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FUNDAMENTAL VERSUS TECHNICAL ANALYSIS OF INVESTMENT: CASE STUDY OF INVESTORS DECISION IN INDONESIA STOCK EXCHANGE

WIWIK UTAMI*

Mercu Buana University, Jakarta, Indonesia, Tel: 021-5840815;

Email: wiwik.utami@Mercubuana.ac.id

LUCKY NUGROHO

Mercu Buana University, Jakarta, Indonesia

FARIDA

Mercu Buana University, Jakarta, Indonesia

Abstract

The focus of this research is to explain whether investors prefer technical or fundamental analysis to analyze their investment options and to analyze factors influencing the selection of that investment analysis method. The research uses questionnaire with 125 participants. Six independent variables used to explain the choice of investment analysis method, namely investor's education, investor's experience, information accessibility by the investor, investor's time the horizon, trading activity frequency, and investor's perception toward the disclosure done by the corporation. The result showed that Indonesian investors prefer technical analysis. The influencing factors that significantly the selection of analysis method are investor's experience and investor's time horizon.

Keywords: Investor Demography; Investment Decision; Fundamental Analysis;

Technical Analysis

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INTRODUCTION

Nowadays, the modern and advanced economy has always characterized the rapid development of the activity in the capital market. Likewise, increasing awareness of the public to invest in the stock exchange because in the past people invest only in deposits. In making an investment decision, investors can analyze their investments by using two methods of analysis, namely fundamental analysis and technical analysis [1,2]. Fundamental analysis is the analysis of investment aimed at knowing the intrinsic value of shares in the company [3,4]. While technical analysis is an analytical tool that relies on market data that can be either graphics or other technical indicators, thus the technical analysis is also called charting [5].

Taylor and Allen [6] have conducted a survey of 353 dealers in the London exchange market. The results showed that the use of fundamental analysis and technical analysis are complementary. However, 90% of respondents in this study give more weight to the technical analysis. Similar to Taylor and Allen [6], Lui and Mole [7] conducted a study on investment analysis methods that are widely used by Hong Kong investors. Lui and Mole [7] conducted a survey of the exchange market dealers in Hong Kong and found that technical analysis is more attractive to use, especially for a shorter period.

Selection of the analytical methods used by investors associated with the Efficient Market Hypothesis and regarding Fama [8], an active market as a market that prices have reflected in all the relevant information. Relevant information is including past event, society, and personal information. Based on the absorption rate of the relevant information, Fama [8] divides the efficient market into three categories which include weak market, semi-strong market, and efficient markets.

In Indonesia, an efficient market mechanism research has been carried out. Sirait [9] conducted a study to examine the mechanism of the weak market in Indonesia. The results of this study indicate that the Indonesian stock market is inefficient and becomes efficient when done with a long-term research. Pontoh [3] also showed that the Indonesian stock market is not efficient, even including a weak stock market. Suryadimaja [10] tested the semi-strong form efficient market in Indonesia by using event study to analyze the effect of the announcement of the Initial Public Offering (IPO) and additional listing. Suryadimaja [10] showed that the information related to the announcement of the stock listing could not reflect in stock prices. In other words, the Indonesian stock market is not efficient or classified as the semi-strong stock market. The implication of this research is the investor can earn abnormal returns by using only historical data on the Indonesian stock market because the Indonesian stock market is not efficient [3]. Therefore, the use of technical analysis might be useful in Indonesia. The purposes of this study are:

1. To review and investigate whether the level of investor education influence the

selection model of investment analysis;

2. To examine and investigate whether the experience of investors influence the selection model of investment analysis;

3. To review and investigate whether the time horizon investor-owned affect the selection of models of investment analysis;

4. To review and investigate whether the trading frequency do investors influence the selection model of investment analysis;

5. To examine and investigate whether the accessibility of information investors influence the selection model of investment analysis;

6. To assess and investigate whether the level of investor perceptions affecting the composition of the investment analysis model.

Moreover, this study provides two main contributions were:

1. Purpose on aspects of science are expected to provide and add knowledge to the reader how the techniques or methods in stock investing and what factors are affecting it,

2. Purpose on aspects of the practitioner is methods of analysis in this study is still relatively rare, especially in Indonesia and this study contributes to investigating methods of analysis used by investors in investing.

LITERATURE REVIEW, CONCEPTUAL FRAMEWORK, AND HYPOTHESIS

Literature Review

Decision-making theory: According to Davis [11], the decision is the result of solving its problems. It relates to the answers to questions about "what to do" and the making of planning. In another word, the decision was the result of a thought process that the form of elections one among several alternatives that can use. There are five models of decision-making [12], namely: Model Rational, Rational Model Limited, Trash Cans Model (Garbage Can Model), Transcendent Model, and Model Intuitive.

