of capital. Journal of Finance, 46(4), 1325-1359.
3) Francis, J., LaFond, R., Olsson, P., & Schipper, K. (2005). The market pricing of accruals quality. Journal of Accounting and Economics, 39(2), 295-327.
4) Kim, O., & Verrecchia, R. (1994). Liquidity and volume around earnings announcements. Journal of Accounting and Economics, 17(1), 41-67.
5) Akins, B. K., Ng, J., & Verdi, R. S. (2012). Investor competition over information and the pricing of information asymmetry. *The Accounting Review*, *87*(1), 35-58.
6) Amihud, Y., & Mendelson, H. (1986). Asset pricing and the bid-ask spread. *Journal of financial Economics*, *17*(2), 223-249.
7) Armstrong, C. S., Core, J. E., Taylor, D. J., & Verrecchia, R. E. (2011). When does information asymmetry affect the cost of capital? *Journal of Accounting Research*, *49*(1), 1-40.
8) Bhattacharya, N., Desai, H., & Venkataraman, K. (2013). Does earnings quality affect information asymmetry? Evidence from trading costs. *Contemporary accounting research*, *30*(2), 482-516.
9) Chen, S., Chen, X., & Cheng, Q. (2008). Do family firms provide more or less voluntary disclosure? *Journal of Accounting Research*, *46*(3), 499-536.
10) Easley, D., & O'hara, M. (2004). Information and the cost of capital. *The journal of finance*, *59*(4), 1553-1583.
11) FAKHARI, H., & REZAEI, P. Y. (2017). Explaining a model for measuring corporate information environment.
12) Fama, E. F., & MacBeth, J. D. (1973). Risk, return, and equilibrium: Empirical tests. *Journal of political economy*, *81*(3), 607-636.
13) Francis, J., LaFond, R., Olsson, P. M., & Schipper, K. (2004). Costs of equity and earnings attributes. *The Accounting Review*, *79*(4), 967-1010.
14) Jiambalvo, J., Rajgopal, S., & Venkatachalam, M. (2002). Institutional ownership and the extent to which stock prices reflect future earnings. *Contemporary accounting research*, *19*(1), 117-145.
15) Lambert, R. A., Leuz, C., & Verrecchia, R. E. (2012). Information asymmetry, information precision, and the cost of capital. *Review of finance*, *16*(1), 1-29.
16) Lambert, R. A., Leuz, C., Verrecchia, R. E., Gao, P., Nichols, C., Pompilio, D., & Zechner, J. 2009, Information asymmetry, information precision, and the cost of capital.
17) Tan, K. J. K. (2017). Why do overconfident REIT CEOs issue more debt? Mechanisms and value implications. *Abacus*, *53*(3), 319-348.