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THE INVESTIGATION RELATIONSHIP BETWEEN VARIOUS MEASURES OF FIRM GROWTH AND SUSTAINABILITY OF THE CAPITAL STRUCTURE IN 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. The results of research in relation to first hypothesis of research indicate that there is a direct relationship between the company's growth opportunities and debt changes ratio. Furthermore, the results show that in relation to the second 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 third 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 fifth and sixth 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: *Growth opportunities, 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 (Fakhari et al, 2011). 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 use them with decisions about current assets, long-term assets and investments (Razzaghi, 2007, 3). Therefore, the debt is one of the main components of the capital structure of most

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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 has impact on (growth opportunities, profitability index, firm size) on the changes ratio in debt 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.

REVIW OF LITERATURE
foreign background
Nissim and Penman (2003), have attempted to analyze the leverage and the impact of financial leverage, debt leverage resulting from the operations and total leverage on profitability and the ratio P/B review, and reached the conclusion that, due to the debt leverage due to operations than financial leverage has greater positive impact on profitability P/B ratio .

Brad Shaw 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.

Byoun (2009) has done a study in America entitled "How and when companies change capital structure to the determined targets?" The population consists of all companies in America during the period 1971 to 2003, which following previous studies, finance companies and utility companies were removed from the sample. The results showed that the majority of changes in capital structure, occurs when companies have excess cash and their debt level is higher than debt capacity specified in the Company, When companies have a cash deficit and their debt level is lower than the debt capacity specified in the Company, or when they have excess cash and their debt is lower than their debt capacity determined by the company, the speed of these changes is reduced. Also, the rate of change in the capital structure of companies that have surplus cash and their debt is higher debt capacity determined by the company is higher than the rate of changes in companies that have a cash deficit and their debt is lower than debt capacity determined of the company and this may be because changes costs resulting from reduced debt is lower than costs which will only use for increase the debt. Byoun concluded that companies that have the debt lower than capacity in comparison with companies which have higher debt than capacity, use debt for financing.

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.

Internal background
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

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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.

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 second hypothesis, financing through retained earnings (reserves) more than borrowing on stock returns is effective. The results of the first and second hypothesis suggest that the impact of financing method through retained earnings more than borrowing on stock returns and price is effective. In the third 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.

FarajpourAhangar (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.

THEORETICAL LITERATURE OF RESEARCH

According to the theory of stable equilibrium, growing companies in bankruptcy more than other lose their value. Several theories which have been proposed in the theory of agency costs, have confirmed this negative relationship. In contrast, the hierarchy theory of financing options suggests that we expect firms with high investment projects, over time, have accumulated a lot of debt (Kimiagari, et al, 2008)

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 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 (Kordestani and Najafi, 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, et al, 2008).

THE HYPOTHESIS OF THE RESEARCH

There is a significant relationship between company's growth opportunities and debt changes ratio of companies.

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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 growth opportunities of the company and changes ratio in retained earnings of companies.
4.   There is a significant relationship between Profitability index and the ratio of retained earnings changes of companies.
5.   There is a significant relationship firm size and the ratio of the changes in retained earnings of the 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
Growth opportunities (M/B):Growth opportunities is the ratio of market value to book value (Cheng et al, 2009). The ratio of the profitability index ($profit_{i,t}$): earnings before deducting interest, tax, depreciation on book value of total assets (Kayhan and Titman, 2007)
Company Size ($Size_{i,t}$): is equal to the natural logarithm of the book value of total assets (Wu and Xu, 2005).

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):

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

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

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

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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 and 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$_{i,t}$): 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

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.

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 of growth opportunities, profitability index ratio and firm size, sample companies during the positive period, respectively are

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1.0068, 0.1382 and 0.1018. The positive mean the ratio of Tangible assets, investment policy, dividend, ratio of cash assets and the growth rate of sales respectively are0.1889, 0.0348, 0.4259, 0.2179 and 2.0804.

Table 1: Descriptive statistics of variables of Reserch

Elongation	Skewness	The maximum amount	The Minimum amount	Standard deviation	Average	Number of observations	Variable
56.029	-4.253	0.8985	-2.8086	0.2114	0.0507	606	The ratio of changes in the debt
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
1.648	0.437	0.6545	-0.3274	0.1382	0.1382	606	The ratio of profitability index
0.145	0.499	2.0781	1.5383	0.1018	0.1018	606	Company size
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

TEST FOR NORMAL DISTRIBUTION OF THE DEPENDENT VARIABLE OF RESERCH

In this study, this issue through Kolmogorov-Smirnov (KS) is investigated. H1 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), H0 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.

