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THE RELATIONSHIP BETWEEN FIRM SIZE AND PROFITABILITY INDICATORS OF SUSTAINABLE CAPITAL STRUCTURE OF LISTED COMPANIES IN TEHRAN STOCK EXCHANGE

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ABSTRACT

The purpose of this study was to evaluate the relationship between different measures of company's growth and sustainability of the capital structure. This study is a library and analysis – scientific study based on an analysis of panel data. In this study, the financial data of 101 companies listed in Tehran Stock Exchange during the period 2006 to 2011 have been reviewed (606 companies -Year). To analyze the results of research, software Spss 20, Eviews7 and Minitab16 is used. Furthermore, the results show that in relation to the first hypothesis confirmation, there is an inverse and significant relationship between profitability index and the ratio of debt changes ratio of companies. Also, according to the analysis made in relation to the second research hypothesis confirmation, we find that there is a direct and significant relationship between firm size and the debt changes ratio of companies. Also in connection with the fourth hypothesis of research, we find that there is an inverse and significant relationship between company's growth opportunities and changes ratio in retained earnings ratio of companies. Finally, results of research in connection with the third and Fourth hypotheses confirmation suggest that is a direct and significant relationship between variables of profitability index and the factor of company's size with changes ratio in retained earnings of companies.

Keywords: Profitability Index Ratio, Firm Size, the Ratio of Debt Changes, Ratio of Changes in Retained Earnings

INTRODUCTION

In the real world in which firms and financial companies operate, optimize resources is the most important of their issues. Balancing financial resources lead to maximize yields with the lowest cost of capital. Companies for financing don't use only one resource (asset or liability), but use the combination of them. The important thing is that ", which of the Financial resources should the companies to achieve their goals select? ", and "how much should they use that resource in the composition of their capital?" Certainly, identifying the different ways of financing, and use of financial appropriate tools make managers able to business decision making and achieve more benefits for companies, and efficient use of financial resources will provide the opportunity for managers to increase overall value of the company and the wealth of owners. Despite the debt in the financial structure of companies due to the tax advantage thereby increasing the accounting profit, and accordingly, will increase earnings rate per share, and on the other hand, because of the interest costs, risk of non-fulfillment of obligations at maturity, resulting increase financial risk and thereby increase retained earnings and consequently decrease in stock returns (Cheng *et al.,* 2009). Management decisions on debt and equity provides financial sources and uses them with decisions about current assets, long-term assets and investments. Therefore, the debt is one of the main components of the capital structure of most firms, which plays an important role in managing financing of companies. Criteria of company growth are considered a crucial tool for management decisions. Therefore, identifying factors affecting growth of the company is one of the most sensitive and important issues. Most previous researches investigated company's growth factor with a factor, but in this paper, we focus on mentioned issues, we are looking for finding a convenient and effective relationship between several factors influencing the growth of the firm, and its relation to retained earnings and changes ratios in debt. Finally, the main research question of research is that whether its growth parameters have impact on (profitability index, firm size) on the changes ratio in debt

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and retained earnings of companies or not. The main purpose of this study is to find the relationship between various factors of the company's growth and sustainability of firms' capital structure (Ataei, 2014).

