Research Article

Studying the Relationship between Portfolio Turnover Rate, Stocks Return, and Profitability of Investment Companies in Tehran Stocks & Exchanges Market

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ABSTRACT

The present research is aimed to study the relationship between portfolio turnover rate, stocks return, and profitability of the investment companies. The research method is, in terms of objective, of applied type and, in terms of method, a descriptive-correlational one. The statistical society includes all the investment companies in stocks market whose portfolio turnover had been regarded during years 1391-92. Due to limitations of the statistical society of the research, the companies have been chosen from among the companies accepted in Tehran Stocks & Exchanges Market; the number of companies reached 19 in 30/12/1394. The portfolio turnover rate model, ROE=C+αPTR+E and PROFIT=C+αPTR+E, and a combination of t-test, simple correlation coefficient, and regression analysis were used to examine the intended hypothesis of the research. In order to study the effect of the independent variables on the dependent variables we have used determination coefficient. The first hypothesis states that there is meaningful relationship between portfolio turnover rate and profitability of the investment companies and the second hypothesis states that there is a meaningful relationship between portfolio turnover rate and stocks return of the investment companies.

Keywords: Companies accepted in stocks market, portfolio, return, profitability

INTRODUCTION

Portfolio in fact means a set of securities. In general, investment on a set of securities or portfolio is much more efficient than investment on a single stock because increase of the number of stocks in a portfolio results in reduction of the risk. Such reduction is caused by various effects which are exerted on the investee companies by economic, social, and political conditions; for example, occurrence of a war can have opposite effects on two different companies. Imagine that your portfolio contains stocks of a pharmaceutical company and a petrochemical company, then, in case of insecurity and severe battles in the region, the demand for drugs will increase and the possibility of exporting petrochemical products will decrease.

Investment companies are divided, in terms of management, into two categories: investment companies with active management and investment companies with inactive management. Investment companies with active management have expert and connoisseur portfolio managers. Scrutinizing in the stock market and companies' advantages, these companies attempt to recognize and buy securities whose price is less than their real value and then sell them in a proper time. Investment companies with inactive

management assume perfect efficiency for market, thus it is not possible to find securities whose price has meaningful difference with their real value (Rezazadeh, 1389, p49).

In the present research we attempt to study the relationship between portfolio turnover rate with investment companies' profitability and stocks return and predetermine their strategy in terms of activeness and inactiveness. In fact, studying such relationship can tell us whether portfolio turnover rate can be an appropriate criteria and measure for investment decisions or not. in this research, our independent variable is portfolio turnover rate, and profitability and stocks return are our two dependent variables. At the end of the research we face the question that what kind of relationship exists between portfolio turnover rate and investment companies' stocks return and profitability.

Review of history

About 500 years ago in a Belgian city and in front of a man's house (Wander Bourse), the moneychangers came together to buy and sell securities, so since then on any place where the securities are bought and sold is called Bourse. World's first bourse (stocks market) was opened in the Belgian city of Anorse. Currently, most of the countries have stocks markets, and the World's Stocks Markets Organization acts as an international coordinator organization in order to create cooperation and collaboration among the stocks markets, protect the stockholders' rights and resources, and develop the capital market. Some of the most important stocks markets of the world include New York Stock Exchange (NYSE), London Stock Exchange (LSE), Stockholm Stock Exchange (SSE), Montreal Stock Exchange (MSE), and Tokyo Stock Exchange (TSE). The idea of creating a stocks market in Iran goes back to 1315 when a Dutch expert and a Belgian expert came to Iran in order to investigate about preparing regulations for supervising the activity of a stock market in Iran, but their investigations were stopped by

occurrence of the World War II. After the coup d'état in Mordad 28th in 1332, again in 1333 the mission of setting up a stocks market was delegated to the Chamber of Trade, Industries, & Mines of the Central Bank and the Ministry of Commerce. Then in 1345 and after a 12-year study, this group prepared the regulations for formation of Tehran Stocks & Exchange Market and delivered the related bill to the National Consultative Assembly. The bill was enacted in Ordibehesht 1345 and thereby the stocks market inaugurated its activity in 1346 by entering the stocks of Pars Oil Company and Mine & Industry Bank.