Efficient market theory: An efficient market may indicate that stock prices fully reflect (fully reflect) the information available, it can be a company's annual report, the distribution of dividends, stock splits, stock market analysts' reports, and so on. Regarding Gumanti and Utami [13], Fama [8] presents three (3) types of primary types of market efficiency based on three kinds of information related to the selection method of analysis used by investors that past information, the information is now being published and information provided as follows:

(i) Weak market, (ii) semi-strong market, (iii) efficient markets.

Stock valuation techniques: In conducting stock transactions, every investor has a different analysis. Many references investment and financial analysis, divide stock investments, namely fundamental analysis, and technical analysis. Nevertheless, the fact that many investors and speculators are not familiar with this type of investment analysis because they only rely on information from the monitor screen, rumors, and

news in the media for making an investment decision.

Fundamental analysis is a method of forecasting movements of financial instruments in the future based on economic, political, environmental, and other relevant factors, as well as statistics that will affect the demand and supply of such financial instruments [14]. Meanwhile, according to Halim [15], fundamental analysis is an analysis that compares the intrinsic value of stock by its market price to determine whether the stock exchange prices already reflect the intrinsic value or not. According to Jogiyanto, the Fundamental analysis is the analysis using financial data, i.e. data derived from financial statements, such as earnings, dividends distributed and so on. Fundamental analysis is an analysis regarding the condition of the company. Meanwhile, according to Sutrisno [16] is a fundamental analysis of stock price analysis approach that focuses on the performance of businesses that issue shares and economic analysis which will affect the company's future.

Different from the fundamental analysis, technical analysis involves information relating to government policies, economic growth, the development of interest rates, the political conditions of a country, significant events, and others. A fundamental premise of technical analysis is the stock price reflects the relevant information, that information indicates changes in prices in the past, and hence the stock price changes will have a particular pattern, and that pattern will be repeated [17]. According to Ahmad [18], technical analysis is the analysis of the securities market or focusing on stock indices, prices or other market statistics to find patterns that might be predictive of a picture that has made. Briefly, technical analysis can be considered as securities analysis using historical price and volume charts [19].

Mechanism of Capital Market Transactions

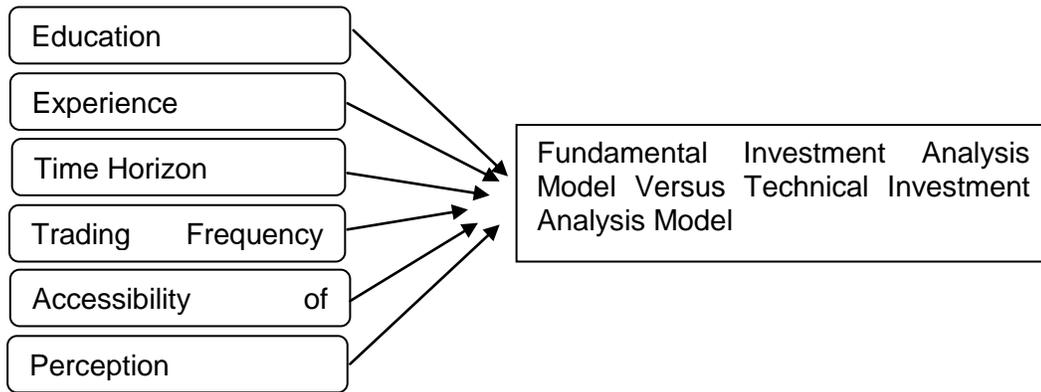
The securities trading activities do not differ from market activities involving buyers and sellers. In the capital market, the parties include referred to as issuers and investors. According to the Capital Market Law Article 1 number 6: "The term refers to the activities listed by the company that sells a broad range of shares to public investors through a public offering (the primary market). The shares have sold to the investors would be traded back among investors through the stock exchange (secondary market)".

According to Siamat [20] defines the prime market is the supply of securities directly by the issuer to the investor without going through the stock exchange. Marketing is the effects of the emissions trading securities. Prices of securities offered in the primary market do not fluctuate. After completion of the offer on the main market, these securities trade continuously and the prices will remain uncertain in the secondary market.

Conceptual Framework

The conceptual framework of this research can be seen in Figure 1.

Figure 1: Conceptual framework.



Hypothesis

Frensidy [21] stated that fundamental analysis is more complicated to do than technical analysis. Furthermore, it is possible that investor education and experience can influence the choice of investment analysis methods. Investors with a high level of education and expertise prefer to use fundamental analysis because fundamental analysis requires lots of understanding of economic and accounting circumstances. Only educated and experienced investors can process all the information needed in decision making. On the other hand, less educated and less experienced investors prefer the use of technical analysis because it is easy to implement. Investors do not need education and experience to process market data into decision makers since charts play a significant role. Therefore, the first and second hypotheses in this study are:

H1: The higher the investor's education, the higher probability of using fundamental analysis;

H2: The higher the experience the investor has the higher probability of using fundamental analysis.

