Examining the Concurrent Effects of Specific Corporate Traits and Macroeconomic Variables on Capital Structure

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ABSTRACT

The main purpose of this study is to investigate the effects of specific characteristics of a company and macroeconomic variables on the capital structure of the companies accepted in the Tehran Stock Exchange between 2008 and 2015 using the panel data approach. To measure specific characteristics of a company, profitability ratio, payable dividends ratio, and stock price performance ratio were employed; variables such as GDP growth rate, exchange rate, inflation rate, interest rate, and ratio of the amount of bank credits were employed as macroeconomic variables. The results showed that the variables of profitability ratio, payable dividends ratio, and ratio of the amount of bank credits have a significant negative effect and GDP growth rate has a significant positive effect on capital structure. The results also showed that effects of specific corporate variables differ from macroeconomic variables on capital structure according to the type of industry.

Keywords: Capital structure, Corporate specification, Macroeconomic variables

JEL classification: E31, E32, C22

1. INTRODUCTION

The capital structure consists of a combination of debt and equity, with which companies finance their long-term assets (Weston and Copeland, 2007). Capital structure is the long-term financing of the company, which is shown by long-term debt and equity (Pourzamani and Jamshidi, 2015). As it impacts the company's value, determining the

capital structure by top managers is one of the most important subjects in the financial field; therefore, further research is needed in this field. In deciding the capital structure of the company, corporate executives should consider the specific characteristics of the company, in accordance with macroeconomic conditions, and determine the optimal capital structure. Most of the relevant studies involved company-specific variables as determinants of capital structure by considering the influence of the specific factors of each company that can be managed. However, the importance of macroeconomic factors cannot be ignored. Nowadays, in combining economics and finance, no company can remain uninfluenced by what is happening in the world economy. Therefore, these interactions lead managers to new demands require to consider linking the

company and its development to changes in the macroeconomic environment. In other words, whatever managers find power and dimensions of macroeconomic factors, they can better identify their impact on the structure of capital, and the decision-making process will be more flexible and efficient. More attention should be paid to market-oriented or bank-centered economy while making decisions about capital structure. According to (Demirguc-kunt et al., 1999), market-oriented economies are more transparent and protect the interests of investors, while bank-centric economies are less transparent and do not protect the interests of investors. In addition, companies operating in market-oriented economies are less debt-driven than bank-centric economies. On the contrary, results of various previous studies indicate that the optimal amount of debt in a capital structure depends on the economic conditions of a country, type of industry, legal system, accounting regulations, etc., that differs across countries. So, effective economic factors, such as internal factors, should be considered. In Iran, despite sharp fluctuations in economic indicators over the past few years, this issue has been underestimated by researchers. Therefore, in this study, effects of the corporate specifications and macroeconomic variables on the structure of capital are studied according to the type of industry.

2. LITERATURE REVIEW

Capital Structure Irrelevance Principle by Modigliani and Miller, 1958, followed a surge in discussing capital structure and is a theorem on capital structure, arguably forming the basis for modern thinking and discussion on capital structure. The basic theorem states that in a certain market price process (the classical random walk), in the absence of taxes, bankruptcy costs, agency costs, and asymmetric information, and in an efficient market, the value of a firm is unaffected by how that firm is financed. It does not matter if the firm's capital is raised by issuing stock or selling debt. It does not matter what the firm's dividend policy is. They proved that the market value of the company is independent of its capital structure. According to their results, the use of debt in the capital structure does not increase the value of the company. However, this theory was based on limited assumptions such as full capital market, homogeneous expectations, and absence of transaction costs and taxes. The existence of these limiting hypotheses has led researchers to test and examine how various factors affect the capital structure. Finally, the combination of theoretical and empirical studies in the field of capital structure led to the presentation of two important theories of "balance" and "hierarchical" in relation to optimal capital structure.

