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The Relationship between Financial Leverages and Total Efficiency of the Production Factors among Companies Recognized in Tehran Stock Exchange

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Abstract

The purpose of the present study is to assess the relationship between the financial leverages with the total efficiency of the production factors among the recognized companies in Tehran Stock Exchange between 2007 to 2012, in which the efficiency of workforce and one of the capital were also assessed as the parameters of efficiency. In addition, the role of financial leverages including the ratio of long-term debt to the total asset and the total debts to the total capital, along with the effect of the companies' sales volume on their efficiencies as the control variables were assessed. To have more efficiency, the companies might change their financial leverages and in the study, the relation of each of the independent variables (here the financial leverages) on the efficiency of the companies were evaluated. The results indicated that there is a meaningful relation between the financial leverages and the efficiency of the companies.

Keywords: Efficiency of workforce, efficiency of capital, financial leverage.

Introduction

In principle, the success of stock exchange and its attraction for the potential investors comes true through the increase of efficiency and the one of the shares of the recognized companies in the stock exchange. Financial leverages are of the factors that affect the behavior and performance of companies. Because, regarding the close relation between the capital structure and financial leverages, we can say that the companies performance can be affected by the financial leverages, capital structure, and also the ways to provide finances.

In regard to the point that profit making is the ultimate goal of a profit unit, a weak performance indicates unsuccessfulness that can come to the stop, bankruptcy, and the dissolution of the profit unit, if that not to be rectified. One of the most important ideals of the stocks markets is the appropriate allocation of the fiscal sources; it means that the fiscal sources go into the most appropriate and the most efficient sectors of the market. Regarding this point and also investors' interest in accessing the appropriate sources to assess high-efficient shares and investing in the companies which have a better financial future, utilizing the financial ratios, specially the market's ones, is really spread all over the world. Familiarity with these ratios and their relation with the companies' future output and also their shares is really important to investors (Brigham *et al.* 1999).

In economic sector, the most important factor involving in increasing the investment and consequently the economic development and growth is having strong and efficient financial markets in addition to appropriate financial institutions in these markets. Attracting the capital, managers provide resources needed to finance projects with positive net present value for the company; but many factors can influence a firm's investment decisions. Affecting the selection of investment projects, the factors can affect the capital cost, profit, profit anticipated by shareholder, and the future value of the company's stocks (Majluf & Myers, 1984).

An important element of the securities market is the price that reflects the available information. Studies conducted on corporate finance literature discuss that administrators can use information be-

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hind the company's stock price. The stock price may contain some information that managers do not know. As a result, this information can help managers in decision-making, such as making decisions on investment (Chen *et al*, 2007)

In this study, the relationship between the financial leverages and the total efficiency of the production factors among the recognized companies in the Tehran Exchange Stock would be assessed. Furthermore, the efficiency of workforce and the efficiency of investment would be assessed as the efficiency factors in the study. Therefore, the fundamental question here is:

What kind of relation is between the financial leverages and the recognized companies in the Tehran Exchange Stock?

Recitation

Decisions regarding the stock firm's financial leverage is one of the most important decisions are made by corporate executives. Financial decisions not only affect the company's future performance. It can also affect the country's macro-economic performance. It discusses the financial accelerator is directly related to the role and impact of financial conditions on economic shocks Because the efficiency of a company is regarded as important criteria for evaluating So can the productivity of firms in the major financial markets, he said. Thus, based on the theory that excess debt can be achieved compared to the optimal debt And thereby determine the optimal amount of leverage. Thus represents the theoretical amount of debt associated with the asset (Koruslli *et al*, 2010) Excess or deficiency of these approaches leverage on corporate performance is measured.

The objective of this study

Stock performance and sustainability in developing countries are regarded as an indicators to evaluate the economic, financial and trade policy changes. Purpose of this study was to investigate the relationship between financial leverage and the productivity of factors of production (labor and capital separately) and functional goals of this research is the relationship between each of the independent variables (financial leverage here) and how the efficiency of companies achieve higher productivity and what changes they can make on their financial leverage.