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

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

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, H0 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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Figure 3: The results of normality test of Dependent variables after normalization process

Significance level (Sig)	Statistics (K-S)	Number (N)	Variable
0.967	0.495	606	The ratio of Changes in the debt
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 (0.967, 0.812), thus the 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 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. 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. 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. 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.

Figure 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	Growth opportunities	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	0.025 (0.541)	0.013 (0.753)	Growth opportunities (P-Value))
						1	0.103 (0.011)	0.273 (0.000)	-0.056 (0.1666)	The ratio of profitability index (P-Value)
					1	-0.053 (0.195)	-0.005 (0.899)	0.008 (0.852)	0.090 (0.027)	Company size (P-Value)
				1	-0.045 (0.682)	0.045 (0.272)	0.090 (0.027)	-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)	-0.063 (0.121)	-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)	-0.001 (0.988)	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)	-0.069 (0.090)	-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)	-0.019 (0.641)	0.064 (0.114)	0.014 (0.722)	The ratio of sales growth P-Value))

EVALUATION OF MULTICOLLINEARITY AMONG VARIABLES
In this study, we investigate the multicollinearity relationship between independent variables using Pearson's correlation coefficient. As shown in table 4, variables of growth opportunities, the ratio of

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profitability index and company size have direct correlation with each other which this correlation between the variables growth opportunities and the ratio of profitability index is very strong. Thus, given problem of multicollinearity among these three variables, the simultaneous entry of variables in a model is not possible, and it is necessary to examine and test them in separate models. In conjunction with other variables, given the lack of strong correlations can be said, there was no multicollinearity problem between them and the simultaneous entry of them in model leads to create multicollinearity problem.

RESULTS OF HYPOTHESIS TESTING

Test results of the first research hypothesis

The aim of the test of the first hypothesis is to investigate relationship between firm growth opportunities and the ratio of changes in debt of companies, and its statistical hypothesis is defined as follows:

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

H_1: There is a significant relationship between growth opportunities 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_1 is significant at a confidence level of 95%, it will be confirmed.

$$GD_{i,t} = \beta_0 + \beta_1 M/B_{i,t} + \beta_4 Tang_{i,t} + \beta_5 Inv_{i,t} +$$

$$\beta_6 DivPayer_{i,t} + \beta_7 CashHolding_{i,t} + \beta_8 SG_{i,t} + \varepsilon_{i,t} \quad (1)$$

To determine that whether the use of panel data in estimation of the model would be effective or not the Chow test or F-bound and in order to determine which method (fixed effects or random effects) to estimate is more appropriate (for detection Fixed or random differences of sectional units) Hausman test is used. The results of these tests are presented in table 5.

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

P-Value	Degrees of freedom	Statistics value	Statistics	Number	Test
0.0000	(100.499)	1.8799	F	606	Chow
0.0000	6	78.6082	χ^2	606	Hausman

According to the results of the Chow test and its P-Value (0.0000), the hypothesis is rejected at the 95% significance level, indicating that panel data method can be used. Also according to the results of the Hausman test and its P-Value (0.0000) which is less than 0.05 , is the hypothesis is rejected at the 95% significance level, and the hypothesis is accepted, so, it is necessary that model using fixed effects be estimated. Jarque-Bera test results indicate that the remaining obtained from evaluation of research model at 95% confidence level, have normal distribution, so that the probability of this test (0.18541) is greater than 0.05. Another classical regression assumption is consistency of variance of the remaining. If, variances are dissimilar, then estimator doesn't have the least variance. In this study, to investigate the homogeneity of variances, test Breusch-Pagan was used. Given the significance level of the test which is less than 0.05 (0.0412), H0 hypothesis based on homogeneity of variance is rejected, and can be said that this model has variance anisotropy problem. In this study, to solve this problem, generalized least squares estimation (GLS) is used. In this study, to test not correlated residuals which is one of the assumptions of regression analysis, and is called Autocorrelation, the Durbin-Watson test (D-W) is used. According to preliminary results from the model, whereas the Durbin-Watson statistic is 2.38, and since it is between 1.5 and 2.5, it can be concluded that the residuals are independent. In addition, to test whether the model has linear relationship and whether this model in terms of being linear or not, is explained properly, Ramsey test is used. Given that confidence level of the Ramsey test (0.1574) is greater than 0.05, so the

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hypothesis H0 of this test about model's linearity is confirmed and the model does not have clear error. Summary results of these tests are presented in table 6.