According to the trade-off theory, companies that use debt as a source of funding must create a balance between the benefits of using debt versus its related costs, for example, financial distress costs (Hejazi and Khademi, 2013). The hierarchical theory presented by Russ, 1977, and Majluf and Myers, 1984, acknowledges that companies take all existing financing practices into account and initially choose the cheapest source. Finally, the financing arrangement will be such that first the accumulated profit then the debt and eventually the distribution of shares will be on the agenda. In view of these explanations, to achieve the research objectives, three corporate characteristics (profitability ratio, payable dividends ratio, and stock price performance ratio), and five economic factors (GDP growth rate, exchange rate, inflation rate, interest rate, and ratio of the amount of bank credits) have been selected, according to previous studies, such as those by Taoulaou and Burchuladze, 2014, and Eriotis et al., 2007.

2.1. Corporate Specifications and Capital Structure

Profitability is the ultimate aim of all corporate finance plans and decisions. According to the hierarchical theory, there is a negative relationship between profitability and debt-to-book ratio, because more profitable companies have more potential to finance their own investment projects through domestic resources. On the contrary, as profitability increases the market value of the company, it can be expected that there will be a negative relationship between profitability and the debt-to-market ratio (Kurdestani and Najafi, 2009). On the basis of the Static Trade-off theory, the relationship between profitability and capital structure is investigated

through bankruptcy. By decreasing the company's profitability, the expected cost of bankruptcy increases, which reduces the financial leverage. Therefore, based on the Static Trade-off theory, there is a positive relationship between profitability and capital structure (Khalifesoltan et al., 2015). While (Ghalibaf Asl and Izadi,1988; Titman and Wessels,1988; Rajan and Zingales, 1995; and Serghiescu and Vaidean, 2014) have confirmed the negative relationship between profitability and debt levels, Jensen, 1986, argues that high-profit companies can take advantage of the ordering and limitation of debt payments to reduce the problem of free cash flows.

To explain the relationship between the amount of dividends paid by the company and the structure of capital, it is pointed out that whatever the company's profit is paid to the shareholders, it will accumulate and can be used in the resources required for the company's investments. Therefore, paying more dividends will increase the ratio of debt to total equity, which can be based on the positive relationship between the number of dividends paid and the ratio of debt to equity (Bokpin, 2009). According to Allen, 1993, and Chang and Rhee, 1990, dividend payments have a positive impact on financial leverage, while Rozeff, 1982, Mackie-Mason, 1990, and Asgharian, 1997, have shown a negative relationship between dividends and financial leverage. Sarlak et al., 2016, showed that companies prefer debt financing at each stage of their life cycle (growth, maturity, and decline). In other words, companies follow the hierarchical theory to arrange financial resources.

Asgharian, 1997, and Dimitrov and Jain, 2008, in their research found a negative relationship between market performance and leverage ratio. Taoulaou and Burchuladze, 2014, argued that companies tend to favor stock issuance under favorable market conditions and considered stock performance ratios as potential determinants of capital structure decision making. This affects the overall leverage in a positive way. Khalifesoltan and Bahrami, 2013, also concluded that changes in capital structure have a significant negative effect on liquidity changes, but liquidity changes have no significant effect on capital structure changes. Momeni-Taheri and Sadeghi, 2017,

showed that in both groups of firms with capital-driven debt-capital structure, capital structure has a negative and significant effect on the financial performance of companies. However, this negative effect on debt-driven companies is larger. The financial performance of companies is also more severe than the economic downturn in corporate debt-driven firms.

2.2. Macroeconomic Variables and Capital Structure

Many researches consider GDP growth rate as a determinant of capital structure. The GDP growth rate is considered as a measure that enables companies to deal with future debt costs. In previous studies that have been carried out mainly in developing countries, GDP growth rate has had an inverse relationship with the structure of selected capital (Taoulaou and Burchuladze, 2014). Bokpin, 2009, states that the increase in GDP will improve cash flows and profits, indicating an inverse relationship between GDP growth rate and capital structure. Gajurel, 2005, also shows that GDP growth rate has an inverse relationship with the amount of debt in the capital structure. While the findings of a study by Hejazi and Khademi, 2013, indicate a positive and significant relationship between economic growth and capital structure in Iran, Bandyopadhyay and Barua, 2016, showed that the economic cycle significantly affected the financing decisions of a company and, as a result, the performance of companies in India. Setayesh et al., 2011, showed that there is a positive and significant relationship between GDP and capital structure in Iran.

