

THE RELATIONSHIP BETWEEN FIRMS GROWTH OPPORTUNITIES AND CHANGES RATIO IN RETAINED EARNINGS IN LISTED COMPANIES IN TEHRAN STOCK EXCHANGE

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ABSTRACT

The purpose of this research is to investigate the relationship between firm growth opportunities and Changes ratio in retained earnings of companies. This study is a literature study and analysis - scientific, and is based on the analysis of panel data (panel data). In this study, the financial data of 101 companies listed in Tehran Stock Exchange during the period 2006 to 2011, has been reviewed (606 companies - the Year). To analyze the results of research, software 20 Spss, Eviews 7, Minitab16 are used. Results of study related to confirm first hypothesis indicates that there is significant and inverse relationship between company's growth opportunities and Changes ratio in retained earnings of companies.

Keywords: *capital structure, the company's growth opportunities, changes ratio of retained earnings, panel Data*

INTRODUCTION

Understanding and awareness of the effects of company growth on the changes ratio in debt and retained earnings of companies, seems necessary for managers and stakeholders. Because, on the one hand, it helps managers in fulfilling responsibilities include deciding on the choice of the appropriate method of financing, and the maximum value of the company, which is goal of any institute and profit organization, and the other hand, it brings knowledge and awareness for stakeholders and investors in the decision making (Arab, 2007).

Most financial managers agree that concept of leverage is the most important financial concepts, and have a special place in the capital structure. A company that does not have any debt is a company with capital structure. But in reality, we do not have such a company, and all companies use leverage different ratios. But the question is: how much a firm should use debt in its capital structure. Are there specific rates for debt in the capital structure or not? (AtaeiZadeh, 2014)

Companies' managers are looking to how they can balance the changes ratio of debt and retained earnings in companies to maximize shareholder value in the market, in other words, to maximize shareholder wealth, and ultimately cause rapid growth of the company. Finally, the main research question is whether there is relationship between company's growth opportunities and Changes ratio in retained earnings. The main objective of this study is to investigate the relationship between firm growth opportunities and Changes ratio in retained earnings of the companies.

REVIW OF LITERATURE

Xuepingand Chow (2012) noted that they have discussed in their study "the investigation of various factors in the company's growth and stability of capital structure", and in their study have found that different types of companies growth (the ratio of market value to book value and tangible assets) can be considered as an application point of view in increasing the financial leverage ratio importance .

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Stability types of company's growth which is due to some factors such as styles of investment in tangible assets versus tangible assets, and it is possible which they have significant differences during growth and recession. From an economic and market perspective, providing recovery and growth in companies is due to the increase of debt or capital. They also found that the origin of high growth firms typically is increase investment and financing given policies of managers related to the growth.

Wiedemann et al (2002) noted that in their study, they were reviewed the relationship between company growth opportunities with company's debt policy for Hong Kong Stock Exchange in the financial period 1980-1995. Which came to the conclusion that there is a positive relationship between the growth opportunities of Hong Kong listed companies, and debt (financial leverage).

Nissim and Penman (2003), have attempted to analyze the leverage and impact of financial leverage, Debt leverage arising from operations and total leverage on the profitability and ratio P/B, and reached the conclusion that, debt leverage due to the financial operations than financial leverage has the more positive impact on profitability and the ratio P/B.

AtaeiZadeh and colleagues (2014), in their study examined the relationship between firms' growth opportunities and changes in debt ratio of listed companies in Tehran Stock Exchange, and the results of the study show a significant and direct relationship between growth opportunities and the ratio of changes in debt.

Samadi et al (2013), in their study have analyzed the impact of growth opportunities on financial leverage for firms listed on the Stock Exchange during the period 2000 to 2010. In this research, two hypotheses of nonlinear relationship between growth opportunities and financial leverage, and also the gap between actual and target leverage (optimal) is used, the findings of this study suggest that a nonlinear relationship (third-order) at high and low levels of growth opportunities is negative and at medium levels is positive, negative relationship at low levels is much greater high levels of growth opportunities.

THEORETICAL LITERATURE OF RESEARCH

Hierarchical theory of financing models for the first time was presented by Myers as follows.

