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Conceptual model for relationship between earning quality and cost of capital

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In this study, the relationships between cost of capital and six dimensions of earning quality are evaluated. Furthermore, we provide a conceptual model based on these relationships. Six dimensions of earning quality based on accounting information include, "Accrual quality ", " Earning variability", "Optional accrual items", "Common factor", "Earning predictability" and "Earning smoothness". Findings of this paper show that, common factor has no effect on cost of capital. Furthermore, optional accrual items have unexpected relation with cost of capital. Among other factors, "Earning quality" and "Accrual quality " had the highest impact on cost of capital. Finally, a conceptual model is presented using structural equations such that, only two indices of quality of accrual items and earning smoothness and two indices of operating environment (size and return of assets) are presented in the final model.

Key words: Earning quality, cost of capital, conceptual model, accrual quality, smoothness.

INTRODUCTION

It is a well known fact that the development of stock market is one of the fundamental components of economic growth and development of every country. It is needless to say that Information plays an important role in capital market functioning, via properly guiding decision making process for optimizing capital allocation (Osmani, 2003). The notion that the main source of firms-specific information is earning has been supported by various empirical researches. Previous researches showed that investors pay much attention to earning. Also, research results show that managers are considering earning as a key index for investors and analysts (Francis et al., 2004). According to Zulkufly (2010),

Corporate governance encompasses a broad spectrum of mechanisms intended to mitigate agency risk by increasing the monitoring of managements' actions, limiting managers' opportunistic behavior, and improving the quality of firms' information flows. Large part of literature explains that corporate governance mechanisms have the capability to enhance a firm's value (Alam, 2009). A firm's value is commonly measured using either market or accounting performance measures. Alternatively, a value is created when a firm enjoys a reduction in its cost of capital (Osmani, 2003). In the U.S.A. context, Ashbaugh (2004) document the effect of corporate governance on the cost of equity capital (COEC) of U.S. firms by linking governance attributes to firm's expected returns, beta and realized returns. The governance attributes used in this research were related to (1) quality of firms' financial information, (2) ownership structure, (3) shareholder rights and (4) board structure. These mechanisms are intended to reduce moral hazard and adverse selection problems present in public listed companies.

On the other hand, one of the basic concepts in financial literature is cost of capital. Cost of capital plays a fundamental role in financing and investing decisions. Company management must assign financing cost in

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order to determine the appropriate financial resources and determine the impacts of these resources on company's risk and efficiency (Alam et al., 2010). Minimizing the financing costs (after tax) should be the aim of company. Since the cost of capital is based on the expected return rate of investors, thus this is related with risk taking by them. Based on previous research findings (Francis et al., 2004, 2005, 2008), it is expected that earning quality to be determined jointly; first, based on the reporting and administrative decisions of management (optional), secondly, the inherent characteristics of business model of business unit and company's operating environment (non-optional). The aim of present study is determining the importance of each of the earning quality indices for investors and to measure their importance by computing the quantity of each dimension of quality, which is performed by evaluating the cost of capital relating to each particular quality. Therefore, the main research question can be stated as follows: do various features of earning have a significant relationship with the cost of capital?

ANALYTICAL PRINCIPLES AND BACKGROUND

Earning quality dimensions and cost of capital

Here, we evaluate earning quality that has been considered in this study and previous research. And next, we introduce the relation between these characteristics and the risk information.

Accrual quality

Accounting accrual items have attracted much attention recently as a measure of earning quality. Many of earning quality evaluation methods focuses on cash based-earning and presume that earning which is closer to cash is more desirable (Penman, 2001; Harris et al., 2000). Dechow (2002) proposed and tested a bench-mark for measuring of earning quality. This measure is obtained from the relation between current accrual items with cash flows of past period, current period and future period. Francis et al. (2005) showed that the quality of accrual items is dependent on the amount of capital costs, liability costs and investment quality (first hypothesis of research).

Earning variability

Some accounting studies relate the earning quality to earning stability. As a result, this quality restores to earning stability. The concept of stability is associated with the notation that the company retains their earning in the long-term time. Therefore, the earning has quality that will happen in the future. Because a stable earning occurs again, then it is desirable (Penman and Frank,

2002; Rossini et al., 2002; Richardson et al., 2003). Analysts sometimes focus on repeatability or stability of earning (second hypothesis of research) (Francis et al., 2008).

