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The relationship between current ratio and financial leverage of the companies listed in Tehran stock exchange

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ABSTRACT

Since companies are developing in today's world and they have to compete with multiple factors and expand their activities through new financing in order to survive, they go after financial resources. The most important issue is to find out how the debt and cash flow generated in the firm affect current ratio. The objective of this research is to determine whether or not there is a significant relationship between current ratio (independent variable) and financial leverage (dependent variable). In the other words, this ratio is known as a measure of liquidity of the company. By liquidity ratios, the company's power to pay current liabilities (when they reach maturity date) can be determined. Among the listed companies in Tehran Stock Exchange, 85 companies during the period 2010-2014 have been selected based off of systematic elimination method. The statistical method used to test hypotheses in this study, is multivariate regression of panel data. Given the research results, there is a significant and inverse relationship between current ratio and financial leverage.

1. Introduction

Accounting is one of the most efficient tools in the service of technological advances and economic and social development of different societies in the world. Meanwhile, due to scientific and technological developments and the growing variety of industrial and service activities, knowledge of accounting has become the fundamental basis in the decision-making process; so that this field during its development has been divided into different branches in order to meet several needs. Nowadays, there is no doubt that the importance of financial issues followed by proper decision-making process in firms must be taken into account. The future life and development of such companies depend on financial decision-making methods to a great extent, and the results regarding corporate performance as well. Financial resources are needed for the company's growth and concerning the usage of financial resources, these resources are always limited and how to determine current ratio is one of the most important issues that managers are dealing with (Razeghi and Rahimian, 2007).

2. The importance of research

Since companies are developing in today's world and they work in a competitive manner, they have to compete with multiple factors and expand their activities through new financing in order to survive, therefore, they require financial resources and project finance and the use of these resources should lead to company's profitability. In fact, the current ratio is the crucial factor of the firm's economic growth; to have the necessary capital investments, there should be some resources for funding, and one of these resources is debts.

The use of debt in the capital structure brings the concept of leverage to mind (capital structure is the combination of debt and shareholders' equity) and leverage is one of the most important concepts of finance, because it has a special place in the firm's capital structure. A firm that does not have any debt is a firm with a capital structure. However, usually there is no such a firm and all firms employ different ratios of leverage.

2.1. Problem statement

Financing methods must be consistent with the firm's current ratio and also leverage and current ratio must be used reasonably in order to maximize corporate value and prevent the adverse consequences of financial risks due to the use of debt. Most studies concerning capital structure on

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large non-financial public companies focus on access to world markets. In the financial analysis of the firm, several tools will be used to determine the value. Analytical ratios or financial indicators are common tools to finance, financial condition, and business performance and they can be used by financial executives, investors, creditors and other authorities and individuals within and outside the organization. Current ratio is one of these ratios and a balance sheet has been used to calculate these ratios. On the other hand, it seems that the current ratio meets most investors' need of cash. Because of it represents an unbiased way to measure the consumption capacity and direct the resources. In addition, calculation problems cannot affect current ratio, it accelerates the prediction of future cash profit, shares and return, and debt and loan, and it is the most comprehensive measure for investors. Moreover, financial analysts have cited the importance of current ratio in evaluating the long-term performance of the firm in many studies.

2.2. Importance of research

Current ratio is one of the most important and critical resources of any economic unit and forecasting current ratio for the future, is one of the necessities for managing economic units. Creditors and other users of accounting information require information related to the current ratio for making financial and investment decisions (Abzari et al. 2007). The standard number seven confirmed by International Accounting Standards Committee says awareness of the current ratio of a business unit is beneficial for users of financial statements to provide a basis to assess the ability of the unit in creating cash and the needs of the unit for employing these funds. Achieving the expected current ratio is largely considered independent of the effects and viewpoints of management. However, evidence suggests managers take action to manage current ratio for reasons such as achieving indicators and forecasts, avoiding waste of resources, achieving greater rewards, etc. (Marsh, 2010).

3. Research background

3.1. Background of domestic studies

Nasiri and Ebrahimpour (2013) determined and calculated factors affecting financial leverage in the capital structure of listed companies in Tehran Stock Exchange, and they considered financial leverage as capital structure. The sample included 90 companies during the period 2000-2009. In their research, variables including total debt to total assets and current ratio were chosen as liquidity criterion, rate of return on shareholders' equity as a measure of corporate profitability, and working capital as independent and effective variables for determining the financial leverage of the firm. Three of these four variables have a significant relationship with capital structure (financial leverage). However, the relationship between current ratio and financial leverage is insignificant. Moreover, given the results, in general, there is a significant relationship between the independent variables of effective factors in determining financial leverage and capital structure (quoted by Aghaei et al., 2009)

3.2. Background of foreign studies

Khalid Alkhatib (2012) studied leverage in listed companies in Jordan Stock Exchange during the period 2007-2010. Growth rate, profit, and the ratio of tangible assets are independent variables and leverage ratio is dependent variable. In the industrial sector, ratio of tangible assets has a significant relationship with leverage, and in the service sector, this relationship between assets ratio and leverage exists as well (quoted by Khalifeh and Akhlaghi, 2013).