1. Firms prefer internal sources of financing.
2. If external sources of financing are required, firms will publish the safest securities. Accordingly, the companies for financing respectively use following cases: 1. Debt, 2. Hybrid securities such as convertible bonds, 3. Shares (As a last resort).

According to the hierarchy retained earnings is the most effective method for financing a company. Because, only cost which companies because it incurs is paying Dividend, which may cause the stock price is lower. However, dividend is not the only determinant of stock prices. Often, however, for the rapid growth of companies, retained earnings as tradable securities only can provide a small fraction of the capital required. Companies in financing through long-term, short-term debts or stock publication, and the amount of them are free. There are various types of long-term and short-term debt such as bank loans, convertible bonds, commercial paper and commercial credit. There are also two main types of stock: common stock and preferred stock. Companies to select the right mix of financing methods assess the costs and benefits, risks and returns of different types of financial instruments, and then using their experiences and commercial and investment banks advice, select the best of them. It is not possible to say which one is the absolute best, because each of them has their unique advantages and disadvantages which are appeared in the different methods, different places and different times. However, we can say that, retained earnings in terms of the cost of publishing, is the cheapest method of financing, after that the following cases respectively are arisen: Benefit of trade credit, short-term credit, bank loans, personal publishing bonds, convertible bonds and stock, and finally, public publishing bonds, convertible bonds and stock (AtaeiZadeh, 2014).

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THE HYPOTHESIS OF THE RESEARCH

1 – There is significant relationship between the company's growth opportunities and changes ratio in retained earnings of companies.

METHODOLOGY

Research Methodology in terms of nature, purpose and method for doing research

Present study in terms of nature and content is Correlation study, and in terms of type of work is a research study and in terms of purpose in a applicable study, and as well as in terms of the method for doing research is in the framework of deductive-inductive reasoning.

Data collection tools

To study theoretical foundations and literature review, the library method with using books and papers and theses have been used, and information needed is extracted from financial statements of listed companies on the Stock Exchange.

Variables of research

Independent Variable

Opportunities for growth: the ratio of market value to book value (Cheng et al, 2009)

$$M/B_{i,t} = \frac{\text{The value of stock market}}{\text{Book value of total assets}}$$

Dependent variables

The ratio of changes in retained earnings ($GRE_{i,t}$): This formula is derived from the research of Graham and Harvey (2001):

$$GRE_{i,t} = \frac{\text{retained earnings at end of year } t - \text{retained earnings at end of year } (t-1)}{\text{Book value of total assets}}$$

Control Variables

Tangible Assets Ratio: The net ratio of property and machines and equipment over book value of assets (Pastor and veronesi, 2003)

$$Tang_{i,t} = \frac{\text{Net property of machines and equipment}}{\text{Book value of total assets}}$$

Investment Policy: According to the following formula is obtained: (Wu and et al, 2005).

$$INV_{i,t} = \frac{\text{Capital expenditure}}{\text{Book value of total assets}}$$

Dividend: It is dummy variable that if the company has paid a cash dividend, it is equal to 1, and otherwise equal to zero. (Baker and Wurgler, 2002)

The ratio of cash assets: Cash assets divided by book value of total assets is calculated by the following formula (Stein, 1996).

$$\text{CashHolding}_{i,t} = \frac{\text{Cash assets}}{\text{Book value of total assets}}$$

Sales growth rate of company ($SG_{i,t}$): This formula is derived from the research of Cooney et al (1993):

$$SG_{i,t} = \frac{S_{i,t} - S_{i,t-1}}{S_{i,t-1}}$$

$SG_{i,t}$: Sales growth of firm i in year t

$S_{i,t}$: Net sales of firm i in year t

$S_{i,t-1}$: Net sales of firm i in year t-1

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The population

The population of the study is all listed companies in Tehran Stock Exchange during the period of 2006-2011, of the 520 companies listed in Tehran Stock Exchange, which meet all of the following criteria:

- 1 - To March 2006 are listed, and their names until the end of March 2012 from the list of listed companies are not removed.
- 2 - During the desired period, their shares are traded actively on an exchange.
- 3 - Their financial period must be ended 29 March, and in the course of the study, the financial terms have not changed.
- 4 – They are not among financial intermediation companies (investment, holding, leasing, and banking and insurance) because of their different performances.
- 5 - The information you need is available.

