

# Original Article: Relationship Between Macroeconomic Variables and Capital Structure in the Iranian Capital Market

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## ABSTRACT

This study investigates the relationship between macroeconomic variables and the structure of capital in the Iranian capital market. Undoubtedly, today the largest amount of capital in the world is exchanged through capital markets in countries, and the economy and the capital market are undoubtedly and strongly influenced by each other. And what is especially important for investors is to increase their wealth in the shortest time, and with the separation of company management from investors and the discussion of agency theory, management decisions benefit from a high reflection among shareholders, including this decision. Financial decisions and financing strategies of managers in companies, according to the decisions of managers in the type of financing, impose different costs on the company, which ultimately affects the profitability and efficiency of companies. Discussion of capital structure and choice of type of financing is one of the concerns of managers in companies, hence the researcher has done much research in relation to choosing the optimal capital structure and type of financing and many factors inside and outside the company that affect it. Macroeconomic factors are among these external factors. Given that in developing countries, including Iran, these macroeconomic variables have been very volatile during the last three decades, it is clear that these fluctuations have an adverse effect on the economy and the capital market will undoubtedly affect the decisions of managers. They have cast a shadow and made them have serious doubts about this.

## Introduction

In today's investment world, decision-making is perhaps the most important part of the investment process, in which investors need to make the most optimal decisions in order to maximize their profits and wealth. In this regard, the most important factor is the information of decision process. Information can have a

significant impact on the decision-making process. Because it causes different decisions in different people. In companies, decisions on capital structure are also influenced by information. Economists consider economic information as one of the information resources of financial managers [1].

For this reason, one of the purposes of preparing economic variables is to provide information to

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facilitate decision making. In developed countries, due to economic stability, future economic conditions are predictable for most individuals and companies, and by considering these conditions, they try to optimize their decisions, but in underdeveloped countries, the development of this issue due to fluctuations and turbulence in the economic environment is far from the mind or impossible and during various researches, the relationship between macroeconomic variables and accounting variables has been studied and evaluated. The question is whether macroeconomic variables affect the structure of capital in the Iranian capital market or not. Therefore, the main approach in this research is the experimental test of the effect of economic variables with debt ratio.

### Background of Research

Sinai (2005) studied the effect of corporate characteristics on the capital structure and named the size of the company, profitability, growth opportunities and tangible assets as the most important parameters within the company affecting the financial leverage of companies. Namazi (2005) reported that there is a positive relationship between capital structure and profitability of companies that this relationship is influenced by the type and also an industry [2].

Nemati (2009) showed that in Iran, as in the countries of East Asia, there is a relationship between the ratio of fixed assets to total assets and the size of the company to the capital structure and there is a negative relationship between profitability and current ratio with capital structure. Sajjadi (2010) approached the effect of macroeconomic variables on the total stock index in the Tehran Stock Exchange and found a negative relationship between inflation and liquidity with the growth rate of the stock price index.

In a study, Riotis (2010) investigated the effect of companies' characteristics on their capital structure in Greece and found a significant

relationship between the current ratio and the interest rate and value of the company with the capital structure.

Bokpin (2010) studied the effect of macroeconomic variables on financial decisions of the capital structure and found a significant relationship between GDP and interest rates with decisions about the structure of capital and financial leverage in companies. Imran (2018) reported that there is a positive relationship between capital structure and company size.

In examining the structure of capital in Portugal, Cerasquier (2017) has proved the existence of a significant relationship between size and fixed assets with the structure of capital or the amount of long-term debt to total assets in companies. In his research, Viviani (2017) examined the determining and effective factors in the capital structure of commercial companies in France and considered the number of long-term debts in companies to be different depending on the type of industry. Amido (2016) also studied the factors affecting the capital structure in Ghanaian banks and found a significant relationship between tax rate, growth rate and asset structure, the size of banks and the capital structure.

### Data Analysis

#### *Descriptive indicators of variables*

In order to better understand the nature of the population studied in the study and become more familiar with the research variables, before analyzing the statistical data, it is necessary to describe the data [2].

