The testing of belief-adjustment model and framing effect on non-professional investor's investment decision-making

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A R T I C L E   I N F O

A B S T R A C T

This study aims to find out the effect of belief-adjustment model and framing effect on non-professional investor's investment decision making. The designs of experiment was done by means of the presentation pattern of 2×2×2, disclosure pattern (step-by-step and end-of-sequence), disclosure evidence of information order (good news followed by bad news and bad news followed by good news), and framing effect (framing condition according to the information and framing condition with the reversed information). The research hypotheses were tested using parametric test. The dependent variable is investment decision making, while, the independent variables are belief-adjustment model and framing effect. The participants were 80 undergraduate students of STIE Perbanas Surabaya majoring in Accounting or Management. It shows that there are significant differences in decision making and recency effect occurs between the investors who receive good news followed by bad news and those who receive bad news followed by good news in the step-by-step disclosure pattern with framing condition according to the information. It also shows that primacy effect occurs between the investors who receive good news followed by bad news and the investors who receive bad news followed by good news in the step-by-step disclosure pattern with framing condition in reversed information.

A B S T R A K

Penelitian ini bertujuan untuk mengetahui pengaruh belief-adjustment model dan framing effect terhadap pengambilan keputusan investasi investor non-profesional. Desain eksperimen dilakukan dengan presentation pattern of 2×2×2, pola pengungkapan (step-by-step dan end-of-sequence), bukti pengungkapan informasi pesanan (kabar baik diikuti oleh kabar buruk dan kabar buruk diikuti kabar baik), dan framing effect (membingkai kondisi sesuai dengan informasi dan kondisi framing dengan informasi yang terbalik). Hipotesis penelitian diuji dengan uji parametrik. Variabel dependennya adalah pengambilan keputusan investasi, sedangkan variabel independennya adalah belief-adjustment model dan framing effect. Peserta adalah 80 mahasiswa STIE Perbanas Surabaya jurusan Akuntansi atau Manajemen. Hal ini menunjukkan bahwa ada perbedaan signifikan dalam pengambilan keputusan dan efek kemunculan terjadi antara investor yang menerima kabar baik diikuti oleh berita buruk dan mereka yang menerima berita buruk diikuti kabar baik dalam pola pengungkapan langkah demi langkah dengan kondisi pembingkaian sesuai dengan informasi. Hal ini juga menunjukkan bahwa efek unggulan terjadi antara investor yang menerima kabar baik diikuti oleh kabar buruk dan investor yang menerima berita buruk diikuti kabar baik dalam pola pengungkapan langkah demi langkah dengan membingkai kondisi informasi terbalik.

1. INTRODUCTION

In the current development, investment has become a global economic media that encourages economic players, especially investors when they have to invest. Fluctuation and changes in stock prices provide an opportunity for them to earn a higher return than other financial instruments such as deposits or saving products. However, the opportunity

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does not always give investors a high return. Yet, they get even a bad risk, that is, a loss. Stoner et al. (1995) states that decision-making means identifying and selecting a series of actions to deal with a particular problem.

The phenomenon associated with the difference of accounting information presentation occurs in pharmaceutical companies, that is, between Indo Farma Tbk and Kalbe Farma Tbk. Kalbe Farma Tbk Company presents the financial statement and annual report separately, while Indo Farma Tbk Company combines both the financial statement and the annual report in one reporting. This will affect the decision-making taken by investors. Previous research conducted by Teoh and Shiu (1990) provides empirical evidence that financial statement information is more important than social responsibility report for investors in Australia. This makes investors tend to see financial performance information rather than non-financial information. Based on the difference of presentation, investors are more likely to choose companies that present financial statements and annual reports separately, because investors can see the company's financial performance information directly in the financial statements without having to see the annual report first.

According to Levin et al. (1998), some previous studies revealed that framing effect was inconsistent and they were limited to the variations of relationships and procedures. Lipe (1993) argues that the purpose of framing in the future is to test the role of motivation as a whole. The framing adopted by decision makers depends largely on the problems faced, the norms, habits, and characteristics of decision makers themselves (Gudono and Hartadi, 1998). Investment decision is generally influenced by many factors, but the most important factor is the attitude of individuals in receiving and processing information provided. Framing effect does not really affect investors in making decisions, especially on actions at risk. In other words, when investors are given information about positive framing/gain, the investors tend to avoid the risk. Conversely, when investors are given information about negative framing/loss, the investors are more likely to like the risk. Given the differences in these statements, the authors are motivated to develop further research on the framing effect of the information presented in the financial statements that have an impact on the investment decision-making process.

Based on the evidence described above, this study formulates the problem as follows: belief adjustment model testing (aspect of presentation order and presentation patterns) on non-professional investor decision-making and framing effect testing on non-professional investor decision-making. The specific objective of this study is to find out the difference received by investors in belief adjustment model testing (aspect of presentation order and presentation patterns) and framing effect testing on non-professional investor decision making.

2. THEORETICAL FRAMEWORK AND HYPOTHESIS

Belief Adjustment Model Theory

Hogarth and Einhorn (1992) stated that belief-adjustment model illustrates the adjustment of individual beliefs that process information sequentially using anchoring process and adjustment approach. This belief-adjustment model is more interesting than the judgment-model because it adjusts a series of predictions based on its uniqueness. In particular, the belief-adjustment model predicts that there is no sequence effect on consistent evidence (overall positive or overall negative, but the recency effect occurs when individuals obtain various information evidences (positive and negative).

Fuzzy-Trace Theory

Based on previous research on the relationship between memory and reasoning, Reyna and Brainerd (1990) found fuzzy-trace theory in which this theory is different from the prospect theory. The function of this fuzzy-trace theory is to look for a psychophysical function for a given probability and the value generated, and to assume that individuals tend to like the simple information presentation better than the complex one. Fuzzy-trace theory is also used as an alternative in explaining the effect of framing effect. Reyna and Ellise (1994) suggest that the use of heuristic approach is one of the supporting theoretical alternatives of fuzzy-trace.