3.3. Research objective

Relationship between current ratio and financial leverage in listed companies in Tehran Stock Exchange during the period 2010-2014 was studied.

3.4. Research hypothesis

There is a significant relationship between current ratio and financial leverage.

4. Methodology

4.1. Materials and methods

Regarding classification and in terms of objective, it is an applied research and in terms of methodology, it is a quasi-experimental and ex post facto research. Such studies are more focused on the most effective action and pay less attention to causes. In addition, concerning classification and in terms of data collection, it is a Descriptive/Correlational Research and the methodology used here is based on the market (quoted by Khalifeh and Akhlaghi, 2013).

4.2. Statistical population

The research population includes all the listed companies in Tehran Stock Exchange during the period 2010-2014; this population includes all the companies that have been in different industries and groups during this period of 5 years. A hypothesis related to this statistical population will be studied and examined.

4.3. Sample size and sampling

In this research, sampling is based off of systematic elimination. Concerning the sample, the following restrictions are taken into account. In

other words, the companies of the statistical population will be elected based on the following conditions:

- They should have been listed in Tehran Stock Exchange since February 2009 and their fiscal year should have been ended in late February.
- Companies should not have changed their fiscal year during the aforementioned period.
- They should have been completely provided financial information required for study during the period 2010-2014.
- They should not be a part of banks, financial institutions (investment companies, financial intermediation, holding companies, and leasing companies); i.e. they should be manufacturing companies, because their nature of activity is different.
- Companies should not have been out of bourse before 2014.
- Companies should not be among those companies that have been listed in Tehran Stock Exchange from 2010 onwards.

Based on the requirements above, sampling was done and among listed companies in Tehran Stock Exchange during the period 2010-2014 and based on systematic elimination, 91 companies were selected as the research sample.

4.4. Materials and methods for data collection

In this research, required data collection as well as the research background is based on library method, namely, the study and review of the literature, theses, articles, Persian and English specialized books, and information from websites. The research data and necessary financial information were obtained by examining the documents that Tehran Stock Exchange has reported. By refereeing to firms' financial statements and explanatory notes, we could provide this information. Rahavard Novin and Tadbirpardaz software were used to obtain the financial information of stock companies. CDs released by the Public Relations Unit of Tehran Stock Exchange were also used to reach financial statements and explanatory notes. Finally, EViwes 7 software will be used for data analysis and achieving reliable results.

5. Data analysis

5.1. Descriptive findings

After data collection, it will be discussed using descriptive statistical techniques. In this regard, central tendency and dispersion such as mean, median, standard deviation, variance, skewness, kurtosis, minimum, and maximum will be used.

5.2. Analytical results

Analytical statistics used in this study are as follows:

1. Kolmogorov-Smirnov test: to examine the normal distribution of the variables, Kolmogorov-Smirnov test has been used.
2. Pearson correlation coefficient: this correlation coefficient is a parametric method that will be employed for normally distributed data or large amounts of data.
3. Regression testing: it will be used for evaluating the impact of independent variable on dependent variable.
4. Durbin–Watson test: it is one of the assumptions that will be considered in regression. Errors' independency (the difference between the actual values and the values predicted by the regression equation) from each other.
5. Multicollinearity test: multicollinearity is a condition that shows an independent variable is a linear function of other independent variables.
6. F-Limer test: a question that arises when we are considering the data in most studies: is there any evidence of data integration capabilities or the model is just different for all cross-sectional units?
7. Hausman test: to choose between the estimators of fixed effects (FE) and random effects (RE), Hausman test is being used.

6. Findings

In this research, preliminary data for the calculation of these variables has been extracted from the website of Tehran Stock Exchange, Rahavard Novin software, and Tadbirpardaz software, then, it has been transferred to EXCEL spreadsheet for calculation and analysis. Afterwards, based on the type of hypothesis, EViews software and regression analysis will be used for data analysis and hypothesis testing. To evaluate the normal distribution of a quantitative variable data, SPSS software will be employed here.

6.1. Descriptive findings of variables

Descriptive statistics of the variables of the research are financial leverage (F), current ratio (CR), and firm size (Size) and they are listed in Table 1.

The number of observations of descriptive statistics concerning the companies (85 companies in 5 years) is 425.

According to descriptive statistics, the dispersion index of these variables in different companies is low.

Table 1: Descriptive analysis of research variables

Kurtosis	Skewness	Variance	Standard deviation	Mean	Maximum	Minimum	No.	Variable
-.121	.312	.120	.0012	.001	.0026	.0003	350	F
.389	.943	.015	.159	.776	2.026	.004	455	CR
.209	.306	.327	.156	455	4.99	.13	350	SIZE

The highest standard deviation belongs to the variable of firm size and the lowest standard deviation belongs to the variable of financial leverage. After studying the skewness and kurtosis of each variable and comparing them to normal distribution, it seems that all the research variables are normally distributed, because when the absolute value of the skewness and kurtosis is large, it can be concluded that it has a big difference with a normal distribution. High skewness means number density towards negative or positive and kurtosis indicates towards the shortness and lengthiness of the distribution graph of the variables.

