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The Investigation and Comparison of Fundamental and Technical Methods in Explaining Stock Return in Iran Capital Market

Elham Heidari Kelishmi, Dr. Zahra Moradi and Dr. Mahmood Shirazi
Department of Accounting, Science and Research Branch, Islamic Azad University, Damavand, Iran

*Corresponding Author: Dr. Zahra Moradi

Abstract: This study was applied and correlational with regard to purpose and nature. The data were collected through field studies. Published information by Securities and Exchange Organization and Rah Avard Novin 3 Software Database were used in this study. In order to calculate the technical scales, Trader Useful Software was used and the diagrams were analyzed. The statistical method used in this study was correlation coefficient because the data were not distributed normally. The results of testing the hypotheses showed that there was a positive significant relationship between the calculated returns in the two technical methods, i.e., Dual Moving Average and Relative Strength Index, and market real return. In addition, there was a weak positive significant relationship between the expected return by the fundamentalists calculated by Capital Asset Pricing Model and market real return. The results of testing the hypotheses showed that there was no significant relationship between the calculated technical returns through Dual Moving Average Method and Relative Strength Index, and the fundamental return calculated through Capital Asset Pricing Model.
KEYWORLDS: Fundamental and Technical Methods, Exchange Organization

INTRODUCTION

Tehran Stock Exchange is considered one of the bases of Iran capital and the progress and development of this organization will lead to the growth and development of Iran. Thus, it is important to investigate all the effective factors in this organization such as the factors causing the investors to have a tendency towards Securities and Exchange.

This study addresses the issue whether using technical analysis (Dual Moving Average, Relative Strength Index and Money Flow Index) and fundamental analysis (in which Asset Pricing Model is used) [1] are efficient.

In this regard, a study was conducted by Fereidoon Rahnamaye Rod Poshti and Farshad Heibati in 2010 in which 5 technical methods, i.e., Moving Average, Divergent and Convergent Moving Average, Relative Strength Index (RSI), Money Flow Index, Average Exponential were used. As in the present study, they used Capital Asset Pricing Model to calculate the fundamental return. This study took five years from 2004 to 2008. The results of this study showed that there is a positive significant relationship between the real and fundamental return, and

the real return and 5 technical methods. But, there is no significant relationship between the return of some technical methods and the return of fundamentalists. These findings are in line with the present study. Ali Mardani investigated and compared β power in Capital Asset Pricing Model (CAPM) in his study. The results of his study showed that Fama and French Model Factors are intended to explain the stock market. In a study done by Sadeghi Sharif entitled "Capital Asset Pricing Conditional Model in Tehran Stock Exchange", the effect of risk on the expected return in up and down markets was investigated. Explaining Capital Asset Pricing Conditional Model in Tehran Stock Exchange, portfolio managers help other investors in the optimization of their portfolio.

In a study entitled "The Investigation of Effective Factors in the Stock Price and the Decision of Investors in Tehran Stock Exchange" Hamedian investigated the effect of information and profitability of the financial statements of publicly traded companies on investors' decisions. This study showed that buyers in the stock market do not act based on analysis of financial statements and the old methods, and are mostly under the influence of economic and political issues on periodical policies of stock exchange, access to confidential information of companies, high demand for company products, profitability, payout policy, etc. [2].

In a study done by Tavakoli and Mohammadi in 2004, "The Behavior of Investment Managers and Financial Analysts about the Market Forecasting and Stock Selection" was investigated. The respondents to the questionnaire included exchange servers, financial analysts and consultants of commercial banks. The participants were asked to determine the relative importance of using fundamental and technical analyses techniques and portfolio in order to predict the market in the short and long run. This study showed that the mentioned individuals are interested in fundamental and technical analyses more than new methods of portfolio management.

The fundamentalists attend to the intrinsic value of securities more; they believe that the value of each stock can be determined scientifically and they depend on financial economy-statistics and information more. They significantly attend to income statement, balance sheet, dividend records, management policies, sales growth, management power, and competitive pressures [3].

In a study done by Elyas Heidarnia in 2005, a stock prediction method entitled Moving Average was investigated. He concluded that Moving Average Method, as a stock price prediction method in stock exchange, does not lead to additional profit or abnormal returns. Sadeghi Batani conducted a study focused on the return using turnover filter rules method and the number of transactions and the number of buyers' payment. He concluded that it is possible to design rules for buying and selling stocks based on the size and number of buyers and the number of transactions, but it is not possible to attain more return using it[4].