Therefore, before testing the research hypotheses, the research variables are briefly examined in Table (1). This table contains indicators to describe the research variables. These indices include central indices, dispersion indices and distribution shape indices.

**Table 1.** Indicators describing research variables, central indices, dispersion indices and distribution shape indices

Bank interest rates	dollar price	Liquidity rate	The inflation rate	Debt ratio	Variables Indicators
625	625	625	625	623	Number
13	9399/4	1620600	15/5	0.614	average
0.06405	12/634	19794/2	0.22727	0.0077	Mean standard error
1/60128	3/1586e2	4/94855e5	5/69173	.19342	Standard deviation
2/564	9/977e4	2/44e11	32/396	0.037	Variance
4	897	1/43e6	14/60	1/66	Domain changes
15/8	9920	2/36e6	25/4	1/73	The highest
11/8	9023	921019	10/8	1/06	the lowest

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Table 1 shows the characteristics of the research variables. The first line of this table states that the number of all data for all variables studied is equal to 125 per year and up to 625 per year. And the second line shows the average of the collected variables separately, which is, for example, the average return on the debt ratio by 0.614. The fifth line shows the variance and scatter of variables around the mean, which is the debt ratio variance by 0.037. The sixth line describes the changes of the largest and smallest numbers as the amplitude of the changes [3].

*Analysis of research hypotheses*

*Checking the assumption on the normality of the variables*

Since the normality of the variables depends on the normality of the remainder of the model; It is necessary to check the normality of the model before fitting it.

The null hypothesis and the hypothesis opposite to the normality test are as follows:

$$\left\{ \begin{array}{l} H_0 : \text{Data distribution is normal} \\ H_1 : \text{Data distribution is not normal} \end{array} \right.$$

The Kolmogorov-Smirnov test was used to test the above hypothesis. In this test, when the significance level is less than 5%, the null hypothesis is rejected at the 95% confidence level.

**Table 2.** Kolmogorov - Smirnov test (K-S) for dependent variable (debt ratio)

Meaningful level	Kalmogrof Smirnov	Most Deviation negative	Most Deviation Positive	Absolute value Most Standard deviation	Standard deviation	Average	Number
0.369	0.918	-0.037	0.028	0.037	0.19342	0.614	623

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Based on the values presented (Table 2), since the values of the significance level for the debt ratio in the model are more than 5% (Sig.> 0.05 or P-

value); therefore, the assumption of zero, i.e. the normality of the variables, is not rejected.

**Table 3.** Correlation coefficient, determination coefficient, adjusted coefficient of determination and Camera-Watson test between debt ratio and bank interest rate

Camera - Watson	Estimation criterion error	Adjusted coefficient of determination	Determination coefficient	Correlation coefficient	Model
1.764	0.19338	0.000	0.002	0.044	1

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According to Table 3, Pearson correlation coefficient between the two variables of debt ratio and bank interest rate is 0.044. This number at the level of 5% error indicates a lack of significant relationship between the two variables of debt ratio and bank interest rate. According to SPSS software outputs, the tables show that since the calculated adjustment coefficient shows the number 0.000, which is a very small number, it does not provide a good fit of the changes in the debt ratio variable by the bank interest rate variable.

One of the assumptions of independence regression is errors; if the hypothesis of error

independence is rejected and the errors are correlated with each other, regression cannot be used. Camera-Watson statistics are used to check the independence of errors that if the value of the Camera-Watson statistics falls in the distance of 1.5 to 2.5, the assumption of correlation between errors is rejected and regression can be used. The value of the Camera-Watson statistic is 1.764, based on Table 3 and this number shows that the errors are independent of each other and there is no correlation between the errors and the assumption of correlation between the errors is rejected and regression can be used [4].