Framing Effect

Yusnaini (2005) argued that framing is one of the reasons for biased decision making. When bias occurs, the prospect theory serves as explanation revealing that an information frame adopted by a person can affect his decision making. There are two alternatives when information frame is presented to individuals in decision making. The first alternative is that when the framed alternative decision is positive, the decision normally taken by the individual is risk averse.

Based on collections and findings of previous studies, the framework of this experimental study is as presented in Figure 1. Figure 1 provides the
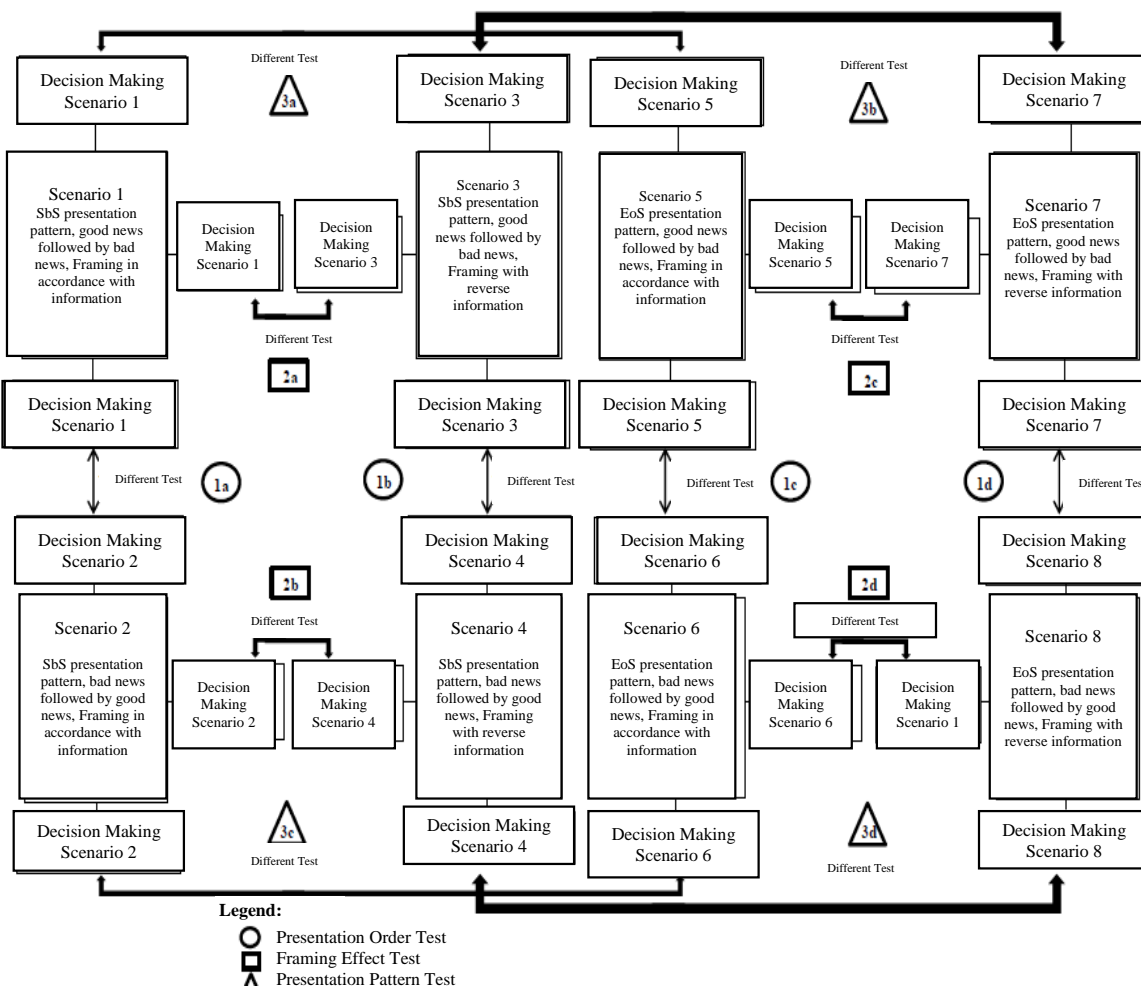
Figure 1
Research Framework

reviews related to the schematic framework. This study, therefore, cannot be separated from previous studies because it has both the similarities and differences in the object to be studied.

For example, the previous research by Almilia and Supriyadi (2013) indicates that there is a difference of investment decision between the investors who receive the direction/order of information good news followed by bad news and the investors who receive the direction/order of information bad news followed by good news for step by step information presentation pattern. Meanwhile, for end-of-sequence presentation pattern shows that there is no difference in end-of-sequence presentation pattern so there is no sequence effect between the investors who receive the direction/sequence of information good news followed by bad news and the investors who receive the direction/sequence of information bad news followed by good news that ultimately no recency effect occurs in the end of sequence information presentation pattern.

It can be concluded that step by step information presentation pattern can affect an investor to make an investment decision. In contrast, in the end-of-sequence information presentation pattern, there is no significant effect on an investor to make an investment decision. A study by Luciana Spica Almilia et al. (2013) indicates that there is a similar level of consistency in previous studies. However, there is additional complex information consisting of accounting information, non-accounting information, and a combination of information from both.

This study discusses the effect of framing effect on investment decision making on non-professional investors. This effect is based on the research conducted by Ni Kadek Ari and Made Gede (2016) related to the effect of adverse selection and the effect of negative framing on commitment escalation trends. The results show that when information is presented in negative framing, managers tend to perform commitment escalation. In other words, commitment escalation is the tendency of

decision-maker to continue an uneconomical investment project, despite past poor performance information and the possibility of a more profitable future alternative for investment.

The result of the research by Chang et al. (2002) indicates that fuzzy-trace theory is the best in explaining framing effect on decision-making behavior in accounting relationships, although the prospect theory has been applied and most commonly used. Based on previous studies, it can be concluded that framing effect has an effect on investment decision making.

