

STUDYING THE RELATIONSHIP BETWEEN DIVERSIFICATION STRATEGY, CAPITAL STRUCTURE, AND FREE CASH FLOW WITH PERFORMANCE OF THE FIRMS LISTED IN TEHRAN STOCK EXCHANGE

Hossein safari, Mehrdad ghanbary*

Department of Accounting, Collage of Humanities, Kermanshah Branch, Islamic Azad University, Kermanshah, Iran.

**Corresponding Author: mehrdadghanbary@yahoo.com*

ABSTRACT: Financing decisions of firms and their choice for financing by debt or investment was remarkably influenced by the characteristics of their assets. In companies that have taken a variety of strategies, asset structure is nonspecific and can be obtained through debt resources. Because of that, at the time of company's liquidation, possible liquidity is higher. However, in firms with low diversity (monoculture), assets are specific and should be provided by bringing the resources of stakeholders. Because, at the time of liquidation of the company, possible liquidity is lower. The general and main goal of the study is to research the relationship between diversification strategy, capital structure, and free cash flow with performance of listed companies in Stock exchange of Tehran. The sample consisted of 96 companies listed in the stock exchange whose data was collected and analyzed during 5 years (2008 to 2012). Generally, the findings suggest that the strategy of diversification has a positive impact on firm performance. However, the impact of financial leverage on performance is negative. These findings suggest that firms with high diversity in business have higher profitability, but high debt in the capital structure will reduce profitability. According to the findings, better performance of the firm caused to take a diversification strategy. However, in companies with high debt levels, diversification strategy was more limited. Accordingly, it seems that the commercial and productive activities of companies in the sample company can be a function of their financial structure and capital. These findings suggest that, in firms with better performance, level of financial leverage is lower. These findings show that firms with higher profitability are less willing to be funded through borrowing. Also, according to the research results, free cash flow, in companies with a high level of financial leverage, is lower.

Keywords: diversification strategy, financial leverage, free cash flow, performance

INTRODUCTION

Many of today's organizations in the world go toward upsizing and increasing business environment; maybe, one of its reasons is fulfilling customers multiple needs. Managers try to keep customers loyal to their organizations by fulfilling their needs. For this reason and other technical ones like material providing and final production distribution system within organization, organizations tend to various strategies. Variety in strategy is a policy by which organization tries to provide more productions and services which needs to establish unites and sub-unites separating organizational structure (Kim and mother, 2008). In this study, the diversification strategy of sample firms is considered showing that the results can be useful for managers to determine the policies of diversity.

PROBLEM STATEMENT

Some research has focused on variety strategy on firms' financial resources decision. From on

hand, empirical and experimental witnesses show that mentioned decisions and clearly, firms' capital structure are effective on their future and current performance. Financial resource providers are investors (stock holders and validators) who search in each group for their profits. What urges providers to use their resources in specific activity is that activity's favorable performance that in its following, firm value; consequently, stock holders capital will get increased. From on hand, financing costs are different. Financial leverage shows the amount of firms usage from borrowing in capital structure, and firms which most parts of their capital structure is provided by borrowing, are so-called leverage firms. In firm point of view, financing costs is less by debts since debt entails spending interest to b creditors, and this amount of cost is not acceptable according to taxes rules; on the other hand, debts irregular increase bankruptcy risk, and decrease the stock value. According to another point of view, extra use of stock holders rights cause increasing expected by stock holders; finally, increase financing cost.

Therefore, managers should choose capital structure by considering existed strategies that have less capital costs in order to have firm with better yield. In a way that capital optimum structure occurs when its capital costs arrived to its least point (Tang & Jang, 2007).

Other roles in the company's diversification strategy can be explained by representation theory. In this regard, Jensen (1986), in free cash flow theory, suggests that managers, instead of free cash flow distribution among the owners, tend to reinvest in the company, because paying to shareholders reduces the resources under the control managers and leads to decrease their power. Accordingly, the existence of free cash flow provides opportunity for managers to expand the company's operations domain, and corporate structure becomes more dispersed.