Review of Literature

Brad *et al.,* (2006) studied the relationship between external financing activities and future profitability and efficiency of the firms. Two mentioned methods above for assessing the net amounts of cash generated in financing activities has been the use of cash flows data, and they have emphasized on evaluation various methods of financing (debt or capital) selected by the company. Also, they in their research, in addition to efficiency and profitability of companies about financing also have analyzed forecasting Analysis of profits on short-term and long-term, prediction of growth and company's value. Our findings indicate an inverse and relatively significant correlation between net financing and future stock returns and profitability of companies (Brad *et al.,* 2006). Makouyra and colleagues (2012) in a study entitled "Capital budgeting, cost of capital and capital structure", investigated the relationship between three variables on the stock exchange in Latin America. They studied Budgeting 290 active firms based on the LATAM method in connection with cost and capital structure. They compared the results of their analysis with previous studies. They have been studied and compared particular characteristics and budgeting differences in the two markets, emerging and SME markets. They observed that companies with budgeting structure use LATAM method and standard capital, but there is not specific weight which analyzes liquidity and capital rationing. Namazi and colleagues (2005), in his study examines the impact of capital structure on profitability of listed companies in Tehran Stock Exchange in the various industries. Our sample consists of 108 companies from various industries which the data related to mean ratio of debt to assets and equity, over the period of 5 years, was examined. The results show that in general, between capital structure and profitability of the company, there is a positive relationship, but this relationship is statistically weak. The relationship between capital structure and profitability is dependent on the industry, and optimal capital structure can be determined in various industries (Namazi and Shirzad, 2005). Bagheri (2009) has investigated the impact of financing methods on the yield and price of shares of listed companies in Tehran Stock Exchange. In this study, to find how effect of financing methods on prices and Stock returns in listed companies in Tehran Stock Exchange, three hypotheses have been designed. The first hypothesis, financing through retained earnings more than borrowing on the stock price of listed companies (cement industry) is effective. The first hypothesis, financing through retained earnings (reserves) more than borrowing on stock returns is effective. The results of the first and first hypothesis suggest that the impact of financing method through retained earnings more than borrowing on stock returns and price is effective. In the second hypothesis, the average annual total returns of companies which have financed through retained earnings (reserves) are more than the average annual total returns of firms that have financed through borrowing (Bagheri, 2009). Farajpour (2009) studied the various methods of financing of listed companies in Tehran Stock Exchange on the stock return. In this study, the effect of external sources of financing (issuing ordinary shares and receiving loan) on companies listed on stock returns between (2002 -2007) was examined. In this study, the effect of increasing investment and getting a Loan on the annual returns of 156 firms that use both the financial resources (issuing ordinary shares and receiving loan), were compared with each other. Statistical analysis showed there is no significant relationship between stock issuing and stock returns, but there is relationship between getting a loan and stock return. Meanwhile, there is no significant relationship between two methods of getting a loan and stock issuing. Here, our purpose is to consider the specific information flows required by the use of a combination of DC and ABC in a FMIS. Modern ICT and PA technologies offer the possibility to collect a large amount of data that can be used to set a precise monitoring of costs with a reduced intervention by farmers, since automatic processes could collect large part of the data and perform information processing activities (Farajpour, 2009).

Theoretical Literature of Research

Theoretically, the relationship between firm size and financial leverage is not clear. According to ISNA balance model, larger firms have greater debt capacity. Also, larger companies usually have more

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diversity, and therefore, have more stable cash flows. Stability of cash reduces the risk and their bankruptcy. They also during the use of debt, have more bargaining power, and can reduce transaction costs associated with the release of long-term debt. Another possibility is that larger companies have more diverse shareholders causing less control over the management of the company. Thus it is likely that managers for reducing the risk of personal loss arising from bankruptcies use more debt. However, when the size of the company as a risk default variable, is considered, where the costs of financial distress is trivial, should not there is a significant positive relationship between financial leverage and firm size (Kurdistani and Mazaher, 2008). According to the theory of stable equilibrium, profitable firms because of less bankruptcy costs and high profitability have high debt ratio. According to Jensen, firms with high profitability can benefit from advantages Regulation and restrictions on debt payments in reducing free cash flows problems. The theory of the hierarchy of financing options suggests that firms prefer internal sources to external sources (Kimiagari and Eynali, 2012).

The Hypothesis of the Research

1. There is a significant relationship between Profitability index and the ratio of debt changes of companies.
2. There is a significant relationship between Changes in firm size and the ratio of debt changes of companies.
3. There is a significant relationship between Profitability index and the ratio of retained earnings changes of companies.
4. There is a significant relationship firm size and the ratio of the changes in retained earnings of the companies.

MATERIALS AND METHODS

Methodology

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. 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. 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.

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, Eviews 7 and Minitab16 are used for analysis

Independent Variable

The ratio of the profitability index ($\mathrm{Pr}\,ofit_{i,t}$): earnings before deducting interest, tax, depreciation on book value of total assets (Kayhan and Titman, 2007).