Abnormal (discretionary) accruals

Many researches related the earning quality to the accounting and management computational powers, and the right to provide different methods and principles of accounting. In this regard, optional accrual items reflect the lower quality of earning. The fundamental hypothesis of the definition of earning quality is that the difference between current year and last year items are largely attributable to optional accrual items because non-optional accrual items will not be much different during one year. However, this assumption is abandoned in subsequent models and accepts changes in economic conditions and factors as non-optional accrual items (third hypothesis of research) (Francis et al., 2005).

Common factor

As noted before, there exists no complete agreement regarding the definition of earning quality and accounting standards and therefore several models is designed for measuring earning quality. In order to use the standard that has the different values for quality dimensions of earning for a company, common factor is used. This analysis is introduced by Franci et al. (2008), which combines three major indexes: (1) The quality of accrual items, (2) variability of earning (3) optional accrual items (fourth hypothesis of research).

Predictability

Lip (1990) introduced this feature as the earning ability to predict itself. He believed that earning follows a random walk model (that is, permanent earning correlated completely and earning changes did not correlate over time). Recent studies (Collins and Kothari, 1989) showed that, we could also find significant correlation between earning changes over time. Accordingly, current period earning is only part of the expected current earning and next year earning is predictable based on changes in current year earning (Fifth hypothesis of research) (Barth and Landsman, 2003).

Smoothness

The subject that smoothness is a desired feature of earning derived from the vision that managers use their private information about future earning to smoothing temporary fluctuation of earning and thus obtain more useful reported earnings figures. Different definitions of non-optional accrual items and optional accrual items

cause accrual items sometimes be the component of optional accrual items and in other cases be non-optional accrual items (Sixth hypothesis of research) (Francis et al., 2004). Barth et al. (2009) studied the effect of accounting information transparency on the capital costs. The results showed that, increasing the transparency of accounting information leads to a reduction in capital costs. The negative relationship between cost of capital and transparency of accounting information found in this study is more significant than similar research conducted in this field. Bhattacharya et al. (2009) examines the various relationships between the cost of capital and earning quality. Investigation of relations between earning quality and cost of capital showed that earning quality could affect the cost of capital through their impact on the cost of information asymmetry. Considering the existence and impact of earning (quality of accrual items) on the normal cost of capital, Kim and Qi (2010) investigate the impact of macroeconomic conditions and business cycles on the quality of accrual items. Their results suggest that, companies with low quality of accrual items might be more affected by the bad economic conditions and consequently their cost of capital is increased.

Conceptual model

A conceptual model describes the basic features of a phenomenon and the main processes that is happening. In order to provide such conceptual model, structural equation modeling (SEM) is used. This technique is a powerful multivariable analysis from multiple regression family and is an expansion of "general linear model" (GLM). This model allows the researcher to test a set of regression equations simultaneously.

RESEARCH HYPOTHESES

Research hypotheses based on fundamental principles is explained as follow:

i) There is an inverse and significant relationship between the cost of capital and various aspects of earning quality.
ii) What is conceptual model that relate cost of capital and various aspects of earning quality?

RESEARCH METHODOLOGY

Considered statistical universe

The considered statistical universe in this study consists all of listed firms in Tehran Stock Exchange (TSE) with the following conditions:

1. Fiscal year of selected firms must accord with solar year and should not change during the study period.
2. Financial intermediaries (for example, investment companies, mutual funds, etc.) are excluded.
3. Data of selected firms should be available for the period 1998 to 2009.
4. The firms' shares must be traded during every year of the studying period years (2002 to 2009).

Based on above conditions, we selected 303 firms and collected their information from 2002 to 2009.

Research variables

Dependent variable

Cost of capital is weighted average of cost of financial resources provided by various methods such as debt and shares. The process of obtaining this average is difficult and complex work that must be done more attentively. The importance of calculating the cost of common stock in Iran, where the portion of other components of the capital structure (long-term debts with earning and preferred stock) is low, is much higher. In addition, due to importance of daily value of cost of capital components, this value is chosen as the representative of cost of capital in this research (Osmani, 2003). Gordon valuation model is used in this study for measuring the value of cost of capital:

$$K_e = \frac{D_1}{P_0} + g$$

(1)

Where, P_0 is the cost of stocks in the beginning year; D_1 is the expected stock earning in the next year; K_e is expected rate of return by shareholders and g is expected growth rate. As sales growth is more stable and more predictable in comparison with earning growth, geometric mean of 5 year sales growth is used for measuring the expected growth rate. This is because of the low effectiveness of accounting procedures compared with profit (Damodaran, 2002).