While, higher level in debt, with the decrease in free cash flow, potentially denies the opportunity from managers and prevents the waste of resources through more investment by managers (Belckoie and Bannister, 1994). The above discussions show that four variables of capital structure, free cash flow, diversification strategy, and firm performance are in contrast with each other. The past empirical evidence has considered the relationships among these variables separately, and notices the contrast among them simultaneously (Park and Zhang, 2013). In this study, the interactions of these four variables were considered in a unified conceptual framework and in terms of experimental data. Underlying problem of this study is that how diversification strategies, with the level of debt and free cash flow, affected how performance of profit units.

LITERATURE REVIEW

Park and Zhang (2013), in a study, investigated the relationship between capital structure, free cash flow, diversification strategy and firm performance simultaneously. The results showed that free cash flow increases the amount of corporate diversity. Also, the results suggest that financial leverage is an effective way of reducing the free cash flow and improves corporate performance and the role of financial leverage in firms with diversification strategy is more significant. The researchers found that financial leverage reduces the negative effects of dispersion on firm performance directly and decreases the opportunities for managers to take an inefficient diversification strategy.

In another research, Honarbakhsh et al. (2012) have explored the relative impact of trading strategy on relationship between financial leverage and accepted firms performance in

Tehran stock exchange market. To test hypotheses, firms are divided into 2 classifications having cost management strategy or commodity distinction strategy. Results have shown that in both 2 firm classifications, financial leverage variable has positive relationship with firm performance. Moreover, results have shown that in firms with cost management strategy, dividing profit has positive relationship with performance, but it has negative relationship with firm performance. Jacob Odd (2012) investigated the relationship between payout policy, financial flexibility and free cash flow. He found that firms with free cash flow have more flexibility and motivation of the firms to pay earning is more than firms that do not have the free cash flow.

Inside country, also, Khalili Eraghi et al. (2009) who, in a research entitled environment risks, firm strategy and capital structure concluded that about the effect of strategy on performance it can be stated that stock holders' rights return's rate can be considered as linear function of equity growth, selling growth, growth potential, and liquidation that equity growth has the most impact on stock holders rights return, and selling growth, growth potential and liquidation have the least impact.

Ruland and Zhou (2005), in a study, explored the relationship between diversification strategy, financial leverage and firms' values. Their research results have shown that financial leverage increase the firm value potentially by accessing to financial resources with low costs, While the firms' values following the variety strategy are less than the other firms' values.

RESEARCH METHODOLOGY

Research method, in terms of implementation, is descriptive and correlational. It's descriptive because its purpose is to describe a situation or phenomenon under study and to understand the present situation and its correlation because the relationship is among the variables and in this aspect the study purpose is applied because it investigates the relationship among the variables in the Stock Exchange.

THE RESEARCH HYPOTHESES

- 1) Free cash flow has positive and significant impact on firm performance.
- 2) Diversification strategy has positive and significant impact on firm performance.
- 3) The amount of financial leverage has positive and significant impact on firm performance.

- 4) Free cash flow has positive and significant impact on firm diversification strategy.
- 5) Financial leverage has positive and significant impact on their diversification strategy.
- 6) Financial leverage of the firm has positive and significant impact on free cash flow.

THE MODEL OF HYPOTHESES TEST AND RESEARCH VARIABLES

To test the hypotheses of the research, the regression model proposed by Park and Zhang (2013) was used. In these models, the relationship between the main variables of study include financial leverage (as a measure of the company's capital structure), the diversification strategy, and free cash flow and the ratio of Kiotobin (as a measure of company performance) has been explained. Also, in each model, in accordance with the dependent variable in the model, variables had been entered as a control variable in the regression. These models are as follows.

MODEL OF THE FIRST AND THE THIRD HYPOTHESES TEST

$$\ln(\text{Tobin's } q)_{it} = \beta_0 + \beta_1 FCF_{it} + \beta_2 DIVER_{it} + \beta_3 \ln(TDL)_{it} + \beta_4 \text{Cashflow}_{it} + \beta_5 \text{Sales GR}_{it} + \beta_6 \ln(\text{sales})_{it} + \epsilon_{it}$$

(Tobin's q) ln: Natural logarithm of the q Tobin's ratio as a factor of company performance. According to Park and Zhang (2013) Tobin's q ratio through the following equation is calculated.

$$\text{Tobin's } q = \frac{\text{book value of debt} + \text{market value of equity}}{\text{total assets}}$$

FCF: Free Cash Flow is calculated by the following equation. In this study, Lehn and Poulsen model (1989) was used for the measurement of free cash flow (FCF)

$$FCF_{it} = \frac{(INC_{it} - TAX_{it} - INTEXP_{it} - CSDIV_{it})}{TA_{it-1}}$$

INC: operating profit plus depreciation cost for tangible and intangible assets.

