

THE CORRELATION BETWEEN STOCK RETURN OF COMPANIES CALCULATED IN THE INDEX OF 50 MOST ACTIVE COMPANIES AT TEHRAN SECURITIES AND EXCHANGE ORGANISATION AND CASH FLOWS OF FINANCING IN THE SAID COMPANIES

Zeinab Kazemi¹ and Amirreza Kazemikhasragh²

¹Student of Master's Degree in Financial Business Administration, Islamic Azad University, Abhar Branch

Email: zeinabkazemi1987@gmail.com

²Student of Bachelor's Degree in Economics, Islamic Azad University, Central Tehran Branch

Email : a.kazemi1984@gmail.com

ABSTRACT

One of the most important decisions, made by managers for increase of wealth of shareholders is to choose the best method for financing from among a widespread number of methods. Moreover, choosing the most appropriate method shall lead to growth and perpetuation of life of companies. As far as we know, financing is facing innumerable limitations in most cases. This study deals with investigation of the correlation between stock return and cash flows, obtained from financing. Statistical population of this study consists of the companies, calculated in the index of fifty most active companies at Tehran Securities and Exchange Organization. The said study was conducted from 2007 to 2011.

This study is of correlation and post-event type. Herein this study, accounting and financial variables as well as Pearson's correlation tests and regression have been used.

The results obtained from this study show a reverse correlation between the said two variables. Moreover, no correlation between funds of capital increase and stock returns has been found. However, there is a correlation between funds of liabilities and stock shares accordingly.

Keywords: Financing, Capital Increase, Liabilities, Stock Return and Index of Fifty Most Active Companies at Tehran Securities and Exchange Organization

JEL Classification: G1, G11, G20, D53

INTRODUCTION

Establishment and increasingly development of economic agencies do require remarkable financing, most of which is beyond the capacity of founders. Capital market provides this possibility for companies through which they will be able to supply required financial resources through offering securities.

In other words, capital market is acting as a path for transmit of resources from savors to consumers of financial resources and plays a prominent role in economy of countries through supply of required capital by economic agencies and optimized allotment of resources.

Using the resources obtained, managers try utmost for survival and growth of their organization. While due to serious competitive conditions, financial, economic and political crises and proprietorship and legal requirements, companies have to demand more resources and sometimes they reinvest respective resources, obtained from the operation of an economic unit, belonging to owners inside the economic unit.

On a whole, active economic units use foreign resources such as funds of increase of capital and loaning due to two reasons:

1. Implementation of capital projects such as development plans and promotion of efficiency of current operations being executed
2. Amendment of capital structure for reduction of financial costs due to liabilities and assistance with increase of return of stockholders

Although hire of funds of financing activities may simultaneously follow two aims, stated here above, the most important problem is to study the effect of financing on total yield of the company. In other words, in an efficient market, growth and profiting of the company and ultimate increase of wealth of stockholders will be materialized only when return due to hire of financing through issuance of stocks will exceed respective costs of opportunity of capital projects, being implemented. Since financing methods together with decisions of investment and policies for division of profit influence value and finally wealth of stockholders, identification of the patterns and models, which are followed by managers in decision making process, are of great importance.

Research Background

Jang and Kay (2005) conducted a research entitled “Dynamism of capital structure and stock yields”, using a sample of American governmental companies from 1972 to 2003. Like Fama and French, they considered leverage as a target for any company and then, calculated deviation of the target. The results obtained from this study didn't conform to prediction of sustainable balance model because deviation of the target must be interpreted as a bad news. When stockholders were divided into various groups in the order of deviation of target, no specific pattern of stock return was observed among the said stockholders. They came up with this conclusion that there is mostly a negative relationship between financial leverage changes and stock return. In other words, regarding the companies where there are more changes in their leverage ration, they shall have less stock return. This negative relation for the companies with higher leverage level is more serious. Role of long-term liabilities at the said companies is greater than short-term liabilities. Herein this research, sectional analysis has been used.

Bradshaw, Richardson and Oslovan (2006) conducted a research entitled “the relationship between financing activities, prediction of analysts and stock return” during a 30-year period and came up with this conclusion that there is reverse relation between net cash flows of each floor of financing activities (issuance of stocks and loaning) and stock return as well as profiting by a company. Innovation of the research plan is to use cash flows statement for information obtained from financing. Considering this point, the said research has had a completely critic approach on the subject and other changes in capital structure such as

capital increase through collection of claim, capital increase of retained earnings, reserves and conversion of liabilities to capital are not taken into consideration. In this research, two hypotheses of incorrect pricing and transfer of wealth have been studied simultaneously.

