The Investigation of the Relationship between Financial Leverage and Return on Supply Chain Management

Hassan Mohammadzadeh Moghadam[1*], Mehdi Faghani[2], Mostafa Heydari[3]
[1]*Faculty Member, Department of Accounting, Payame Noor University, Iran*
[1]mohamadzadhacc@gmail.com
[2]*Assistant Prof. in Accounting, University of Sistan and Baluchestan, Zahedan, Iran*
[3]*Faculty Member, Department of Management, Payame Noor University, Iran*

***Abstract*—The objective of the present study was to investigate the relationship between financial leverage and return on supply chain management and assest of the rural cooperatives. In this study, five ratios have been selected as financial leverage including total debt to total assets, total debt to total shareholders' equity, total long-term debt to total assets, total short-term debt to total assets and total debt to total capital. The return on asset is also calculated from the total debt to annual profit ratio. According to the objective of the research, this work is an applied research and according to the data collection method, it is a descriptive correlational study. The population included all rural cooperatives in the eastern part of the country in which 153 cooperatives were selected using the elimination method. Data analysis and the hypothesis testing were performed by simple linear regression test and using SPSS software. The results showed that three financial leverages have significantly affected the return on assets of the cooperatives which are the total debt to total assets, total long-term debt to total assets, and total short-term debt to total assets ratios. Of these three ratios, the total debt to total assets (-0.304) has the greatest effect on the return in assets of the cooperatives. The two other financial leverage ratios, i.e., the total debt to total shareholders' equity and the total debt to total capital did not have a significant effect on the return on assets of the rural cooperatives in the eastern part of the country. Thus, it is recommended to the cooperatives' Chief Executive Officer to focus more on three ratios of total debt to assets, total long-term debt to total assets, and total short-term debt to total assets in order to increase the return on equity of the cooperative and plan on the financial focus of the cooperative to reduce these ratios based on the efficient supply chain system.**

***Keywords*—** *Financial Leverage, Equity, Returns on Assets, Supply chain management, Cooperatives.*

1. Introduction

Capital and financing budgeting decisions are considered the major areas of decision making of cooperative financial managers. The financial managers should plan the optimal capital structure of the company based on theoretical concepts. The optimal capital structure will be achieved when the market capitalization is maximized [7]. In general, the capital structure of the companies comprises of two parts: the amount of required capital and the composition of the finance. Mainly, loans and stocks are considered as two main components of the capital structure [21]. Because of the differences in financing costs, companies prefer to use debts instead of the share issue. Therefore, worsening operational performance mainly increases debt or the level of financial leverage (debts divided by total assets). It should be noted that in the discussion for each company, changes in the financial leverage and changes in debt are used synonymously [10]. In the literature, the financial leverage is defined as the

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amount of debt that is used to acquire additional assets. According to the definition, the firms could be defined financially as firms with high and low financial leverage [21]. Creating value and increasing shareholder wealth in long-term are the companies' goals. Maximizing the value of companies requires the implementation of profitable projects which requires the finance. Selecting the type of finance such as new share issue, flotation or raise a loan affects the optimal capital structure and the capital structure affects the total company value as well [15]. This study aims to find the relationship between the change in financial leverage and the return on assets in the rural cooperatives in the eastern part of the country.

The Chief Financial Officer (CFO) or Chief Executive Officer (CEO) of the companies should develop an optimal capital structure that will bring the most benefit to the company while minimizing the cost of capital. This will only be realized when all factors affecting the capital structure of the company are properly analyzed and balanced [7]. In the capital structure planning, the concept of the leverage is very important. The financial leverage is the use of fixed-income funds such as debt and preferred stock against common stock. In the capital structure of the company, the higher debt and preferred against common stock are used, the higher financial leverage company are used [19]. The changes of financial leverage could affect the company's financing capability, risk-taking propensity, cost of capital, investment, strategic decisions, and shareholder wealth [5]. After Modigliani and Miller, many theorists have studied the capital structure selection of the company and its relationship with other characteristics of the company [16]. In addition to flotation and share repurchase, leverage ratios could be affected by several other factors such as using commercial credit, dividend payouts, and so on [5]. Thus, in the present work, the main issue is the correlation between the changes of financial leverage and return on assets fact.