Firm size ($Size_{i,t}$): is equal to the natural logarithm of the book value of total assets (Wu and Xu, 2005).

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Dependent Variables

The ratio of changes in the company's debt (GD $_{i,t}$): This formula is derived from research of the Myers and Majluf (2008):

$$\text{GD}_{i,t} = \frac{\text{Total liabilities at end of year t} \quad \text{- Company's total debt at end of year (t-1)}}{\text{Book value of total assets}}$$

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

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

Control Variables

Tangible assets ratio (Tang $_{i,t}$): Net property and equipment and machines divided by the book value of total assets (Pastor and Veronesi, 2003).

Investment policy (Inv $_{i,t}$): To get the investment policy, the ratio of capital expenditure to book value of assets is used (Wu *et al.,* 2005).

Dividend of the Company (DivPayer $_{i,\,t}$): Dummy Variable that if the company has paid a cash dividend, it is equal to 1 otherwise it is equal to zero (Baker and Wurgler, 2002).

Cash assets ratio (CashHolding $_{i,\,t}$): cash assets divided by the book value of total assets (Stein, 1996).

Sales growth rate of company (SG_{it}): This formula is derived from the research of Cooney *et al.,* (1993):

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

SG_{it} : 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

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 20Spss are presented in table 1.

According to table 1, the average ratio of changes in debt and the ratio of changes in retained earnings of sample companies has been 0.0507 and 0.0052, and minimum and maximum values, respectively, has been -2.8086 and 0.8985.

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 variables profitability index ratio and firm size, sample companies during the positive period, respectively are 0.1382 and 0.1018. The positive mean the ratio of Tangible assets,

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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.

Table 1: Descriptive statistics of variables of Research

Variable	Number of observations	Average	Standard deviation	The Minimum amount	The maximum amount	Skewness	Elongation
The ratio of changes in the debt	606	0.0507	0.2114	-2.8086	0.8985	-4.253	56.029
The ratio of changes in retained earnings	606	0.0052	0.1069	-0.9446	0.5119	-1.701	16.168
The ratio of profitability index	606	0.1382	0.1382	-0.3274	0.6545	0.437	1.648
Company size	606	0.1018	0.1018	1.5383	2.0781	0.499	0.145
Tangible assets ratio	606	0.1889	0.1889	0.0008	0.8786	0.859	0.391
Investment policy	606	0.0348	0.0348	0.0000	0.4803	4.616	46.689
Dividend	606	0.4259	0.4259	0.0000	1.0000	-1.226	-0.474
The ratio of cash assets	606	0.2179	0.2179	0.0713	0.9723	-0.547	-0.547
Rate of sales growth	606	2.0804	2.0804	-1.0000	49.1606	21.763	5.6.818

Test for Normal Distribution of the Dependent Variable of Research
In this study, this issue through Kolmogorov-Smirnov (KS) is investigated. H_1 and null hypothesis in this test is as follows:

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

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 ratio of changes in debt and changes in retained earnings ratio of companies in the sample are provided.

Table 2: The results of normality test of dependent variable of research

Variable	Number (N)	Statistics (KS)	Significance level (Sig)
The ratio of Changes in the debt	606	2.507	0.000
The ratio of changes in retained earnings	606	4.322	0.000

Given that, for a variables of ratio of changes in debt and the 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 debt and 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.