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

Jarque-Bera statistic		Breusch-Pagan test		Durbin-Watson statistic	Ramsey test	
χ^2	P-Value	F	P-Value	D	F	P-Value
1.3810	0.1854	2.2031	0.0412	2.38	4.9412	0.1574

According to the results of Chow and Hausman test, 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. The model is estimated using Eviews 7 software as follows:

$$GD_{i,t} = -0.1971 + 0.0147M/B_{i,t} + 0.2944Tang_{i,t} - 2.6609Inv_{i,t} - 0.0279DivPayer_{i,t} + 0.5208CashHolding_{i,t} + 0.0013SG_{i,t} + \varepsilon_{i,t}$$

Table 7: Results of first hypothesis testing using fixed effects

The dependent variable: the ratio of changes in debt Number of views: 606 companies- year				
Variable	Coefficient	Statistics t	P-Value	Relationship
Fixed component	-0.1971	-2.9400	0.0034	Negative
Growth opportunities	0.0147	2.3643	0.0184	Positive
The ratio of Tangible assets	0.2944	3.9259	0.0001	Positive
Investment policy	-2.6609	-7.4392	0.0000	Negative
Dividend	-0.0279	-2.4018	0.0167	Negative
The ratio of the cash assets	0.5208	6.1182	0.0000	Positive
Rate of sales growth	0.0013	0.2424	0.8086	Meaningless
The determination coefficient of model				0.3013
Statistics F (P-Value)				2.0308 (0.0000)

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, 30.13 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 7, since the possibility of t-statistic for variable coefficient of growth opportunities is smaller than 0.05 (0.0184), therefore, it is confirmed that there is significant relationship between growth opportunities and ratio of changes in debt at the 95 percent confidence level. A positive coefficient for this variable (0.0147), indicating that there is a direct relationship between growth opportunities and the ratio of changes in debt of companies.

Test results of the second hypothesis
The purpose of second 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:
There is no significant relationship between profitability index and the ratio of changes in debt of companies.
There is a significant relationship between profitability index and the ratio of changes in debt of companies.

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

$$GD_{i,t} = \beta_0 + \beta_2 \Pr ofit_{i,t} + \beta_4 Tang_{i,t} + \beta_5 Inv_{i,t}$$

$$+ \beta_6 DivPayer_{i,t} + \beta_7 CashHolding_{i,t} + \beta_8 SG_{i,t}$$

$$+ \varepsilon_{i,t}$$

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 result of Chow and Hausman test results for model (2)

P-Value	Degrees of freedom	Statistics value	Statistics	Number	Test
0.0000	(100.499)	2.5336	F	606	Chow
0.0000	6	89.5399	χ^2	606	Hausman

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 9.

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

Jarque-Bera statistic		Breusch-Pagan test		Durbin Watson statistic	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

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 10.

Table 10: Results of first hypothesis testing using fixed-effects

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 (P-Value)				2.8571 (0.0000)

Research Article

The model is estimated using Eviews 7 software as follows:

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

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 growth opportunities 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 third research hypothesis
In the third hypothesis, the relationship between firm size and the ratio of the changes in debt of companies are also studied, and its statistical hypothesis isstated as follows:
There is no significant relationship between company size and the ratio of changes in debt of companies.
There is a significant relationship between company size and the ratio of changes in debt of companies.

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

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

The results of the Chow test (to determine th 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 11.

Table 11: The results of Chow and Hausman test for model (3)

P-Value	Degrees of freedom	Statistics value	Statistics	Number	Test
0.0000	(100.499)	2.1058	F	606	Chow
0.0000	6	94.2436	χ^2	606	Hausman

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 12

Table 12- The results of test related to the statistical assumptions of the model (3)

Jarque-Bera statistic		Breusch-Pagan test		Durbin Watson statistic	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

Research Article

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 13.

Figure 13- 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	-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 (P-Value)				2.5109 (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 13, since the possibility of t-statistic for variable coefficient of growth opportunities 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.

Test results of the fourth hypothesis test
In the fourth hypothesis, the relationship between growth opportunities and the ratio of Changes in retained earnings of companies is studied, and its statistical hypothesis is stated as follows:
There is no significant relationship between growth opportunities and the ratio of Changes in retained earnings of companies.
There is a significant relationship between growth opportunities and the ratio of Changes in retained earnings of companies.
This hypothesis using the model (4) as the panel data is estimated, and if the coefficient is significant at a confidence level of 95%, it will be confirmed

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

Research Article

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 14

Table 14: The results of Chow and Hausman results for model (4)

P-Value	Degrees of freedom	Statistics value	Statistics	Number	Test
0.0087	(100.499)	1.6054	F	606	Chow
0.0495	6	6.4038	χ^2	606	Hausman

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 between 1.5 - 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 test related to the statistical assumptions of the model (4)

Jarque-Bera statistic		Breusch-Pagan test		Durbin Watson statistic	Ramsey test	
χ^2	P-Value	F	P-Value	D	F	P-Value
3.3482	0.1874	6.4049	0.0000	2.18	23.9161	0.1132

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 16.

