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The Comparison of Investment Decision Frame and Belief-adjustment Model on Investment Decision Making

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Abstract

Investors sometimes performed the irrational behavior in the stock market. Framing indicated that decision maker would respond with different ways on the problem of the similar decision if the problem was presented in different format. Framing effect was need to be wary because it can created bias in decision making. We examined investment decision making based on belief-adjustment model and investment decision frame. The research method a mixed design experiment (between and within subject). Research participants in this research were non-professional investors. The numbers of participants in this research were 113 people. We found that participants gave a different response when receiving non-accountancy information (expressive decision frame) with different presentation patterns that were step-by-step and end-of-sequence. The other findings of these research showed that there was no different response between participants receiving accountancy information (financial decision frame) and participants receiving non-accountancy information (expressive decision frame) in end-of-sequence presentation pattern. However, when participants received accountancy information compared to non-accountancy information in step-by-step presentation pattern, it showed that there was a different response. The overall results of the study indicated that the investment decision frame affects the investment decision making when the information presentation pattern was step-by-step.

Keywords: Belief-Adjustment Model; Investment Decision; Investment Decision Frame; Order Effect; Presentation Pattern

JEL Classification: D82, G11

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Abstrak

Investor kadang-kadang melakukan perilaku irasional di pasar saham. Framing menunjukkan bahwa pembuat keputusan akan merespon dengan cara yang berbeda pada masalah keputusan serupa jika masalah disajikan dalam format yang berbeda. Efek framing adalah perlu diwaspadai karena dapat menciptakan bias dalam pengambilan keputusan. Kami menguji keputusan investasi berdasarkan model belief-adjustment *dan* investment decision frame. *Metoda riset adalah eksperimen* mixed design experiment (between and within subject). *Partisipan penelitian ini adalah investor profesional dan investor non-profesional.Jumlah partisipan dalam penelitian ini adalah 113 orang. Kami menemukan bahwa partisipan memberikan respon yang berbeda ketika menerima informasi non-akuntansi* (expressive decision frame) *pada pola penyajian* step-by-step *dan* End-of-sequence. *Hasil penelitian ini juga menunjukkan bahwa tidak ada perbedaan respon antara partisipan yang menerima informasi akuntansi* (financial decision frame) *dan partisipan yang menerima informasi non-akuntansi* (expressive decision frame) *pada pola penyajian* End-of-sequence. *Namun, ketika partisipan menerima informasi akuntansi dibandingkan partisipan yang menerima informasi non akuntansi pada pola penyajian* step-by-step *menunjukkan respon yang berbeda. Hasil penelitian secara keseluruhan menunjukkan bahwa* Investment Decision Frame *berpengaruh pada pengambilan keputusan investasi, ketika pola penyajian informasi* step-by-step.

Kata Kunci: *Model* Belief Adjustment; Investment Decision Frame; *Pengambilan Keputusan Investasi; Efek Urutan; Pola Penyajian*

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Investors sometimes perform the irrational behavior in the stock market. Behavioral finan theory explains irrational behaviors through prospect theory. Prospect theory developed by Kahneman & Tversky (1979) explains human behavior when they must evaluate risk in an uncertain condition that is presented in the form of information with a certain frame. Framing shows that decision maker will respond with different ways on the problem of the similar decision if the problem is presented in different format. Framing is used for referring to some ways of presenting problems with different situation and how it affects an individual to set different decision for each situation. Framing effect is a condition that commonly happens, and it needs to be wary because it can create bias in decision making.

Investors often use data of corporate finance to evaluate corporate performance and investment decision making. However, previous researches show different results that investors also pay attention to other information in addition to the corporate financial report. Abdelkarim, Shahin, & Arquawi (2009) tested perception of information user toward financial report disclosed by company, this research result shows that reports of profit loss, balance sheet, cash flow report, statement from shareholder, management comment, and notes on financial report are important information in annual report, while auditor report is less important report for users. Other findings in the research from Abdelkarim, Shahin, & Arquawi (2009) shows that profit loss, stock rate growth, net cash flow, selling, and current liability are important items used by use for investment decision making. Miller (2010) find that more complex (longer and less readable) filings are associated with lower overall trading and that this relationship appears due to a reduction in small investors' trading activity. Brown & Moser (2017) find that investors frequently litigate when they can impose a financial penalty on managers for misreporting even though they cannot recover their legal fees or receive restitution for their losses.