This experimental study aims to examine the effect of belief-adjustment model, especially on the aspect of presentation sequence by using accounting information, on decision making. Based on the results of previous research, the hypotheses can be formulated as follows:

H1a: There is a difference in investment decisions between participants receiving information order ++-- and participants receiving information order --++ in the step-by-step presentation pattern and the framing effect which is in accordance with the information.

H1b: There is a difference in investment decisions between participants receiving information order ++-- and participants receiving information order --++ in the step-by-step presentation pattern and the framing effect with reversed information.

H1c: There is a difference in investment decisions between participants receiving information order ++-- and participants receiving information order --++ in the end-of-sequence presentation pattern and the framing effect which is in accordance with the information.

H1d: There is a difference in investment decisions between participants receiving information order ++-- and participants receiving information order --++ in the end-of-sequence information pattern and the framing effect with reversed information.

This experimental study aims to examine the effect of framing effect, by using accounting information, on decision making. The framing to be tested include: (1) framing in accordance with the information and (2) framing with reversed information. Based on the results of previous research, the hypotheses can be formulated as follows:

H2a: There is a difference in investment decisions between participants receiving information order ++-- on the framing effect which is in accordance with information and participants receiving information order ++-- on the

framing effect with reversed information in the Step by step presentation pattern.

H2b: There is a difference in investment decisions between participants receiving information order --++ on the framing effect in accordance with information and participants receiving information order --++ on the framing effect with reversed information in the Step by step presentation pattern

H2c: There is a difference in investment decisions between participants receiving information order ++-- on the framing effect in accordance with the information and participants receiving information order ++-- on the framing effect with reversed information on the end of sequence presentation pattern.

H2d: There is a difference in investment decisions between participants receiving information order --++ on the framing effect in accordance with the information and participants receiving information order --++ on the framing effect with reversed information in the end of sequence presentation pattern.

In addition, this experimental study also aims to examine the effect of belief-adjustment model, especially on the aspects of presentation pattern using accounting information, on decision making. Based on the results of previous research, the hypotheses can be formulated as follows:

H3a: There is a difference in investment decisions between participants receiving information order ++-- on the step by step presentation pattern and participants receiving information order ++-- on the end of sequence representation pattern in the framing effect which is in accordance with information.

H3b: There is a difference in investment decisions between participants receiving information order --++ on the step by step presentation pattern and participants receiving information order --++ on the end of sequence presentation pattern in the framing effect which is in accordance with information.

H3c: There is a difference in investment decisions between participants receiving information order ++-- on the step by step presentation pattern and participants receiving information order ++-- on the end of sequence representation pattern in the framing effect with reversed information.

H3d There is a difference in investment decisions between participants receiving information order --++ on the step by step presentation pattern and participants receiving informa-

tion order --++ on the end of sequence representation pattern in the framing effect with reversed information.

3. RESEARCH METHOD
Research Design
This research is an experimental research using primary data. Ertambang (2012: 1) suggests that experimental research is a research design to investigate a phenomenon by manipulating a condition through a particular procedure, and then observe and interpret the manipulation results. Primary data was obtained by giving a questionnaire directly to the participants without any intermediaries from other participants. In general, the purpose of experimental research is to examine and know specifically the effect of presentation pattern, information order, and framing effect based on accounting information on non-professional investor decision making.

Research Participants
The participants were undergraduate students majoring in Accounting and Management of STIE Perbanas Surabaya with a total of 80 participants. These participants have no experience in the investment world but they have extensive knowledge related to Finance and Investment in the Capital Market. The sample was taken by using a purposive sampling method, from the population with the specific provisions required by the researchers. In this research, the criteria of the students selected as the research subject are the students who had and/or were still taking the following courses: (1) Investment Management and Capital Market (for the students of Accounting Program), (2) Investment and Portfolio Management (for the students of Management Program), and (3) Financial Statement Analysis (for the students of Accounting and Management Programs). And they are expected to have a good knowledge of both.

The design of experimental procedures used is mix design, which is a combination of between subject and within subject. In the within subject design, each subject receives treatment/evidence of manipulation scenarios under the same conditions with each other. Meanwhile, in between subject, between one subject and another will get evidence of different manipulation scenarios. Thus, it can be concluded that for the use of mix design in this study is a merger between the same presentation pattern, that is, step by step and end of sequence, but the evidence of order received is different (++--) compared with (--++).

The subjects or participants in this study will carry out one session of eight scenario conditions in a randomized experimental study presented as follows:
1. Scenario 1, the subjects receives accounting information with framing according to information and step-by-step (SbS) presentation pattern with presentation order ++-- (positive information/good news followed by negative information/bad news).
2. Scenario 2, the subjects receive accounting information with framing according to information and step-by-step (SbS) presentation pattern with presentation order --++ (negative information/bad news followed by positive information/good news).
3. Scenario 3, the subjects receive accounting information with reversed information framing and step-by-step presentation pattern with presentation order ++-- (positive information/good news followed by negative information/bad news).
4. Scenario 4, the subjects receive accounting information with reversed information framing and Step-by-step (SbS) presentation pattern with presentation order --++ (negative information/bad news followed by good information/good news).
5. Scenario 5, the subjects receive accounting information with framing according to information and end-of-sequence (EoS) presentation pattern with presentation order ++-- (good information/good news followed by negative information/bad news).
6. Scenario 6, the subjects receive accounting information with framing according to information and end-of-sequence (EoS) presentation pattern with presentation order --++ (negative information/bad news followed by positive information/good news).
7. Scenario 7, the subjects receive accounting information with reversed information framing and end-of-sequence (EoS) presentation pattern with presentation order ++-- (positive information/good news followed by negative information/bad news).
8. Scenario 8, the subjects receive accounting information with reversed information framing and end-of-sequence (EoS) presentation pattern with presentation order --++ (negative information/bad news followed by positive information/good news).