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Table 3: The results of normality test of Dependent variables after normalization process

Variable	Number (N)	Statistics (K-S)	Significance level (Sig)
The ratio of Changes in the debt	606	0.495	0.967
The ratio of changes in retained earnings	606	0.637	0.812

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	Company size	The ratio of profitability index	The ratio of changes in retained earnings	The ratio of changes in debt	
								1	The ratio of changes in debt (P-Value))
							0 1	0.043 (0.291)	The ratio of changes in retained earnings (P-Value))
						1	0.273 (0.000)	-0.056 (0.1666)	The ratio of profitability index (P-Value)
					1	-0.053 (0.195)	0.008 (0.852)	0.090 (0.027)	Company size (P-Value)
				1	-0.045 (0.682)	0.045 (0.272)	-0.004 (0.924)	0.034 (0.398)	The ratio of Tangible assets (P-Value))
			1	-0.132 (0.001)	0.052 (0.197)	-0.496 (0.000))	-0.314 (0.000))	-0.153 (0.000))	Investment policy P-Value))
		1	0.030 (0.463)	-0.053 (0.194)	-0.054 (0.186)	0.063 (0.121)	0.249 (0.000)	-0.044 (0.274)	Dividend (P-Value))
	1	0.075 (0.063)	0.200 (0.000)	-0.669 ((0.000)	-0.163 (0.000)	-0.089 (0.029)	-0.050 (0.216)	0.087 (0.032)	The ratio of cash assets (P-Value))
1	-0.026 (0.525)	0.004 (0.920)	-0.043 (0.290)	0.002 (0.952)	0.052 (0.203)	0.019 (0.647)	0.064 (0.114)	0.014 (0.722)	The ratio of sales growth P-Value))

According to table 3, since after normalizing data, significance level (Sig) of statistic Kolmogorov - Smirnov for the dependent variable is greater than 0.05 (0.967, 0.812), thus the H_0 hypothesis at 95% confidence level is confirmed and indicates that the variables of ratio of changes in debt and ratio of changes in retained earnings, after normalization process, have normal distribution.

The Investigation of Correlation between 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

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presented in table 4. Based on the results of the Pearson statistic, the ratio of changes in debt of companies has significant and positive correlation with firm size, and the ratio of cash assets has significant and negative correlation with investment policy. 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. The ratio of Profitability index also has significant and negative correlation with investment policy and the ratio of cash assets. In connection with the company's size, this variable has negative and significant correlation with 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.

Results of Hypothesis Testing

Test Results of the First Hypothesis

The purpose of first hypothesis testing is investigating this issue that whether there is a significant relationship between profitability index and the ratio of changes in debt of companies or not? The statistical hypothesis is stated as follows:

H_0: There is no significant relationship between profitability index and the ratio of changes in debt of companies.

H_1: There is a significant relationship between profitability index and the ratio of changes in debt of companies.

This hypothesis using the model (1) as the panel data is estimated, and if the coefficient β_2 is significant at a confidence level of 95%, it will be confirmed.

$$GD_{i,t} = \beta_0 + \beta_2 \Pr ofit_{i,t} + \beta_4 Tang_{i,t} + \beta_5 Inv_{i,t} + \beta_6 DivPayer_{i,t} + \beta_7 CashHolding_{i,t} + \beta_8 SG_{i,t} + \varepsilon_{i,t} \qquad (1)$$

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

Table 5: The result of Chow and Hausman test results for model (1)

Test	Statistics	Statistics value	Degrees of freedom	P-Value
Chow	F	2.5336	(100.499)	0.0000
Hausman	χ^2	89.5399	6	0.0000

According to the results of the Chow test and P-Value, panel data methods can be used, and also according to the results of Hausman test and P-Value, it is necessary to estimate the model using fixed effects.

In investigation of assumptions of the classical regression, the results of Jarque-Bera indicate that, the remaining of the research model at 95% confidence level have normal distribution, and Breusch-Pagan test results based on this issue that model has problem of non-homogeneity of variance. In this study, to solve this problem, generalized least squares estimation (GLS) is used.

Statistic of Durbin-Watson also indicates that the residuals are independent. In addition, Ramsey test results indicate that the model does not have clear error. Summary results of these tests are presented in Table 6.