2. An Overview of the Research Background

Tavlonia and Tirgari (2014) have conducted a study titled "financial leverage, cash holding level and the value of the recognized companies in Tehran Stock Exchange: investigating the non-linear and hierarchical relations" and found that financial leverage has a curvilinear effect (U-shaped) on the cash holding level. Sati Qara-Mosa, Shakerian, and Mir-Mohammadi have found in their study that there is no significant relationship between financial ratios and stock return in the recognized companies in Tehran Stock Exchange [20]. However, investigating all ratios along with stock return shows that the correlation coefficients between all ratios along with stock return are equal. There is no significant correlation between financial ratios and stock return in the listed companies in Tehran Stock Exchange. Matsa concluded that big markets reduce the willingness to invest in profitable projects after raising financial leverage.

Umutlu has examined the relationship between financial leverage and investment decisions in the manufacturing companies in Turkish Stock Exchange. Their finding indicates that financial leverage has a negative effect on investment decisions and companies with more debt are less willing to invest in capital assets [25]. Li and Zhaohua have studied the relationship between financing through debt account and corporate investment behavior. Their sample included 60 Chinese companies from 2006 to 2008 which had been categorized according to the company development and shareholders structure [13]. They initially classified the companies into three groups according to their growth rate. The results showed that there is a significant negative relationship between financial leverage and investment in the companies with high growth and the companies with low growth, but this relationship is positive in the companies with moderate growth. Huaiji bao conducted a study on 1686 Chinese companies from 1992 to 2009 and found that there is a negative relationship between financial leverage and investment [8]. They argued that the companies with high leverage would not be able to use those opportunities even if the profitable opportunities are available. Then, excessive use of debt in

investment financing results in future investment restrictions.

Franklin and Mutazami have conducted a work titled "leverage effects on the investment decisions of the companies", in which 25 Indian pharmaceutical companies were selected from 1998 to 2009. In this study, they classified the companies into three groups including large, medium and small companies [6]. The results indicated that there is a significant positive relationship between financial leverage and investment. They also found that the cash flow and the retained earnings play a significant role in the investment decisions. Olufem has examined the effect of the exchange rate on stock returns of 117 firms in Nigeria, using three alternative exchange rates, i.e., Dollar, Pound, and Euro with extended Jorion's model, from 1998 to 2007 [18]. Companies were classified into two subgroups of financial and non-financial companies and findings represented that the exchange rate sensitivities (Beta) in most companies were significant (both positive and negative) and largely the return sensitivities to dollar exchange rate alternations was higher than other currencies [14]. Kai and Zhang investigated changes in the financial leverage ratios among the listed companies in US Stock Exchange from 1975 to 2002 [5]. The results indicated that there is a significant negative relationship between changes of financial leverage and stock return and, additionally, the increased financial leverage reduces the future investment and subsequently the company value. Ogden and Wu conducted a study titled “Re-evaluation of the impact of growth opportunities on financial leverage” [17]. They took into account the profitable growth opportunities as a vital factor in explaining the financial leverage of firms with respect to exciting literature, especially the equilibrium theory. They found that there is a non-linear relationship between firm growth opportunities and financial leverage.

3. Theoretical Foundations and Hypothesis Plan

3.1 Financial leverage

Financial leverage has been used as an indicator of company's financial position in many cases such that financial analysts have never neglected its importance. Therefore, the net present value (NPV) or net present worth (NPW) of investment opportunities is the only factor influencing the firm's investment strategy [8]. Operational leverage is the ratio of changes in operating income to changes in sales. In the other words, it represents the ratio of sensitivity and changes of operating income against changes in the sale and states how much change will be obtained in operating income for a single change in the sale. Thus, the higher the company's operating leverage, the higher the sensitivity and changes in the company's operating income per change in the sale is and vice versa. Therefore, the lower the operating leverage, the lower the fluctuation in operating income for change in the sale is [22]. Therefore, according to the abovementioned concept, the operating leverage is calculated using the following relation:

$$DOL = \frac{\%\ change\ in\ Operating\ Income}{\%\ change\ in\ Sales}$$

However, the above relation will not be true as a measurement criterion for operating leverage. In Iran, this criterion cannot be used to measure operating leverage of the recognized companies in Tehran Stock Exchange since different factors such as inflation, exchange rate changes, changes in raw material prices, and other uncontrollable factors have made it unreliable to use for sale and operating income of firms in line with this relation. Therefore, we need to look for another criterion to measure the company's operating leverage [2].