TAX: Income Tax.

INTEXP: cost interest.

CSDIV: earring paid to ordinary shareholders.

TA_{it-1}: the total book value of assets at the beginning of the fiscal year.

DIVER: a measure of the diversification strategy in company according to Park and Zhang (2013) is calculated by the following equation.

$$DIVER = P_{it} * \ln\left(\frac{1}{P_{it}}\right)$$

P: the ratio of sale income earring from largest business of company to total income of the company.

(TDL) ln: the natural logarithm of the company's financial leverage as a measure of capital structure (financial leverage is the ratio of total debt to total assets)

Cash flow: the ratio of net cash flow to total assets as a control variable

Sales GR: growth rate of sale income of the company as the control variable

(Sales) ln: the natural logarithm of sales income of the company as a control variable

THE MODEL OF THE FOURTH AND FIFTH HYPOTHESIS TEST

$$DIVER_{it} = \beta_0 + \beta_1 FCF_{it} + \beta_2 \ln(\text{Tobin's } q)_{it} + \beta_3 \ln(TDL)_{it} + \beta_4 RER_{it} + \beta_5 PPNE_{it} + \beta_6 \ln(\text{sales})_{it} + \epsilon_{it}$$

RER: the ratio of retained earnings to total assets as a control variable

PPNE: the ratio of fixed net assets to total assets as a control variable

THE MODEL OF THE SIXTH HYPOTHESIS TEST

$$FCF_{it} = \beta_0 + \beta_1 \ln(TDL)_{it} + \beta_2 \text{dummy Dividend}_{it} + \beta_3 \ln(\text{sales})_{it} + \epsilon_{it}$$

Dummy Dividend: a variable with two states that if the Company, during the financial period, paid the dividend, the value is 1 and otherwise it is zero.

THE RESULT OF TEST HYPOTHESIS STATISTICAL POPULATION AND RESEARCH SAMPLE

Statistical population of the study consist all listed companies in Iran investment market. Sampling method is screening (FA systematic) that the specific terms and conditions is defined for the participation of companies in the sample. Table 1 shows how to select appropriate research sample extraction method according to the method of sampling and the considerations and conditions raised and the data and information available in the stock market.

Table 1: The Method of the Sample Selection and Extraction

The number of companies presented in Stock exchange from 2007 to 2012	310 companies
The number of companies was not investment companies and financial intermediaries	218 companies
The number of companies with fiscal years ending in March	157 companies
The number of companies that had not changes in fiscal years in the period of the study	151 companies
The number of companies that their trademarks are active and have not off more than 4 months in a year	109 Companies
The number of companies that their sales incomes have been disclosed as a breakdown	96 companies
The number of companies that their data is collected (final sample),	96 companies

THE RESULTS OF (FITTING) OF THE FIRST AND THIRD HYPOTHESES TEST

Table 2: Results of statistical analysis to test the first to three hypotheses

p-value F	F Statistics	Durbin-Watson Statistics	R ² adjusted
0.000	28.359	1.997	0.284
(P-value)	Statistics t	β (standardized)	variable
0/043	-1/989	-0/086	FCF
0/013	2/497	0/112	DIVER
0/000	-4/239	-0/203	ln (TDL)
0/003	2/971	0/137	Cashflow
0/25	1/51	0/051	Sales GR
0/987	-0/016	-0/001	ln (sales)

The results of the statistical analysis of the regression model validity presented in the first part of the table. Determination Coefficient of regression model is 0/284 and suggests that this model has 28.4 percent of the variation in the sample firms during the period of research explain by independent and control variables. Also, the results show that Dorbin-Watson statistic was between 5.1to5.2. Therefore, there is a strong correlation between the errors of the regression model and lack of correlation between the errors, as one of the basic hypothesis of the regression about fitting model, accepted.