Independent variable

Accrual quality (AQ): Accrual quality refers to cash ability of accrual items of earning.

$$\frac{TCA_{j,t}}{Asset_{j,t}} = \varphi_{0,j} + \varphi_{1,j}\frac{CFO_{j,t-1}}{Asset_{j,t}} + \varphi_{2,j}\frac{CFO_{j,t}}{Asset_{j,t}} + \varphi_{3,j}\frac{CFO_{j,t+1}}{Asset_{j,t}} + \varphi_{4,j}\frac{\Delta Rev_{j,t}}{Asset_{j,t}} + \varphi_{5,j}\frac{PPE_{j,t}}{Asset_{j,t}} + v_{j,t}\delta_o$$

(2)

Where, $TCA_{j,t}$ is firm j's total current accrual item in year t; $Asset_{j,t}$ is firm j's average total assets in year t; CFO is operational cash flows; $\Delta Rev_{j,t}$ is firm j's revenue changes between year t–1 and year t and $PPE_{j,t}$ is firm j's gross value of property, plants and equipments in year t.

Earning variability: According to views of Francis et al. (2008), earning variability is measured by the standard deviation of earning before the unexpected items. In this research, we use 5 year earning standard deviation (t_0 to t -4) before the unexpected items that is divided on the whole assets in the beginning of the year:

$$EarnVar = \delta\left(EBEI_{j,t}\right) \tag{3}$$

Abnormal (discretionary) accruals: According to the model of Kothari et al. (2005), the earning has more quality, which has smaller optional accrual items:

$$\frac{TCA_{i,t}}{A_{i,t-1}} = \alpha_0 \left(\frac{1}{A_{i,t-1}}\right) + \alpha_1 \left[\frac{\left(\Delta RE_{i,t} - \Delta AR_{i,t}\right)}{A_{i,t-1}}\right] + \alpha_2 \left(\frac{PPE_{i,t}}{A_{i,t-1}}\right) + \alpha_2 ROA + \varepsilon_{i,t} \tag{4}$$

Where, TCA is the total accrual items; A is total of firm's assets in the beginning of the year; ΔAR change in receipt accounts and Total accrual items= operational Earning - operational cash flow (5)

$$NA_{j,t} = k_1 \frac{1}{Asset_{j,t-1}} + k_2 \frac{\left(\Delta Rev_{i,t} - \Delta AR_{i,t}\right)}{Asset_{j,t-1}} + k_3 \frac{PPE_{j,t}}{Asset_{j,t-1}} \tag{6}$$

Common factor: Common factor is the fourth index of this research and is obtained from factor analyzing of three previous criteria that is, optional accrual items, earning variability and quality of accrual items:

CF= optional accrual items + Earning variability + quality of accrual (7)

Result of this criterion keeps classification method of triple criterions. Thus, larger common factor indicates insufficient quality of earning.

Predictability: Defined as earning power in its prediction that according to Francis et al. (2008), measured by using the auto regression model:

$$NIBE_{j,t} = \phi_{0,j} + \phi_{0,j} NIBE_{j,t-1} + v_{j,t} \tag{8}$$

$$Predictability = \sqrt{\delta^2\left(\hat{v}_j\right)} \tag{9}$$

Smoothness: Means earning similarity in various years and is measured as follows using the t to t-4 data:

$$Smoothness = \frac{\delta\left(NIBE_{j,t}\right)}{\delta\left(CFO_{j,t}\right)} \tag{10}$$

Controlling variables

Controlling independent variables in this research consist of various symbols of effective risk on cost of capital based on previous studies (Francis et al., 2008), including firm's size, the ratio of book value to market value (BM) and performance [return on assets (ROA)]. Firm's size measured by total logarithm of firm assets, BM ratio measured by book value of cost of capital to market value of cost of capital in end of the year and eventually ROA measured by dividing earning before unusual and unexpected items by total assets in the beginning of the year.