3.2 Return on Equity

Return on equity (ROE) is a measure of the efficiency of generating profits and return by measuring the rate of return that a company can generate from its assets and the money shareholders have invested. In fact, ROE helps investors to figure out if the company is an efficient or inefficient machine. Those companies

which are able to gain profit through their operations have a great advantage over other companies which are dividend payout and generate a return for investors. This relationship between company' profitability and gaining returns from investors makes the ROE a very valuable measure to perform a company's analysis [3]. Return on equity ratio determines the relationship between the amount of company assets and incomes. If the company adds to its investments (based on total assets) but fails to increase symmetrically its earnings before interest and taxes, the return on equity rate decreases. Therefore, an increase in the volume of company investment does not automatically improve the financial condition of the company [4].

Due to the aforementioned theoretical principles, the following hypotheses have been raised and tested to achieve the research objectives:

- First hypothesis: there is a significant relationship between total debts to total assets ratio and accounting standard of return on equity ratio in the rural cooperatives.

- Second hypothesis: there is a significant relationship between total debts to total shareholders' equity ratio and accounting standard of return on equity ratio in the rural cooperatives.

- Third hypothesis: there is a significant relationship between total long-term debt to total assets and accounting standard of return on equity ratio in the rural cooperatives.

- Fourth hypothesis: there is a significant relationship between total short-term debt to total assets and accounting standard of return on equity ratio in the rural cooperatives.

- Fifth hypothesis: there is a significant relationship between total debt to total capital and accounting standard of return on equity ratio in the rural cooperatives.

4. Method

The present study has been done based on the applied research and the required data has been collected using descriptive and correlational research strategies. The population included all rural cooperatives in the eastern part of the country in which 153 cooperatives were selected by the elimination method and, their data from 2011 to 2017 has been investigated. Accordingly, the companies included in the sample have the following criteria:

1- Type of company is registered as a rural cooperative.

2- Companies that have independent audit report plus financial statements, over the period of 6 years, from 2011 to 2016.

In this study, the required data were collected from financial statements, boards' reports, and annual audit reports of the companies; the library research method was also applied to further examine the background of the present work. In this research, the independent and dependent variables were calculated by using Excel software. Moreover, the simple linear regression analysis was done via SPSS at 95% confidence level to investigate the rejection or acceptance of the hypotheses.

5. Findings

Before analyzing the inferential statistics, one-sample Kolmogorov–Smirnov test was first applied to investigate the type of distribution of variables as a result of selecting the appropriate test. Since the Kolmogorov-Smirnov Z for all variables was between +1/96 and -1/96, and on the other hand, the P-value for all variables is greater than 0.05, then Null hypothesis, i.e., the normal distribution of the community for all variables is confirmed.

5.1 Inferential statistics of total debt to assets debt ratio with return on equity ratio (first hypothesis)

In order to measure inferential statistics of total debt to total assets ratio with return on equity ratio and with

respect to the interval scale of measure and normal distribution of variables, simple linear regression test was applied. The multiple correlation coefficient (0.304) indicated that the variable of return on equity could be predicted by the variable of total debt to total assets ratio, 30.4%. In addition, the coefficient of determination (R2) (0.092) showed that 9.2% of observed return on equity dispersion is explained and justified by total debt to total assets ratio. According to Table 1, the significance of analysis of variance (ANOVA) test as a predictor of being linear the regression model is less than 5% (0.000). Hence, the assumption of the linearity of the model is confirmed.