Another important factor affecting capital structure is inflation rate. The results appear to be different in relation to the inflation rate. For instance, Bastos et al., 2009, argue that inflation does not affect capital structure. Goyal and Frank, 2009, found a relationship between inflation and market leverage but did not find any relationship between inflation and leverage. In addition, Camara, 2012, showed that inflation has a significant relationship with capital structure. Sett and Sarkhel, 2010, and Hanousek and Shamshur, 2011, also argue that inflation has a powerful and positive effect on capital structure. In addition, Gajurel, 2005, concluded that inflation had a

negative relationship with the total leverage and short-term debt ratio but had a positive effect on the long-term debt ratio. Drobetz et al., 2007, stated that in the long run, an increase in the inflation rate would improve the company's cash inflows, which would increase the company's accumulated dividends profits that could be attributed to corporate financing. Therefore, by financing from accumulated profit, the financial leverage of the company will decrease, which indicates a negative effect of the inflation rate on the structure of capital.

Interest rate as a financial factor in economic entities plays a key role. As money is a vital factor in managing directors' decisions, interest rate changes are also important in these cases. Bokpin, 2009, argued that raising the expected rate of investors would increase the risk-free interest rate that would increase the cost of financing the company to secure the necessary repayment through the issuance of bonds. As financial managers are seeking access to financing sources at the lowest cost, raising interest rates and the cost of financing the partnership bonds will most likely eliminate the option of financing through the issuance of bonds, which indicates a negative relationship between the interest rate and capital structure. Therefore, directors tend to finance through the issuance of shares that will cost less than financing through the issuance of bonds. Chakraborty, 2015, showed that with the growth of long-term interest rates and inflation rates, companies' willingness to use debt in the capital structure decreases, whereas with increasing economic growth, the tendency to use domestic cash has been higher.

In general, exchange rate changes can affect the structure of capital of companies that use foreign credit, because the funds that they channel into the company should be converted into domestic currency. Therefore, increasing the value of the domestic currency against the currencies of other countries could lead to the acquisition of more financial resources. On the contrary, an increase in the exchange rate and devaluation of the domestic currency will result in more cash outflows and an increase in the company's interest rate, which will increase the ratio of debt to

equity, while the company should use more debt. Accordingly, there is a positive correlation between exchange rate changes and capital structure (Fanelli and Keifman, 2002). Karimi et al., 2015, confirm the positive effect of the exchange rate variable on the capital structure of companies admitted to the Tehran Stock Exchange.

On the basis of theoretical foundations, adoption of open policies for lending by banks provides conditions for more companies to use the amount of the loan, which leads to an increase in the ratio of debt to equity, and accordingly, the relationship between the amount of bank credits and the structure of capital is positive (Bokpin, 2009). Rajan and Zingales, 1995, also claimed that the criterion of importance for the banking sector while choosing a policy to finance a company is the ratio of bank loans granted to the private sector to GDP, which is far more important for economies that are banking-based than for capital-based economies. The research findings of Taoulaou and Burchuladze, 2014, also show that the amount of bank credits as a percentage of GDP has a positive relationship with capital structure. Zhang et al., 2015, showed that, in China, large corporations close to the capital, with a rise in uncertainty about monetary policy, are reducing their financial leverage, but smaller and marginalized companies tend to decline. Setayesh et al., 2011, showed that there is a significant negative relationship between the volume of liquidity and import with the capital structure in Iran.

3. RESEARCH METHODOLOGY

3.1 Research Pattern
In this study, the model by Taoulaou and Burchuladze, 2014, is used by the panel data approach in the form of equation (1) to answer research questions. In equation (1), y represents the capital structure, specific company variables are showed by F, macroeconomic variables are represented by M, i is the variable for company, and t for year. In this model, the company's specific variables change over time from one company to another, while macroeconomic

variables remain unchanged for each company but change over time.