Another factor influencing the choice of investment analysis method is the time range owned by investors and the frequency of trade [22]. Investors who trade in high frequency prefer to use technical analysis because technical analysis is easy to use and fast in decision making. On the other hand, investors with weak strategies prefer the use of fundamental analysis because the fundamental analysis is more comprehensive and takes much time in its use. So the third and fourth hypotheses in this study are:

H3: investor's time span influences the selection of investment analysis method;

H4: the trading frequency or trading activity owned by the investor has an effect on the choice of investment analysis method.

According to Lynch [23] states that investors should invest in what they know. Fundamentalists invest in companies that they know well. Thus, high levels of information accessibility required fundamentalists to complete their analysis. If access to information is limited, investors tend to use technical analysis that does not necessarily require company information. Investors simply collect past prices and the amount of

data, as well as their decision-making depends on the chart or table. So the fifth hypothesis in this study is:

H5: the accessibility of information owned by investors has an effect on the choice of investment analysis method.

Perceptions of the disclosure of financial statements have been mostly undertaken by listed companies also affect the selection of investment analysis methods. Fundamental analysis requires disclosure of financial statements that also require disclosure on the balance sheet. Fundamentalists should have a real perception of the disclosure of financial statements. If investors do not have a right opinion, investors tend to choose technical analysis, since technical analysis does not require knowledge and analysis on financial reporting. So the sixth hypothesis in this study is:

H6: investor's perception level has an effect on the choice of investment analysis method [24-26].

THE METHODOLOGY AND MODEL

The population approach in this study is the population of securities investors in Indonesia whose numbers uncertainty. Selection of sample in this research using approach proposed by Sugiyono that for the population that is not known with certainty (because of the amount of very many) can be taken responder as sample at least 100 respondents. Securities companies listed in Indonesia amount to 115 (one hundred and fifteen) companies. In this study, the population takes only 5 (five) securities companies located in Jakarta. The company is the longest securities company in managing the investment, the investors have more than five years' experience, have more than 1 billion investment, have been trading online, and already have permission as broker-dealer (Broker Dealer) Finance Services Authorities (OJK).

In this study used a sample of 125 respondents who became investors in some securities companies. The selection of securities firms as many as five companies from 115 listed companies do randomly. The sample used in this study is cluster random sampling, where each group of investors from securities firms randomly selected with the amount of each of 25 (twenty-five) respondents in securities companies that became the object of this study. Samples were taken as many as 25 respondents because the questionnaire was given randomly to investors who are under the auspices of securities companies who are willing to fill out the survey so that the total samples studied complete (amounted to 125 respondents).

Component questions to understand and know the rankings in the use of fundamental analysis are: macroeconomic analysis, Gross Domestic Product (GDP) analysis, business cycle analysis, yield curve analysis, inflation rate analysis, industry analysis, technical cycle analysis, investment rotation, other company disclosure analysis, and financial ratio analysis. Each of the above components is measured using a Likert scale with an unbalanced rating scale. While the other question components employed in the use of technical analysis are: historical price review, historical volume review, chart usage, use of sentiment indicator, use of put/call ratio, and moving average usage.

Each of the above components is measured using a Likert scale with an unbalanced rating scale.

Investor education will measure in two components, namely formal education and informal education. Formal education is a degree completed by investors in formal education. Moreover, informal learning is the participation of investors in various training, workshops, seminars, and talk shows with investment theme. This variable will be measured using an ordinal scale. The investor experience will measure by asking how long the investor has experienced in investing in the capital market. This variable will be measured using an ordinal scale. Investor accessibility to information will measure in two components, namely the availability of information relating to financial statements and accessibility of information unrelated to the financial statements. This variable will measure by using the ordinal scale. The time span is how long the investor holds the company's shares. This variable will be measured using an ordinal scale. The investor's trading frequency measures the number of transactions done by the investor per day. This variable is measured using an ordinal scale. Investor perception is the disclosure will be measured in five components, namely: perceptions of disclosure of the balance sheet, Income Statement, Cash Flow, Other Financial Disclosures, and Other Non-Financial Disclosures. This variable will measure on an ordinal scale.

All the above data were analyzed using descriptive statistics and inferential statistics. Descriptive statistical information in this study is used to determine the characteristics of Indonesian investors and to find out what Indonesian investors select analytical methods, whether fundamental analysis or technical analysis. The variables measured using the Likert scale consisting of the use of fundamental analysis, the use of technical analysis, accessibility of information, and perception were tested to determine the level of its validity and reliability. Validity test in this research is correlation and reliability analysis in this study using Cronbach's alpha. All variables consisting of two or more components will be tested for by using factor analysis, i.e., accessibility information, perception, fundamental analysis, and technical analysis. Factor analysis is used to form sizes for concepts consisting of more than one component. Furthermore, to analyze the influence of independent variable to the dependent variable, this research will use logistic regression with the formula:

$$\text{FUND} = \beta_0 + \beta_1 \text{EDU} + \beta_2 \text{EXP} + \beta_3 \text{ACS} + \beta_4 \text{TIM} + \beta_5 \text{FRQ} + \beta_6 \text{PCP}$$

Where:

FUND: The variable that shows the comparison between using the level of fundamental analysis and technical analysis

EDU: Investor Education

EXP: Experience investor

ACS: Accessibility of investor information

TIM: Time horizon investor

FRQ: The frequency of investor trading

PCP: Perceptions of investors.