Table 6: The results of tests related to the statistical assumptions of the model (1)

Jarque-Bera statistic		Breusch-Pagan test		Durbin statistic	Watson	Ramsey test	
χ^2	P-Value	F	P-Value	D		F	P-Value
1.9323	0.6457	2.2074	0.0408	2.4073		10.1173	0.2145

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

Table 7: The results of the first hypothesis test using fixed-effects method

The dependent variable: the ratio of changes in debt
Number of views: 606 companies- year

Variable	Coefficient	Statistics t	P-Value	Relationship
Fixed component	-0.1305	-2.0241	0.0435	Negative
profitability index	-0.5197	-7.3414	0.0000	Negative
The ratio of Tangible assets	0.2219	3.1748	0.0016	Positive
Investment policy	-3.6306	-11.0620	0.0000	Negative
Dividend	-0.0155	-1.3933	0.1641	Meaningless
The ratio of the cash assets	0.5549	6.6984	0.0000	Positive
Rate of sales growth	0.0034	0.5965	0.5511	Meaningless
The determination coefficient of model				0.3776
Statistics F				2.8571
(P - Value)				(0.0000)

The model is estimated using Eviews 7 software as follows:

$$GD_{i,t} = -0.1305 - 0.5197 \Pr ofit_{i,t} + 0.2219 Tang_{i,t} - 3.6306 Inv_{i,t} - 0.0155 DivPayer_{i,t} + 0.5549 CashHolding_{i,t} + 0.0034 SG_{i,t} + \varepsilon_{i,t}$$

In investigation of being significant of model, given that the probability of F-statistic is smaller than 0.05 (0.0000), with 95% confidence, being significance of the model is confirmed. Determining coefficient of model also indicates that, 37.76 percent of ratio of changes in debt of companies is explained by the variables entered in the model. In investigation of being significant of coefficients given the results presented in table 10, since the possibility of t-statistic for variable coefficient of profitability index is smaller than 0.05 (0.0000), therefore, it is confirmed that there is significant relationship between Profitability index and ratio of changes in debt at the 95 percent confidence level. A negative coefficient for this variable (-0.5197), indicating that there is an inverse relationship between Profitability index and the ratio of changes in debt of companies.

Test Results of the Second Research Hypothesis

In the second hypothesis, the relationship between firm size and the ratio of the changes in debt of companies are also studied, and its statistical hypothesis is stated as follows:

H_0: There is no significant relationship between company size and the ratio of changes in debt of companies.

H_1: There is a significant relationship between company size and the ratio of changes in debt of companies.

This hypothesis using the model (2) as the panel data is estimated, and if the coefficient β_3 is significant at a confidence level of 95%, it will be confirmed.

$$GD_{i,t} = \beta_0 + \beta_3 LnSize_{i,t} + \beta_4 Tang_{i,t} + \beta_5 Inv_{i,t} + \beta_6 DivPayer_{i,t} + \beta_7 CashHolding_{i,t} + \beta_8 SG_{i,t} + \varepsilon_{i,t} \quad (2)$$

The results of the Chow test (to determine the use of panel data or hybrid data method) and Hausman (to determine the use of fixed or random effects in the method of panel data) for model (2), are presented in Table 8.

Table 8: The results of Chow and Hausman test for model (2)

Test	Statistics	Statistics value	Degrees of freedom	P-Value
Chow	F	2.1058	(100.499)	0.0000
Hausman	χ^2	94.2436	6	0.0000

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According to the results of the Chow test and P-Value, panel data methods can be used, and also according to the results of Hausman test and P-Value, it is necessary to estimate the model using fixed effects. In investigation of assumptions of the classical regression, the results of Jarque-Bera indicate that, the remaining of the research model at 95% confidence level have normal distribution, and Breusch-Pagan test results based on this issue that model has problem of non-homogeneity of variance. In this study, to solve this problem, generalized least squares estimation (GLS) is used. Statistic of Durbin-Watson also indicates that the residuals are independent (because Durbin-Watson Statistics is between1.5 - 2.5). In addition, Ramsey test results indicate that the model does not have clear error. Summary results of these tests are presented in Table 9.

Table 9: The results of test related to the statistical assumptions of the model (2)

Jarque-Bera statistic		Breusch-Pagan test		Durbin-Watsonstatistic	Ramsey test	
χ^2	P-Value	F	P-Value	D	F	P-Value
1.5111	0.3254	2.1456	0467/0	2.39	3.7755	0.2235

According to the results of Chow and Hausman tests, and also the results of test the assumptions of the classical regression, model (2) using panel data and as fixed effects be estimated. The results are presented in Table 10.