Regression models

In order to test the effect of every earning quality dimensions on cost of capital, the following regression model is used:

$$CofC_{j,t} = \beta_0 + \beta_1 Earning\, Quality_{j,t} + \beta_2 ROA_{j,t} + \beta_3 size_{j,t} + \beta_4 BM_{j,t} + e_{j,t} \tag{11}$$

Where, $CofC_{j,t}$ is the cost of capital and Earning Quality is the earning quality dimensions. Final effect of every earning quality dimensions on cost of capital is evaluated by using the model (12) that measures the total effect of earning quality dimensions on cost of capital simultaneously:

$$CofC_{j,t} = \beta_0 + \sum_6^1 \beta \sum Earning\, Quality_{j,t} + \beta_7 ROA_{j,t} + \beta_8 size_{j,t} + \beta_9 BM_{j,t} + e_{j,t} \tag{12}$$

Fitting tests of general model

Although, various types of tests that are generally known as fitting indices are comparing, progressing and developing, yet there is no general agreement on an optimal test. The result is that various papers presented various indices and even making popular mean square error of approximation (RMSEA) programs like EQS, Amos, LISERAL software obtained many fitting indices (Hooman, 2005). These indices classified by various methods which one of the major of these, is absolute, relative and adjustment classifying. Some of these indices are:

Goodness-of-fit index (GFI) and adjusted goodness-of-fit index (AGFI) indices: Goodness-of-fit index (GFI) index evaluates relative amount of variances and covariances through the model commonly. GFI ranges between zero and one. GFI amount must be equal or greater than 90.0. Other fitting index is adjusted goodness-of-fit index (AGFI) or same adjustment amount of GFI index for degree of freedom. This index fluctuates between zero and one.

Mean square error of approximation (RMSEA) index: This index is root mean squares of approximation. RMSEA index for good models equals 0.05 or less. The models that is, their RMSEA is 0.1, has less fitting.

Normed fit index (NFI) and comparative fit index (CFI) indices: For values larger than 90.0, normed fit index (NFI) index (that is known as Bentler-Bont) is acceptable and indicative of fitting of the model. If comparative fit index (CFI) index is larger than 90.0, then it is acceptable and indicative of fitting of the model. This index tests the improvement value by comparing an independent model in which there is no relation between variables with suggested model. CFI index has same meaning with NFI, but it compensates for sample group volume.

RESULTS

Descriptive statistics

Descriptive statistics that related to used variables in research are shown in Table 1. Table 2 represents the correlation results between variables. The tables show that quality of accrual items has no significant relation in the two types of correlations with cost of capital; numbers above the major diameter show Pierson (parametric) correlation and numbers below that show Spearman (nonparametric) correlation.

Evaluation of the models and hypotheses testing

In this paper, the relation of all earning quality variables

Table 1. Descriptive statistics of the research.

Variable	Mean value	Standard variation	10%	First quarter	Median	Third quarter	90%
C. of C.	0.248	0.186	0.093	0.124	0.221	0.331	0.448
AQ	0.083	0.084	0.01	0.008	0.024	0.059	0.114
EARN VAR.	0.127	0.145	0.035	0.054	0.09	0.151	0.237
AA	0.106	0.096	0	0.015	0.038	0.077	0.149
COM. FAC.	0.408	0.821	-0.526	-0.103	0.403	0.897	1.354
PREDICT.	0.112	0.133	0.027	0.046	0.077	0.138	0.225
Log SMOOTH.	0.64	0.769	-0.249	0.156	0.558	1.064	1.583
Size	5.28	0.573	4.6	4.906	5.258	5.598	5.988
Log BM	0.305	0.616	-0.268	0.063	0.333	0.644	0.924
ROA	0.111	0.219	-0.102	0.022	0.099	0.207	0.364

Table 2. Correlation among variables of the research.

Var.	C. of C.	AQ	EARN VAR.	AA	COM. FAC.	PREDICT.	Log SMOOTH.	Size	Size	ROA
C. of C.	1	0.003	0.04	-0.095**	0	0.046	0.001	0.147**	-0.012	0.326**
AQ	0.023	1	0.120**	-0.006	0.013	0.140**	0.107**	-0.04	0.066*	-0.059*
EARN VAR.	0.016	0.085**	1	0.004	0.120**	0.861**	0.023	-0.104**	0.088**	0.067**
AA	-0.104**	-0.038	-0.033	1	0.035	0.008	-0.038	0.025	-0.067*	-0.017
COM. FAC.	0.007	-0.014	0.189**	0.012	1	-0.054*	-0.007	0.127**	0.058*	-0.022
PREDICT.	0.019	0.105**	0.854**	-0.012	-0.064**	1	0.01	-0.070**	0.113**	0.100**
Log SMOOTH.	-0.005	0.060*	0.011	-0.029	0.007	0.008	1	0.059*	-0.026	-0.035
Size	0.104**	0	-0.060**	0.032	0.157**	-0.075**	-0.012	1	-0.068**	0.150**
Size	0.047	0.055	0.197**	-0.056*	0.04	0.188**	-0.019	-0.017	1	0.209**
ROA	0.379**	-0.022	0.108**	-0.045	-0.044	0.146**	-0.036	0.114**	0.308**	1