The theoretical principles and literature review

Kourisleli *et al.* (2010) assessed the relation between the financial leverages and the growth of efficiency in the capital structure based on the trade-off theory in an article titled as "when the financial leverages affect the efficiency ?". They considered the growth of efficiency as a standard, regarding the value of the company and assessed this issue using the regression of panel data for the eastern and central countries in Asia. They finally concluded that although the effect of financial leverages on the total efficiency of the of the production factors been assessed, the severity of the relation can be different from one agency to another, in a way that this effect has been more for some of the countries, such as Poland and Slovenia, and negligible for some others, such as Bulgaria and Romania. Because the efficiency has not been used as the standard to assess the performance of companies internally, so we evaluate the studies conducted about the relation between the financial leverages and other standards which based upon the performance of companies assessed.

Odabashian (2005) conducted a study regarding the increase of the effect of financial leverages on leveling the recognized companies in the New York Stock Exchange. The findings indicate that the increase of debts (leverage), decreases the opportunistic behaviors and also the management of profit in the companies with a high-speed liquidity. According to the results of the study, debt causes managers have lower free liquidity in order to repay the principle money and it's interest. So, they are not able to do inefficient investments. Dicemsaek, Padiel and Pestou assessed the factors effective on the structure of the capital of the companies in the Middle East and came to the conclusion that the capital structure is under the influence of the environmental conditions which companies have activities in. According to them and many others, various economic and political crisis – such as the financial crisis in 1997 – and different cultural and economic conditions dominating the activities of the companies, determine the type and the volume of the effects dominating on the performances of the companies.

Rajan and Zingales (1998) came to the conclusion in their article, titled as " financial independence and growth ", that the companies have more long-term debts, have more revenue growth and also more efficiency. This conclusion has also been confirmed regarding the companies in the stock exchanges of 16 countries.

Khodami Poor and Esmaeili (2012) concluded in their article, titled as "The value-based relations among the changes of financial leverage to clarify the operational performance ", that the financial leverage provides information more than the one can be accessed by the traditional standards. While the main focus of the study is upon the present time period, however, it's effect would remain until the next one, because the market does not have an on time understanding about the informational content of the financial leverage changes.

Nikoomaram *et al.*(2012) in their study have assessed accountancy conservatism and financial crisis of the recognized companies in the Tehran Exchange Stock. This study has assessed the effect of accountancy conservatism on the financial crisis of the recognized companies in the Stock Exchange within a 7-year period, since 2002 to 2008, in 48 companies stricken by financial crisis and have been removed from the Tehran Stock Exchange and also 57 profitable companies. The findings of the study indicate there is a direct and meaningful relation between the index of accountancy conservatism and the financial crisis of the companies. The study indicates there is an inverse relation between the size of the company and the profitability index and also the size of the company has a direct relation with the financial leverage. In addition, the study shows that sales growth has no effect on the financial crisis of the companies.

In a study titled as " The assessment of the effect of financial leverage and the chance of company growth on the investment-related decisions in the recognized companies in Tehran Stock Exchange", Karimi *et al.* (2011) offered two propositions ; according to the first one, the effect of the financial leverage on the investment decisions and according to the second one, the effect of growth chance on the investment divisions been tested. The findings of the analysis confirms the first one and the rejection of the second one. In addition, the findings of the study showed that there is a reverse and meaningful relation between the financial leverage and the investment decisions.

The variables of the study

In the study, the ratio of long-term debt to the total capital and the ratio of total debt to the total capital were as the independent variables, and the variables of workforce and capital efficiencies were as the dependent ones and also the company's total sales was regarded as the control variable.

The main hypothesis of the research

1. There is a significant relationship between the ratio of long-term debt to the total capital and total factor productivity in manufacturing companies listed in Tehran Stock Exchange,

2. There is a significant relationship. between the ratio of total debt to the total capital and total factor productivity in manufacturing companies listed in Tehran Stock Exchange.

The secondary hypotheses for the study

1. There is a significant relationship between the ratio of long-term debt to the total capital and workforce efficiency in companies listed in Tehran Stock Exchange.

2. There is a significant relationship between the ratio of total debt to the total capital and workforce efficiency in companies listed in Tehran Stock Exchange.

3. There is a significant relationship between the ratio of long-term debt to the total capital and capital efficiency in companies listed in Tehran Stock Exchange.

4. There is a significant relationship between the ratio of total debt to the total capital and capital efficiency in companies listed in Tehran Stock Exchange.

Statistical Population

It included all listed companies on Tehran Stock Exchange (Capital Market) Iran except investment companies, insurance companies and banks are examined. The study period, from 2007 to 2012 for six years.

Methodology

The quasi-experimental study of the category of casual study based on real data and stock market Financial statements of listed companies in Tehran stock exchange was performed. Also, to gather data, library and field methods have been used by using data from 142 financial statements of companies listed in Tehran Stock Exchange during the period 2006 to 2011. And, the method of multiple linear regression analysis was used for data results.