The task of participants is to reassess the shares of PT OPN which is a fictional company but the

data presented is real data. Researchers take the data from the website of a company and the web-site of Indonesia Stock Exchange (IDX). This fictional company is one of the largest state-owned banking companies in Indonesia. The company was established on December 16, 1895 in Purwokerto, Central Java. On November 10, 2003 PT OPN released its initial shares to the public (IPO) traded in Indonesia Stock Exchange with BBRI ticker. The price per share at that time was IDR 875 per share. There are no restrictions used by researchers from this fictional company. The researchers are allowed to freely choose the fictional company in this experimental research.

The first stage conducted by the researchers was to provide the participants with information about the background and the initial stock value of the company, which is determined as a benchmark of IDR 11,650. The participants were then asked to reassess each type of information related to the investment presented with Step by step and End of Sequence representation patterns. The participants were then given information about initial stock price as reference, that is, IDR 11,650. Furthermore, the participants are required to scale the information provided, that is, the disclosure related to the company's financial statements at a price multiple of -1000 for very bad news and +1000 for very good news. After all the above information was understood and responded by the participants, the participants fill out manipulation check and questions about knowledge in the field of capital market investment and financial statement analysis with the purpose to measure the ability of participants.

The stages of procedure performed by the participants in reassessing the shares of PT OPN can be shown in the step-by-step presentation pattern as follows.
1. Reading the background of the company.
2. Providing information related to the initial value of the company's stock (using anchor stock value of IDR 11,650.
3. Providing accounting information related to the disclosure of financial statements with framing in accordance with information consisting of eight items, that is, four items of ++ information and four items of -- information for the step by step presentation pattern ++-- and four items of -- information and four items of ++ information for the presentation pattern --++, and with reversed information framing consisting of eight items, that is, four items of ++ information and four items of -- information for step by step presentation pattern --++.

4. Performing reassessment and judgment for eight (8) times on the value of the company's shares and the number of shares to be purchased for each information presented (accounting information in the financial statements).
5. Participants are asked to respond to questions about manipulation checks, accounting knowledge, psychological experiment questions to measure confidence characteristics, questions to measure the basic skills of subjects in the analysis of financial statements and capital markets and demographic items of respondents.
6. Debriefing session.

The stages of procedure performed by participants in re-assessing the shares of PT OPN on end-of-sequence presentation pattern are as follows.
1. Reading the background of the company.
2. Providing information related to the initial value of the company's stock (using anchor stock value of IDR 11.650.
3. Providing accounting information related to the disclosure of financial statements with framing in accordance with information consisting of eight items, that is, four items of ++ information and four items of -- information for the step by step presentation pattern ++-- and four items of -- information and four items of ++ information for the presentation pattern --++, and with reversed information framing consisting of eight items, that is, four items of ++ information and four items of -- information for step by step presentation pattern --++.
4. Performing reassessment and judgment eight one (1) times on the value of the company's shares and the number of shares to be purchased for all information presented (accounting information in the financial statements).
5. Participants are asked to respond to questions about manipulation checks, accounting knowledge, psychological experiment questions to measure confidence characteristics, questions to measure the basic skills of subjects in the analysis of financial statements and capital markets and demographic items of respondents.
6. Debriefing session

This experimental research uses four (4) accounting information taken from the company's financial statements and categorized into four (4) good news information and four (4) bad news information as follows.
Good news accounting information
1. The company's Earnings after Tax increases compared to the previous period.
2. The company's Price to Book value increases

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compared to the previous period.

3. The company's Return on Assets (ROA) increases compared to the previous period.
4. The company's Return on Equity (ROE) increases compared to the previous period.

Bad news accounting information

1. The company's Net Profit (EAT) decreases compared to previous period.
2. The company's Price to Book Value decreases compared to previous period.
3. The company's Return on Assets (ROA) decreases compared to the previous period.
4. The company's Return on Equity (ROE) decreases compared to the previous period.

Research Variables

The dependent variable used in this research is investment decision making done by non-professional investor. While the independent variables are:

1. Information presentation pattern (Step-by-Step and End-of-Sequence).
2. Information presentation order (good news followed by bad news and bad news followed by good news).
3. Framing effect (framing according to information and framing with reversed information).

The experimental design used is 2×2×2, that is, the information presentation pattern (Step-by-Step and End-of-Sequence), the order/direction of information presentation (good news followed by bad news and bad news followed by good news), and framing effect (framing according to information and framing with reversed information).

Data Analysis Technique
Normality Test

Filtering of data normality is the first step that should be done for any multivariate analysis if the achievement of a goal is for inference. Inference is a conclusion about the population parameter based on the analysis on the sample. If there is data normality, the residual will be normally distributed and independent. The normality test used is Kolmogorov-Smirnov statistical test.

Hypothesis Test

The data analysis technique of hypothesis test is conducted by using parametric test (Independent sample t-test). In general, the characteristics of parametric test are having data with interval and ratio scale and the data is spreading or normally distributed. The use of the technique is performed after knowing whether the data is normally distributed or not by using the normality test. If the data is not

normally distributed, the testing technique is done by using non-parametric test, that is, Wilcoxon Rank Sum Test or commonly called Mann-Whitney U test. The characteristics of non-parametric test are after knowing that the data is not normally distributed and generally the data is in nominal and ordinal scale.

4. DATA ANALYSIS AND DISCUSSION
Demographic Data and Manipulation Check

The criteria of the subject are such as they are undergraduate students of Accounting Program and Management Program who have knowledge in the field of Investment Management and Capital Market, and Financial Statement Analysis. Researchers choose the undergraduate students of both programs because they get Financial Statement Analysis and Investment Management and Portfolio, but the difference is only in the course title. Thus, the researchers assumed that the students of Management Program have the same skills and knowledge as the students of Accounting Program. The benchmark that researchers expect did not lie in different program or department, but on the courses they were taking, namely Financial Statement Analysis and Investment and Capital Market Management (students of Accounting Program) and Investment and Portfolio Management (students of Management).