The dependent variable is FUND which shows the comparison between fundamental analysis and technical analysis. FUND will be worth 1 (one) if the analysis result using fundamental analysis and frequency of use of fundamental analysis is bigger than with result of technical analysis and frequency of usage of technical analysis. So is the opposite condition. While the independent variables are:

EDU=investor education;

EXP=investor experience;

TIM=investor time span;

FRQ=investor trading frequency;

ACS=accessibility of investor information;

PCP=investor perception.

Findings

This study uses 125 respondents consisting of investment managers and individual investors who domiciled in Jakarta. Some respondents are individual investors, 90 (ninety) respondents or 72% and the rest of the respondents are investment managers of 35 (thirty-five) respondents or 28%. The investment analysis method favored by Indonesian investors is described in Table 1.

Table 1: Investor's choice analysis method.

| Analysis Method | Amount | Percentage |
|------------------------|---------------|-------------------|
| Fundamental | 61 | 48,8% |
| Technical | 64 | 51,2% |
| Total | 125 | 100% |

Indonesian investors prefer technical analysis compared with fundamental analysis which shown in Table 1 above that the comparison between the use of fundamental analysis and technical analysis is not much different. Although they also use both methods of analysis, most prefer using technical analysis. This result is similar to previous research conducted by Taylor and Allen [6] and Lui and Mole [7]. The difference lies in the characteristics of the research undertaken. Taylor and Allen [6] and Lui and Mole [7] conducted a study on the foreign exchange market where price patterns were easier to determine than in the stock exchange, and technical analysis was more frequently in the foreign exchange market than in the stock exchange.

Tables 2 and 3 illustrate the question components in fundamental analysis and technical analysis used by Indonesian investors. In FUND, the analysis often used by investors is industry analysis because industry report is one part of fundamental analysis. The technical analysis usually performed after conducting an economic analysis. In industry analysis, investors try to compare the performance of various industries to be able to know what kind of industry that gives the most promising prospect or vice versa. After analyzing the industry, investors will then be able to use the information as input to consider the shares of which industry groups will include in the existing portfolio. The rarest analysis used by Indonesian investors is the business cycle because the

business cycle has not been able to describe the macroeconomic indicators. At TECH, on the technical component (TECH), more investors use the chart that due to the natural use of this type of analysis. In today's technological developments, it is very easy to get past price data and chart or stock price movements to analyze it. The most rarely used analysis is the average of the stock movement because Indonesian investors are less in the average use of stock price movements.

Table 2: Fundamental analysis used by investor Indonesia.

| Description | Strongly Disagree | Disagree | Agree | Strongly agree |
|---|-------------------|-----------|------------|----------------|
| FUNDAME NEAL (FEN-10) | | | | |
| Macroeconomic analysis | 6(4,3%) | 36(23,2%) | 49(39,2%) | 34(27,2%) |
| Analysis of Gross Domestic Product (GDR) | 1(0,8%) | 37(29,6%) | 50(40,0%) | 37 (29,6%) |
| Business cycle analysis | 1(0,3%) | 31(24,8%) | 71 (56,8%) | 22 (17,6%) |
| Yield Curve Analysis | 5(4,0%) | 27(21,6%) | 64 (51,2%) | 29 (23,2%) |
| Inflation Rate Analysis | 3(,4%) | 28(22,4%) | 67(53,6%) | 27 (21,6%) |
| Industrial Analysis | 2(1,6%) | 39(31,2%) | 46 (36,8%) | 33 (30,6%) |
| Industrial Cycle Analysis | 8(6,4%) | 29(23,2%) | 56(44,8%) | 32(25,6%) |
| Investment Rotation | 8(6,4%) | 27(21,6%) | 56 (44,34) | 34 (27,2%) |
| Analysis of financial statement | 8(6,4%) | 25(20,0%) | 64(51,2%) | 28 (22,4%) |
| Analysis Disclosure analysis of other companies | 6 (4,8%) | 22(17,6%) | 72 (57,6%) | 25 (20,0%) |
| Financial ratio analysis | 6(4,8%) | 18(14,4%) | 68(54,4%) | 33(26,4%) |

Table 3: Technical analysis used by investor Indonesia.

| Description | Strongly Disagree | Disagree | Agree | Strongly Agree |
|-----------------------------|-------------------|------------|------------|----------------|
| TECHNICAL (TECH) | | | | |
| Review of historical prices | 4 (3,2%) | 27 (21,6%) | 61(43,3%) | 33 (26,4%) |
| Review historical Volumes | 6 (4,3%) | 14 (11,2%) | 73 (53,4%) | 32 (25,6%) |
| Use of Charts | 6 (4,8%) | 21(16,3%) | 61(43,3%) | 37 (29,614) |

| | | | | |
|-----------------------------|----------|------------|------------|------------|
| Use of sentiment indicators | 3 (2,4%) | 37 (29,6%) | 49 (39,2%) | 36 (28,3%) |
| Use of put/call ration | 4 (3,2%) | 41(32,3%) | 46 (36") | 34 (27,2%) |
| Use of moving average | 3 (2,4%) | 49 (39,74) | 43 (34,4%) | 30 (24,0%) |

In Table 4 below investors are more likely to use market news access that is not related to the subject of financial statements because the use of financial statements will be more useful if reported not only quantitative aspects, but includes other explanations that are deemed necessary, and this information should factual and objectively measurable.