Another factor that can affect investment decision making can be explained in belief revision model. Bayes' theorem was the most dominant normative belief revision model before 1988. Bayes' theorem became popular because of the logical consequence of conditional probability in belief revision. The research in decision-making behavior states that Bayes' theorem is a model that is less comprehensive as a descriptive model of belief revision because it cannot predict intuitive revision.

Hogarth & Einhorn (1992) state that the order effect has potential implication both in efficiency and effectiveness of decision. Efficiency can be affected because information presentation can limit or expand the search of decision maker for additional evidence. Effectiveness can be affected when the order can cause investment decision to choose different investment action, if investment action taken is contrary, it will be able to affect the decrease of decision accuracy.

Glac (2009) shows that an investor who has an expressive decision frame in an investment situation tends to sacrifice more return for investment choice focusing on social responsibility compared to an investor who has a financial decision frame. The research result from Glac (2009) gave empirical evidence showing that the Investment Decision Frame is a factor that is also able to affect investment decision.

Some models of investment decision making include belief-adjustment model and investment decision frame, their research is done partially. This research will reconstruct some models of investment decision making that their research has been done partially during this time. This study also develops research conducted by Pinsker (2011) in terms of the study does use not only the accounting information but also uses non-accounting information which is the report of corporate governance and social responsibility implementation.

Daigle, Pinsker, & Pitre (2015) indicate that initial primacy effects revert to recency effects over

time. These results offer insights regarding how nonprofessional investors process mixed information disclosures over time and should be of interest to firm managers and investors since firms that release information to investors want to know what effects if any, information order/disclosure patterns have on investors' long-term firm valuations. Wahyuni & Hartono (2012) shows that information obtained previously can influence decision making. Alvia & Sulistiawan (2009) shows that there is a recency effect on investment judgment.

The urgency of this research is that there have been no researches in the field of behavioral accountancy with the setting of investment decision making trying to integrate the testing of belief-adjustment model and investment decision frame. The result of this research activity is expected to be applied for decision-makers in the field of investment. Factors of presentation order, presentation pattern, and investment decision frame are suspected to be able to cause bias in investment decision making.

HYPOTHESES DEVELOPMENT

Belief-adjustment model of Hogarth & Einhorn (1992) predicted that the presentation pattern of step-by-step will result in recency effect either when information is complex or simple, whereas if the pattern of presentation is end of the sequence, it will result in primacy effect if the information is simple and recency effect if the information is complex. This study examines the effect of the order of information presentation and the pattern of information presentation using three information that is accounting and non-accounting, and the combination of accounting and non-accounting information on investment decision bias.

Pinsker (2011) also showed that the largest recency effect is under sequential conditions compared simultaneous conditions; this study provides support to the presence of the recency effect in investment decision making. The previous study that has been done and its result has been obtained is as the following, in specific, the research of Almilia et al. (2013) aims to: (1) examine the effect of information presentation order in investment decision making; and (2) examine the effect of information presentation pattern in investment decision making. The research result shows that "judgment bias," especially updating effect will be higher when the information presentation pattern is sequential or gradually.

Almilia (2013) examined to investigate the existence of Belief-adjustment model developed by Hogarth & Einhorn (1992) in investment decision making: examined anchor (the previous belief) in investment decision making; tested the usefulness of accountancy and non-accountancy information, and tested the difference of confidence level that can cause the emergence of difference in interpreting and processing information, so it produces different prediction performance as well. Overall, this research result shows that belief revision model of Hogarth & Einhorn (1992) is partially held in investment decision making.

Almilia & Supriyadi (2013) examined the effect of order effect in investment decision making. This research result shows the existence of an order effect in investment decision making, which is the recency effect if the presentation pattern is step-by-step (SbS). This research result also gives evidence that there is no effect of recency effect if the presentation pattern is end-of-sequence (EoS).

Pravitasari & Almilia (2015) and Angraeni & Almilia (2017) show that there are significant differences in the final judgment participants who received information of good news followed by bad news compared to participants who received information about bad news followed by good news also recency effect occurs in making investment decisions. Kusumawardhani & Almilia (2015) show the different results. Kusumawardhani & Almilia (2015), Astania & Almilia (2017), and Nisa (2017) show that no difference between participants that were informed good news followed by bad news with a

participant who informed good news followed by bad news in step-by-step presentation and complex information.