Initially, the number of participants targeted by researchers was 120 students, but those who were willing to be research participants were 113 people consisting of: twenty one (21) Undergraduate students of Management and ninety two (92) undergraduate students of Accounting. 113 students filled out the experimental instrument up to a predetermined time limit, but ten (10) subjects could not be analyzed further because they did not meet the correct answer criteria either from their manipulation checks or from questions about accountings. The total number of subjects that can be analyzed and processed further and pass the manipulation check is as many as 103 students.

Participants can be said to pass if they have fulfilled the criteria determined by researchers. The criteria of the data determined are as follows:

1. Participants can answer correctly as expected by researchers related to the answer to manipulation check, at least one question;
2. Participants can answer correctly as expected by researchers related to the answers to the knowledge of accounting, at least one question;
3. Participants have completed all the assignments.
   The criteria above is the underlying thing to

determine whether the participants pass or not and to determine whether the data can be used or not for further processing as required by the researchers so that the researchers know and sort the data that can be used on filling scenarios that have been done by each participant.

Instrument Execution Chronology

1. Preparation

Preparatory stages start from the search for participants who are willing to become participants. This study used the population of the students of STIE Perbanas Surabaya, with the samples of Undergraduate students of Accounting and Management Programs who have/are taking the courses of Financial Statement Analysis and/or Investment Management and Capital Market (Accounting Program) and/Investment Management and Portfolio (Management Program). Researchers then began to disseminate the form of willingness to be participants for a month before the completion of the instrument was conducted to anticipate and minimize the urgent time and ensure the students' willingness to be participants.

2. Execution

One week before the implementation day, the participants are reminded through the student information that the names listed as participants can be seen in the student information including the plotting of their respective classes. There are six (6) classrooms used: IIB302, IIB401, IIB402, IIB403, IIB404, and IIB405. In addition, one day before the implementation day, the participants are reminded again via online (chat) and offline (message). The implementation was conducted on Saturday, December 03, 2016.

3. Obstacles

The obstacles experienced by researchers at the time of preparation and implementation of the research are:

a) Difficulty in finding participants because the implementation day is on Saturday. Some students had regular activities in their organization so they could not attend.

b) Some participants, who had been willing to follow the experiment and had filled out the participant's willingness form, were late.

c) The limited human resources made some classes less effective because the guide had two responsibilities at once, to guide the event and to serve as a time keeper. In addition, the researchers who served as the correctors also got difficulty and had to work quickly and thoroughly because the three researchers had to correct six classes. Each researcher had to correct two classes.

Discussion

The Effect of Presentation Order, Framing Effect, and Presentation Pattern on Participant's Final Judgment.

This research is an experimental research that generally uses pencil-based experiment. Pencil-based experiment is an experimental treatment by using a questionnaire, which will be answered by the participants manually in accordance with the criteria determined by researchers. Each participant will be asked to work on eight scenarios in two sessions/stages. The scenarios treated by researchers consist of eight scenarios that have been given the code specifically so that participants will not get the same scenario, in which each of them will be spread into several classes.

In Scenario T1, the participants are given short series of accounting information with step-by-step presentation pattern, presentation order of good news followed by bad news (++ -) with framing condition according to information.

In scenario T2, the participants are given short series of accounting information with step-by-step presentation pattern, presentation order of bad news followed by good news (--++) with framing condition according to information.

In scenario T3, the participants are given short series of accounting information with step-by-step presentation pattern, presentation pattern of good news followed by bad news (++--) with framing condition of reversed information.

In scenario T4, the participants are given short series of accounting information with step-by-step presentation pattern, presentation order of bad news followed by good news (--++) with framing condition of reversed information.

In scenario T5, the participants are given short series of accounting information with end-sequence presentation pattern, presentation order of good news followed by bad news (++--) with framing condition according to information.

In scenario T6, the participants are given short series of accounting information with end-sequence presentation pattern, presentation order of bad news followed by good news (--++) with framing condition according to information.

In scenario T7, the participants are given short series of accounting information with end-sequence presentation pattern, presentation order of good news followed by bad news (++--) with framing condition of reversed information.

In scenario T8, the participants are given short series of accounting information with end-sequence presentation pattern, presentation order of bad

Table 1
Test Results of Information Presentation Order Using Independent Sample T-Test

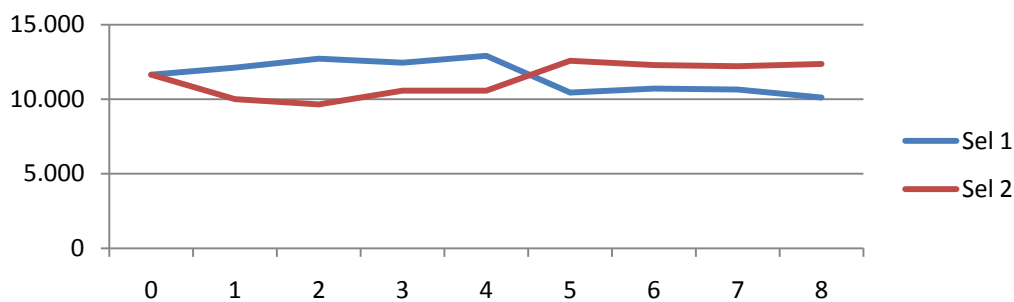| Presentation Pattern	Framing effect	Presentation Order	Sig.	Effect
Cell 1 and 2-SbS	According to information	++--	0.014	Recency effect
		--++		
Cell 3 and 4-SbS	Reversed information	++--	0.007	Primacy effect
		--++		
Cell 5 and 6-EoS	According to information	++--	0.055	No Order Effect
		--++		
Cell 7 and 8-EoS	Reversed information	++--	0.723	No Order Effect
		--++		

Figure 2
Fishtail Pattern of Investor's Belief Revision on Information Pattern Testing

news followed by good news (--++) with framing condition of reversed information.