**Table 4.** Regression analysis of variance for debt ratio and bank interest rate variables

ANOVA <sup>b</sup>					
Meaningful level	F statistics	Mean Square	Degrees of freedom	Sum of squares	Model
0.271	1,215	0.045	1	0.045	1
		0.037	621	23.224	Residual
			622	23.269	Total

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Table 4 shows the analysis of variance between the bank interest rate variable as an independent variable and the debt ratio as a dependent variable. According to this output, since sig is more than five

percent, the H0 hypothesis is at the error level five. The percentage is confirmed and the correlation between this variable is hardened.

**Table 5.** Correlation coefficient, determination coefficient, adjusted determination coefficient and Camera-Watson test between debt ratio and bank interest rate with the presence of control variables

Camera - Watson	Estimation criterion error	Adjusted coefficient of determination	Determination coefficient	Correlation coefficient	Model
1.86	0.138894	0.485	0.489	0.699	1

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Then, the above hypothesis was examined with the presence of control variables. Based on Table (5), Pearson correlation coefficient between the two variables of debt ratio and bank interest rate with the presence of control variables is 0.699.

This number at the error level of 5% shows a significant relationship between debt ratio and bank interest rates and control variables. With respect to SPSS software outputs, the tables show that since the calculated adjusted coefficient shows the number 0.485, which is a good number, it provides a good fit of the changes in the debt ratio variable by the independent variables.

One of the assumptions of independence regression is errors; if the hypothesis of error independence is rejected and the errors are correlated with each other, regression cannot be used. Camera-Watson statistics are used to check the independence of errors that if the value of the Camera-Watson statistics lies in the distance of 1.5 to 2.5, the assumption of correlation between errors is rejected and regression can be used. The value of the Camera-Watson statistics, as depicted in Table 5, is 1.86 and this number shows that the errors are independent of each other and there is no correlation between the errors and the assumption of correlation between the errors is rejected and regression can be used [5].

**Table 6.** Regression analysis of variance for debt ratio and bank interest rate and control variables

ANOVA <sup>b</sup>					
meaningful level	F statistics	Mean Square	Degrees of freedom	Sum of Squares	Model
0.00	117.848	2.275	5	11.375	Regression
		0.019	616	11.891	Residual
			621	23.266	Total

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According to the obtained results, the first sub-hypothesis, i.e. return on equity, return on assets, ratio of earnings per share and fixed assets ratio affect the relationship between bank interest rate and capital structure, is confirmed at 95% confidence level. According to this output, the overall significance of the regression model is tested by ANOVA table through the following statistical hypotheses:

$H_0$  : Data distribution is normal

$H_1$  : Data distribution is not normal

Given that sig is less than five percent, the assumption that the relationship between the variables is linear is confirmed. Finally, we will discuss how to fit multiple regression by the Enter method as follows Table 7.

**Table 7.** Summary of multiple regression findings of sub-hypothesis one by Enter method

meaningful level	Statistics t)	Standardized coefficients	Non-standardized coefficients		Model
			B		
<b>0.000</b>	10.816	10,816	-	0.499	(Constant)
<b>0.126</b>	1.531	1,531	0.044	0.044	Fixed Asset Ratio
<b>0.00</b>	9,391	9,391	0.433	0.07	Earnings per share ratio
<b>0.00</b>	-21.4	-21.4	-0.981	-0.015	Return on total assets
<b>0.00</b>	5,169	5,169	0.152	0.00	Return of capital owners
<b>0.000</b>	<b>4.8</b>	<b>4.8</b>	<b>0.14</b>	<b>0.017</b>	Bank interest rates

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**Table 8.** Correlation coefficient, determination coefficient, adjusted coefficient of determination and Camera-Watson test between debt ratio and inflation rate

Camera - Watson	Estimation criterion error	Adjusted coefficient of determination	Determination coefficient	Correlation coefficient	Model
1.762	0.19349	0.000	0.001	0.03	1

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According to Table 8, Pearson correlation coefficient between the two variables of debt ratio and inflation rate is 0.03. This number at the 5% error level indicates a lack of a significant relationship between the two variables of debt ratio and inflation rate. According to SPSS software outputs, the tables show that since the calculated adjustment coefficient shows the number 0.000, it is a very small number and does not provide a good fit of the changes in the debt ratio variable by the

inflation rate variable. One of the assumptions of independence regression is errors; if the hypothesis of error independence is rejected and the errors are correlated with each other, regression cannot be used. Camera-Watson statistics are used to check the independence of errors and if the value of the Camera-Watson statistics falls in the distance of 1.5 to 2.5, the assumption of correlation between errors is rejected and regression can be used. The value of the Camera-Watson statistic according to Table (8)

is 1.762 and this number shows that the errors are independent of each other and there is no correlation between the errors, so the assumption of

correlation between the errors is rejected and regression can be used [6].