*, Correlation is meaningful in 95% level of confidence; **, correlation is meaningful in 99% level of confidence.

variability, unusual accruals, common factor, predictability and smoothness?}

$$H_0 : \beta_4 \leq 0$$

$$H_0 : \beta_4 > 0 \tag{14}$$

Here, in order to test the model, we used F test. For this purpose, the results of preceding cross-sectional regression model are used according to Table 2.

As observed in the above Table 2, the amount of F statistics is 46.93. Therefore, one can conclude that regression model is statistically significant in 99% confidence level.

Evaluating of complete model

Observing reported results in Table 4, it can be confirmed that in absence of controlling variables,

Table 3. Results of model panel regression.

Var.	Coefficient	Std. error	t-Statistic	Prob.
Dependent variable: C. of C.				
Method panel cross-section random				
Size	0.077915	0.009456	8.239	0
B.M.	-0.00041	0.00116	-0.349	0.7266
ROA	0.202564	0.038384	5.277	0
AA	-0.04204	0.010695	-3.931	0.0001
EARN VAR.	-0.12899	0.182253	-0.707	0.4794
AQ	0.065443	0.031919	2.05	0.0407
COM. FAC.	-0.03782	0.023593	-1.604	0.1094
PREDICT.	0.384898	0.169949	2.264	0.0239
SMOOTH.	0.000173	6.64E-05	2.601	0.0095
C	-0.22198	0.049844	-4.453	0
R^2	0.418912			
Adjusted R^2	0.409986			
S.E. of regression	0.11635			
F-statistic	46.9312			
Prob (F-statistic)	0			
Durbin-Watson stat	1.77924			

six dimensions of earning quality has the capability to describe only 3.4% of changes of cost of capital. Furthermore, as one can see, among six dimensions of earning quality, only optional accrual items, predictability and smoothness have significant relation with cost of capital. By introducing controlling variables in line 7, approximation factors for earning quality dimensions undergo essential changes, so that among the six dimensions of earning quality, five of them have significant relation with cost of capital and only the common factor has no significant relation with cost of capital.

Significant relation of earning variability and earning predictability with cost of capital is the significant matter. In addition, the sign of approximated factors for these two dimensions of earning quality confirms the hypotheses of research. It means that these two dimensions of earning quality have inverse and meaningful relation with cost of capitals, so that by improving them, cost of capital can be decreased. Results of other dimensions of earning quality and controlling variables are the same as other previous results.

Formulating the conceptual model

As mentioned before, one of the main purposes of this work is providing conceptual model for describing how earning quality and affirmation quality affect the cost of capital. Based on this, research literature and the mentioned hypotheses, the considered conceptual method is shown in Figure 1. We will define the formulated model subsequently.

However, this model is constructed based on theoretical principles and research hypotheses. The previous

tested Hypotheses indicates that, some of the explanatory and controlling variables have significant relation with cost of capital. Thus, it is expected that, testing the model-which is a part of the conceptual model, does not provide the basis for confirming the proposed model. In this case, the following conceptual model needs to be changed and adjusted.

Testing the conceptual model

Table 5 represents the results of conceptual model (Figure 1). As results of different tests indicate, initial conceptual model does not fit properly the empirical data and thus is not valid. So adjusting the conceptual model must be done so that available data match with it. For this purpose, we can use the provided guidelines obtained by model output. Furthermore, obtaining the suitable model needs the usage of error testing process relatively. Figure 2 illustrates the best fitting model obtained by the available data. Among six dimensions of earning quality, two dimensions of quality that is, accrual items and earning smoothness, two dimensions of affirmation quality (that is, reliably and timely) and two representatives of operational environment (that is, size and return of assets) are represented in this model. The results of this model are presented in Tables 6 to 8.