The completion of this instrument is done to test whether the participants receiving presentation order, framing effect, and presentation pattern have a different effect on their final judgment. The information presentation order is an evidence of order received by the participants. In this study, there are two types of presentation order:

a. Presentation order of good news followed by bad news.

b. Presentation order of bad news followed by good news.

Information presentation pattern is a form of information condition received by the participants. In this study, there are two presentation patterns:

a. Step-by-step presentation pattern

b. End-of-sequence representation pattern

In addition, there are two forms of framing effect:

a. Framing effect with the condition according to information.

b. Framing effect with the condition of reversed information.

The testing of presentation order, framing effect, and presentation pattern can be seen in the final judgment to test each treatment consisting of:

1. The testing of presentation order: to determine whether there are differences of judgment or not between participants based on the presentation order received on investment decision making. This can be seen from the evidence of scenarios of participants receiving scenario T1 and T2, scenario T3 and T4, scenario T5 and T6, and scenario T7 and T8.

2. The testing of framing effect: to determine whether there are differences of judgment or not between participants based on the framing effect received on investment decision making. This can be seen from the evidence of scenarios of participants receiving scenario T1 and T3, scenario T2 and T4, scenario T5 and T7, and scenario T6 and T8.

3. The testing of presentation pattern: to determine whether there are differences of judgment or not between participants based on the presentation pattern received on investment decision making. This can be seen from the evidence of scenarios of participants receiving scenario T1 and T5, scenario T2 and T6, scenario T3 and T7, and scenario T4 and T8.

All of the testing (presentation order, framing effect, and presentation pattern) above were done using statistical test tool, that is, Independent sample t-test because all data were distributed normally.

Table 1 presents the results of hypothesis testing of the information presentation order which show that hypothesis testing 1a, cell 1 with cell 2 on

Table 2
Results of Hypothesis Testing of Framing Effect Using Independent Sample T-Test

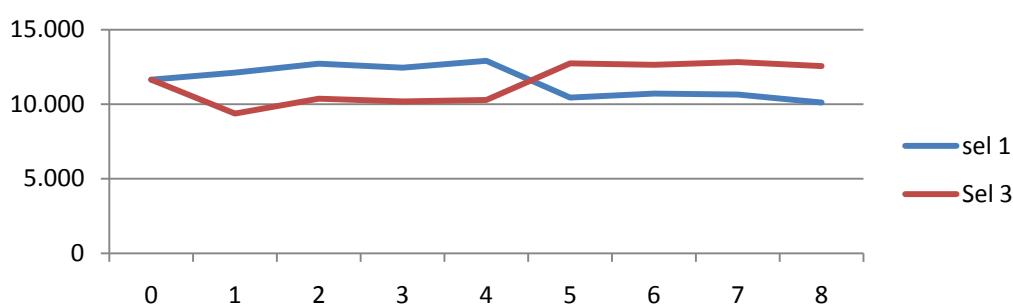| Presentation Pattern	Presentation Order	Framing effect	Sig.	Effect
Cell 1 and 3-SbS	++--	According to information Reversed Information	0.000	Framing effect
Cell 2 and 4-SbS	--++	According to information Reversed information	0.053	No Framing effect
Cell 5 and 7-EoS	++--	According to information Reversed information	0.939	No Framing effect
Cell 6 and 8-EoS	--++	According to information Reversed information	0.014	Framing effect

Figure 3
Fishtail Pattern on Investors' Belief Revision in Framing Effect Test

the same presentation pattern (step-by-step) with the framing according to information, but sequence/order effect occurs on the different presentation order (good news followed bad news) compared to (bad news followed good news). In other words, there is a significant difference in the average final judgment. This is also supported by the fishtail pattern formed from the average final judgment of participants to the stock price after receiving the information in step-by-step which can be seen in Figure 2.

In addition, hypothesis testing 1c, cell 5 with cell 6 on the end-of-sequence presentation pattern with framing according to information in different sequences, i.e. ++-- (good news followed by bad news) compared to --++ (bad news followed good news) there is no order effect. In other words, there is no significant difference in the average final judgment. Similarly, in the hypothesis testing 1d, cell 7 with cell 8 in the end-of-sequence representation pattern with the reversed information framing in a different order, i.e. ++-- (good news followed by bad news) compared to --++ (bad news followed by good news) there is no order effect. In other words there is no significant difference in the average final judgment.

From the overall result of hypothesis testing on the presentation order, it can be concluded that in hypothesis 1a there is a significant difference in the final judgment between the subjects receiving the

information order of good news followed by bad news and the subjects receiving the information order of bad news followed by good news on the step-by-step presentation pattern. Similarly, the testing of hypothesis 1c and hypothesis 1d shows that there is no significant difference in the presentation order of good news followed by bad news or the presentation order of bad news followed by good news on end-of-sequence presentation pattern. Accordingly, these results are consistent with the results of previous research conducted by Luciana Spica et al. (2013) and Luciana Spica (2010) that there is a recency effect on the step-by-step presentation pattern and there is no order effect on the end-of-sequence representation pattern. On the other hand, there is a difference in the testing of hypothesis 1b which proves that there is a significant difference but the result is a primacy effect because the subject prefers the evidence of initial order to the evidence of final order. So the result of hypothesis 1b does not support previous research.