Figure 16- the results of the fourth hypothesis test using fixed-effects method

The dependent variable ratio of Changes in retained earnings Number of views: 606 years - now				
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
The ratio of Tangible assets	-0.0123	-0.4360	0.6630	Meaningless
Investment policy	-0.5377	-4.4987	0.0000	Negative
Dividend	0.0469	10.2654	0.0000	Positive
The ratio of the cash assets	0.0355	1.1074	0.2686	Meaningless
Rate of sales growth	0.0023	1.0319	0.3026	Meaningless
The determination coefficient of model				0.2870
Statistics F （P-Value）				1.8955 (0.0000)

The model is estimated using Eviews 7 software as follows:

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

Research Article

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, 28.70 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 16, since the possibility of t-statistic for variable coefficient of growth opportunities is smaller than 0.05 (0.0038), therefore, it is confirmed that there is significant relationship between Growth opportunities and ratio of Changes in retained earnings at the 95 percent confidence level. A negative coefficient for this variable (-1.0006), indicating that there is an inverse relationship between Growth opportunities and ratio of Changes in retained earnings.

The results of fifth hypothesis test
In the fifth 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:
There is no significant relationship between Profitability Index and the ratio of Changes in retained earnings of companies.
There is a significant relationship between Profitability Index and the ratio of Changes in retained earnings of companies.
This hypothesis using the model (5) as the panel data is estimated, and if the coefficient is significant at a confidence level of 95%, it will be confirmed.

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

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 (5), are presented in table 17.

Table 17: The results of Chow and Hausman test for model (5)

P-Value	Degrees of freedom	Statistics value	Statistics	Number	Test
0.0096	(100.499)	1.5703	F	606	Chow
0.0437	6	9.5752	χ^2	606	Hausman

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 between 1.5 - 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.

Table 18: The results of tests related to the statistical assumptions of the model (5)

Jarque-Bera statistic		Breusch-Pagan test		Durbin Watson statistic	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

Research Article

According to the results of Chow and Hausman tests, and also the results of test the assumptions of the classical regression, model (5) using panel data and as fixed effects be estimated. The results are presented in table 19.

Figure 19- The results of the fourth hypothesis test using fixed-effects method

The dependent variable ratio of Changes in retained earnings 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 （P- Value）				2.0381 (0.0000)

The model is estimated using Eviews 7 software as follows:

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

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 19, since the possibility of t-statistic for variable coefficient of growth opportunities 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 sixth hypothesis test
The purpose of the sixth 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:
There is no significant relationship between company size and the ratio of changes in retained earnings of the companies.
There is a significant relationship between company size and the ratio of changes in retained earnings of the companies.
This hypothesis using the model (6) as the panel data is estimated, and if the coefficient is significant at a confidence level of 95%, it will be confirmed.

$$GRE_{i,t} = \beta_0 + \beta_3 LnSize_{i,t} + \beta_4 Tang_{i,t} + \beta_5 Inv_{i,t}$$

$$+ \beta_6 DivPayer_{i,t} + \beta_7 CashHolding_{i,t} + \beta_8 SG_{i,t}$$

$$+ \varepsilon_{i,t}$$

Research Article

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 (6), are presented in table 20.

Table 20: The results of Chow and Hausman test for the model (6)

P-Value	Degrees of freedom	Statistics value	Statistics	Number	Test
0.0016	(100.499)	1.6749	F	606	Chow
0.0199	6	6.8950	χ^2	606	Hausman

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 between 1.5 - 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 21.

Table 21: The results of test related to the statistical assumptions of the model (6)

Jarque-Bera statistic		Breusch-Pagan test		Durbin Watson statistic	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

According to the results of Chow and Hausman tests, and also the results of test the assumptions of the classical regression, model (6) using panel data and as fixed effects be estimated. The results are presented in table 22.

Figure 22- the results of the sixth hypothesis test using fixed-effects method

The dependent variable ratio of Changes in retained earnings Number of views: 606 years - now				
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 (P-Value)				9 (0.0000)

The model is estimated using Eviews 7 software as follows:

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

Research Article

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 22, since the possibility of t-statistic for variable coefficient of growth opportunities 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. Using the first hypothesis can be concluded that there is a direct relationship between company's growth opportunities and the ratio of changes in debt. The result of the first hypothesis is in accordance with the significant relationship between the independent variable and dependent of research of Alti (2006), but in terms of the type of relationship (direct or inverse), it is related to the results of Cheng et al (2009) and it is inconsistent with the research of Graham and Harvey (2001). 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 fourth hypothesis, it can be concluded that there is significant and inverse relationship between growth opportunities for the company and the ratio of changes in retained earnings 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 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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