The model estimated in this study is formulated as follows:

$$y_{it} = \infty + \sum_{k=1} \beta_k F_{k,it} + \sum_{j=1} \gamma_{JM_{j,t}+u_{it}}$$

According to the research goals and to meet the hypothesis, in line with Chakraborty, 2015,

Taoulaou and Burchuladze, 2014, and Eriotis et al., 2007, the variables of profitability ratio, payable dividends ratio, and stock price performance ratio were selected to examine specific corporate characteristics, and variables of GDP growth rate, exchange rate, inflation rate, interest rate, and ratio of the amount of bank credits were selected to study the effect of macroeconomic variables on capital structure. In Table 1, the research variables and their calculation methods are stated.

Table 1: Research variables			
Variable	**Type**	**Symbol**	**Calculation Method**
Capital structure	Dependent	y	$\frac{\text{Total debits}}{\text{Total assets}}$
Profitability ratio (corporate)	Independent	F_1	$\frac{\text{Operational Profits}}{\text{Sales}}$
Payable dividends ratio (corporate)	Independent	F_2	$\frac{\text{Cash Dividends per Share}}{\text{Dividends per Share}}$
Stock price performance (corporate)	Independent	F_3	The geometric mean of final price monthly changes percentage per share
GDP growth rate (macroeconomic)	Independent	M_1	Consumer price index
Exchange rate (macroeconomic)	Independent	M_2	$\frac{\text{GDP of interest year} - \text{GDP of base year}}{\text{GDP of base year}}$
Inflation rate (macroeconomic)	Independent	M_3	Dollar vs. Rials exchange rate of informal market
Interest rate (macroeconomic)	Independent	M_4	The annual interest rate of government banks
Ratio of the amount of bank credits (macroeconomic)	Independent	M_5	Amount of credits by government and commercial banks (reported by the central bank of Iran) to GDP

3.2. Population and Statistical Sample

The statistical population of this research includes all companies accepted in the Tehran Stock Exchange. The statistical sample of the research is selected according to the statistical population and using the sampling method. The companies with the following characteristics were selected from the statistical sample:

1. Companies that have been accepted before 2008.
2. Companies whose fiscal year ends on March 20 every year.
3. Companies that have not been in the course of the examination, stop the transaction, or change the financial period.
4. Companies that are not financial intermediaries.
5. Companies whose data are available.

Therefore, 103 companies were selected as the research sample. Table 2 presents the descriptive statistics of the research variables.

Table 2: Descriptive statistics

Variable	Observations	Mean	Mid	Std. Dev.	Min.	Max.
Capital structure	824	0.628	0.619	0.224	0.067	1.66
Profitability ratio	824	0.231	0.162	0.518	-1.24	13.02
Payable dividends ratio	824	0.556	0.561	0.536	-067	7.05
Stock price performance	824	0.255	-0.022	1.053	-0.91	10.16
GDP growth rate	824	1.85	3	7.99	-6.8	7.7
Exchange rate	824	110.75	100	51.15	52.74	203.24
Inflation rate	824	18591.66	13568	10608.25	9357	34750
Interest rate	824	16.6	17	3.23	11.5	22
Ratio of the amount of bank credits	824	0.204	0.079	0.239	0.05	0.62

The companies surveyed were accepted in the Tehran Stock Exchange for a period of 8 years from 2008 to 2015, representing a total of 824 observations (company per year). The dependent variable is financial leverage with the criterion of the total ratio of total debt to total assets, which is an average of 0.628, indicating that, on average, 62.8% of the total assets of sample companies are financed from debt liabilities. Independent variables include two groups of company specification variables and macroeconomic variables. The company's specification variables include profitability ratio, payable dividends ratio, and stock price performance ratio with average values of 0.213, 0.556, and 0.255, respectively. The macroeconomic variables include GDP growth rate, exchange rate, inflation rate, interest rate, and ratio of the amount of bank credits as a percentage of gross domestic product, the average of which is equal to 1.85, 110.75, 18591.66, 16.6, and 0.204, respectively.