In this study, 101 companies as sample are selected

Data analysis method

In this study, to evaluate and determine the appropriate model, panel data method of Chow test using, Hausman test is used and to test the significance of the model, the F statistic and for significance of the coefficients, T-statistics and for normalizing variables, Kolmogorov-Smirnov test is used and software Spss 20, Eviews7 and Minitab16 are used for analysis.

DESCRIPTIVE STATISTICS FOR RESEARCH VARIABLES

Mean is the most important central index, and shows mean data so that, if the data are aligned on an axis on a regular basis, the mean value is precisely the balance point or center of distribution. Standard deviation is a distribution parameter, and shows scattering of data. Skewness is determining parameter of deviations from symmetry and is symmetry index of data. Summary descriptive statistics of the variables modeled after the screening and removal of outliers using software Spss20 are presented in table 1.

Table 1. Descriptive statistics of variables of Research

Elongation	Skewness	The maximum amount	The Minimum amount	Standard deviation	Average	Number of observations	Variable
16.168	-1.701	0.5119	-0.9446	0.1069	0.0052	606	The ratio of changes in retained earnings
9.387	-2.231	4.5546	-3.0076	1.0068	1.0068	606	Growth opportunities
0.391	0.859	0.8786	0.0008	0.1889	0.1889	606	Tangible assets ratio
46.689	4.616	0.4803	0.0000	0.0348	0.0348	606	Investment policy
-0.474	-1.226	1.0000	0.0000	0.4259	0.4259	606	Dividend
-0.547	-0.547	0.9723	0.0713	0.2179	0.2179	606	The ratio of cash assets
5.6.818	21.763	49.1606	-1.0000	2.0804	2.0804	606	Rate of sales growth

According to table 1, the average ratio of changes in retained earnings of sample companies has been 0.0052, and minimum and maximum values, respectively, has been -0.9446 and 0.5119. Evaluation of skewness and elongation of this variable, which should be 0 and 3, to variable has normal distribution indicates that this variable does not has normal distribution. Based on the descriptive statistics presented in table 1, the average variable of growth opportunities sample companies during the positive period,

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respectively are 1.0068,. The positive mean the ratio of Tangible assets, investment policy, dividend, ratio of cash assets and the growth rate of sales respectively are 0.1889, 0.0348, 0.4259, 0.2179 and 2.0804.

TEST FOR NORMAL DISTRIBUTION OF THE DEPENDENT VARIABLE OF RESERCH

In this study, this issue through Kolmogorov-Smirnov (KS) is investigated. H_1 and null hypothesis in this test is as follows:

$$\begin{cases} H_0 : \text{Normal Distrbuton} \\ H_1 : \text{Not Normal Distribution} \end{cases}$$

If the level of significance of the test statistic is more than 0.05 (Prob> 0.05), H_0 hypothesis based on normal variable distribution will be accepted. In table 2, the K-S Statistics results for factors of the changes in retained earnings ratio of companies in the sample are provided.

Table 2.the results of normality test of dependent variable of research

Significance level (Sig)	Statistics (KS)	Number (N)	Variable
0.000	4.322	606	The ratio of changes in retained earnings

Given that, for a variables of ratio of changes in retained earnings, significance level of K-S Statistics is less than 0.05, therefore, H_0 hypothesis based on normal variable distribution is rejected at the 95% confidence level, indicating that the variables of the ratio of changes in retained earnings don't normal distribution. Being normal of dependent variable is necessary condition for regression models, so it is necessary that before hypothesis test, this variable is normalized. In this study, for normalizing data, Johnson's Transformation function is used, and it is analyzed by software Minitab16. The results of the K-S test, after normalizing the data, are provided in table 3.

Table 3, the results of normality test of Dependent variables after normalization process

Significance level (Sig)	Statistics (KS)	Number (N)	Variable
0.812	0.637	606	The ratio of changes in retained earnings

According to table 3, since after normalizing data, significance level (Sig) of statistic Kolmogorov - Smirnov for the dependent variable is greater than 0.05 (0.812), thus the hypothesis at 95% confidence level is confirmed and indicates that the variables of ratio of changes in retained earnings, after normalization process, have normal distribution.