**Table 9.** Regression analysis of variance for debt ratio and inflation rate variables

meaningful level	F statistics	Mean Square	Degrees of freedom	Sum of Squares	Model
	0.455	0.56	1	0.021	Regression
		0.037	621	23.248	Residual
			622	23.269	Total

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Table 9 shows the analysis of variance between the inflation rate variable as an independent variable and the debt ratio as a dependent variable.

According to this output, since sig is more than five percent, assumption H<sub>0</sub> at the five percent error level is confirmed.

**Table 10.** Correlation coefficient, determination coefficient, adjusted coefficient and Camera-Watson test between debt ratio and inflation rate with the presence of control variables

Camera - Watson	Estimation criterion error	Adjusted coefficient of determination	Determination coefficient	Correlation coefficient	Model
1.8	0.14119	0.468	0.472	0.689	1

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The above hypothesis was examined with the presence of control variables. According to Table (10) Pearson correlation coefficient between the two variables debt ratio and inflation rates with the presence of control variable is 0.689. This number at the 5% error level shows a significant relationship between the debt ratio and inflation rate and control variables. According to SPSS software outputs, the tables show that the calculated adjustment coefficient shows the number 0.468,

which is a good number and provides a good fit of the changes in the debt ratio variable by the independent variables.

The value of the Camera-Watson statistic according to Table (10) is 1.80 and this number shows that the errors are independent of each other and there is no correlation between the errors, so the assumption of correlation between the errors is rejected and regression can be used.

**Table 11.** Regression analysis of variance for debt ratio and inflation rate and control variables

ANOVA <sup>b</sup>					
meaningful level	F statistics	Mean Square	Degrees of freedom	Sum of Squares	Model
0.00	110.234	2.197	5	10.987	Regression
		0.02	616	12.279	Residual
			621	23.266	Total

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According to the obtained results, the second sub-hypothesis (return on equity, total return on assets, earnings per share ratio and fixed assets ratio

affects the relationship between inflation rate and capital structure) is confirmed at 95% confidence level.

**Table 12.** Summary of multiple regression findings of the second sub-hypothesis by enter method

Level Meaningful	Statistics t)	Standardized coefficients	Non-standardized coefficients		Model
			Std.Error	B	
0.000	38.414	-	0.019	0.741	(Constant)
0.109	1.604	0.047	0.029	0.047	Fixed Asset Ratio
0.00	9.02	0.422	0.000	0.07	Earnings per share ratio
0.00	-20.663	-0.966	0.001	-0.015	Return on total assets
0.00	5.277	0.158	0.00	0.00	Return of capital owners
0.09	-1.689	-0.049	0.001	0.002	The inflation rate

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According to Table 12, the fixed value and the coefficient B related to each variable, in the general model, have been decided according to the level of significance. The assumption that the regression coefficient is equal to zero (assumption H0) is

confirmed and must be removed from the regression equation, showing that there is no significant relationship between the ratio of fixed assets and inflation rate to debt ratio [1].

**Table 13.** Correlation coefficient, determination coefficient, adjusted determination coefficient and Camera-Watson test between debt ratio and dollar exchange rate

Camera - Watson	Estimation criterion error	Adjusted coefficient of determination	Determination coefficient	Correlation coefficient	Model
1.762	0.19347	0.000	0.001	0.032	1

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According to Table 13, Pearson correlation coefficient between the two variables of debt ratio and dollar exchange rate is 0.032. This number at the 5% error level indicates a lack of significant relationship between the two variables of debt ratio and dollar exchange rate. According to SPSS software outputs, the tables show that the calculated adjusted coefficient shows the number 0.000, which is a very small number and does not provide a good

fit of the changes in the debt ratio variable by the dollar exchange rate variable.