Incorrect hypothesis of Logharn and Riter (2000) proves that active economic units act upon issuance of securities when their shares exceed assessed price. However, the hypothesis of transfer of wealth by Eberhart and Sidigo (2002) explains the fact that issuance of securities shall lead into transfer of wealth to counter group of beneficiaries (issuance of stocks shall increase wealth of suppliers of long-term liabilities an in return, financing of loaning type shall lead into increase of stock return). Issuance of stock securities is the common point of this hypothesis with that of incorrect pricing hypothesis. Considering both hypotheses, further decrease of stocks is predicted accordingly.

The difference between the two hypotheses refers to issuance of liability stocks; incorrect pricing hypothesis, following loaning by an economic unit expects decrease of further stock return while wealth transfer hypothesis through issuance of long-term liabilities predicts increase of wealth of shareholders. The results obtained from this research, after data analysis conformed to incorrect pricing hypothesis. On the other hand, concerning the fact that through issuance of liability papers, stock return was decreased, this doesn't confirm wealth transfer hypothesis.

Cohen and Thomas (2006) completed the researches, conducted by Bradshaw, Richardson and Oslovan; and they studied the relationship between financing activities and undertaken accounts and stock return. The result obtained from the said research revealed a negative relationship between financing activities and stock return.

Kiumars Biglar (2005) conducted a research entitled "Study of the relationship between capital structure criteria and operational characteristics of the companies, accepted by Tehran Securities and Exchange Organization. The goals of the said research were to explain the relationship between capital structure and financial operation of the companies and method of measurement of the said relation. In this research, three various criteria have been used for measurement of leverage ratio or financial leverage as capital structure index, namely 1) Liability ratio based on office cost; 2) Liability ratio based on market value; and 3) Adjusted liability ratio. Moreover, herein this research, considering operational characteristics of companies, stock return criterion and assets return ratios, special profit return, profit prior to tax deduction and sales interest and profit prior to deduction of sales taxes have been used. On a whole, the results obtained from this research have confirmed all particular hypotheses and in other words, the effect of capital structure on financial operation of companies. From among the components associated with capital structure, in the view of relation with operation, market value and adjusted value stood at top. Then, office cost is of great interest. Regarding the relation, it indicated the reverse relationship between capital structure criteria and operation. This result is interpreted in such a way as a company with high liability ratios enjoys less profiting.

Effective Elements on Evaluation of Financing Methods

Common framework for analysis of various methods of financing is usually based on the following elements:

1. Flexibility
2. Jeopardy

3. Profit
4. Timetabling
5. Other elements including security values, cost for issuance of securities, speed and further consequences

Relative importance of each element, mentioned here above, depends on particular condition of a profiting unit. However, managers must become sure about including all associated elements accordingly.

The element of flexibility designates the effect of current decisions of financing on various accessible financing methods in further periods. Using a particular method of financing may presently limit financing methods, to be used in the next times.

For example, using financial loan facilities may presently impose limitations in the view of re-loaning in the next year at a profiting unit inevitably so that for supply of required funds, stock issuance method shall be used.

There is a close relationship between jeopardy and profit and they are of great importance accordingly. Control of the profiting unit is of great interest by stockholders as well. If most stocks of a profiting unit presently belong to a few stockholders, who control the said unit, maintaining such control in decision makings associated with choosing from among various financing methods and effect of each method on the same is of importance. However, in large companies with various stockholders, the element of control usually has no sensible effect on decisions on financing.

Timetabling is one of the very important elements in analysis of financing methods. The importance and significance of the said element depends on stocks market fluctuations and bonds. The more the said fluctuations are, the more the importance of timetabling element will be (Kiumars Biglar, 2005).

Other elements, which must be taken into consideration further to the said elements are namely

Security values indicate accessible assets, which can be used as guaranty for loaning.

Issuance fee of securities is an exterior indication, which must be done for issuance and sale of securities.

Access speed of funds indicates the quickest time during which required funds are accessed.

Further consequences indicate the facilities, which are created due to issuance of securities in the present and orientation of buyers with the profiting unit (the same reference).

Statistical Population and Data Collection Method

The statistical population of this research consists of the companies, accepted by Tehran Securities and Exchange Organization. Herein this research, financial statements and notes attached thereto, related to the companies, accepted by Tehran Securities and Exchange Organization have been studied in a five-year period from the 2007fiscal year through 2011 fiscal year. Moreover, the information of the 2006-07 fiscal year, (t) including financing conducted through liability and issuance of stocks has been used in order to measure the effect of the same on the return of the 2007-08 (t+1) fiscal year.

Herein this research, statistical sample consists of the companies, which enjoy the following characteristics:

1. They must not be included among financial dealing and investment companies.
2. They have issued stocks and obtained loan just once at least during the said period.
3. Their fiscal year ends on March 20.
4. Required information of the company must be available in the said period.
5. There is no change in the fiscal year in the said period.