Table 10: The results of the second hypothesis test using fixed-effects method
The dependent variable is the ratio Changes in debt
Number of views: 606 years - now

Variable	Coefficient	Statistics t	P-Value	Relation
Fixed component	-2.8400	-7.5335	0.0000	Negative
firm size	1.5280	609159	0.0000	Positive
The ratio of Tangible assets	0.2535	3.4479	0.0006	Positive
Investment policy	-2.6715	-7.6429	0.0000	Negative
Dividend	-0.0172	-1.5060	0.1327	Meaningless
The ratio of the cash assets	0.3902	4.5103	0.0000	Positive
Rate of sales growth	0.0014	0.2513	0.8016	Meaningless
The determination coefficient of model				0.3478
Statistics F				2.5109
(P - Value)				(0.0000)

The model is estimated using Eviews 7 software as follows:

$$GD_{i,t} = -2.8400 + 1.5280 LnSize_{i,t} + 0.2535 Tang_{i,t} - 2.6715 Inv_{i,t} - 0.0172 DivPayer_{i,t} + 0.3902 CashHolding_{i,t} + 0.0014 SG_{i,t} + \varepsilon_{i,t}$$

In investigation of being significant of model, given that the probability of F-statistic is smaller than 0.05 (0.0000), with 95% confidence, being significance of the model is confirmed. Determining coefficient of model also indicates that, 34.78 percent of ratio of changes in debt of companies is explained by the variables entered in the model. In investigation of being significant of coefficients given the results presented in Table 10, since the possibility of t-statistic for variable coefficient of firm size is smaller than 0.05 (0.0000), therefore, it is confirmed that there is significant relationship between company size and ratio of changes in debt at the 95 percent confidence level. A positive coefficient for this variable (1.5280), indicating that there is a direct relationship between company size and the ratio of changes in debt of companies.

The Results of Third Hypothesis Test

In the third hypothesis, the relationship between Profitability Index and the ratio of Changes in retained earnings of companies is studied, and its statistical hypothesis is stated as follows:

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H_0: There is no significant relationship between Profitability Index and the ratio of Changes in retained earnings of companies.

H_1: There is a significant relationship between Profitability Index and the ratio of Changes in retained earnings of companies.

This hypothesis using the model (3) as the panel data is estimated, and if the coefficient β_2 is significant at a confidence level of 95%, it will be confirmed.

$$GRE_{i,t} = \beta_0 + \beta_2 \Pr ofit_{i,t} + \beta_4 Tang_{i,t} + \beta_5 Inv_{i,t} + \beta_6 DivPayer_{i,t} + \beta_7 CashHolding_{i,t} + \beta_8 SG_{i,t} + \varepsilon_{i,t} \quad (3)$$

The results of the Chow test (to determine the use of panel data or hybrid data method) and Hausman (to determine the use of fixed or random effects in the method of panel data) for model (3), are presented in Table 14.

Table 14: The results of Chow and Hausman test for model (3)

Test	Statistics	Statistics value	Degrees of freedom	P-Value
Chow	F	1.5703	(100.499)	0.0096
TheAsmn	χ^2	9.5752	6	0.0437

According to the results of the Chow test and P-Value, panel data methods can be used, and also according to the results of Hausman test and P-Value, it is necessary to estimate the model using fixed effects. In investigation of assumptions of the classical regression, the results of Jarque-Bera indicate that, the remaining of the research model at 95% confidence level have normal distribution, and Breusch-Pagan test results based on this issue that model has problem of non-homogeneity of variance. In this study, to solve this problem, generalized least squares estimation (GLS) is used. Statistic of Durbin-Watson also indicates that the residuals are independent (because Durbin-Watson Statistics is between1.5 - 2.5). In addition, Ramsey test results indicate that the model does not have clear error. Summary results of these tests are presented in Table 15.