The value of the Camera-Watson statistic according to Table 13 is 1.762 that shows that the errors are independent of each other, and there is no correlation between the errors, so the assumption of correlation between the errors is rejected and regression can be used.

**Table 14.** Regression analysis of variance for debt ratio and dollar exchange rate variables

ANOVA <sup>b</sup>					
meaningful level	F statistics	Mean Square	Degrees of freedom	Sum of Squares	Model
0.422	0.647	0.024	1	0.024	Regression
		0.037	621	23.245	Residual
			622	23.269	Total

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Table (14) shows the analysis of variance between the dollar exchange rate variable as an

independent variable and the debt ratio as a dependent variable.

**Table 15.** Correlation coefficient, determination coefficient, adjusted coefficient and Camera-Watson test between debt ratio and dollar exchange rate with the presence of control variables

Camera - Watson	Estimation criterion error	Adjusted coefficient of determination	Determinatio n coefficient	Correlation coefficient	Model
1.82	0.14026	0.475	0.479	0.692	1

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Then the above hypothesis was examined with the presence of control variables. According to Table (15), Pearson correlation coefficient between the two variables debt ratio and dollar rates with the presence of control variable is 0.692. This number at the 5% error level shows a significant relationship between the debt ratio and the dollar exchange rate and control variables. According to SPSS software outputs, the tables show that the calculated adjustment coefficient shows the number

0.475, which is a good number and provides a good fit of the changes in the debt ratio variable by the independent variables.

The value of the Camera-Watson statistic according to Table (15) is 1.82 that shows that the errors are independent of each other and there is no correlation between the errors, so the assumption of correlation between the errors is rejected and regression can be used.

**Table 16.** Regression analysis of variance for debt ratio and dollar exchange rate and control variables

ANOVA <sup>b</sup>					
meaningful level	F statistics	Mean Square	Degrees of freedom	Sum of Squares	Model
0.00	113.234	2.23	5	11.148	Regression
		0.02	616	12.118	Residual
			621	23.266	Total

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According to the results, the third sub-hypothesis (return on equity, total return on assets, earnings per share and fixed assets ratio affects the

relationship between the dollar exchange rate and capital structure) is confirmed at 95% confidence level.

**Table 17.** Summary of Multiple Regression Findings of the Third Sub-Hypothesis by Enter Method

Level Meaningful	Statistics t)	Standardized coefficients	Non-standardized coefficients		Model
			Std.Error	B	
<b>0.000</b>	7,461	-	0.173	1,288	<b>(Constant)</b>
<b>0.106</b>	1,617	0.047	0.029	0.047	<b>Fixed Asset Ratio</b>
<b>0.00</b>	9.36	0.437	0.000	0.07	<b>Earnings per share ratio</b>
<b>0.00</b>	- 21.032	- 0.992	0.001	- 0.015	<b>Return on total assets</b>
<b>0.00</b>	5,166	0.154	0.00	0.00	<b>Return of capital owners</b>
<b>0.01</b>	- <b>3.328</b>	- <b>0.099</b>	<b>0.00</b>	- <b>0.06</b>	<b>dollar price</b>

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According to the table number (17) about the fixed value and the coefficient B related to each variable, in the general model has been decided according to the level of significance.

Since in this output, the significance level of the regression coefficient equality test related to the

fixed asset ratio variable is greater than five percent; Therefore, the assumption that the regression coefficient is equal to zero (assumption H0) is confirmed and should be removed from the regression equation and shows that there is no significant relationship between the ratio of fixed assets to debt ratio. But for other variables, the



assumption The equation of the regression coefficient is rejected by zero (assumption H0) and

they should not be excluded from the regression equation.