Another study, titled "choosing portfolio by means of three criteria including average return, return standard deviation, and liquidity in Tehran Stocks & exchange Market", has been done by Gholam Reza Bigdeli and Ali Reza Saranj in autumn of 1387. This research, which was done with the aim of improving Markowitz Model, describes the criticism to the above-mentioned model and the research results as follows:

Markowitz in his "portfolio selection" theory states that the investors choose their portfolio based on two criteria of risk and return; on this basis, he introduced his mathematical model for optimal portfolio selection. One of the criticisms to his model was that in this model only two criteria of return standard deviation and average are regarded while in practice the investors consider various criteria in formation of a portfolio. Liquidity is one of the criteria regarded by the investors in making their portfolio. This research is seeking to merge this criterion in Markowitz's suggested model using two approaches of filtering and liquidity limitation in the Iranian capital market and thereby come to model by which the investors can make a portfolio that is optimal in terms of liquidity, risk, and return. The research results show that liquidity in higher levels influences

the investors' decisions and, consequently, the efficient boundaries.

Research hypotheses

1- There is meaningful relationship between portfolio turnover rate and profitability of the investment companies.

2- There is meaningful relationship between portfolio turnover rate and stocks return of the investment companies.

Research scope

Place scope

The present research has been done in the companies which are accepted in Tehran Stocks & Exchange Market.

Time scope

Time scope of the research is from 1388 to the end of 1391.

Subject scope

This research is done on financial management and on investment and stocks.

Research method

Achieving scientific objectives or scientific cognition would be impossible until an appropriate methodology is applied; in other words, credibility and validity of a research depends on its methodology not the subject (Khaki, 1386, p155). The present research's method is of correlational-descriptive type and, in terms of objective, it is an applied research.

Statistical society

The statistical society of the research includes all the companies accepted in the stock market, whose number reached 19 in 30/12/1390.

Statistical sample

Since the number of data appropriate for performing the research was insufficient before 1393, thus all the companies which had been accepted in the stocks market since 1393 were included in the study.

Data analysis method

Regarding the research objective, conceptual model, and compiled question, the analysis of

data was done using statistical tests and methods (by means of EQS statistical software). In order to examine the hypothesis, we have used a combination of t-test, simple correlation coefficient, and regression analysis; besides, for more examination of the effect of independent variables on dependent variables, the determination coefficient was used (Azar & Momeni, 1385, p39).

Research model

ROE= [1]C+ [2]α PTR+ [3]E

PROFIT= C + α PTR+E

Dependent variables

-Stocks return of the investment companies, ROE.

$$PROFIT = \frac{post\_tax\ loss\ \&\ profit}{stockholders\ equity} \times 100$$

-Profitability of the investment companies, PROFIT.

Stocks return of the investment companies.

In this research, we use the loss or profit of stocks sales in percent as an index for calculating the profitability of the investment companies. This variable is extracted from RahavardNovin Software and is obtained through the following relationship:

$$ROE = \frac{totalsale\ price - end\ price}{end\ price} \times 100$$

Profitability

Independent variable

Portfolio turnover rate (PTR): the portfolio turnover rate of the investment companies is a variable that is obtained through the following relationship:

$$PTR = \frac{transactions\ volume}{average\ market\ value\ of\ portfolio}$$

average market value of portfolio

$$= \frac{\sum_{k=0}^{n}(\text{stock price} \times \text{number of stocks})}{\text{total stocks}}$$

intercept - [1]
correlation coefficient – [2]
error value – [3]

Data analysis in 1391

Table-4-5: data analysis in 1391

| No.	Name	Number	Average	Total
1	V1	19	0.110	2.097
2	V2	19	0.738	14.013
3	V3	19	0.529	10.060

As it can be seen, the average stocks return is 0.11 or 11%, profitability is 0.73 or 73%, and portfolio turnover rate is 0.529 or 52% in the given year.

| No.	Standard deviation	Median	Quartile-1	Quartile-2	Minimum	Maximum
1	0.095	0.081	0.050	0.121	0.022	0.395
2	0.247	0.861	0.668	0.916	0.204	0.964
3	0.263	0.450	0.315	0.660	0.170	0.980