THE INVESTIGATION OF CORRELATION VARIABLES

In this section, using Pearson's correlation coefficient, the relationship between variables of research and the correlation between them is examined. Matrix of correlation coefficients between variables is presented in table 4. The ratio of changes in retained earnings also has significant and positive correlation with ratio of Profitability index and dividend and has significant and negative correlation with the investment policy. Growth opportunities have significant and positive correlation with ratio of Profitability index and the ratio of tangible assets. The ratio of Profitability index also has significant and negative correlation with investment policy and the ratio of cash assets. Tangible assets ratio also has significant and negative correlation with investment policy, and the ratio of cash assets and the investment policy also has significant and positive correlation with the ratio of cash assets.

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Table 4. The matrix of Pearson correlation coefficients between variables

Rate of sales growth	The ratio of cash assets	Dividend	Investment policy	The ratio of Tangible assets	Growth opportunities	The ratio of changes in retained earnings	
						0	The ratio of changes in retained earnings (P-Value)
						1	
					1	0.025 (0.541)	Growth opportunities (P-Value)
				1	0.090 (0.027)	-0.004 (0.924)	The ratio of Tangible assets (P-Value)
			1	-0.132 (0.001)	-0.063 (0.121)	-0.314 (0.000)	Investment policy (P-Value)
		1	0.030 (0.463)	-0.053 (0.194)	-0.001 (0.988)	0.249 (0.000)	Dividend (P-Value)
	1	0.075 (0.063)	0.200 (0.000)	-0.669 (0.000)	-0.069 (0.090)	-0.050 (0.216)	The ratio of cash assets (P-Value)
1	-0.026 (0.525)	0.004 (0.920)	-0.043 (0.290)	0.002 (0.952)	-0.019 (0.641)	0.064 (0.114)	The ratio of sales growth (P-Value)

RESEARCH FINDINGS

The purpose of the hypothesis is to investigate the relationship between firm growth opportunities, and changes ratio in retained earnings, and its statistical hypothesis is stated as follows:

H₀: There is no significant relationship between the company's growth opportunities and changes ratio in retained earnings of companies.

H₁: There is significant relationship between the company's growth opportunities and changes ratio in retained earnings of companies.

This hypothesis using the model (1) is estimated as panel data and if the coefficient β_1 is significant at the 95% confidence level, it will be confirmed.

$$GRE_{i,t} = \beta_0 + \beta_1 M/B_{i,t} + \beta_4 Tang_{i,t} + \beta_5 Inv_{i,t} + \beta_6 DivPayer_{i,t} + \beta_7 CashHolding_{i,t} + \beta_8 SG_{i,t} + \varepsilon_{i,t} \quad (1)$$

$$\begin{cases} H_0 = \beta_1 = 0 \\ H_1 = \beta_1 \neq 0 \end{cases}$$

The results of the Chow tests (to determine the use of panel data or hybrid data) and Hausman (to determine the use of fixed or random effects method in the method of panel data) for model (1) are presented in table 5.

Table5. Results of Chow and Hausman test for model (1)

Test	Statistics	Statistics amount	Degrees of freedom	P-Value
Chow	F	1.6054	(100/499)	0.0087
Hausman	χ^2	6.4038	6	0.0495

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According to the results of the Chow test and its P-Value (0.0087), H_0 hypothesis is rejected at the 95% confidence level, indicating that this method can be used for panel data. Also according to the results of the Hausman test and the P-Value (0.0495), which is less than 0.05, H_0 hypothesis is rejected at the 95% confidence level, and the H_1 hypothesis is accepted, so, it is necessary that model using fixed effects method be estimated. In investigation of assumptions of the classical regression, results of Jarque-Bera test indicate that the residues arising from the research model estimation with a confidence level of 95%, have a normal distribution, so the probability of the test (0.1874) is greater than 0.05. Also considering the importance level of Pagan test which is smaller than 0.05, (0000/0) H_0 hypothesis (about homogeneity of variance) is rejected, and can be said that model has variance anisotropy problem. To resolve this problem in this study generalized least squares estimation method (GLS) is used. In the self-correlation test of residuals in the model, which is done using cameras Watson statistic (DW), the statistic Durbin - Watson has been 2.18 and where it is between 1.5 and 2.5, we can conclude that the residuals are independent. In addition, according to the Ramsey test significance level is greater than 0.05 (0.1132), then the H_0 hypothesis of this test based on model's linearity has been confirmed and the model does not have clear error. Summary of the results of these tests are presented in table 6.