Model fitting

The results of model fitting are presented in the form of a few index groups. The reason of various indices usage is that, none of these indices is considered to provide alone sufficient basis for suitability of model.

Table 4. Regression earning quality dimensions on cost of capital.

$$COE_{it} = \beta_0 + \beta_1 AQ_{it} + \beta_2 EarnVar_{it} + \beta_3 AA_{it} + \beta_4 CF_{it} + \beta_5 Predic_{it} + \beta_6 Smooth_{it} + \beta_7 Size_{it} + \beta_8 MB_{it} + \beta_9 ROA_{it} + e_{it}$$

|	Intercept	AQ	Earn. Var	AA	CF	Predic	Smooth	Size	BM	ROA	Adj.R^2
Coefficients (P value)	0.270 (0.000)	0.060 (0.273)									0.000 (0.273)
	0.263 (0.000)	0.051 (0.355)	0.066 (0.128)								0.002 (0.172)
	0.262 (0.000)	0.105 (0.062)	0.062 (0.146)	-0.178 (0.000)							0.020 (0.000)
	0.261 (0.000)	0.105 (0.063)	0.061 (0.153)	-0.179 (0.000)	0.002 (0.739)						0.019 (0.000)
	0.258 (0.000)	0.099 (0.080)	0.164 (0.106)	-0.179 (0.000)	0.010 (0.185)	0.250 (0.014)					0.024 (0.000)
	0.258 (0.000)	0.098 (0.081)	0.162 (0.108)	-0.173 (0.000)	0.011 (0.150)	0.249 (0.014)	0.000 (0.001)				0.034 (0.000)
	-0.057 (0.297)	0.117 (0.037)	0.352 (0.000)	-0.099 (0.010)	0.007 (0.333)	0.352 (0.000)	0.000 (0.033)	0.052 (0.000)	0.056 (0.000)	0.392 (0.000)	0.178 (0.000)
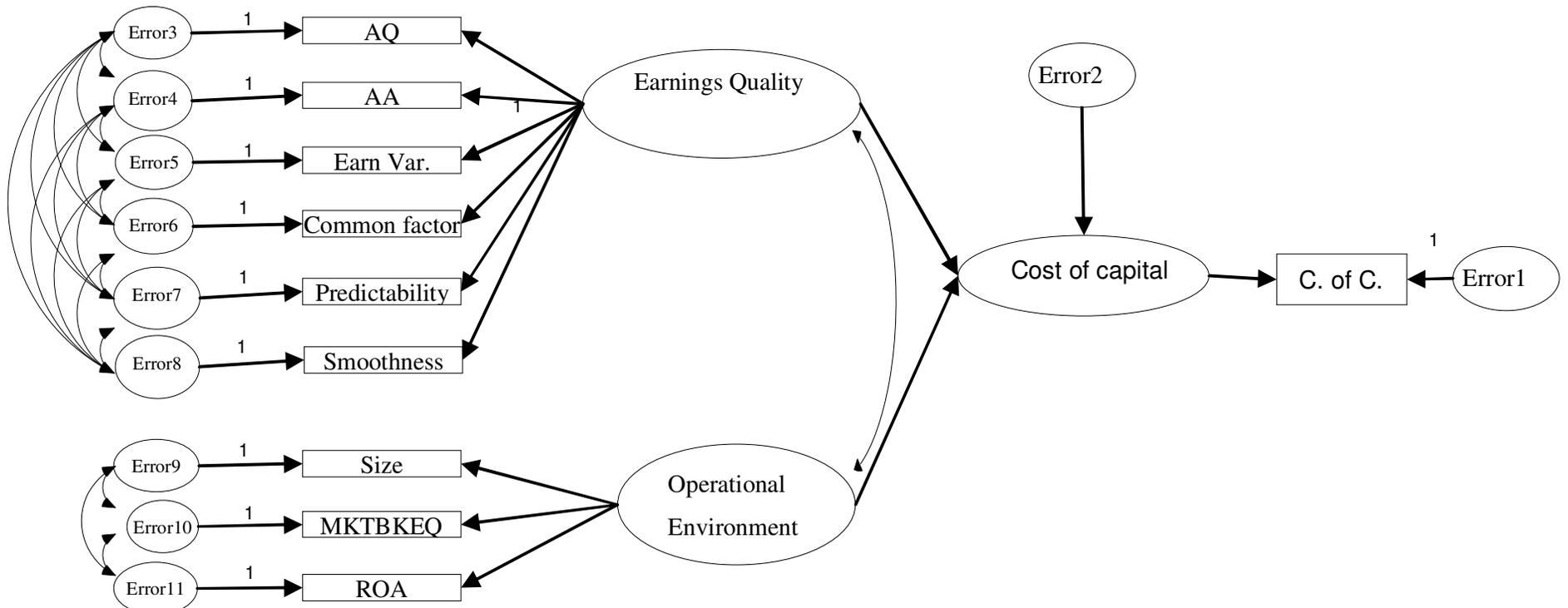
Figure 1. Conceptual model of earning quality impact on cost of capital.
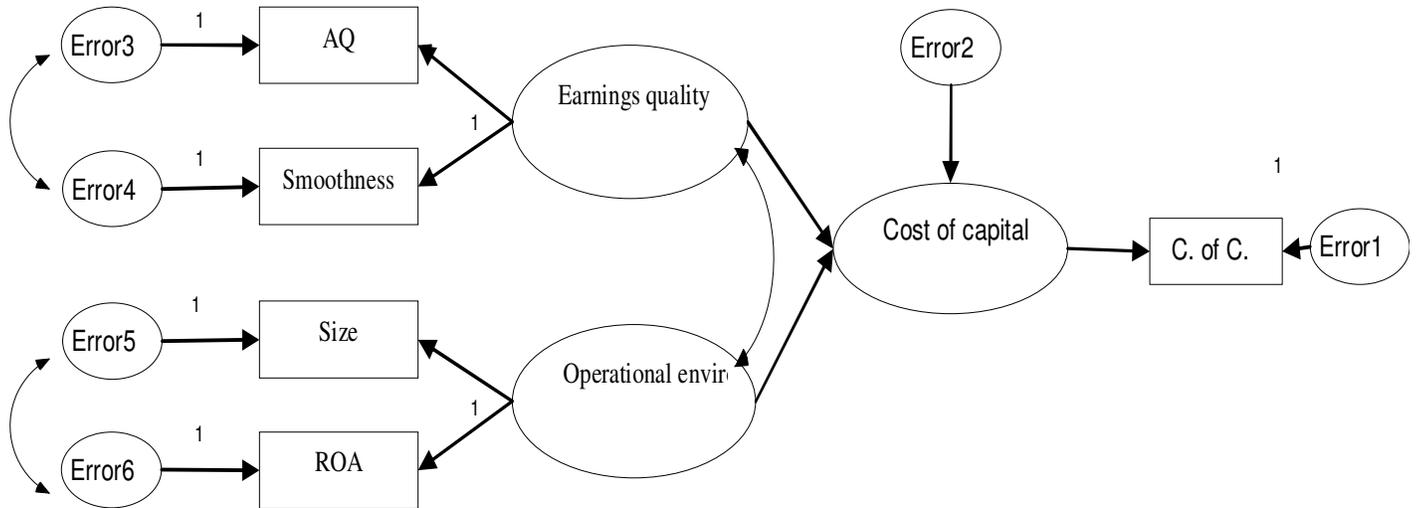
Figure 2. Conceptual model of fitting by using data.