The above table demonstrates that for the stocks return variable, standard deviation is 0.95, median is 0.81, minimum is 0.022, and maximum is 0.395 (the minimum and maximum stocks return of the companies in 1391 has been 2% and 39%, respectively). For the profitability variable, standard deviation is 0.24, median is 0.86, minimum is 0.2, and maximum is 0.96 (the minimum and maximum profitability have been 20% and 96%, respectively). And for the portfolio turnover rate of the companies, standard deviation is 0.26, median is 0.45, minimum is 0.17, and maximum is 0.98 (the minimum and maximum portfolio turnover rate o the companies have been 17% and 98%, respectively).
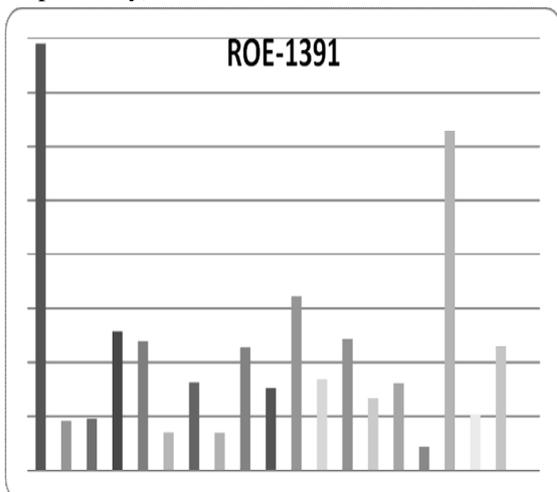
Chart-4-10: stocks return in 1391
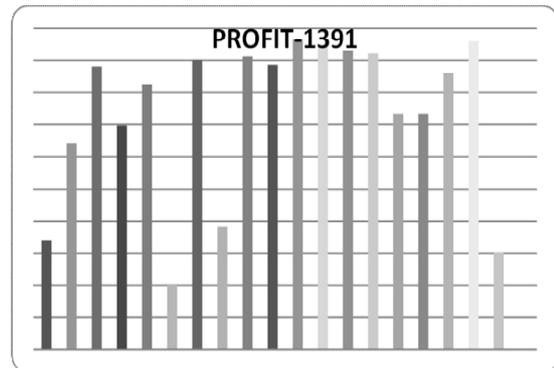
Chart-4-11: stocks profitability in 1391
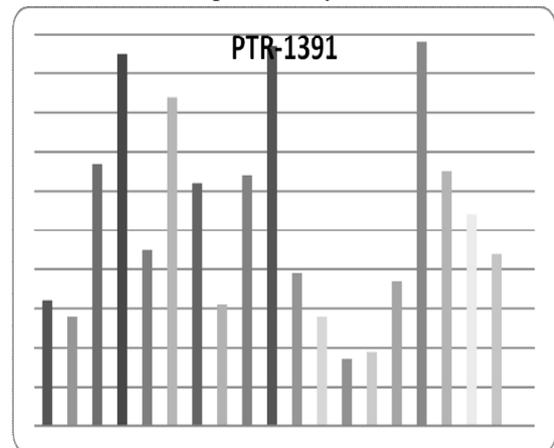
Chart-4-12: portfolio turnover rate in 1391

Hypothesis-1 testing:

There is meaningful relationship between portfolio turnover rate and stocks profitability of the investment companies.

Source	Sum of squares	Freedom degree	average of squares	P	F
Regression	0.016	0.0259	0.002	1	0.002
Residual	0.065	17	1.099		
Total	18	1.101			

Dependent variable= V2

Number of observations= 19

Multiple R= 0.0385

Determination coefficient= 0.3015

F(1,17)= 0.0252

Probability>F= 0.8756

Estimation standard error= 0.2543

Kolmogorov-Smirnov statistic= 0.5310

Durbin-Watson statistic= 1.9133

As indicated by the result of data analysis, the value of p-statistic is obtained p=0.016 thus,

regarding the 5% error level, it can be said that there is a meaningful relationship between portfolio turnover rate and stocks profitability of the investment companies. In order to test the conditions of using regression, first the kolmogorov-Smirnov statistic was calculated and, with regard to its value which is 0.53, it can be said that the data follows a normal distribution. The value of 1.91 for Durbin-Watson statistic indicates the independence of the errors and shows that the second condition for using regression is provided. The third condition is regression model's significance test; thus, since the obtained F (that is 0.0259) is bigger than the F in table (that is 0.0252), it can be said that the regression model is accepted (it is meaningful).