This study compared various investment strategies in the stock market and investigated whether various investment strategies yield identical results or not.

Succeeding and obtaining expected return are not possible without familiarity with investment strategies[5, 6].

Purposes of the Study:

- Familiarity with some technical and fundamental methods to predict the return of stock exchange in Tehran Stock Exchange
- Relating and comparing these two approaches in the prediction of exchange return in Tehran Stock Exchange

Hypotheses:

1- There is a relationship between the expected return of the fundamentalists and the market real return.

2- There is a relationship between the expected return of the technicals and the market real return.

3- There is a relationship between the technicals and the fundamentalists' expected return.

These hypotheses were investigated as a whole and separately.

Population and Sample:

Those companies having over 160 days of transaction from 2002 to 2011 were selected. The number of selected companies was 18.

MATEREAL AND METHODS

The method of the present stud was correlational and comparative.

Statistical Analyses and Data Analyses:

1. Testing the normal distribution of variables under investigation: One assumption behind using parametric tests is normal distribution of tested variables. In order to investigate the distribution of variables Kalmogorov–Smiranov Test was used.

2. In order to investigate the relationship between the calculated returns in the Technical and Fundamental Methods, and the real return, Spearman Correlation Test was used.

Data Collection Method:

1. CAPM Model

2. Trader Useful Software

3. Rah Avard Novin 3 Software Database and the Website of Stock Exchange

RESULTS

Hypothesis 1: There is a relationship between the expected return of the fundamentalists and the market real return.

Table1. relationship between the expected return of the fundamentalists and the market real return

The result of the test	Error	Significance level	Spearman Coefficient	Hypothesis
Positive significant relationship	5 Percent	0.031	0.161	Hypothesis 1:

In order to investigate the relationship between these two intervals, Spearman Correlation Test was used. Because the significance level was less than the error level, the correlation test was significant. In addition, the observed relationship between the two variables is positive, thus, there is a significant positive relationship between the real return and the fundamentalists' expected return. Regarding the correlation test and the significance level between these two intervals, this relationship is direct (positive) which indicates that fundamentalists can obtain a return similar to the real return. The correlation coefficient between these two variables was weak.

Table2. correlation coefficient

```
NONPAR CORR
  /VARIABLES=x y
  /PRINT=SPEARMAN TWOTAIL NOSIG
  /MISSING=PAIRWISE.
```

Nonparametric Correlations

```
[DataSet0]
```

Correlations

			x	y
Spearman's rho	x	Correlation Coefficient	1.000	.161*
		Sig. (2-tailed)	.	.031
		N	180	180
	y	Correlation Coefficient	.161*	1.000
		Sig. (2-tailed)	.031	.
		N	180	180

*. Correlation is significant at the 0.05 level (2-tailed).

Hypothesis 2: There is a relationship between the expected return of the technicals and the market real return.

Regarding the fact that the expected return of technical scales have been calculated using two methods, this hypothesis has two alternative hypotheses.

Regarding the fact that the relationships were not linear (not normal distribution), Spearman Correlation Test was used between the two variables in order to investigate the relationship between the expected return of technical scales and the market real return. The results indicated that there is a

relationship between the expected return of the Chartists and the market real return.

Alternative Hypotheses 1: There is a relationship between the expected return of MA Technical Scale and the market real return. According to table 2, the correlation coefficient of alternative hypothesis 1 is 0.248. Regarding the 5 percent error, this coefficient is significant, thus, there is a positive significant relationship between MA Scale and the market real return in Tehran Stock Exchange.

Table3. Correlation coefficient

```
NONPAR CORR
  /VARIABLES=x y
  /PRINT=SPEARMAN TWOTAIL NOSIG
  /MISSING=PAIRWISE.
```

Nonparametric Correlations

```
[DataSet0]
```

Correlations

			x	y
Spearman's rho	x	Correlation Coefficient	1.000	.248**
		Sig. (2-tailed)	.	.001
		N	180	180
	y	Correlation Coefficient	.248**	1.000
		Sig. (2-tailed)	.001	.
		N	180	180

Alternative Hypothesis 2: There is a relationship between the expected return of the RSI Scale and the market real return. Because the correlation coefficient is 0.271. Because the error is 0 which is less than 5 percent, it indicates

Table4. Positive significant relationship between RSI and market real return

The result of the test	Error	Significance level	Spearman Coefficient	Alternative Hypotheses:
Positive significant relationship	0.05	0.001	0.248	**Alternative Hypotheses 1:**
Positive significant relationship	0.05	0	0.271	**Alternative Hypotheses 2:**

Alternative Hypotheses 1: In fact, there is a positive significant relationship between the MA expected return (Chartists) and the real return.