6.2. Normality test of variables

The results of normality test of the search variables are shown in Table 2:

As you can see, the significance level of all the variables is greater than 0.05, therefore, the research variables are normally distributed (Table 3).

Table 2: Normality test of variables

Significance level	Kolmogorov-Smirnov test	Variables
.238	2.031	F
.642	1.741	CR
.238	2.031	SIZE

6.3. Correlation test

Table 3: Pearson correlation test of the research variables

SIZE	CR	F	Variable
-.004	-.432	1	F
.030	1	-.432	CR
1	.030	-.004	SIZE

** Significant at 1% error level

* Significant at 5% error level

6.4. Regression test

According to f-statistic in all the tables related to regression, their significance level is less than 0.05. Hence, regression model of all the hypothesis tests are significant.

6.5. Multicollinearity test

As you can see, the eigenvalues near zero have high internal correlation and small changes in data values will lead to big changes in the coefficient estimation of regression equation. Eigenvalues indicate the likelihood of internal correlation between variables (Table 4).

6.6. Lack of autocorrelation test

Durbin-Watson statistic of each of the hypothesis tests indicates the existence of autocorrelation between the research variables. Since this statistic is 1.5 to 2.5 in all of the tables related to regression tests, it can be concluded that the lack of autocorrelation is rejected.

Table 4: Multicollinearity test

Status index	Eigenvalue	Variables
5.514	0.973	1

6.7. Hypothesis testing and its results

The results of F-Limer test are listed in Table 5: The F test of null hypothesis suggests the use of panel data to the opposite hypothesis, i.e. it shows the use of panel data. According to the significance level of above Table 5, this test indicates the level is heterogeneous and it is more appropriate to use the data of panel method.

Once the panel data method is chosen, F-Limer test will be used to apply Hausman test. In this test, if null hypothesis (H0) is accepted, random effects model will be used, but when H0 is rejected, fixed effect model will be used (Table 6).

Table 5: F-Limer test (intercept point consistency of levels)

Test result	p-value	Degree of freedom	f-statistic	Research models	Null hypothesis
H0 is rejected	*0.000*	*2*	*1.0231*	Model 1	Intercept point

Table 6: Results of Hausman test (choosing between fixed effects and random effects)

Test result	p-value	Degree of freedom	Chi-square test	Research models	Null hypothesis
H0 is rejected	***0.000***	***2***	403452	Model 1	No difference in systematic coefficients.

6.8. Hypothesis testing

The only research hypothesis studies the relationship between current ratio and financial leverage.

H0: there is no relationship between current ratio and financial leverage. H0: $\beta = 0$

H1: there is a relationship between current ratio and financial leverage. H1: $\beta \neq 0$

The result concerning its regression is offered in Table 7:

Table 7: Results of multivariate regression of firm's current ratio and financial leverage

Significance level	t-statistic	Coefficient	Name of variable	Symbol	Type of variable
_	_	_	Financial leverage	Y	Dependent variable
000.0	*113.1*	*589.1*	Alpha	*α*	Fixed amount
002.0	*447.-1*	*331*.-0*	Current ratio	X1	Independent variable
	0/000	*229.1*	*398*.0*	Firm size	Control variable
_	_	*796.1*	Durbin-Watson		
000.0	_	*546.4*	f-statistic		
_	_	*581.0*	Correlation coefficient	R	
_	_	*337.0*	The coefficient of determination	R Square	
_	_	*437.0*	Adjusted coefficient of determination	Adjusted R Square	

*significance level is 0.05.

According to this table, current ratio and firm size (p-value<5%) have a significant relationship with financial leverage. The coefficient of the variables suggests that the relationship between firm size and financial leverage is stronger than the relationship between firm size and current ratio.

There is a significant, inverse relationship between the firm's current ratio and financial leverage and there is a significant, positive relationship between firm size and financial leverage.

Given the f-statistic of regression model, goodness of fit is significant and according to the coefficient of determination, these variables explain 33.7% of the changes in financial leverage.

Since Durbin-Watson statistic has a value from 1.2 to 2.5, it can be concluded that the lack of autocorrelation between the variables is rejected.

7. Discussion and conclusion

There is a significant and inverse relationship between the current ratio and financial leverage of the listed companies in Tehran Stock Exchange during the period 2010-2014.

So it could be argued that companies that have high financial leverage, their current ratio is at a low level. Companies with high current ratio would rather employ internal cash to finance their investment activities.

8. Suggestion based on research result

According to the results of hypothesis testing it is recommended for managers to take financial leverage into account, because it is the company's ability to meet short-term and long-term obligations and as a result, an increase in financial leverage will likely lead to further obligations, while the current ratio is only concerns current commitments

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