Table 4: Accessibility information investors Indonesia.

| Description | Strongly Disagree | Disagree Agree | Agree | Strongly Agree |
|---|-------------------|----------------|------------|----------------|
| Accessibility Information (ACS) | | | | |
| Access market news related to the subject of financial statements | 2 (1,6%) | 35 (23,0%) | 57 (45,6%) | 31 (24,8%) |
| Access market news that is not related to the subject of financial statements | 4 (3,2%) | 31(24,3%) | 55 (44,0%) | 35 (28,0%) |

In Table 5 below describes the statistical analysis method chosen by the investor regarding disclosure of perception. In the judgment expressed (PCP), the overall investor Indonesia stated that the use of the income statement (Income Statement) might indicate revenue from the sale of a variety of costs, and the profit earned by the company during a particular period. The PCP assist investors and other capital market participants in identifying circumstances of a company while investor perception on small balance.

Table 5: Disclosure investor perception Indonesia.

| Description | Strongly Disagree | Disagree | Agree | Strongly Agree |
|--|-------------------|------------|------------|----------------|
| Published Perception (PCP) | | | | |
| Perception on balance sheet disclosure (balance sheet) | 7 (5,6%) | 36 (28,8V) | 54 (43,2%) | 28 (22,4V) |
| Income statement | 5 (4,0°A) | 39 (31,2%) | 42 (33,6%) | 39 (31,2%) |
| Cash flow | 6 (4,8%) | 43 (34,4%) | 42 (33,6%) | 34 (27,2%) |
| Other financial disclosures | 7 (5,6%) | 29 (23,2%) | 59 (47,2%) | 30 (24,0%) |
| Other non-financial disclosures | 13 (10,4%) | 30 (24,0%) | 49 (39,2%) | 33 (26,4%) |

Table 6: Characteristics of Respondents by Education.

| No. | Variable | Education Level | Total | % |
|-----|-----------------|-----------------|-------|----------|
| 1 | Education (EDU) | High School | 10 | 3,0% |
| | | Bachelor | 88 | 70,4% |
| | | ≥Post Graduate | 27 | 21,6% |
| | | Jumlah | 125 | 100% |
| | | Non Formal: | | |
| | | 0-2 tirnes | 44 | 35,2% |
| | | 3-5 times | 30 | 24,0% |
| | | > 5 times | 51 | 40, a m, |
| | | Total | 125 | 100% |

In Table 6 above, most investors who are in the majority of the securities company is investor education S1. While the level of non-formal education, the majority of respondents have attended various training, seminars, and even talk about an investment of more than five times.

Table 7: Characteristics of respondents based on experience.

| No. | Variable | Experience Level | Total | % |
|-----|-------------------|------------------|-------|-------|
| 2 | Experienced (EXP) | <1 year | 30 | 24,0% |
| | | 1-2 Year | 18 | 14,4% |
| | | 3-5 Year | 33 | 26,4% |
| | | > 5 year | 44 | 35,74 |
| | | Total | 125 | 100% |

The level of experience of the majority of investors is over 3-5 years so that it that most of the respondents or investor in this study is quite experienced in investing that can reflect in Table 7.

Table 8: Characteristics of respondents based on time range implement investment.

| No. | Variable | Level | Total | % |
|-----|-----------------|----------|-------|-------|
| 3 | Time Span (TIM) | <1 year | 56 | 44,8% |
| | | 1-2 year | 15 | 12,0% |
| | | 3-5 year | 36 | 28,8% |
| | | > 5 year | 18 | 14,4% |
| | | Total | 125 | 100% |

In Table 8 above, the characteristics of respondents based on the time span of this study the majority is less than 1 (one) year, which means 44.8% of Indonesian investors to invest only for a short period (short term) and they also are takers term profits short. At FRQ, Indonesian investors trading frequency too high, i.e., 16-20 times per day.

Investor Daily on securities firms with high-frequency trading prefers the use of technical analysis because technical analysis is more easily applied and faster decision making that shown in Table 9.