The results of the regression analysis of variance (ANOVA), make decision based on F statistics, presented for fitted model was to test the first sub-hypothesis in the last column of Table 2. Statistical hypothesis related to F-statistics analysis is as follows.

- H0: $\beta_i=0$ is not meaningful regression model
- H1: $\beta_i \neq 0$ is significant regression model

Significant F statistics level for the model is lower than test error ($\alpha =0/05$), and hence the H0 hypothesis is rejected and the estimated regression statistically is significant and relationships between variables is linear. After reviewing the overall regression model, in order to make decisions regarding to hypothesis, the coefficients of each independent variable of interest was consider.

DECISIONS MAKING REGARDING TO THE FIRST HYPOTHESIS

In the first research hypothesis states that free cash flow impact on company performance. The results in table 2 show that the estimated coefficient for the variable FCF which show free cash flow impact on company performance; Up to 0/086 and with a significantly level 0/043 that is lower than the 0/05 (test error level). These findings suggest that there is a significant negative correlation between these variables. This finding is consistent with the claims raised in the first hypothesis; the hypothesis is rejected at the 95 percent confidence level.

DECISIONS MAKING REGARDING TO THE SECOND HYPOTHESIS

In the second hypothesis of the research stated that the strategy of diversification impact on firm performance. The results in Table 2 show that the estimated coefficient for the variable DIVER that indicate the impact of firm performance diversification strategy; up to 0/112 with significance level 0/013 is less than the 05/0 (test error level). These findings suggest that there is a significant correlation between these variables. This finding is consistent with the claims raised in the second hypothesis and the hypothesis is rejected at the 95 percent confidence level.

THE DECISION MAKING REGARDING TO THE THIRD HYPOTHESIS

In the third hypothesis of the research, has been claimed that the amount of financial leverage the impact on firm performance. The results in Table 2 show that estimated coefficient for the variable $\ln(TDL)$, which shows the impact of financial leverage on firm performance; up to -0/203 and the significance level is 0.000. These findings suggest that there is a significant negative correlation between these variables. This finding is consistent with the claims raised in the third hypothesis and the hypothesis is rejected at the 95 percent confidence level.

THE RESULTS OF THE FOURTH AND FIFTH HYPOTHESIS FITTING TESTING MODEL

Table 3: Results of statistical analysis to test the fourth to sixth hypothesis

p-value F	F Statistics	Durbin-Watson Statistics	R ² adjusted
0.000	25.893	1.757	0.258
(P-value)	Statistics _t	β (standardized)	variable
0/326	0/983	0/044	FCF
0/011	2/552	0/119	$\ln(Tobin's\ q)$
0/025	-2/047	-0/074	$\ln(TDL)$
0/758	-0/308	-0/021	RER
0/005	-2/498	-0/068	PPNE
0/000	4/959	0/234	$\ln(sales)$

DECISION MAKING REGARDING TO THE FOURTH HYPOTHESIS

In the fourth hypothesis of the research states that free cash flow impact on corporate diversification strategy. The results in Table 3 show that the estimated coefficient for the variable FCF that show the free cash flow impact on the company's diversification strategy; up to 0/044 with 0/326 significance level that is higher than the 0/05 (test error level). These findings suggest that, there is no a statistical significant relationship between these variables. This finding is inconsistent with the claims raise in the fourth hypothesis and the hypothesis is rejected at the 95 percent confidence level.

DECISION MAKING REGARDING TO THE FIFTH HYPOTHESIS

In the sixth research hypothesis claims that firm's financial leverage impact on the diversification strategy. The results in Table 3 show that the estimated coefficient for the variable $\ln(TDL)$, which shows the impact of financial leverage on corporate diversification strategy, up to -0/074 and a significant level is 0/025. These findings suggest that there is a significant negative correlation between these variables. This finding is consistent with the claims raised in the sixth hypothesis; the hypothesis is accepted at the 95 percent confidence level.