Table 15: The results of tests related to the statistical assumptions of the model (3)

Jarque-Bera statistic		Breusch-Pagan test		Durbin-Watsonstatistic	Ramsey test	
χ^2	P-Value	F	P-Value	D	F	P-Value
4.3752	0.1121	11.1695	0.0000	2.29	28.4916	0.3265

Table 16: The results of the third hypothesis test using fixed-effects method
The dependent variable is the ratio Changes in debt
Number of views: 606 years - now

Variable	Coefficient	Statistics t	P-Value	Relation
Fixed component	-0.0487	-1.9296	0.0542	Meaningless
Profitability Index	0.1068	3.7665	0.0002	Positive
The ratio of Tangible assets	-0.0079	-0.2955	0.7677	Meaningless
Investment policy	-0.3514	-2.6522	0.0082	Negative
Dividend	0.0465	10.9118	0.0000	Positive
The ratio of the cash assets	0.0252	0.8008	0.4236	Meaningless
Rate of sales growth	0.0022	1.0265	0.3051	Meaningless
The determination coefficient of model			0.3021	
Statistics F			2.0381	
(P - Value)			(0.0000)	

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According to the results of Chow and Hausman tests, and also the results of test the assumptions of the classical regression, model (3) using panel data and as fixed effects be estimated. The results are presented in Table 16.

The model is estimated using Eviews 7 software as follows:

$$GRE_{i,t} = -0.0487 + 0.1068\Pr ofit_{i,t} - 0.0079Tang_{i,t} - 0.3514Inv_{i,t} + 0.0465DivPayer_{i,t} + 0.0252CashHolding_{i,t} + 0.0022SG_{i,t} + \varepsilon_{i,t}$$

In investigation of being significant of model, given that the probability of F-statistic is smaller than 0.05 (0.0000), with 95% confidence, being significance of the model is confirmed. Determining coefficient of model also indicates that, 30.21 percent of ratio of Changes in retained earnings is explained by the variables entered in the model. In investigation of being significant of coefficients given the results presented in Table 13, since the possibility of t-statistic for variable coefficient of Profitability Index is smaller than 0.05 (0.0002), therefore, it is confirmed that there is significant relationship between Profitability Index and ratio of Changes in retained earnings at the 95 percent confidence level. A positive coefficient for this variable (0.1068), indicating that there is a direct relationship between Profitability Index and ratio of Changes in retained earnings.

The Results of Fourth Hypothesis Test

The purpose of the Fourth hypothesis is to examine asymmetric relationship between cash flows due to company size and the ratio of changes in retained earnings of the companies, and its statistical hypothesis is stated as follows:

H_0: There is no significant relationship between company size and the ratio of changes in retained earnings of the companies.

H_1: There is a significant relationship between company size and the ratio of changes in retained earnings of the companies.

This hypothesis using the model (4) as the panel data is estimated, and if the coefficient β_3 is significant at a confidence level of 95%, it will be confirmed.

$$GRE_{i,t} = \beta_0 + \beta_3 LnSize_{i,t} + \beta_4 Tang_{i,t} + \beta_5 Inv_{i,t} + \beta_6 DivPayer_{i,t} + \beta_7 CashHolding_{i,t} + \beta_8 SG_{i,t} + \varepsilon_{i,t} \quad (4)$$

The results of the Chow test (to determine the use of panel data or hybrid data method) and Hausman (to determine the use of fixed or random effects in the method of panel data) for model (4), are presented in Table 17.

Table 17: The results of Chow and Hausman test for the model (4)

Test	Statistics	Statistics value	Degrees of freedom	P-Value
Chow	F	1.6749	(100.499)	0.0016
TheAsmn	χ^2	6.8950	6	0.0199

According to the results of the Chow test and P-Value, panel data methods can be used, and also according to the results of Hausman test and P-Value, it is necessary to estimate the model using fixed effects. In investigation of assumptions of the classical regression, the results of Jarque-Bera indicate that, the remaining of the research model at 95% confidence level have normal distribution, and Breusch-Pagan test results based on this issue that model has problem of non-homogeneity of variance. In this study, to solve this problem, generalized least squares estimation (GLS) is used.