4. ESTIMATION AND ANALYSIS OF RESULTS

4.1. Statistical Tests

4.1.1. F-Limer Test (LM)

In panel data, first, statistical tests are necessary to explain the data type. In Table 3, the results of the F-Limer test (Chow) are shown for each specification of the research. In this test, the hypothesis of zero indicates that data are combined and the opposite hypothesis indicates noncompilation or randomness of data (Wooldridge, 2012). As shown in Table 3, the probability of this statistic is less than 0.05, so zero assumption of the test of data fusion is rejected.

4.1.2. Hausman Test

According to the F-limer test, the Hausman test is required to determine the type of panel data. In this test, the zero hypotheses indicate the effects of the constant of the data and the opposite hypothesis indicates the randomness of the data (Wooldridge, 2012). As shown in Table 4, the probability value for this statistic is less than 5%, so the zero hypothesis is rejected. Therefore, the result of the Hausman test shows that the data are a panel with constant effects. Therefore, the research model is estimated based on the panel data approach with constant effects.

Table 3: F-Limer test results

Effects test	Statistic	Degree of freedom	Significant level
F statistic related to the panels	22.3872	(102.710)	0.0000
ψ^2 statistic related to the panels	1171.64	102	0.0000

Table 4: Hausman test results			
Test summary	**ψ^2 statistic**	**Degree of freedom**	**Significant level**
Random effects of the panels	38.997	8	0.0000

Table 5 presents the results of model estimation for total firms. According to Fisher's statistics, and the significance of the whole model at a 5% error level, 0.0000 is a sign of the fitting of the model. The adjusted coefficient of determination with the value of 0.928 indicates that the independent variables can well explain the dependent variable. The value of the Durbin-Watson statistic, between 1.5 and 2.5, is also indicative of the lack of autocorrelation in the research model. To test the hypotheses, the t statistic is also used. If the significance of the independent variable statistic is less than the error level of the test (0.05), then the hypothesis is accepted; otherwise, if it is more meaningful than the error level, it will not be accepted

Table 5: Model estimation results for total firms				
Variable	**Coefficient**	**t statistic**	**Significant level**	**Model values**
Profitability ratio	-0.0293	-3.297	0.0010	F-statistic significant: 0.000
Payable dividends ratio	-0.0260	-4.4296	0.000	
Stock price performance ratio	0.001473	0.8669	0.387	Determination coefficient: 0.928
GDP growth rate	0.00261	5.0776	0.000	Durbin-Watson: 1.57
Exchange rate	0.00017	0.6196	0.5357	
Inflation rate	0.003010	1.604	0.1092	
Interest rate	0.00001	0.9897	0.3266	
Ratio of the amount of bank credits	-0.091	-7.937	0.0000	

4.2. Analysis of the Results in the Industry Level

4.2.1. Analysis of the Effect of Specific Corporate Characteristics on Capital Structure
As shown in Table 5, the significance level of the variable profitability ratio is equal to 0.001, less than the error level of the test, and is therefore significant. The coefficient of the variable profitability ratio is -0.029 which indicates that there is a negative relationship between profitability ratio and capital structure. These results are consistent with the Hierarchical Theory and research findings of Asgharian, 1997, and Dimitrov and Jain, 2008. This means, by increasing the company's profitability and internal resources, reliance on foreign resources and debt boosts declines. In addition, according to the results shown in Table 5, the significance level of the variable payable dividends ratio is 0.000, less than the level of the test error and is

therefore significant. The coefficient of this variable is -0.026, which indicates that there is a negative relationship between the payable dividends ratio and capital structure. This result is due to the fact that the increase in the profit margin reduces domestic corporate resources and increases reliance on external sources, which ultimately leads to increased debt in the company. This result is in line with the results of the research by Rozeff, 1982, MacKie-Mason, 1990, and Asgharian, 1997. However, in other studies such as those by Allen, 1993, and Chang and Rhee, 1990, there is a positive and significant relation between the payable dividends ratio and capital structure. The significance level of the variable stock price performance ratio is 0.37, more than the error level of the test and is therefore not significant. Therefore, it can be said that there is not a significant relationship between stock price performance ratio and capital structure in Iran. However, in some recent studies such as those by Asgharian, 1997, and Dimitrov and Jain, 2008, a negative correlation between price stock performance and capital structure ratio is shown.