Hypothesis testing

The model of the affectability of the company's workforce efficiency is as follows:

$$PL_{it} = \beta_0 + \beta_1 LD_{it} + \beta_2 TD_{it} + \beta_3 SIZE_{it} + \beta_4 SALE_{it} + \varepsilon_{it}$$

According to the equation above, the company's workforce efficiency is a function of 4 variables including the ratio of long-term debt to the total capi-

tal, the ratio of the total debt to the total capital, the size and total sales of the company. The variables of long-term debt to the total capital and the ratio of total debt to the total capital play the role of independent variables and the size of the company and the company's sales volume do the one of control variables.

Based on the results of the of the affectability of the workforce efficiency, it can be concluded that the variables of the ratio of long-term debt to the total capital and the ratio of the total debt to the total capital have a meaningful effect on the company's workforce efficiency and the 1st and 2nd hypothesis were confirmed. The results of the model shown in the Table 1.

Table 1: Regression analysis to test the effectiveness of the company's work force productivity

Dependent variable: the Labor productivity of enterprises, number of rounds: 6, Number of students: 141, count healthy observed:846						
error level	**t statistic**	**Standard error**	**Coefficient**	**Variable Name**		
0.0000	12.53472	0.001798	0.022542	Constant coefficient	C	β_0
0.0000	-4.873044	0.000135	-0.000656	Long-term debt to total assets ratio	LD	β_1
0.0077	2.673474	0.000310	0.000828	Total debt to total assets ratio	TD	β_2
0.0000	-11.02086	0.000307	-0.003387	Firm size	SIZE	β_3
0.0000	-10.07185	1.60E-11	-1.61E-10	Total Sales	SALE	β_4
0.006537	Mean of dependent variable		0.776063	Coefficient of determination		
0.007117	Deviation of the dependent variable.		0.730062	Determining factor correction		
0.009343	Sum of squared deviations unexplained		0.003651	Standard deviation of the regression		
1.537978	dorbin test - Watson		16.87045	F statistic		
PL= 0.0225424 - 0.00065613*LD + 0.00082820*TD - 0.0033871*SIZE - 1.61432509266e-10*SALE + [CX=F]						

Table 2. Testing models for pooled or panel model and type of the first equation

Houseman test			**Chaw test**					**Target Test**	**model**
Results	**Error level**	**Chi-square**	**Results**	**Error level**	**Chi-square**	**Error level**	**F statistic**		
			Intercept equal	0.4227	4.944	0.4288	0.980094	Test period	Model of labor
Fixed effects	0.0000	53.685	Unequal slopes	0.0000	599.991	0.0000	5.169293	Test sections	

As can be seen from the table, the t calculated test is less than the t critical and the significance level is more than 0.05. So, the equality of the mean from the center is not rejected and the money model for the total periods is utilized, however, the calculated statistics for the slope of companies are more than the t critical and the calculated significance level is less than 0.05. As a result, the panel model is used for the periods or the slopes of the companies. The calculated statistics for Hussmann is more than

the t critical and its error level is less than 0.05. This rejects the random effects for the slope of the company and also confirmed the fixed effects.

The model of the affectability of the company's efficiency of capital is as follows:

$$PK_{it} = \beta_0 + \beta_1 LD_{it} + \beta_2 TD_{it} + \beta_3 SIZE_{it} + \beta_4 SALE_{it} + \varepsilon_{it}$$

According to the equation above, the company's efficiency of capital is a function of 4 variables of the ratio of long-term debt to the total capital, the ratio of the total debt to the total capital, the size and total sales of the company. The variables of long-term debt to the total capital and the ratio of total debt to the total capital play the role of independent variables and the size of the company and the company's sales volume do the one of control variables.

Based on the results of the of the affectability of the efficiency of capital, it can be concluded that the variables of the ratio of long-term debt to the total capital and the ratio of the total debt to the total capital have a meaningful effect on the company's capital efficiency and the 3st and 4nd hypothesis were confirmed. The results of the model shown in the Table 3.