**Table 18.** Correlation coefficient, coefficient of determination, adjusted coefficient of determination and Camera-Watson test between debt ratio and liquidity rate

Camera - Watson	Estimation criterion error	Adjusted coefficient of determination	Determination coefficient	Correlation coefficient	Model
1.76	0.19356	-0.001	0.000	0.012	1

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According to Table (18), Pearson correlation coefficient between the two variables of debt ratio and liquidity rate is 0.012. This number at the 5% error level indicates a lack of significant relationship between the two variables of debt ratio and liquidity rate. According to SPSS software outputs, the tables show that the calculated adjustment coefficient shows the number -0.001, which is a very small number and does not provide

a good fit of the changes in the debt ratio variable by the liquidity rate variable.

Camera-Watson statistics are used to check the independence of errors that if the value of the Camera-Watson statistics in the distance of 1.5 to 2.5, the assumption of correlation between errors is rejected and regression can be used [7].

**Table 19.** Regression analysis of variance for debt ratio and liquidity rate variables

meaningful level	F statistics	ANOVA <sup>b</sup>			Model
		Mean Square	Degrees of freedom	Sum of Squares	
0.455	0.56	0.021	1	0.021	Regression
		0.037	621	23.248	Residual
			622	23.269	Total

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Table 19 shows the analysis of variance between the liquidity rate variable as an independent variable and the debt ratio as a dependent variable. According to this output, since sig is more than five

percent, assumption H0 at the five percent error level is confirmed and the existence of a correlation between these variables is rejected.

**Table 20.** Correlation coefficient, determination coefficient, adjusted coefficient and Camera-Watson test between debt ratio and liquidity rate with the presence of control variables

Camera - Watson	Estimation criterion error	Adjusted coefficient of determination	Determination coefficient	Correlation coefficient	Model
1.84	0.13977	0.479	0.483	0.695	1

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The above hypothesis was examined with the presence of control variables. According to Table (20), Pearson correlation coefficient between the two variables of debt ratio and liquidity rates with the presence of control variable is 0.692. This number at the error level of 5% shows a significant

relationship between debt ratio and liquidity rate and control variables.

According to SPSS software outputs, the tables show that the calculated adjustment coefficient shows the number 0.479, which is a good number

and provides a good fit of the changes in the debt ratio variable by the independent variables.

**Table 21.** Regression analysis of variance for debt ratio, liquidity rate and control variables

ANOVA <sup>b</sup>					
meaningful level	F statistics	Mean Square	Degrees of freedom	Sum of Squares	Model
0.00	114.972	2.246	5	11.231	Regression
		0.02	616	12.035	Residual
			621	23.266	Total

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According to the obtained results, the fourth sub-hypothesis (return on equity, total return on assets, earnings per share ratio and fixed assets ratio affects the relationship between liquidity rate and capital structure) is confirmed at 95% confidence level.

Since economic variables are strongly correlated with each other, their simultaneous use will lead to strong alignment, so none of the variables is significant in the multiple models, and their sign indicates the direction of correlation will be reversed in some cases [8].

**Table 22.** Correlation coefficient between explanatory variables

Bank interest rates	dollar price	Liquidity rate	The inflation rate	Explanatory variables	
- 0.554	0.154	0.266	1	Solidarity	The inflation rate
0.00	0.00	0.00		meaningful level	
- 0.877	0.976	1	0.266	Solidarity	Liquidity rate
0.00	0.00		0.00	meaningful level	
- 0.758	∧	0.976	0.154	Solidarity	dollar price
0.00		0.00	0.00	meaningful level	
∧	- 0.758	- 0.877	- 0.554	Solidarity	Bank interest rates
	0.00	0.00	0.00	meaningful level	

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As can be seen, the correlation coefficient between the variables is very high, so for the simultaneous use of variables, the factor analysis method will be used. Using this method, a

combination of the main variables can be obtained to interpret them. It depends on the relationship between the variables of each factor.