4.2.2. Analysis of the Effect of Macroeconomic Variables on Capital Structure

In Table 5, the results of the effect of macroeconomic variables on the structure of capital are also shown. According to the results, the significance level of the GDP growth rate variable is equal to or less than the error level of the test and is therefore significant. The coefficient of the variable is 0.002 and positive, which shows that there is a positive relationship between GDP growth rate and capital structure. This result shows that with increasing GDP and economic growth, external information represents a good future for corporations, so managers prefer to use more debt in the capital structure. This is in line with the study of Karimi et al., 2014, although this is in contrast with studies by Gajurel, 2005; Bokpin, 2009; and Chakraborty, 2015. The significance level of the inflation rate variable is equal to 0.109 and is not more than the error level of the test and is therefore not significant. This result may be due to the fact that the increase in inflation would increase uncertainty in the economy and thus can make it difficult for managers and companies to

make decisions. Inflation can have different outcomes based on the type of goods and services that the company offers. As a result, the same procedure has not been observed in relation to the capital structure during inflation, which ultimately leads to a lack of significance of the effect of this variable on the structure of capital. A priori research on this subject has different results; for instance, Bastos et al., 2009, believe that inflation does not affect the structure of capital, but some studies indicate a positive or negative relation of inflation with capital structure. Research results such as those of Taoulaou and Burchuladze, 2014, and Karimi et al., 2014, indicate a negative relationship between inflation rate and capital structure, whereas the research results of Sett and Sarkhel, 2010, and Hanousek and Shamshur, 2011, indicate a positive relationship between inflation rate and capital structure. In addition, according to the results, the significance level of the interest rate variable is equal to 0.326, more than the error level of the test, and therefore is not significant. This result can indicate the lack of dependence of the companies accepted in the Tehran Stock Exchange on bank credits, which ultimately led to a lack of correlation between interest rates and capital structure in these companies. While research results such as those of Taoulaou and Burchuladze, 2014, show a positive relationship between interest rates and capital structure, the results of the survey by Bokpin, 2009, and Chakraborty, 2015, showed a negative relationship between interest rates and capital structure.

According to the results of Table 5, the significance level of the exchange rate variable is not equal to or greater than the error margin of 0.328 and is therefore not significant. The result is in line with that of Chakraborty, 2015; Bokpin, 2009; and Fanelli and Keifman, 2002,. This can be due to different behaviors of companies in the face of rising exchange rates in Iran. In relation to exporting companies such as petrochemicals, rising exchange rates have increased their profitability and, thus, ultimately reduce the ratio of debt to capital and have a negative effect on capital structure. Instead, for foreign and foreign affiliate companies and consequently imports, rising exchange rates have led to a sharp increase

in costs and, consequently, a reduction in their profitability, which resulted in the financing of outsourced resources and ultimately increased debt ratios and positive relationships with the capital structure. These two different results make the effect of an increase in the exchange rate on the capital structure of companies in Iran not meaningful.

Finally, the results of model estimation in Table 5 show that the significance level of variable ratio of the amount of bank credits as a percentage of GDP is less than 0.000, which is less than the level of test error and is therefore significant. The coefficient of this variable is -0.91, which indicates that there is a negative relationship between the ratio of bank credits as a percentage of gross domestic product and capital structure. The results of Taoulaou and Burchuladze, 2014, showed a positive relationship between the amount of bank credit and capital structure. This

indicates that companies accepted in the Tehran Stock Exchange have used less bank credits as a source of capital, or a small amount of bank credit has been allocated to companies admitted to the Tehran Stock Exchange. The lack of significant correlation between interest rates and capital structure can also be attributed to this, namely, the inverse relationship between bank credit and capital structure. On the contrary, an increase in bank credit and, subsequently expansionary policies can increase demand in the economy which results in more profitability of companies and ultimately leads to a reduction in the ratio of debt to their assets.