Index of 50 Most Active Accompanies at Tehran Securities

Once three months, 50 active companies listed on the stock exchange are introduced as the index of 50 most active firms. This index is calculated based on Dow Jones Index. In this calculation, the number of the shares issued by the company is not applied, and only the sum of the stock price of 50 companies is divided by the number of the shares to find out the value of the index. This number has been equal to 50 at the first time of calculation, i.e. Mar. 20, 2000, and it was adjusted gradually.

This index must be adjusted in the following cases:

- In case of increase in capital for whatsoever reason (whether in form of contribution or reserve).
- Adding or removing the companies from the list of 50 most active companies at the end of each three months. (Zeinab Kazemi & Amirreza Kazemikhasragh 2012)

RESEARCH METHODOLOGY AND MANNER OF TESTING HYPOTHESES

This research is regarded as post-event type. Considering research classification based on goals, this research is classified as applied one of which results can directly be used for choosing financing resources and investment. Moreover, considering classification of research in the order of manner of data collection, this empirical research is of field type, explaining the relationship among the variables, associated with type of financing and stock return using Pearson and Spearman's correlation coefficient. Any hypotheses of this research are tested using real information, collected based on real operation of the companies, and accepted by exchange organization. Thus, an analyst must be aware of type of distribution of variables prior to statistical analyses and study of variables. For this purpose, Kolmogorov–Smirnov test has been used. Since number samples, subject of study, exceed 30 ones (50) cases, the hypothesis for a normal population is acceptable and testing Pearson's correlation has been sufficient. However, concerning the fact that analyses conducted on the population, subject of study indicate abnormal distribution of population, conducted aiming at raise of reliability of the results of statistical tests conducted earlier, Spearman's correlation test has been conducted as well. In all cases, the results of the said tests were aligned.

STATEMENT OF PROBLEM AND RESEARCH HYPOTHESES

This research has been conducted in order to answer this question in order to designate which financing activities are more effective for creating return and sustainable maximizing profit of the companies. Moreover, this research is seeking for identification of the relationship between financing activities and stock yield variable in form of two hypotheses of wealth transfer and incorrect pricing.

According to the said criteria at statistical population as described earlier, 50 distinguished companies and required tests have been managed for investigation of the following hypotheses based on their information:

First Hypothesis: There is a relationship between cash sum of financing activities and stock return. After testing Hypothesis 1 and aiming at dividing cash sums of financing into the elements, obtained from issuance of stocks and loaning, the following hypotheses were established as well.

Second Hypothesis: There is a relationship between financing fund through issuance of stocks and stock return.

Third Hypothesis: There is a relationship between financing funds through loaning and stock return.

Herein this research in order to test meaningfulness of Spearman's correlation coefficient, Normal Z test and to test meaningfulness of Pearson's correlation coefficient, T-Student test has been used.

Definition of Research Variables

1. Independent Variables

Independent research variables, cash sum is obtained from financing activities. Considering the following relation:

$$\Delta XFIN = \Delta EQUITY + \Delta DEBT$$

$\Delta XFIN$: Cash sum of financing activities

$\Delta EQUITY$: Net cash sum of sale of stocks

$\Delta DEBT$: Net cash sum of loaning

$\Delta XFIN$, $\Delta EQUITY$ and $\Delta DEBT$ are independent research variables, which have been adjusted each using average of the company's assets (average of assets at the beginning and at the end of period) and also information of each variable, mentioned earlier has been extracted from cash flow statements of the companies.

2. Dependent Variables

Since the research plan deals with study of market stock price behavior after issuance of stocks or liabilities, cash return and price, is a desirable index for interpretation of the said behavior, which is defined as follows:

“It is defined as return rate, which is obtained in the view of both increase of stock price and cash profit”.

Stock return rate in normal conditions is given as follows:

$$R = \frac{P_t - P_{t-1} + DPS}{P_{t-1}}$$

R: Real return rate of a company during t period

P_t : Stock price of the company at the end of t period (if no transaction is conducted on the stock of the company in the said period, the latest transaction carried out on the said stock shall be regarded as base for action).

P_{t-1} : Stock price of the company at the beginning of t period (if no transaction is conducted on the stock of the company in the period, the first transaction carried out on the said stock shall be regarded as base for action).

DPS: Cash profit received during t period

If the company acts upon increase of capital through difference resources, the return formula shall be given as follows:

$$R = \frac{P_t - P_{t-1} + DPS + (P_t - \dots)\alpha + P_t\beta}{P_{t-1}}$$

R: Real return rate of a company during t period

P_t : Stock price of the company at the end of t period (if no transaction is conducted on the stock of the company in the said period, the latest transaction carried out on the said stock shall be regarded as base for action).