Table 1. Analysis of Variance (first hypothesis)

	TSS	**Freedom**	**MSE**	**F-value**	**Sig**
Regression	1.745	1	1.745	15.345	0.000
Reminder	17.172	151	0.114		
Total	18.917	152			

In accordance with Table 2, the significance of testing the equivalence of regression coefficients and the constant value of zero is less than 5% for total debt to total assets ratio. Therefore, the assumption of equivalence of regression coefficients and the constant value of zero is rejected and it is not necessary to extract variables from the regression equation. In other words, total debt to total assets ratio affects the return on equity. Moreover, due to the regression coefficients, relation -0.304 is established between total debt to total assets and return on equity. This moderate negative relationship indicates that the higher the total debt to total assets ratio of the cooperatives, the lower the return on equity of the companies is.

Table 2. Regression Coefficient (first hypothesis)

Dependent Variable	**Non-standardized Coefficient**		**standardized Coefficient**	**t-value**	**Sig**
Return on Equity	**B-value**	**SE**	**Beta**		
Constant value	0.117	0.054		2.154	0.033
Total debt to total assets	-0.266	0.068	-0.304	-3.917	0.000

5.2 inferential Statistics of total debt to total shareholders' equity ratio with return on equity ratio (second hypothesis)

In the simple linear regression test, the multiple correlation coefficient (0.060) indicated that the variable of return on equity could be predicted from total debt to total shareholders' equity ratio of 6%. Furthermore, the coefficient of determination (0.004) indicated that just 0.4% of the observed return on equity dispersion is justified by the variable of total debt to total shareholders' equity. According to Table 3, the significance of ANOVA test as a predictor of the linearity of the regression model is more than 5% (0.461). Therefore, the assumption of the linearity of the model is not confirmed.

Table 3. Analysis of Variance (second hypothesis)

	TSS	Freedom	MSE	F-value	Sig
Regression	0.068	1	0.068	0.576	0.461
Reminder	18.849	151	0.125		
Total	18.917	152			

In accordance with Table 4, the significance of testing the equivalence of regression coefficients and the constant value of zero is greater than 5% for the variable of total debt to total shareholders' equity. Therefore, the assumption of equivalence of regression coefficients and the constant value of zero is not rejected and it is necessary to extract variables from the regression equation. In other words, the variable of total debt to total shareholders' equity does not affect the return on equity.

Table 4. Regression Coefficient (second hypothesis)

Dependent Variable **Return on Equity**	**Non-standardized Coefficient**		**standardized Coefficient**	**t-value**	**Sig**
	B-value	**SE**	**Beta**		
Constant value	-0.069	0.029		-2.395	0.018
Total debt to total shareholders' equity	0.001	0.001	0.060	0.739	0.461

5.3 inferential Statistics of total long-term debt to total assets ratio with return on equity ratio (third hypothesis)

In the simple linear regression test, the multiple correlation coefficient (0.222) indicated that the variable of return on equity could be predicted from total long-term debt to total assets ratio of 22.2%. Furthermore, the coefficient of determination (0.049) indicated that just 4.9% of observed return on equity dispersion is justified by the variable of total long-term debt to total assets. According to Table 5, the significance of ANOVA test as a predictor of the linearity of the regression model is less than 5% (0.006). Therefore, the assumption of the linearity of the model is confirmed.

Table 5. Analysis of Variance (third hypothesis)

	TSS	Freedom	MSE	F-value	Sig
Regression	0.931	1	0.931	7.815	0.006
Reminder	17.986	151	0.119		
Total	18.917	152			

In accordance with Table 6, the significance of testing the equivalence of regression coefficients and the constant value of zero is less than 5% for the variable of total long-term debt to total assets. Therefore, the assumption of equivalence of regression coefficients and the constant value of zero is rejected and it is not necessary to extract variables from the regression equation. In other words, the variable of total long-term debt to total assets affects the return on equity. Also, due to the regression coefficients, relation -0.222 is established between the variable of total long-term debt to total assets and return on equity. This moderate negative relationship indicates that the higher the total long-term debt to total assets ratio of the cooperatives, the lower the return on equity of the companies is.