Variable	Standard deviation	Standard deviation	Standard Beta	Beta coefficient	Student t-test
Fixed	0.134	0.134	0.757	0.000	5.632
0.225	0.228	2.036	V3	0.034	4.161 0.039

R-square^4=0.30 indicates that 20% of the changes in the stocks profitability is resulted by the portfolio turnover rate. Eventually, according to the above table, we can write the regression model of the hypothesis-2 as: **V2 = 0.75 + 2.036 (v3)**

Hypothesis-2 testing:

There is meaningful relationship between portfolio turnover rate and stocks return of the investment companies.

Source	sum of squares	freedom degree	average of quares		p	F
Regression	0.019	0.534	0.004	1	.004	
Residual	0.009	17	0.158			
Total		18	1.162			

Dependent variable= V1
Number of observations= 19
Multiple R= 0.1578
Determination coefficient= 0.3249

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determination coefficient – ^{4}

F(1,17)= 0.4343
Probability>F= 0.5187
Estimation standard error= 0.0.963
Kolmogorov-Smirnov statistic= 0.6510
Durbin-Watson statistic= 2.0202

As it is indicated by the data analysis results, the p-statistic is obtained p=0.019 thus, regarding the 5% error level, it can be said that there is a meaningful relationship between portfolio turnover rate and stocks return of the investment companies. For testing the conditions of using regression, first the Kolmogorov-Smirnov statistic has been calculated and regarding the fact that it has been obtained 0.65, it can be said that the data follows a normal distribution. The value of 2.02 for Durbin-Watson statistic indicates the independence of errors and shows that the second condition for using regression is provided. The third condition is the regression model's significance test; therefore, since the obtained F (that is 0.534) is bigger than the F in table (that is 0.434), it can be said that the regression model is accepted (it is meaningful).

Variable	standard deviation	standard deviation	standard Beta	Beta coefficient	student t-test
Fixed	0.052	0.140	0.015	2.701	
V3	0.075	0.086	1.057	0.059 3.758 0.158	

R-square=0.32 indicates that 32% of the changes in the stocks return is resulted by the portfolio turnover rate. Eventually, according to the above table, the regression model of the hypothesis-1 can be written as: **V1=0.14+1.057(v3)**

RESULTS
Analysis of the hypothesis-1 results
"There is meaningful relationship between portfolio turnover rate and profitability of the investment companies."
The obtained results show that the independent variable's coefficient (portfolio turnover rate) is positive, which indicates that increase of the portfolio turnover rate results in the increase of the stocks profitability. The Beta coefficient,

that is 0.30, shows that the independent variable (portfolio turnover rate) can account for only 3% of the changes in the dependent variable (profitability).

Analysis of the hypothesis-2 results

"There is meaningful relationship between portfolio turnover rate and stocks return of the investment companies."

The obtained results show that the independent variable's coefficient (portfolio turnover rate) is positive, which indicates that the increase of the portfolio turnover rate results in the increase of the stocks return. The Beta coefficient, that is 0.15, shows that the independent variable (portfolio turnover rate) can account for only 15% of the changes in the dependent variable (stocks return).

Research suggestions

It is recommended to the managers of the companies to use help of the experts for measuring their stocks return monthly or every three months and then provide the researchers with their obtained results, because the solutions for many of the problems are achieved through scientific studies and researches.

It is recommended to use various portfolios which include various kinds of assets and securities. Also it is recommended to the companies to not limit themselves to one or a limited number of stocks (even profitable stocks).

It is recommended to lead all the attempts and objectives of the companies toward maximizing the return and efficiency through combining different securities.

It is recommended to the managers of the companies to continuously observe and watch the market information and choose items for their portfolio which are among the market's long-term needs and can improve the profitability.

It is recommended that the companies pay special attention to the issue of tax because tax can directly affect the profitability.

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