**Table 23.** KMO sample adequacy criterion and Bartlett test

0.39		Kaiser-Meyer-Olkin sample adequacy criterion
3e4.926	The amount of kai - approximately two	Bartlett test for unit unity of correlation matrix Kaiser-Meyer-Olkin sample adequacy criterion
6	Degrees of freedom	
00	meaningful level	

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**Table 24.** Percentage of changes expressed by agents

Special values			
Percentage of cumulative changes	Percentage of changes	Total	Component
72,714	72,714	2,909	<b>1</b>
96,701	23,987	0.959	<b>2</b>
99,975	3,274	0.131	<b>3</b>
100.00	0.025	0.001	<b>4</b>

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**Table 25.** Component matrix (factor coefficient matrix)

Component	Variables
0.484	The inflation rate
0.97	Liquidity rate
0.912	dollar price
- 0.949	Bank interest rates

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**Table 26.** Correlation coefficient, coefficient of determination, adjusted coefficient of determination and Camera-Watson test between macroeconomic variables and debt ratio

Camera - Watson	Estimation criterion error	Adjusted coefficient of determination	Determination coefficient	Correlation coefficient	Model
1.76	0.19356	-0.001	0.00	0.012	1

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According to Table (26), the Pearson correlation coefficient between the two factors is 1 and the debt ratio is 0.012. This number at the 5% error level indicates the absence of a significant relationship between the debt ratio variable as a dependent variable and factor 1 as an independent variable. According to the outputs of SPSS software, since the calculated adjusted coefficient shows the number -0.001, it does not provide a suitable fit of

the changes in the debt variable by the independent variable.

The value of the Camera-Watson statistic according to Table (26) is 1.760. This number shows that the errors are independent of each other and there is no correlation between the errors, so the assumption of correlation between the errors is rejected and regression can be used.

**Table 27:** Summary of multiple regression findings of main hypothesis one by enter method

Statistics t))Level	Statistics t) Level	Standardized coefficients	Non-standardized coefficients		Model
			Std.Error	B	
<b>0.004</b>	2,885	-	2,025	5,842	<b>(Constant)</b>
<b>0.122</b>	1,549	0.045	0.029	0.044	<b>Fixed Asset Ratio</b>
<b>0.00</b>	9,428	0.434	0.000	0.07	<b>Earnings per share ratio</b>
<b>0.00</b>	- 21.27	- 0.988	0.001	- 0.015	<b>Return on total assets</b>
<b>0.00</b>	5,052	0.148	0.00	0.00	<b>Return of capital owners</b>
<b>0.004</b>	2,921	2,079	0.00	0.008	<b>Liquidity rate</b>
<b>0.002</b>	3,061	0.16	0.002	0.005	<b>The inflation rate</b>
<b>0.00</b>	3,639	0.987	0.033	0.119	<b>Bank interest rates</b>
<b>0.005</b>	- <b>2.796</b>	- <b>1.403</b>	<b>0.00</b>	<b>0.00</b>	<b>dollar price</b>

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Since in this output, the significance level of the regression coefficient equality test related to the

fixed asset ratio variable is greater than five percent, the assumption that the regression coefficient is

equal to zero (assumption H<sub>0</sub>) is confirmed and must be removed from the regression equation, showing that there is no significant relationship between the ratio of fixed assets to debt ratio.

### Conclusion

Information on economic conditions is useful for investors and managers to make financial decisions. Information is useful in itself if it changes the beliefs and behaviors of investors and managers. In addition, the amount and degree of usefulness can be measured by the extent of volume and price changes following the dissemination of information. Investors and corporate executives are required to increase their capital day by day and maximize it, and for this reason, they are looking for ways to reduce costs, including financing costs and increase revenues. To achieve this goal, they need tools and criteria to be identified. These criteria must be sufficiently reliable so that managers can make decisions based on them and invest their capital in business activities. This is where the knowledge of accounting and financial management and economic information comes to the aid of managers to make decisions. One of the pieces of information that managers and analysts around the world attach great importance to is information that reflects the economic situation of countries. And one of the factors that affect the economic situation of countries is that financial managers in companies are interested in knowing information that indicates the degree of stability or instability of the economic situation. In this study, inflation rate, cash rate, bank interest rate and dollar rate were studied as macroeconomic variables and its effect on the capital structure of companies was investigated.