Table5. Correlation coefficient

```
NONPAR CORR
  /VARIABLES=y x
  /PRINT=SPEARMAN TWOTAIL NOSIG
  /MISSING=PAIRWISE.
```

Nonparametric Correlations

```
[DataSet0]
```

Correlations

			y	x
Spearman's rho	y	Correlation Coefficient	1.000	.271**
		Sig. (2-tailed)	.	.000
		N	180	180
	x	Correlation Coefficient	.271**	1.000
		Sig. (2-tailed)	.000	.
		N	180	180

Alternative Hypotheses 2: In fact, there is a positive significant relationship between the RSI expected return (Chartists) and the real return.

Thus, it can be concluded that all there is a positive significant relationship between all the selected methods in this study and the real return.

Hypothesis 3: There is a significant relationship between the technical expected return and the fundamentalists' expected return. Regarding the fact that there are two technical methods, hypothesis 3 has two alternative hypotheses which are discussed respectively. Spearman Test was used in order to investigate the relationship between the expected return of technical scales and the obtained return through CAPM regarding that the relationships were not normal and linear.

Alternative Hypotheses 1: There is a significant relationship between MA expected return and CAPM return. The correlation coefficient between these two variables was 0.034. Since the error level was 5 percent and the significance level was 0.649, there is no relationship (SPSS).

Alternative Hypothesis 2:

There is a significant relationship between RSI expected return and CAPM return. The correlation coefficient between these two variables was 0.027. Regarding the 5 percent error and 0.718 significance level, there exists no relationship.

Table6. Correlation coefficient

```
NONPAR CORR
  /VARIABLES=y x
  /PRINT=SPEARMAN TWOTAIL NOSIG
  /MISSING=PAIRWISE.
```

Nonparametric Correlations

```
[DataSet0]
```

Correlations

			y	x
Spearman's rho	y	Correlation Coefficient	1.000	.027
		Sig. (2-tailed)	.	.718
		N	180	180
	x	Correlation Coefficient	.027	1.000
		Sig. (2-tailed)	.718	.
		N	180	180

Table7. Correlation coefficient

```
NONPAR CORR
  /VARIABLES=x y
  /PRINT=SPEARMAN TWOTAIL NOSIG
  /MISSING=PAIRWISE.
```

Nonparametric Correlations

```
[DataSet0]
```

Correlations

			x	y
Spearman's rho	x	Correlation Coefficient	1.000	.034
		Sig. (2-tailed)	.	.649
		N	180	180
	y	Correlation Coefficient	.034	1.000
		Sig. (2-tailed)	.649	.
		N	180	180

Table8. Relationship between CAPM expected return and the two methods of the Chartists

Result	Error	Significance level	Coefficient	Alternative Hypotheses:
There is no positive	0.05	0.649	0.034	**1**

significant relationship.				
There is no positive significant relationship.	0.05	0.718	0.027	**2**

The result of hypothesis 3: There is no relationship between CAPM expected return and the two methods of the Chartists.

3.1. There is no similar return between the Chartists using MA and the fundamentalists using CAPM.

3.2. There is no similar return between the Chartists using RSI and the fundamentalists using CAPM. On the whole, there is no relationship between the fundamentalists and the chartists in the two methods they used for stock analysis. This issue can be under the influence of technical methods used in this study.

DISCUSSION

In this regard, a study was conducted by Fereidoon Rahnamaye Rod Poshti and Farshad Heibati in 2010 in which 5 technical methods, i.e., Moving Average, Divergent and Convergent Moving Average, Relative Strength Index (RSI), Money Flow Index, Average Exponential were used. As in the present study, they used Capital Asset Pricing Model to calculate the fundamental return. This study took five years from 2004 to 2008. The results of this study showed that there is a positive significant relationship between the real and fundamental return, and the real return and 5 technical methods. But, there is no significant relationship between the return of some technical methods and the return of fundamentalists. These findings are in line with the present study.

On the whole, there is no relationship between the fundamentalists and the chartists in the two methods they used for stock analysis. This issue can be under the influence of technical methods used in this study.

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