Table 18: The results of test related to the statistical assumptions of the model (4)

Jarque-Bera statistic		Breusch-Pagan test		Durbin-Watsonstatistic	Ramsey test	
χ^2	P-Value	F	P-Value	D	F	P-Value
3.1077	0.2114	5.8643	0.0000	2.01	22.4094	0.1612

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Statistic of Durbin-Watson also indicates that the residuals are independent (because Durbin-Watson Statistics is between1.5 - 2.5). In addition, Ramsey test results indicate that the model does not have clear error. Summary results of these tests are presented in Table 18. According to the results of Chow and Hausman tests, and also the results of test the assumptions of the classical regression, model (4) using panel data and as fixed effects be estimated. The results are presented in Table 19.

Table 19: The results of the Fourth hypothesis test using fixed-effects method

The dependent variable is the ratio Changes in debt
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Variable	Coefficient	Statistics t	P-Value	Relation
Fixed component	-0.3730	-2.9809	0.0030	Negative
Firm size	1.1995	2.8131	0.0051	Positive
The ratio of Tangible assets	-0.0132	-0.4643	0.6426	Meaningless
Investment policy	-0.5200	-4.3414	0.0000	Negative
Dividend	0.479	10.6815	0.0000	Positive
The ratio of the cash assets	0.5844	0.5473	0.5844	Meaningless
Rate of sales growth	0.0020	0.8856	0.3762	Meaningless
The determination coefficient of model				0.2964
Statistics F				9
(P - Value)				(0.0000)

The model is estimated using Eviews 7 software as follows:

$$GRE_{i,t} = -0.3730 + 1.1995 LnSize_{i,t} - 0.0132 Tang_{i,t} - 0.5200 Inv_{i,t} + 0.0479 DivPayer_{i,t} + 0.0178 CashHolding_{i,t} + 0.0020 SG_{i,t} + \varepsilon_{i,t}$$

In investigation of being significant of model, given that the probability of F-statistic is smaller than 0.05 (0.0000), with 95% confidence, being significance of the model is confirmed. Determining coefficient of model also indicates that, 29.64 percent of ratio of Changes in retained earnings is explained by the variables entered in the model. In investigation of being significant of coefficients given the results presented in Table 19, since the possibility of t-statistic for variable coefficient of firm size is smaller than 0.05 (0.0051), therefore, it is confirmed that there is significant relationship between company size and ratio of Changes in retained earnings at the 95 percent confidence level. A positive coefficient for this variable (1.1995), indicating that there is a direct relationship between company size and ratio of Changes in retained earnings.

Conclusion

In this study, we have examined the relationship between various measures of company growth and sustainability of the capital structure of listed companies in Tehran Stock Exchange with a total of 101 samples in 2006 to 2011. To gather information, the library method, and also for extracting statistical information, the audited financial statements of listed companies in Tehran Stock Exchange are used, and for analysis, panel data method is used. In relation to confirmation of the second hypothesis, it can be concluded that there is significant and inverse relationship between profitability index the ratio of changes in debt of companies.

The results of second hypothesis of our research is consistent with findings of research Titman and Kayhan (2007) and Wei *et al.,* (2009), and it is inconsistent with findings of researches of the Opler *et al.,* (1999) and Wei and Wang (2005). In relation to confirmation of the third hypothesis, it can be concluded that there is significant and direct relationship between company size the ratio of changes in debt of companies.). In relation to confirmation of the fifth hypothesis, it can be concluded that there is significant and direct relationship between Profitability index and the ratio of changes in retained earnings of companies. In relation to confirmation of the sixth hypothesis, it can be concluded that there is significant and direct relationship between company size and the ratio of changes in retained earnings of companies. The results of sixth hypothesis of our study in terms of relationship are consistent with the

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results of some studies such as Liu (2009) and Pastor and Veronesi (2003), and it is inconsistent with the results of other research such as: Kachik and colleagues (1990).

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