In this research, after collecting the necessary information and data of the sample companies, the relationship between macroeconomic variables and the capital structure of companies and other control variables of the research was measured using Pearson correlation coefficient and then the test (T) With degree of freedom  $df = n-2$  and 95% confidence level was used to determine the significance of the correlation between the above criteria.

According to the tests and analyses obtained through regression and correlation, it can be said that there is no correlation coefficient between the

two variables of bank interest rate and debt ratio in companies admitted to the Iranian capital market and its value is 0.002; the correlation is weak and in fact the mentioned variable cannot affect the debt ratio independently. Studies have shown that the above hypothesis has not been confirmed, and there is no linear and positive relationship between bank interest rates and capital structure, which is consistent with Sajjadi's (2018) findings stating there is no relationship between bank interest rates and total stock index. With the introduction of control variables, the lack of relationship between the ratio of fixed assets and the return on equity with the structure of capital was revealed, which was also the result of research by Partners' brothers (2019).

Further, the coefficient of determination obtained from the two-variable regression between the two variables of inflation rate as independent variables and debt ratio as a dependent variable in the Iranian capital market is 0.001, showing the lack of correlation between the two variables is mentioned. Studies have also shown that the above hypothesis has not been confirmed, and there is no linear and positive relationship between inflation and capital structure, which is related to the volatile market of the country's economy, affected by various factors every month. This result does not correspond to the findings of Sajjadi's (2010) research voicing there is no relationship between bank interest rates and the total stock index. And with the introduction of control variables, the lack of relationship between the ratio of fixed assets and return on equity with the capital structure was revealed. It has also been the result of the research of the partners' brothers (2017).

The coefficient of determination obtained from the two-variable regression between the two variables of the dollar exchange rate as independent variables and the debt ratio as a dependent variable in the Iranian capital market is 0.001, showing the lack of correlation between the two variables. Studies have also shown that the above hypothesis has not been confirmed, and there is no linear and positive relationship between the dollar exchange rate and the capital structure, which is consistent with the findings of Sajjadi's (2018) research saying there is no relationship between exchange rate and total stock index. The introduction of control variables revealed the lack of relationship between the ratio of fixed assets and return on equity to the

structure of capital, which has been the result of research by Partners' brothers on 2010.

The coefficient of determination obtained from the two-variable regression between the two variables of liquidity rate as independent variables and debt ratio as a dependent variable in the Iranian capital market is 0.001 that shows the lack of correlation between the two variables. Studies have also shown that the above hypothesis has not been confirmed, and there is no linear and positive relationship between liquidity rate and capital structure, which also indicates the mismatch between the growth of money and capital markets and their ownership differences. This result is not consistent with that of Sajjadi's (2018) research stating there is no relationship between the liquidity rate and the total stock index.

According to the tests and analyses that were presented through regression and correlation and using the method of factor analysis and creating a factor or a factor as macroeconomic variables, the coefficient of determination obtained by two-variable regression between two variables of factor one as variables Independent and debt ratio as a dependent variable in the Iranian capital market is 0.001 that shows that there is no relationship between the two variables. Studies have also shown that the above hypothesis has not been confirmed, and there is no linear and positive relationship between macroeconomic variables and the structure of capital, which is due to the volatile market of the country's economy, affected by various factors every month. Because the managers of companies, due to the current fluctuation of the country's economy, are not able to predict and analyze future events in the environment around companies and cannot consider the best way to arrange the capital structure in companies than the cost, capital financing should be reduced.

What is present in the general conclusion of the test of research hypotheses is that there is no significant relationship between the independent variable and the capital structure of listed companies. And macroeconomic variables have no significant relationship with the debt ratio, which is almost in line with the results of Sajjadi's (2016) research and also the control variables of total return on assets and earnings per share ratio affect this relationship. The results obtained in this study are consistent with those of Chahab and Bukpin's (2010).

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