Table 2 above presents the results of hypothesis testing of the framing effect which show that the testing of hypothesis 2a, cell 1 with cell 3 on the same presentation pattern (step by step) and the same presentation order also ++-- (good news followed by bad news). However, the framing according to information, which is different from the framing with reversed information, results in framing effect. In other words, there is a significant difference in the
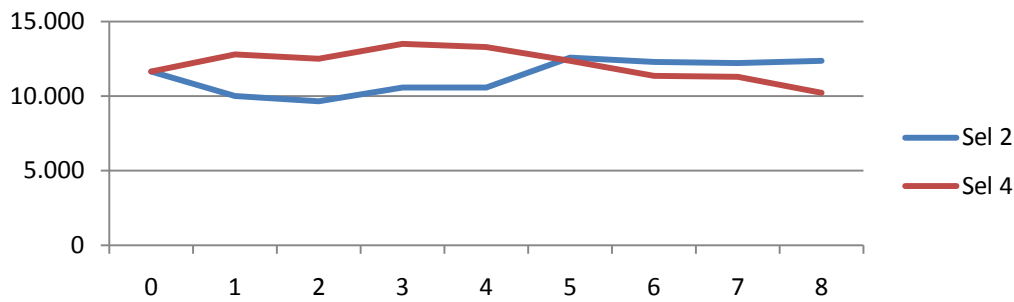
Figure 4
Fishtail Pattern on the Belief Revision Made by Investors in Framing Effect Testing

Table 3
The Results of Hypothesis Testing of Information Presentation Pattern using Independent Sample

Presentation Order	Framing effect	Presentation Pattern	Sig.	Effect
++--	According to Information	Cell 1 – SbS	0.001	There is a difference
		Cell 5 – EoS		
--++	According to Information	Cell 2 – SbS	0.201	There is no difference
		Cell 6 – EoS		
++--	Reversed Information	Cell 3 – SbS	0.239	There is no difference
		Cell 7 – EoS		
--++	Reversed Information	Cell 4 – SbS	0.019	There is a difference
		Cell 8 – EoS		

average final judgment that causes the participants to get trapped in the framing trap. This is also supported by the fishtail pattern formed from the participants' average final judgment on the stock price after receiving the information with the presentation pattern of step-by-step as seen in Figure 3.

It also supports the testing of hypothesis 2d, cell 6 with cell 8 on the same presentation pattern (end-of-sequence) with in the same presentation order ++-- (good news followed by bad news). However, the framing according to information, which is different from framing with reversed information, results in framing effect. In other words, there is a significant difference in the average final judgment. In addition, the testing of hypothesis 2b, cell 2 with cell 4 on the same presentation pattern (step by step) with same presentation order --++ (bad news followed good news). However, the framing according to information, which is different from the framing with reversed information, results in no framing effect. In other words, there is no significant difference in the average final judgment. This is not supported by the fishtail pattern formed from the participants' average final judgment on the stock price after receiving the information with the presentation pattern of step-by-step which can be seen in Figure 4.

It is the same as the test result of hypothesis 2c, cell 5 with cell 7 on the same presentation pattern

(end-of-sequence) and the same presentation order --++ (bad news followed by good news). However, on the framing according to information, which is different from framing with reversed; the result indicates no framing effect. In other words, there is no significant difference in the average final judgment.

For the overall results of hypothesis testing on the presentation order, it can be concluded that in hypothesis 2a and hypothesis 2d that there is a significant difference in the final judgment between the subjects receiving information with framing condition according to information and the subjects receiving framing condition with reversed information in step-by-step and end-of-sequence presentation patterns. Similarly, the test results of hypothesis 2b and hypothesis 2c show that there is no significant difference in the final judgment between the subjects receiving information with framing conditions according to information and the subjects receiving framing condition with reversed information in step-by-step and end-of-sequence representation patterns. Therefore, these results are consistent and consistent with previous studies conducted by Tammy and Marcus (2015); Teodora et al. (2015) and Ghosh and Boldt (2006) that there is a framing effect on the individual's decision making when the information is framed both in framing positive and in negative framing.

On the other hand, there is a difference in hypo-

theses testing 2b and 2c which proves that there is no significant difference between one subject and another in the investment decision making although the presentation pattern is step-by-step and end-of-sequence. So the results of hypothesis 2b and hypothesis 2c do not support previous research.

Table 3 presents the results of hypothesis testing of information presentation pattern. The results indicate that hypothesis testing 3a, cell 1 with cell 5 is in the same presentation order ++-- (good news followed bad news) and the framing conditions according to information, but in different presentation pattern, that is, step-by-step compared with end-of-sequence presentation pattern, the result indicates that there is a significant difference in mean final judgment in investment decision making. This results also support the testing of 3d hypothesis, cell 4 with cell 8 in the same presentation order --++ (bad news followed good news) and the framing condition of reversed information, but in different presentation patterns, that is, step-by-step compared with end-of-sequence presentation pattern, the results indicate that there is a significant difference in mean final judgment in investment decision making. The results also support the testing of 3d hypothesis, cell 4 with cell 8 in the same presentation order --++ (bad news followed good news) and the framing condition of reversed information, but in different presentation pattern, that is, step-by-step compared to the end-of-sequence presentation pattern, the results indicate that there is a significant difference in mean final judgment in investment decision making.

In addition, hypothesis testing 3b, cell 2 with cell 6 on the same presentation order --++ (bad news followed good news) and framing condition of reversed information, but in different presentation pattern, that is, step-by-step compared with end-of-sequence presentation pattern, the results indicate that there is no significant difference in the mean final judgment in investment decision making.

Similarly, hypothesis testing 3c, cell 3 with cell 7 in the same presentation order ++-- (good news followed by bad news) and the information condition of reversed information, but in different presentation patterns, that is, step-by-step compared to end-of-sequence, the results indicate that there is no significant difference in the mean value of final judgment in investment decision making.

It can be concluded that for the overall result of the hypothesis testing in the presentation sequence, hypothesis 3a and hypothesis 3d show that there is a significant difference in the final judgment between subjects receiving step-by-step presentation pattern and the subjects receiving end-of-sequence presentation patterns based on the presentation order and condition of the framing information. Similarly, the testing of hypothesis 3b and hypothesis 3c indicates that there is no significant difference in the final judgment between the subjects receiving step-by-step presentation pattern and the subjects receiving end-of-sequence presentation pattern based on the presentation order and condition of the framing information. Thus, these results are consistent and in accordance with previous research conducted by Luciana Spica and Supriyadi (2013) which states that there is a difference in the final judgment between the subjects receiving presentation order of good news followed by bad news and the subjects receiving the presentation order of bad news followed by good news in the step-by-step presentation pattern. On the other hand, there is a difference in the testing of hypothesis 3b and hypothesis 3c which proves that there is no significant difference among the subjects receiving presentation order of bad news followed by good news on framing conditions according to information but on different presentation patterns. Conversely, there is no significant difference among participants receiving presentation order of good news followed by bad news on the framing conditions of reversed information on different presentation pattern. So the results of hypothesis 3b and hypothesis 3c do not support previous research.