THE RESULTS OF FITTING MODEL OF THE SIXTH HYPOTHESIS TEST

Table 4: Statistical analysis results for sixth hypotheses test of the research

p-value F	F Statistics	Durbin-Watson Statistics	R ² adjusted
0.000	14.613	1.573	0.122
(P-value)	Statistics t	β (standardized)	variable
0/009	-2/615	-0/123	ln (TDL)
0/456	-0/745	-0/034	dummy Dividend
0/096	-1/668	-0/079	ln (sales)

The results in table 4 show that the estimated coefficient variable *ln (TDL)* that the impact of financial leverage on corporate free cash flow; Up to -0 /123 and with significant level 0/009 that is lower than 0/05(test error level). These findings suggest that there is a significant inverse relationship between these variables. This finding is consistent with the claims raised in the sixth hypothesis and the hypothesis is accepted at the 95 percent confidence level.

DISCUSSION AND CONCLUSIONS

In general, the findings suggest that the strategy of diversification has a positive impact on firm performance. However, the impact of financial leverage on performance was negative. These findings suggest that firms have high diversity in business, higher profitability, but high debt in the capital structure reduce profitability. According to the findings, in companies with high debt levels, diversification strategy has been more limited. Accordingly, it seems that the commercial activities of companies in the sample can be a function of their financial structure and capital. Also, according to the research results, free cash flow in companies with a high level of financial leverage, is lower. It seems that the managers of sample firms during the study period could not applied surplus cash resources in appropriate way to create value for shareholders. Also, it is possible that firm's profitability provide motives and facilities for managers who can follow and implement strategies to diversify significantly.

PRACTICAL RECOMMENDATIONS THAT EMERGED FROM THE RESEARCH

1. Based on the findings of the first research hypothesis, it is proposed to the managers of profit units that avoid to holding free cash in the company and try to enter a surplus of cash resources into short-term investments that in addition to making a profit from the investment, liquidity of assets are not endangered.

2. Based on the findings of the second research hypothesis, it is proposed to the managers of profit units that pay attention to the new requirement of the costumers and in this regard, collect and analyze product market.

3. Based on the findings of the third hypothesis of the research, it is proposed to the managers of profit units to try to more rely on local resources and seriously limited financing providing through debt. Because the results showed debt has a negative effect on the performance.

4. Based on the findings of the fifth research hypotheses, it is proposed to the managers of profit units to try to financial resources from main and ongoing efforts of the company applied in order to create diversity and expansion of business activities.

5. Based on the findings of the sixth research hypotheses, it is proposed to the managers of profit units, if they need financial resources to expand their business activities, provide the resources in ways other than securing the debt. In this regard, noted to the increase in capital through equity or retained earnings could be an appropriate option.

SUGGESTIONS FOR FUTURE RESEARCH

1. Exploring free spot cash flow's impact and variety strategy on accepted firms' stock returns in Tehran stock exchange market.
2. Exploring competitive potential impact in commodity market on accepted firms' variety strategy in Tehran stock exchange market.
3. Studying the relationship between variety strategies with the capital structure of companies accepted in Tehran Stock Exchange.

REFERENCES

- Honarbaksh S, et al. Studying the relative effect of business strategies on the relationship between financial leverage and performance of listed companies in Tehran Stock Exchange. *Quarterly Journal of Financial Knowledge of Exchange*. 2012: No. 47. Pp. 15-58.
- Jacob OD. Payout Policy, Financial Flexibility, and Agency Costs of Free Cash Flow. *A Journal of practice & Theory*. 2012: Vol 22. No2. pp: 61-104
- Khalili Iraqi, et al. Effect of Environment Risks, Company's Strategy and Capital Structure on Operation of Companies at Petrochemical Industry. *Development and Transition Management Journal* 1. 2009: 41-47.
- Mathur I, Sang Kim Y. The Impact of Diversification on Firm Performance, *International Review of Financial Analysis*. 2008: vol 17, pp. 747-766
- Park K, Jang S. Capital structure, free cash flow, diversification and firm performance: A holistic analysis. *International Journal of Hospitality Management*. 2013: Vol, 33 pp. 51-63.
- Riahi-Belkaoui A, Bannister J. Multidivisional structure and capital structure: the contingency of diversification strategy. *Managerial and Decision Economics* 1994: 15, 267-276.
- Ruland, W, Zhou P. Debt, diversification, and valuation. *Review of Quantitative Finance and Accounting*, 2005: Vol. 25, pp. 277-291
- Tang C, Jang S. Revisit to the determinants of capital structure: a comparison between lodging firms and software firms. *International Journal of Hospitality*. 2007: Volume 26, Issue 1, pp. 175-187