Table 6. Regression Coefficient (third hypothesis)

Dependent Variable **Return on Equity**	**Non-standardized Coefficient**		**standardized Coefficient**	**t-value**	**Sig**
	B-value	SE	Beta		
Constant value	-0.012	0.034		-0.356	0.723
Total debt to total shareholders' equity	-0.994	0.355	-0.222	-2.796	0.006

5.4 inferential Statistics of total short-term debt to total assets ratio with return on equity ratio (fourth hypothesis)

In the simple linear regression test, the multiple correlation coefficient (0.256) indicated that the variable of return on equity could be predicted from total short-term debt to total assets ratio of 26.5%. Furthermore, the coefficient of determination (0.070) indicated that 7% of the observed return on equity dispersion is justified by the total variable of total short-term debt to total assets. Based on Table 7, the significance of ANOVA test as a predictor of the linearity of the regression model is less than 5% (0.001). Therefore, the assumption of the linearity of the model is confirmed.

Table 7. Analysis of Variance (fourth hypothesis)

	TSS	**Freedom**	**MSE**	**F-value**	**Sig**
Regression	1.330	1	1.330	11.422	0.001
Reminder	17.586	151	0.116		
Total	18.917	152			

According to Table 8, the significance of testing the equivalence of regression coefficients and the constant value of zero is less than 5% for the variable of total short-term debt to total assets. Therefore, the assumption of equivalence of regression coefficients and the constant value of zero is rejected and it is not necessary to extract variables from the regression equation. In other words, the variable of total short-term debt to total assets affects the return on equity. Therefore, due to the regression coefficients, relation -0.265 is established between the variable of total short-term debt to total assets and return on equity. This moderate negative correlation indicates that the higher the total short-term debt to total assets ratio of the

cooperatives, the lower the return on equity of the companies is.

Table 8. Regression Coefficient (fourth hypothesis)

Dependent Variable **Return on Equity**	**Non-standardized Coefficient**		**standardized Coefficient**	**t-value**	**Sig**
	B-value	**SE**	**Beta**		
Constant value	0.083	0.052		1.595	0.113
Total debt to total shareholders' equity	-0.237	0.070	-0.265	-3.380	0.001

5.5 inferential Statistics of total debt to total capital ratio with return on equity ratio (fifth hypothesis)

In the simple linear regression test, the multiple correlation coefficient (0.047) indicated that the variable of return on equity could be predicted from total debt to total capital ratio of 4.7%. Furthermore, the coefficient of determination (0.002) indicated that just 0.2% of the observed return on equity dispersion is justified by the variable of total debt to total capital ratio. Based on Table 9, the significance of ANOVA test as a predictor of the linearity of the regression model is greater than 5% (0.000). Therefore, the assumption of the linearity of the model is not confirmed.

Table 9. Analysis of Variance (fifth hypothesis)

	TSS	**Freedom**	**MSE**	**F-value**	**Sig**
Regression	0.042	1	0.042	0.337	0.563
Reminder	18.875	151	0.125		
Total	18.917	152			

According to Table 10, the significance of testing the equivalence of regression coefficients and the constant value of zero is greater than 5% for the variable of total debt to total capital. Therefore, the assumption of equivalence of regression coefficients and the constant value of zero is not rejected and it is necessary to extract variables from the regression equation. In other words, the variable of total debt to total capital does not affect the return on equity.

Table 10. Regression Coefficient (fifth hypothesis)

Dependent Variable **Return on Equity**	**Non-standardized Coefficient**		**standardized Coefficient**	**t-value**	**Sig**
	B-value	**SE**	**Beta**		
Constant value	-0.071	0.029		-2.408	0.017
Total debt to total shareholders' equity	0.000	0.000	0.047	0.580	0.563