Table 9: Characteristics of respondents based on frequency trading.

| No. | Variable | Number of Frequencies | Total | % |
|-----|---------------------------------|-----------------------|-------|-------|
| 4 | Trading Frequency per day (FRQ) | < 10 times | 39 | 31,2% |
| | | 10-15 times | 27 | 21,6% |
| | | 16-20 times | 57 | 45,6% |
| | | > 20 times | 2 | 1,6% |
| | | Total | 125 | 100% |

Measurements on the selection of investment decision analysis method use a dummy variable. The fund is given a number or code one because of the use of fundamental analysis is much more challenging when compared to the technical analysis (Tek) so as to Tek given number or code 0. Therefore, the FUND will be worth one if the product of a factor analysis of the use of fundamental analysis and use of frequencies fundamental analysis is greater than the factor analysis products use technical analysis and technical analysis of the frequency of use. FUND will be 0 if the product of a factor analysis of the use of fundamental analysis and fundamental analysis of the frequency of use is smaller than the factor analysis products use technical analysis and technical analysis of the frequency of use. In other words, the value one will award if more investors opt fundamental analysis, and a value of 0 will give if more investors are choosing technical analysis. So the logistics analysis is consistent with research that due to the difficulty level of the use of methods of analysis for investors in Indonesia in making investment decisions.

Results of the election method investor analysis using logistic regression can be seen in Table 10.

Table 10: Logistic Regression Results.

| Fund=$\beta_0+\beta_1\text{EDU}+\beta_2\text{EXP}+\beta_3\text{ACS}+\beta_4\text{TIM}+\beta_5\text{FRQ}+\beta_6\text{PCP}$ | | | | |
|--|-------------------|---------------|---------------------------|-------------|
| Variable Dependent: Fund | | | | |
| Variable Independent | Hypothesis | Exp(B) | β | Sig. |
| Constant | | 0,021 | -3,885 | 0,013** |
| EDU | - | 0,934 | 0,069 | 0,880 |
| EXP | + | 1,831 | 0,605 | 0,029** |
| TIM | + | 2,847 | 1,046 | 0,003*** |
| FRQ | + | 0,713 | 0,339 | 0,291 |

| | | | | |
|------------------------|--------|-------|-------|-------|
| ACS | - | 1,199 | 0,181 | 0,368 |
| PCP | - | 0,995 | 0,005 | 0,966 |
| Chi-Square | 11,350 | | | |
| Cox and Snell R Square | 0,342 | | | |
| Nagelkerke R Square | 0,456 | | | |

Description: ***Significant at 1%; **Significant at 5%

Based on Table 10 above it can be given the following equation=
 Fund=-3.885 - 0,069EDU+0,605EXP+1,046TIM - 0,339FRQ+0,181ACS - 0,005PCP.

Before performing the analysis on each independent variable coefficients, the feasibility of formula should be tested. The determine using the Hosmer and Lemeshow test output. More significance level of 0.05 means that no significant difference between the Fund predicted by the Fund under investigation. There are two (2) ways to determine the R-Square to the Logistic Regression namely Cox and Snell and Nagelkerke R Square. At Cox and Snell R Square on this model is 0.342 or 34.2%. That means 34.2% on the dependent variable, which the Fund may be affected simultaneously by six (6) independent variables. However, at Nagelkerke R Square, figures obtained higher at 0.456 or 45.6%, where the dependent variable simultaneously can not be affected by the six (6) independent variables but 54.4% which can influence other variables that are not independent included in this study. The difference between the Cox and Snell and Nagelkerke R Square is Nagelkerke R Square has a higher degree of sensitivity than Cox and Snell. By analyzing the variables in the equation table, concluded that among the six (6) independent variables used in this study, only 2 (two) variables that significantly affect the selection of investment analysis methods. The second significant variable was the experience (EXP), and a span (TIM).

Investor Education

Hypotheses used to test the significant level of investor education are:

H1: investor-owned educational influence on the selection of investment analysis methods.

From the data variables contained in equation table, it can see the level of significance in the Communities is more than 0.05 is equal to 0,880, and it means that the variable EDU did not influence the selection of investment analysis methods. So the first hypothesis in this study was rejected. The significant lack Communities variables can cause two (things) both of which are components of the Communities themselves, namely formal education and non-formal education of investors. Formal education may be a factor that causes Communities not significant. Because maybe formal education is not associated with the investment. So the investor educational background did not learn anything about the methods of investment analysis. Although formal education is a relatively high investor because education is not related to finance and investment, then this gives little influence on the selection methods of investment analysis. Non-formal education can also cause Communities become insignificant. Because there is a possibility that the event follows an investor has an investment theme but not directly

related to investment analysis methods. Then there is no added value to knowledge held by investors associated with fundamental and technical analysis methods. Therefore, although the non-formal education is relatively high investors, it has no effect or little effect on the selection of investment analysis methods.

Investor Experience

Hypotheses used to test the significant level of the experience of investors are:

H2: experience of investor influence on the selection of investment analysis methods.