Table 6. The results of tests of the statistical assumptions of the model (1)

Statistics Jarque-Bera		Statistics Breusch-Pagan		Statistics Durbin-Watson	Statistics Ramsey	
χ^2	P-Value	F	P-Value	D	F	P-Value
3.3482	0.1874	6.4049	0.0000	2.18	23.9166	0.1132

According to the results of Chow and Hausman test, and also test results of the statistical assumptions of the classical regression, model (1) of research using panel data method and as fixed effects is estimated. The results are presented in table 7.

Table 7. The results of hypothesis testing using fixed effects method

The dependent variable: the Changes ratio in retained earnings				
Number of views: 606 firm -years				
Variable	Coefficient	Statistics t	P-Value	Relation
Fixed component	-0.0298	-1.1400	0.2548	Meaningless
Growth opportunities	-1.0006	-1.4349	0.0038	Negative
Tangible assets ratio	-0.0123	-0.4360	0.6630	Meaningless
Investment policy	-0.5377	-4.4987	0.0000	Negative
Dividend	0.0469	10.2654	0.0000	Positive
Cash assets ratio	0.0355	1.01074	0.2686	Meaningless
Rate of sales growth	0.0023	1.0319	0.3026	Meaningless
The coefficient of determination model				0.0287
Statistics F (P-value)				1.8955 (0.0000)

The model is estimated using Eviews7 software as follows:

$$GRE_{i,t} = -0.0298 - 1.0006M / B_{i,t} - 0.0123Tang_{i,t} - 0.5377Inv_{i,t} + 0.0469DivPayer_{i,t} + 0.0355CashHolding_{i,t} + 0.0023SG_{i,t} + \varepsilon_{i,t}$$

In the Significant test of whole model, given that the probability of F-statistic is smaller than 0.05 (0.0000), with 95% confidence level, significance of the model is confirmed. Determining factor model

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also indicates that the 28.70 percent ratio changes in retained earnings by the variables entered in the model is explained. In the Significant test of coefficients given results presented in figure table, since the probability of t-statistic for variable coefficient of growth opportunities is smaller than 0.05 (0.0038), therefore existence of significant relationship between growth opportunities and the ratio of changes in Retained Earnings at 95 confidence level, is confirmed. Thus, the fourth research hypothesis is accepted, and we can say with 95% confidence that, between growth opportunities and changes ration in retained earnings, there is a significant relationship. Being negative coefficient of this variable (-1.0006), implies the existence of an inverse relationship between growth opportunities and changes ratio in retained earnings such that, with an increase of 1 unit growth opportunities, changes ratio in retained earnings 1.0006 unit decreases. Thus, according to the analysis made in connection with the fourth research hypothesis confirmation, it can be concluded that between the company's growth opportunities and changes ratio in retained earnings of companies, there is an inverse relationship.

CONCLUSIONS

The aim of present study is to examine the relationship between firms' growth opportunities and changes ratio in retained earnings of listed companies in Tehran Stock Exchange. The population of this research is 101 companies listed in Tehran Stock Exchange, which have conditions discussed in the population section. The scope of this study is time period 2007 to 2012. For data collection, the library method, as well as to extract statistical data, the audited financial statements of listed companies in Tehran Stock Exchange, and for analysis of data, panel data method is used. Also, the growth opportunities of the companies as an independent variable, and the changes ratio in retained earnings as the dependent variable, and the ratio of tangible assets, investment policy, dividend, the ratio of cash assets, sales growth rate of company as control variables is used. Thus, according to the analysis made in connection with the hypothesis confirmation of research, we concluded that between company's growth opportunities and changes ratio in retained earnings of companies, there is an inverse and significant relationship.

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