Table 5. Results of conceptual model.

Model	RMR. GFI				
	RMR	GFI	AGFI	PGFI	
Default model	3718.742	-0.070	-1.036	-0.037	
Saturated model	0.000	1.000			
Independence model	145.877	0.592	0.517	0.501	
Baseline comparison					
Model	**NFI**	**RFI**	**IFI**	**TLI**	**CFI**
Default model	Delta 1	rho 1	Delta 2	rho 2	
Saturated model	-1.346	-2.776	-1.352	-2.798	0.000
Independence model	1.000		1.000		1.000
	0.000	0.000	0.000	0.000	0.000
RMSEA					
Model	**RMSEA**	**LO 90**	**HI 90**	**PCLOSE**	
Default model	0.780	0.770	0.789	0.000	
Independence model	0.400	0.393	0.407	0.000	

Table 6. Regression weights.

Variable		Estimate	S.E.	C.R.	P	Label
Cost of capital	← Earnings quality	0.494	0.177	2.786	0.005	
Cost of capital	← Disclosure quality	-0.231	0.100	-2.300	0.021	
Cost of capital	← Operational environment	0.077	0.061	1.259	0.208	
AQ	← Earnings quality	1.000				
Smoothness	← Earnings quality	1.463	0.344	4.252	0.000	
Size	← Operational environment	1.000				
ROA	← Operational environment	1.263	0.699	1.806	0.071	
Timeliness	← Disclosure quality	1.000				
Reliability	← Disclosure quality	1.311	0.318	4.128	0.000	
C of C	← Cost of capital	1.000				

Table 7. Covariance among independent hidden variables.

Independent hidden variable	Estimate	S.E.	C.R.	P	Label
Earnings quality ↔ Disclosure quality	-.019	.007	-2.650	.008	
Operational environment ↔ Disclosure quality	-.005	.008	-.591	.554	
Earnings quality ↔ Operational environment	.002	.005	.453	.650	

Table 8. Variances.

Independent hidden variable	Estimate	S.E.	C.R.	P	Label
Earnings quality ↔ Disclosure quality	-.019	.007	-2.650	.008	
Operational environment ↔ Disclosure quality	-.005	.008	-.591	.554	
Earnings quality ↔ Operational environment	.002	.005	.453	.650	

Table 9. First group of model fitting.

Model	RMR.GFI			
	RMR	GFI	AGFI	PGFI
Default model	0.003	0.975	0.935	0.379
Saturated model	0	1		
Independence model	0.023	0.57	0.447	0.443

Table 10. Comparison-based fittings.

Model	Baseline comparison				
	NFI	RFI	IFI	TLI	CFI
	Delta 1	rho 1	Delta 2	rho 2	
Default model	0.958	0.915	1.016	1.034	1
Saturated model	1		1		1
Independence model	0	0	0	0	0

Table 11. Results of conceptual model.

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	0	0	0.072	0.877
Independence model	0.282	0.25	0.315	0

First group of fitting test of the above model is presented in the Tables 9 to 11. GFI and AGFI indices are known as the absolute fit indices. GFI and AGFI indices must be between 0 and 1, and the values larger than 0.9 indicate the good fitting of model. Accordingly, model with values 0.975 and 0.935 for GFI and AGFI respectively, indicates the desired fitting of the model. Root mean square residual (RMR) index for fitting model focused on residuals matrix. When this statistics is less than 0.05, then the fitted model is acceptable.

The second group of the model fitting indices is based on comparison between fitted model and basic (implied) model. NFI and RFI indices larger than 0.9, indicate the suitable fitting. If other indices are larger than 0.1, then one can conclude that the model properly fit the empirical data. Next fitting index is RMSEA which is one of the most important indices in the model fitting. When estimated statistics is less than 0.05, it indicates that the model properly fitted the data.

Generally most of the used indices for fitting the final

model, show that the used data has good consistency with the conceptual model.

DISCUSSION

In this paper we examined the relationship between cost of capital and six dimensions of earning quality. Furthermore, we provided a conceptual model. Six dimensions of earning quality based on accounting information are, " Accrual quality"," Earning variability", "Optional accrual items", "Common factor", "Earning predictability" and "Earning smoothness".

The results showed that among the six dimensions of earning quality, four dimensions of quality of accrual items, earning variability, earning predictability and earning smoothness have inverse and significant relationship with cost of capital. Although the relationship between quality of accrual items and the cost of capital is significant, however, the sign of this relationship is not consistent with expectations. In addition, significant relationship between common factors and the cost of capital was not confirmed.

Similar to present work, Saghafi (2009) reported significant negative relationship between predictability and earning smoothness and shareholders costs. However, they could not find a relationship between quality of accrual items and the cost of capital.

Francis et al. (2004) studied the relationship between seven dimensions of earning quality and cost of capital that of these, three dimensions of quality of accrual items, predictability and earning smoothness are common. The results of this study confirmed a negative relationship between quality of accrual items and earning smoothness. Francis et al. (2005) studied the relationship between quality of accrual items and cost of capital. The correlation was also approved in this study. In 2008, Francis et al. (2005) considered four dimensions of earning quality and cost of capital. These four dimensions include quality of accrual items, earning variability, optional accrual items and the common factor. Their results showed that, these four dimensions of earning quality have a negative and significant relation with the cost of capital.

As our results show, some features of earning have information content and significant relationship with the cost of capital. This is while some of these features do not provide relevant information and hence are not considered as relevant data in investment decision making. In conclusion, it must be said that our findings are in agreement with the results of many researches in this field that are done inside and outside the country.

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