From the data variables contained in equation table, a regression coefficient of EXP of 0.934, indicating that any increase in EXP may also cause an increase in the Fund. So this can be seen from the significant level of 0.029 EXP where the rate is less than 0.05, which is a significant level used in this study and it means that the second hypothesis in this study received. The higher level of experience possessed by the investor, the higher the use of fundamental analysis. So the more or higher level of experience, investors are becoming more aware of and understand the ins and outs of investing in securities firms.

Time Span Investors

Hypotheses used to test the significant level in the period the investor is:

H3: investor-owned span of influence on the selection of investment analysis methods.

From the data variables contained in equation table, the regression coefficient of TIM amounted to 2,847, and the figures show that every increase in the TIM may also cause an increase in the Fund. So this can be seen from the significant value gained 0.002 which is the standard of 0.05 which used in this study that means The TIM variable effect on the election method investment analysis. Then the third hypothesis in this study received. The longer span of time has the higher use of fundamental analysis.

Frequency Trading Investors

Hypotheses used to test the significant level of investor trading frequency are:

H4: frequency trading or trading activity of investors who owned an effect on the selection of investment analysis methods.

From the data variables contained in equation table, the regression coefficient of FRQ is equal to 0.713, and significant FRQ value of 0.291 and this figure shows more than 0.05 which is a significant level used in this study, its mean indicates that the FRQ variable no significant effect on the selection of investment analysis methods. The fourth hypothesis in this study is not acceptable.

Investor Information Accessibility

Hypotheses used to test the significant level of the accessibility of information investors are:

H5: the accessibility of information held by the investor influence on the selection of investment analysis methods.

From the data variables contained in equation table explaining that the value of ACS amounted to 0.368 which is greater than 0.05, which is a significant reference value used in this study and it means that the value of ACS does not influence the selection of investment analysis methods. The fifth hypothesis in this study, not acceptable which may result from the normative approach in answering the questionnaire. Most investors said the information in the information exchanges accessible by all means of information. The answer does not generate significant value for the ACS variable selection methods on investment analysis. Other possibilities for ACS components question is general information and not specific therefore the investors tend to answer normative.

Disclosure Investor Perception

Hypotheses used to test the significance level of the perception of investors is:

H6: owned investor perception level affects the election method investment analysis.

From the data variables contained in equation table, the regression coefficient of PCP is more than 0.05 is equal to 0.966, which is the level used in this study that shows the perception variables did not influence the selection of investment analysis methods. The sixth hypothesis in this study was rejected, and its mean caused by the investor-owned normative approach in answering the questionnaire. The majority of investors said that the accuracy of the data companies that go public has been excellent because they believe in the management of professionals in each of these companies. The other reason investors depend on the possibility of SFAS (Statement of Financial Accounting Standards) which serve as guidelines for companies to present the data in the financial statements accurately. Investors believe that every publicly traded company has met its obligations to submit the data with GAAP. There is another possibility that investors believe the auditors provide an opinion on the company's financial statements. Investors believe that the auditor has provided a complete evaluation for the accuracy of financial statements. Therefore, investors are confident that the truth of the financial statements can use as a benchmark on investment decisions. The third reason may lead to an insignificant influence on investors' perception of the correctness of the data the company that made the selection of investment analysis.

CONCLUSION AND RECOMMENDATION

Conclusion

According to the analysis done can be seen that the method of analysis of investment chosen by the investor in Indonesia is a method of technical analysis. The factors that significantly affect the selection of investment analysis methods is the experience of the investor and the investor time span. Results from the other four factors tested in this study did not significantly influence the selection of investment analysis method, namely the level of investor education, trading frequency, accessibility of information, and investor perceptions. The conclusion of this research are as follows:

1. Education investor does not significantly influence the selection of investment analysis methods.
2. Experience investor can significantly affect the electoral method investment analysis.
3. The timeframe investors significantly influence the selection of investment analysis methods.
4. The frequency of trading investors does not significantly influence the selection of investment analysis methods.
5. Accessibility of information does not significantly influence the selection of investment analysis methods.
6. Perception does not significantly influence the selection of investment analysis methods.

Recommendation

From the research results and conclusions as mentioned before, a few suggestions that can convey the author are:

Experience: In this study stated that the experience significantly influences the selection of investment analysis methods. Thus the investors who do not have sufficient experience should not be discouraged to keep investing in the stock market.

Time range: In this study, investors tend to invest in a span of <1 year, so investors are more frequently taking advantage of relatively rapid. However, it also should be considered by investors not to rush into the decision to prevent the amount of the loss.

Perception: Other financial disclosure would burden small companies when issuing the report that emphasized for companies listed on a stock exchange or a company that has a value of certain assets and by defined criteria. Furthermore, it can help the public to know would be a good prospect to be obtained by the company in the future and can assist investors in making right investment decisions.

Education: This study found that education does not significantly influence the selection of investment analysis methods. So it should hold a securities company or work with the school or university to socialize or share knowledge about securities, the method of analysis, types of investment instruments, and so on so that they can understand it well. Also, for the investor should still seek knowledge and knowledge regarding the selection of their investment analysis methods to obtain good investment decisions and profitable.