6. Conclusions

Given the results of the first hypothesis, the variable of total debt to total assets ratio affects the return on equity. The moderate negative correlation indicates that the higher the total debt to total assets ratio of the cooperatives, the lower the return on equity of the companies is. In agreement with the results of the second hypothesis, the variable of total debt to total shareholders' equity ratio does not affect the return on equity. According to the results of the third hypothesis, the variable of total long-term debt to total assets ratio affects the return on equity. The moderate negative correlation represents that the higher the total debt to total assets ratio of the cooperatives, the lower the return on equity of the companies is. Based on the results of the fourth hypothesis, the variable of total short-term debt to total assets ratio affects the return on equity. The moderate negative correlation indicates that the higher the total short-term debt to total assets ratio of the cooperatives, the lower the return on equity of the companies is. Given the results of the fifth hypothesis, the variable of total debt to total capital has no significant effect on return on equity. Afshari et al., in line with the results obtained from research hypotheses, have investigated the effect of financial leverage variable on the investment decisions, considering two standards of total debt to total assets and total long-term debt to total assets ratios [1]. In accordance with the results of the fifth hypothesis, they concluded that there is no linear relationship between total debt to total assets ratio and the companies' investments. However, unlike the results of the third research hypothesis, they found that there is no linear relationship between total long-term debt to total assets ratio and investments decisions.

Khoshtinat and Joshaghani investigated the influence of financial leverage on earnings response coefficient (ERC) and concluded that there is a significant relationship between total debt to total shareholders' equity ratio and total debt to total assets with ERC which was in line with the results obtained from second and fifth research hypotheses [11,12]. Karimi et al. have examined the impact of financial leverage on operating liquidity and concluded that financial leverage has a reverse effect on cash conversion cycle and liquidity ratio, direct effect on return on equity and has no effect on cash flow margin which was somewhat in line with the results of the present work [9]. In another study, Tavakolnia et al. have investigated the correlation between financial leverage, financial ability, growth and heavy investment and found that there is no significant relationship between growth and financial leverage; however, there is a positive relationship between financial leverage and financial ability [23].

Tavakolnia studied the relationship between supply chain management, cash holding level, and the company value and concluded that there is a U-shaped relationship between financial leverage and cash holding level which was somewhat consistent with the results of the present work [24]. In another study, in line with the results of this study, found that there is an inverse U-shaped relationship between financial leverage and companies' growth opportunities. Altogether, one can conclude from the research hypotheses that three financial leverage ratios, i.e. total debt to total assets, total long-term debt to total assets and total short-term debt to total assets have a significant influence on return on equity of the companies. Of these three ratios, total debt to total assets with the coefficient of -0.304 has the greatest impact on return on equity of the companies. Two other financial leverage ratios, i.e. total debt to total shareholders' equity and total debt to total capital, have a significant influence on return on equity of the rural cooperatives in the eastern part of the country. Thus, it is recommended to the CEO of the cooperatives to focus more on the supply chain management systems, three ratios of total debt to total assets, total long-term debt to total assets and total short-term debt to total assets in order to increase the return on assets of the cooperative and plan on the financial focus of the cooperative to reduce these ratios.

7. Practical suggestions

The following solutions and suggestions are presented based on the empirical and theoretical results:

- Conducting training course for cooperatives' CEO to understand the nature of different ratios of financial leverage and manage manner of these ratios.

- Conducting meetings, advisory committees and taking advantage of ideas of financial and accounting experts to manage financial leverage in order to increase the return on equity of cooperatives.

- According to the results, two total debt to total shareholders' equity and total debt to total capital ratios did not have a significant impact on the return on equity; therefore, the necessary arrangements should be implemented in order to improve these two ratios and ultimately increase the return on equity through planning and managing financial resources.

References

[1] Afshari Asdollah "The impact of financial leverage on the investment decisions in recognized companies in Tehran Stock Exchange", Quarterly Management Accounting, Vol. 5, No. 13, pp. 17-29, 2011.

[2] AL-Shubiri, F., "Analysis The Deteminants of Stock Market Price Movements- An Emperical Study of Jordanian Commercial Bank". International Journal of Business and Management, 5 (10), 137-147, 2010.

[3] Azarinia Mohammad Ali, "Capital Market", Capital Newspaper, No. 259, p. 12, 2006.