P_{t-1} : Stock price of the company at the beginning of t period (if no transaction is conducted on the stock of the company in the period, the first transaction carried out on the said stock shall be regarded as base for action).

DPS: Cash profit received during t period

α : Percentage of capital increase of the company during t period, through cash contribution and claims of shareholders

β : Percentage of capital increase during t period, through retained earnings and reserve (Considering the aforesaid formulation, the figure 1000 is nominal price of each share).

TESTING RESEARCH HYPOTHESES AND FINDINGS

Testing The First Hypothesis: There is a meaningful relationship between net cash funds of financing activities and stock return:

The said hypothesis is expressed as follows in statistical view:

Hypothesis H_0 : There is no meaningful relationship between net cash fund of financing activities and stock return.

Hypothesis H_1 : There is a meaningful relationship between net cash fund of financing activities and stock return.

In order to study the relationship between cash funds variable of financing activities and stock return, Pearson's correlation test has been used.

The results of the said correlation coefficients test have been displayed in Table 1:

Table 1. The Result of Pearson’s Correlation Test with a Time Lapse

Test	Variable	Statistics	Cash funds of financing activities
Pearson’s Correlation	Stock return	Correlation coefficient t	-0.11
		Error level of a range	0.0051

Pearson’s correlation with a coefficient of -0.11 and a meaningful level < 0.01 reveal that there is a meaningful and negative relationship between cash fun variable of financing activities (in t year) and a time lapse of stock return variable (in t + 1 year) at 99% level of reliability. Consequently, with a reliability of 99%, one may declare that there is a reverse relationship between cash funds of financing and stock return.

Testing Hypothesis 2: There is a meaningful relationship between financing funds through issuance of stocks and stock return. The said hypothesis is expressed as follows in statistical view:

Hypothesis H_0 : There is no meaningful relationship between funds obtained from issuance of stocks and stock return.

Hypothesis H_1 : There is a meaningful relationship between funds obtained from issuance of stocks and stock return.

The results of Pearson’s Correlation Test for study of the aforesaid hypothesis have been displayed in Table 2:

Table 2. Result of Pearson’s Correlation Test with a Time Lapse

Name of test	Variable	Statistics	Financing funds through issuance of shares
Pearson’s correlation	Stock return	Correlation Coefficient	-0.046
		Error level of a range	-0-.145

Pearson’s Correlation with a coefficient of -0.046 and a meaningful level > 0.05 reveals that there is no meaningful relationship between financing funds variable through issuance of stocks (in t year) and a time lapse of stock return variable (t+1). Consequently, with a reliability of 99%, one may declare that there is no meaningful relationship between financing fund through issuance of stocks and stock return.

Testing Hypothesis 3: There is a meaningful relationship between financing through loaning and stock return. The said hypothesis is expressed as follows in statistical view:

Hypothesis H_0 : There is no meaningful relationship between funds obtained from loaning and stock return.

Hypothesis H_1 : There is a meaningful relationship between funds obtained from loaning and stock return.

The results of Pearson’s Correlation Test for study of the aforesaid hypothesis have been displayed in Table 3:

Table 3. Result of Pearson's Correlation Test with a Time Lapse

Name of test	Variable	Statistics	Financing funds through loaning
Pearson's Correlation	Stock return	Correlation coefficient	-0.123
		Error level of a range	0.000

Pearson's Correlation with a coefficient of -0.123 and a meaningful level < 0.01 reveals that there is a meaningful and negative relationship between financing funds variable through loaning (in t year) and a time lapse of stock return variable (t+1) at 99%. Consequently, with a reliability of 99%, one may declare that there is a reverse meaningful relationship between financing fund through loaning and stock return.

CONCLUSION

Considering the results obtained from tests conducted, it is revealed that the companies, subjects of study have obtained no brilliant success through financing funds (including loaning and issuance of stock) for achieving desirable return for stockholders. It should be mentioned that return in companies is influenced by other various intervening variables from among which one can point out growth, advertising by companies, share of market, research and development, size of company, industry risk, quality of product and services, rendered by the company. Considering the one-year time lapse in research statistical models may be among the reasons for not achieving desirable results in order to obtain return because financing conducted may reflect its effect on the return in the next years. The results obtained from research hypotheses have been given in Table 4.

Table 4. Results of Testing Research Hypothesis

Hypothesis H ₁	Independent variable*	Level of reliability	Result
First	Cash fund of financing activities	99%	Confirmed
2 nd	Cash fund of issuance of stock	99%	Not confirmed
3 rd	Cash fund of loaning	99%	Not confirmed
Dependent variable: Stock return			

* All independent variables have been standardized by assets average.

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