Accessibility information: The increase in trading occurs because investors have different interpretations of an announcement on the market news that is not related to the subject of financial statements. The increase in the volume of trade will be higher with higher uncertainty among investors regarding their interpretation of the announcement. However, the trade does not automatically imply a difference in interpretation between the investors, the increase in the volume of trade can still occur if investors have different information. Then the securities company should always

provide accessibility of information in the form of financial statements and nonfinancial reports easy, understandable, and can help investors in making investment decisions.

Frequency trading: The activities of high-frequency trading caused by some investors and the amount of interest to transact buy and sell shares. Investors with little trading frequency do not worry because the character of each investor is different according to the degree of risk-taking that they take. Securities firms also should always provide a sense of trust and foster a sense of safety to investors to keep trading buy and sell shares.

FURTHER RESEARCH

The subsequent researchers suggested could do similar research but should add another variable to be able to do further research due to the figures obtained by the model Nagelkerke R Square of 45.6%. The dependent variable simultaneously can not be affected by the six (6) independent variables, but 54, 4% of which can be influenced by other independent variables that are not included in this study.

Examples of variables that can be added, namely: transaction volume or the nominal amount per transaction. Because, according to research conducted by the Bodie [21], the investor who uses technical analysis focuses on stock returns. Thus it can be understood that the number of transactions they will use less than the investor who uses fundamental analysis.

REFERENCES

1. William FS, Gordon JA, Jeffrey WB (1995) *Investment* (6th edn), Prentice Hall, New Jersey.
2. Marasović B, Poklepović T, Aljinović Z (2011) Markowitz' model with fundamental and technical analysis-complementary methods or not. *Croatian Operational Research Review* 2: 122-132.
3. Jones P (2007) *Market efficiency test forms of weak capital market of Southeast Asia (Indonesia, Malaysia, Singapore, Philippines, and Thailand) 1998-2005*. University of Indonesia. Jakarta.
4. Emir S, Dinçer H, Timor M (2012) A stock selection model based on fundamental and technical analysis variables by using artificial neural networks and support vector machines. *Review of Economics and Finance* 2: 106-122.
5. Andrew WL, Mamayski H, Wang J (2000) Foundations of technical analysis: computational algorithms, statistical inference, and empirical implementation. *Journal of Finance* 55: 1705-1765.
6. Taylor Mark P, Allen H (1992) The use of technical analysis in the foreign exchange market. *Journal of International Money and Finance* 11: 304-314.
7. Yu-Hon L, Mole D (1998) The use of fundamental and technical analyzes by foreign exchange market dealers: hong kong evidence. *Journal of International Money and Finance* 17: 535-545.
8. Fama E (1991) Efficient Capital Markets. *The Journal of Finance* 46: 575-617.

9. Saut Maruli SL (2005) Development of Indonesia capital market efficiency at Jakarta stock exchange (BEJ): market reaction analysis against publication of annual financial reports. Faculty of Economics, University of North Sumatra, Sumatra.
10. Suryadimaja AS (2004) Stock price behavior and reaction during announcement of stock registration in capital market empirical market efficiency test empirical study at jakarta stock exchange period January 2001-February 2004. University of Indonesia, Jakarta.
11. Davis Gordon B (1991) Basic framework of management information systems. PT-Reader Binamas Pressindo, Jakarta.
12. Agus Triono R (2012) Managerial decision making. Salemba Four, Jakarta.
13. Gumanti TA, Utami ES (2004) The efficiency market and its test. Jurnal Akuntansi dan Keuangan, p: 54.
14. Djoko S, Sabardi A (2010) Technical analysis at stock exchange (2ndedn), UPP STIM YKPM, Yogyakarta.
15. Abdul H (2005) Investment analysis (2ndedn), Salemba Four, Jakarta.
16. Sutrisno (2008) Manajemen keuangan, theory, concepts, and applications. Ekonesia, Yogyakarta.
17. Suad H (1998) Fundamentals of portfolio theory and analysis of securities (3rdedn), BPFE, Yogyakarta.
18. Kamarudin A (2003) Fundamentals of investment management. Rineka Cipta, Jakarta.
19. Dedy S, Liliana (2007) Modern technical analysis on securities trading: practical ways of predicting the movement of shares. Andi, Yogyakarta.
20. Dahlan S (2001) Management of financial institutions (4thedn), FEUI, Jakarta.
21. Bodie Z (2013) Investments. McGraw-Hill.
22. Peter L, Rothchild J (1990) One up on wall street: how to use what you already know to make money in the market. Penguin Group, New York.
23. Budi F, Setyawan IR (2007) The effect of management ownership structure, business risk and firm growth toward the capital structure. Journal of Management of Indonesian Entrepreneurs 36: 48-54.
24. Jogianto (2000) Portfolio theory and investment analysis. BPFE, Yogyakarta.
25. Charles PJ (2007) Investments (10thedn), John Wiley and Sons, New Jersey.
26. Law no. 8/1995 About the Capital Market.