[4] Bazgir Mohammad Reza, "The relationship between return on equity rate and the inflation rate in recognized companies in Tehran Stock Exchange", M.A thesis, 2005.

[5] Cai; jie, zhang; zhe, "leverage change, debt overhang, and stock prices, research collection lee kong chian school of business", vol 17, no 3, pp 391-402, 2011.

[6] Farnklin J. S. and K. Muthsamy, "Impact Of Leverage on Firminvestment Decision", International Journal of Scientific & Engineering Research, Vol.: 2, Issue 4, 2011.

[7] Hampton. John J "Financial Decision Making: Concepts, Problems, and Cases (Financial Management 2)", Prentice Hall, 4th edition, 1989.

[8] Huijie B., "A Study on Leverage & Firm Investment: Chinese Evidence", Royal Institute of Technology (KTH), Master of Science Thesis, Program Economics of Innovation and Growth, 2010.

[9] Karimi. Kamran, "The effect of financial leverage on the operational liquidity of companies (within GOEI model)", Financial Engineering and Portfolio Management, No. 32, pp. 191-205, 2017.

[10] Khodamipour. Ahmad, "Value Relevance in financial leverage changes in explaining the operational performance", Accounting Knowledge, Vol. 2, No. 6, 2011.

[11] Khoshtinat. Mohsen "Effect of financial leverage on earnings response coefficient ", Quarterly Accounting Studies, No.17, pp. 1-25, 2008.

[12] Khoshtinat. Nizamuddin "Financial leverage and its correlation with financial distress and growth opportunities in recognized companies in Tehran Stock Exchange (linear and curvilinear relationship)", Quarterly Financial Accounting, Vol. 5, No. 20, pp. 108-129, 2013.

[13] Li J., S. Chengqin, W. Zhaohua, "The Impact of Debt Financing on Firm Investment Behavior: Evidence from China", International Journal of Digital Content Technology & its Applications, Vol.:4(No. 9), Pp: 17-26, 2010.

[14] Matsa; david, "capital structure as a strategic variable: evidence from collective bargaining, the journal of finance", vol 65, issue 3, pp 1197–1232, 2010.

[15] Mehrani. Sasan "The relationship between financial leverage and value added, Quarterly Financial Accounting, Vol. 1, No. 4, pp. 79-91, 2009.

[16] Modigliani; franco, miller; merton, "the cost of capital, corporation finance and the theory of investment, the american economic review", vol 48, no 3, pp 261-297, 1958.

[17] Ogden, J.P. and Wu, S., "Reassessing the effect of growth options on leverage". Journal of Corporate Finance, 23, 182-195, 2013.

[18] Olufem, A. T., "Exchange rate risks exposure of Negerian listed firms: an empirical examination. International Business Research", 4(2), 219-225, 2011.

[19] Qalibaf Asl. Hassan "The Effect of Board Composition on the financial performance of

listed firms in Tehran Stock Exchange", Financial Research, Vol. 9, No. 2, 2009.

[20] Saati-Gharemusa. Imamali "The relationship between financial leverage and market size with stock returns of recognized companies in Tehran Stock Exchange", New research approaches in management and accounting, No. 2, p. 1-15, 2017.

[21] Sinai. Hussein "The relationship between financial leverage and systematic risk of common stock (B) in publicly listed companies", M.A thesis, Financial Research, No. 18, pp. 107-122, 2004.

[22] Taheri. Mahmood, "The effect of operational leverage on the fluctuation rate in operating profit of Tehran Stock Exchange Companies", M.A thesis, Shahid Beheshti Universit, 2009.

[23] Tavakolnia "Financial leverage and its relationship with financial ability, growth and heavy investment in fixed assets of recognized companies in Tehran Stock Exchange (linear and curvilinear relationship), Financial Management Strategy, Vol. 2, No. 5, pp. 79-101, 2014.

[24] Tavakolnia "financial leverage, cash holding level and the value of recognized companies in Tehran Stock Exchange: study the non-linear and hierarchical relationships", Quarterly Management Accounting, Vol. 7, No. 22, 2014.

[25] Umutlu, M., Firm leverage and investment decisions in an emerging, 2010.