Overall research results show that:
First: The SbS (step-by-step) presentation pattern provides evidence of a recency effect indicating that investors tend to consider evidence of information received at the latest than evidence of information received at the earliest. This can be said that the results support the theory described by Hogarth and Einhorn (1992) on Belief Adjustment Theory. However, there is a difference produced in the step-by-step presentation pattern in this study which shows that there is a primacy effect indicating that investors tend to consider evidence of information received at the earliest compared to evidence of information received at the latest.
Second: Step-by-step presentation pattern with presentation order of good news followed by bad news produces framing effect. This suggests that investors are stuck on a framing trap which is capable of deceiving individuals in decision making. In addition, this result is also supported by the theory proposed by Kuhberger (1998) and Levin et al. (1998) which states that decision makers will respond differently to the same decision issue if the problem is presented in a different format. Inves-

tors also focus on negative information so that the highest value given is the negative information. However, there are differences produced to support the theory, which show that framing effect also occurs in the end-of-sequence presentation pattern. Third: presentation order of good news followed by bad news with framing condition according to information with the comparison of presentation pattern between step-by-step and end of sequence causes significance difference. This is also supported by the research conducted by Luciana and Supriyadi (2013) which suggests that there is a significant difference in decision making by investors when receiving evidence of different patterns. However, there are differences that make the results produced not aligned with the existing theories. This occurs in the presentation order of bad news followed by good news with the framing condition of reversed information which causes a difference in the comparison between step-by-step pattern and end of sequence pattern.

The results of this study indicate that Belief Adjustment Model of Hogarth and Einhorn (1992) and framing effect are partially hold in investment decision making. The predictions of belief adjustment by Hogarth and Einhorn (1992) and framing effect that is not supported in this research are: Firstly, this research fails to provide support that end-of-sequence presentation pattern will produce evidence that there is recession effect or primacy effect when receiving different information evidence on simple information. Secondly, this study fails to support that in end-of-sequence presentation pattern in the framing condition according to information proves that there is framing effect on investors. Thirdly, this study fails to provide support that when investors receive evidence of presentation order of good news followed by bad news on framing conditions according to information on different presentation patterns, that is, step by step compared to end-of-sequence does not prove a significant difference.

5. CONCLUSION, IMPLICATION, SUGGESTION, AND LIMITATIONS

The conclusions that can be drawn based on the test results in this study are as follows: first, based on the testing of information presentation order, it can be said that when the subjects are given evidence of information of good news followed by bad news compared to subjects who receive bad news followed good news with framing conditions according to information on the step-by-step presentation pattern, is the result is causing recency effect. Similarly,

the participants receiving evidence of bad news followed good news with participants/subjects receiving evidence of good news followed by bad news on the framing conditions of reversed information in the step-by-step presentation pattern, the result is causing primacy effect (investors consider more and give the greatest weight value to the initial evidence). Meanwhile, when the subjects are given the same evidence on the end-of-sequence representation pattern, the overall result is the same and no sequence effect generated. Second, the testing of framing effect can be concluded that when participants receive the same evidence, that is, good news followed by bad news but in different framing conditions (framing according to information compared to framing of reversed information in step-by-step condition, the result is that there is framing effect.

Similarly, with the presentation pattern of end-of-sequence presentation but with evidence of different order of bad news followed good news, result indicates that there is framing effect. Meanwhile, this is inversely proportional when the subject received evidence of bad news followed good news on the presentation pattern of step-by-step and the reverse of the end-of-sequence presentation pattern when receiving evidence of good news followed bad news, the result indicates that there is no framing effect. Third, the test result of the presentation pattern can be concluded that when the subject received the same presentation order of good news followed by bad news on framing condition according to information but on different presentation pattern, the result indicates that there is significant difference effect. Similarly, the subject who received presentation order of bad news followed by good news on the framing conditions of reversed information in different presentation patterns, the result indicates that there is the difference. Meanwhile, participants who received presentation order of bad news followed by good news on the framing conditions according to information, the result indicates that there is no difference. Similarly, when participants are given evidence of good news followed by bad news but on the framing condition of reversed information, the result indicates that there is no significant difference.

Based on the reviews discussed and carried out by previous studies, the researcher hopes that the results of this study will be able to explain Belief-Adjustment Model and Framing Effect as factors that influence non-professional investors in investment decision making. This can also be supported based on statements and hypotheses as well as framework in order to provide support that the

results of the study are in accordance with the expectation of the researchers. The results of this study show that the bias in investment decision can occur when the investors receive different presentation order and presentation patterns even though the content of the information is the same.

This study has some limitations, among others are:

1. Some participants who were initially willing to follow the experiment and filled out the participant's willingness form cancelled it one day before the execution day so that the researcher had to immediately find replacement.
2. The lateness of participants in each class resulted in the delay of the execution.
3. The mix design made and presented was the presentation patterns of step-by-step and end-of-sequence. This made the research results less focused and tend to look more into the framing effect.

Based on the results, conclusions, and limitations in this study, it is expected that the future researchers to:

1. Make alternatives/anticipative plans by finding backup participants so that on the day before execution, it will be easier to find a replacement for participants who cancel one-sided and not in accordance with the initial commitment.
2. Recall the participants periodically at least two days before and on the execution day and advance the execution time, at least 15 minutes before the execution begins so that no unwanted things happen .
3. Create and present mix design especially on the framing effect so as to be able to achieve optimal results on discussion of framing effect.

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