4.3. Analysis of the Results in Different Industries

In this study, sample companies are classified according to Table 6 in six industry groups. The results of model estimation for various industries are presented in Table 7.

Table 6: Classification of Companies	
Industry classification	**Observations**
Automotive industry	192
Food industry	88
Metal products and fabric metals industry	120
Cement, tile, and mineral industries	176
Pharmaceutical and chemical products	184
Other industries	64
Total	824

Table 7: Regression model estimation in different industries					
Industry	**Variable**	**Coefficient**	***t* statistic**	**Significant level**	**Model values**
Automotive industry	Profitability ratio	-0.323	-5.230	0.000	Significant: 0.000
	Payable dividends ratio	-0.064	-4.29	0.000	
	Stock price performance	0.009	2.77	0.0063	Determination coefficient: 0.812
	Inflation rate	-0.001	-3.39	0.0006	
	GDP growth rate	0.007	5.23	0.000	Durbin-Watson: 1.77
	Interest rate	0.11	3.59	0.0004	
	Exchange rate	8.38E-06	5.84	0.000	

	Ratio of the amount of bank credits	0.59	16.29	0.000	
Food and beverages	Profitability ratio	-0.110	-0.588	0.568	Significant: 0.000
	Payable dividends ratio	-0.0395	-2.243	0.018	
	Stock price performance	0.0279	5.220	0.000	Determination coefficient: 0.862
	Inflation rate	0.0002	0.372	0.7108	
	GDP growth rate	0.0076	5.839	0.000	Durbin-Watson: 1.59
	Interest rate	0.0088	3.246	0.0018	
	Exchange rate	1.64E-06	5.838	0.000	
	Ratio of the amount of bank credits	-0.274	-6.62	0.000	
Metal products and fabric metals	Profitability ratio	-0.176	-3.314	0.0013	Significant: 0.000
	Payable dividends ratio	0.0033	0.535	0.593	
	Stock price performance	0.0030	0.539	0.590	Determination coefficient: 0.821
	Inflation rate	0.0016	3.579	0.0005	
	GDP growth rate	-0.0063	-4.370	0.000	Durbin-Watson: 1.65
	Interest rate	-0.018	-4.446	0.000	
	Exchange rate	-1.01E-05	-5.555	0.000	
	Ratio of the amount of bank credits	0.2542	6.497	0.000	
Cement, tile, and mineral industries	Profitability ratio	-0.0114	-6.81	0.000	Significant: 0.000
	Payable dividends ratio	-0.063	-2.730	0.0071	
	Stock price performance	0.002	0.791	0.4303	Determination coefficient: 0.913
	Inflation rate	0.0002	0.589	0.558	
	GDP growth rate	0.003	3.91	0.0001	Durbin-Watson: 1.82
	Interest rate	-0.0028	-0.750	0.454	
	Exchange rate	-2.88E-07	-0.169	0.866	
	Ratio of the amount of bank credits	0.047	1.784	0.0765	
Pharmaceutical and chemical products	Profitability ratio	-0.0246	-0.592	0.554	Significant: 0.000
	Payable dividends ratio	-0.0231	-2.289	0.0241	
	Stock price performance	-0.0031	-0.860	0.391	Determination coefficient: 0.890
	Inflation rate	0.0006	1.069	0.286	
	GDP growth rate	0.0044	6.011	0.000	Durbin-Watson: 1.56
	Interest rate	0.0034	0.836	0.000	