Table 3. Regression analysis to test the effectiveness of the company's work force productivity

Dependent variable: the capital productivity of enterprises, number of rounds: 6, Number of students: 141, count healthy observed:846						
error level	**t statistics**	**Standard error**	**Coefficient**	**Variable Name**		
0.000	10.75	0.963	10.36	Constant coefficient	C	β_0
0.000	5.869	0.057	-0.33	Long-term debt to total assets ratio	LD	β_1
0.002	3.688	0.15	0.55	Total debt to total assets ratio	TD	β_2
0.000	8.748	0.16	1.44	Firm size	SIZE	β_3
0.000	-10.27466	1.01E-08	-1.03E-07	Total Sales	SALE	β_4
6.716	Mean		0.785083	Coefficient of determination		
7.896	SD		0.740934	Determining factor correction		
1.295.	Sum of squared mean		4.298240	Standard deviation of the regression		
1.573	Durbin Watson test		17.78279	F statistics		
Pk= 10.36010 - 0.33588*LD + 0.55345*TD – 1.44463*SIZE - 1.03368764211e-07*SALE + [CX=F]						

Table4: Testing models for pooled or panel model and type of the first equation

Houseman test			**Chaw test**					**Target Test**	**model**
Results	**Error level**	**Chi-square**	**Results**	**Error level**	**Chi-square**	**Error level**	**F statistic**		
			Intercept equal	0.083	9.811	0.083	1.950	Test period	Model of labor
Fixed effects	0.000	36.13	Unequal slopes	0.000	743.186	0.000	7.046	Test sections	

As can be seen from the table, the calculated test for from the center of the periods, is less than the t critical and the signifiance level of the calculation is more than 0.05. So, the equality of the mean from the center is not rejected and the money model for the total periods is utilized, however, the calculated statistics for the slope of companies are more than the t critical and the calculated significance level or

the slopes of the companies. The calculated statistics for Hussmann is more than the t critical and its error level is less than 0.05. This rejects the random effects for the slope of the company and also confirmed the fixed effects.

Discussion and conclusion

The results of the analysis show that the main hypothesis of the study was confirmed. Because there is a meaningful relation between the ratio of " the long-term debt to the total capital " and the ratio of " the total debts to the total capital " and also the total efficiency of the production factors, we can suggest the shareholders to pay attention to the financial leverage as an appropriate factor to understand the total efficiency. Also, through the provision of an appropriate ground for the investors and companies, on one hand, the investors embark on investing according to their risk level, and on the other hand, the companies would not be confined to the capital increase, regarding the adaptation of the financial provision strategies and they would be able to have an efficient choice among various finance provision strategies and the present efficiency ratios. Explaining this issue, the companies can move toward accessing an appropriate financial structure. It means that any company can borrow loans based on its potentials. Therefore, the professionals of the provision and revision of the theoretical principles of the financial reporting of the fiscal accountancy standards are recommended to pay attention to the results of this study and the similar ones and determine the specifics of the financial reporting, such as the financial reporting in regard to the accountancy standards and also the present conditions of the country's capital market.

References

Chen, Q., I. Goldstein, & W. Jiang, (2007). Price informativeness and investment sensitivity to stock price, The Review of Financial Studies, 20, 619–650.

Fabrizio C., Nigel, D., Sarmistha, P., & Isabelle, R. (2012). When does leverage hurt productivity growth? A firm-level analysis, *Journal of International Money and Finance, 1*-21.

Karimi, F., & Rezaei, A. (2011). *The effect of financial leverage on the company's growth opportunities and investment decisions of firms listed in Tehran Stock Exchange, Islamic Azad University, Rebel Unit, Department of Accounting, Rebel, Isfahan, Iran.*

Khodami Poor, A., & Esmaili, A. (2012), Financial leverage in explaining the relationship between changes in operating performance, Knowledge of Accounting, 2 (6), 65-91.

Majluf, M. & S. Myers (1984). Corporate Financing and investment decision when firms have information that investors do not have, *Journal of Financial Economics*, *13*(2), 187-222.

Nikoomaram, H. B., & Mirsepasi, N. (2012). Accounting conservatism and financial companies listed on the Stock Exchange, *Journal of Financial Securities Analysis, 9.*

Odabashian, K. (2005). *The Effect of large Leverage Increases on Opportunistic Behavior and Earnings Management*, Ph.D dissertation., University of Connecticut.

Rajan, R., & Zingales, L. (1998). Financial dependence and growth. *American Economic Review 88,* 559-586.

Rtaporn D., Krishna, P., & Gioia, P. (2004). The Determinants Of Capital Structure: Evidence From The Asia Pacific Region. *Journal of multinational financial management, 14,*387-405.