	Exchange rate	2.48E-06	1.046	0.000	
	Ratio of the amount of bank credits	-0.211	-14.2525	0.0063	
Other industries	Profitability ratio	-0.240	-2.054	0.0006	Significant: 0.000
	Payable dividends ratio	-0.073	-1.743	0.000	
	Stock price performance	-0.0166	-4.0171	0.0005	Determination coefficient: 0.597
	Inflation rate	0.0024	3.079	0.000	
	GDP growth rate	-0.0011	-4.0537	0.000	Durbin-Watson: 1.78
	Interest rate	-0.0043	-0.0601	0.558	
	Exchange rate	-1.47E-05	-2.665	0.018	
	Ratio of the amount of bank credits	0.1484	1.236	0.000	

Table 7 shows that the profitability ratio variable in all industries except the food and beverages industry and pharmaceutical and chemical products has a negative and significant relationship with capital structure. Payable dividends ratio in all industries except the metal products industry has a negative and significant relationship with capital structure. Stock price performance in the automotive industry, food industry, and other industries has a significant relationship with capital structure. GDP growth rate in all industries has a positive and significant relationship with capital structure. Inflation rate in the automotive industry, metal products, and other industries has a significant relationship with capital structure. Interest rate in the automotive, food, and metal products industries has a significant relationship with capital structure. Exchange rate in the automotive industry, metal products, and other industries has a negative and significant relationship with capital structure. Finally, ratio of the amount of bank credits in all industries except those in other industries has a significant relationship with capital structure.

5. SUMMARY AND RECOMMENDATIONS

In this paper, effects of different macroeconomic variables and company specifications on the capital structure of companies accepted in the Tehran Stock Exchange during the years 2008 to 2015 were investigated. GDP growth rate, exchange rate, inflation rate, interest rate, and ratio of the amount of bank credits considered as a percentage of the gross domestic product were selected as macroeconomic variables, and profitability ratio, payable dividends ratio, and stock price performance ratio were selected as specific corporate features.

The results indicate that there is a negative and significant relationship between profitability ratio and capital structure in the whole industry. Similarly, the industry-to-industry survey shows that there is a negative and significant relationship in all industries except the food industry, pharmaceutical, and chemical products. In addition, the results show that there is a negative and significant relationship between the ratio of payable dividends and capital structure. There is a relationship in all industries except the metal and metal products industry. According to the results of the whole industry, there was no significant relationship between stock price performance ratio and capital structure; however, the industry-to-industry survey showed that in the food industry, this relationship is positive and in other industries, there is a negative and significant relationship. There is a positive and significant relationship between GDP growth rate and capital structure in the whole industry, but in metals and other industries, this relationship is negative; there is a positive relationship in the automotive industry, food, cement, mineral

products, and pharmaceutical and chemical products. In addition, no significant relationship between inflation rate and capital structure was observed. However, the automotive and metals industry have a negative relation between inflation rate and capital structure but, in other industries, there was a positive relationship. On the contrary, despite the fact that there is no significant relationship between interest rate and capital structure in the whole industry, in the automotive and food industry, there was a positive and significant relationship with the metals industry. The results of the study indicate that there is no significant relationship between exchange rate and capital structure. However, the automotive industry has a positive relationship with the metal industry, and other industries have a negative relationship between exchange rate and capital structure. Finally, despite the negative and significant relation between the ratio of the amount of bank credits to gross domestic product and capital structure in the entire industry, automotive, food, and pharmaceutical industries, there was a positive relationship in the metal industry.

The results of this study indicate that, despite the significant effect of some corporate and economic factors on the whole industry, in different industries, the influence of the factors affecting the capital structure is distinct; therefore, managers of companies should focus on the specifications of the company in the type of industry terms to decide about financing. In addition, given the interaction between economics and finance, corporate executives need to consider macroeconomic factors when financing. Indeed, as corporate executives better understand the strengths and dimensions of macroeconomic factors and their impact on corporate capital structure, their flexibility and efficiency will increase in financing decisions. Meanwhile, industry-to-industry surveys show that some of the macroeconomic factors of some industries are overwhelming, so managers must decide on funding according to their industry. It should be noted that considering the impact of macroeconomic variables on the capital structure, legislators and policymakers should facilitate the financing of companies by making changes and modifying the rules.

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