Almilia & Wulanditya (2016) examined the effect overconfidence and experience on increasing or reducing the information order effect in investment decision making. The research result is consistent with that predicted that individuals who have a high level of confidence that will tend to ignore the information available, the impact on individuals with high level of confidence will be spared from the effect of the information sequence. Based on these arguments, formal research hypotheses to test the effect of the order of information presentation can be expressed as follows:

H_1: a subject who has received information with step-by-step presentation pattern will give difference judgment on the company's stock compared to a subject who has received information with end-of-sequence presentation pattern

H_2: a subject who has received the order of good news information followed by bad news will give difference judgment on the company's stock compared to a subject who received the order of bad news information followed by good news

Alattar & Al-Khater (2007) tested the importance, understanding, and usefulness of corporate annual report for individual and institutional investors, credit providing bank, financial analysts, and government officials in Qatar. The research result from Alattar & Al-Khater (2007) shows that Balance is the most important part of the annual report when will make an investment decision. Similarly to the research in developing country, the ratings of annual report parts that are consistently important for a user group of the traditional financial report are balance sheet, profit loss report, cash flow report and notes on the financial report. It shows that user group in a developing country in general and in Qatar particularly focuses more on liquidity, solvency, and flexibility of finance rather than profitability. The research result from Alattar & Al-Khater (2007) also shows that the reports of executive board and board of directors are less used in investment decision making, and the lowest is corporate accountancy policy.

Sharma (2006) examined the effect of investor perception on the effectiveness of the board of directors in the investment decision. The research result from Sharma (2006) shows that: (1) decision of investor is affected by effectiveness of board of directors and perception of investor on the effectiveness of board of directors positively is related to the amount that will be invested; (2) investors give low rating on investment risk and are willing to invest their fund in big amount for a company that has an effective board of directors; and (3) the investment amount of non-professional investors is lower than professional investors. It is consistent with the argumentation expressed by Sharma (2006) that association between effectiveness of board of directors and investment decision is different from professional investors and non-professional investors, which is professional investors will make conservative investment decision that is relatively low, so the relationship between the effectiveness of board with investment decision is moderated by investor type.

In line with the demand of information disclosure that is not only financial information, but this research also tries to examine the effect of non-financial information on information users especially investors. UU Perseroan Terbatas No. 40 Tahun 2007/Law of Incorporated Company No. 40 the year 2007 (that regulates company obligation to disclose the report of corporate social responsibility) encourages the company to disclose the report of corporate social responsibility for information users. Some companies have reported corporate sustainability information, but only focus on policy and description of social and environmental problems rather than reporting corporate sustainability performance.

The research results of Glac (2009) shows that investors who have an expressive decision frame in investment situation tend to sacrifice more returns for choosing an investment that focuses on social responsibility compared to investors who have a financial decision frame. Some research results above show the existence of varied results related to the role of accountancy and non-accountancy information for investors in investment decision making. This research tries to examine how accountancy information (corporate financial report) and non-accountancy information (governance implementation and social responsibility reports) play their role in the investment decision.

The research result that shows why investors pay attention to Social Responsibility information is shown in previous researches conducted by Hockerts & Moir (2004). Ketchand & Strawser (2001) give the evidence that there is a positive relationship between disclosure quality and corporate social responsibility. Hockerts & Moir (2004) shows the role of investor relations is having a shift from only to guarantee that corporate equity is fairly evaluated, while the present investor interest is that how the practice of corporate social responsibility is so that the role of investor relations also develop which is the practice disclosure of company's corporate social responsibility.

Laskin (2018) examine what value respondents assign to socially responsible behaviors as well as to identify the presence of third-person effects in the corporate social responsibility evaluations. The results of the Laskin (2018) study show that, while individually people are supportive of the socially responsible behaviors of corporations, they perceive others to be less supportive of such behaviors; they also see others as less likely to encourage such behaviors through action. As a result, people are less likely to act on their views of corporate social responsibility as they perceive themselves to be outliers.

Ang & Trotman (2015) examine whether group members make different use of quantitative and qualitative cues in situations where they have both common and unique cues when making a capital investment decision. The result of Ang & Trotman (2015) show that: (1) individuals who receive a mix of quantitative and qualitative cues to assist them in an investment decision will rely more on the quantitative cues when providing a written justification for their decision; and (2) groups that receive a mix of quantitative and qualitative cues to assist them in an investment decision will be more likely to repeat quantitative cues during discussion than qualitative cues.

Based on some research results above, the researcher is trying to compare the response of investors on corporate financial performance as a proxy of financial decision frame and corporate sustainability report as a proxy of expressive decision frame. Accountancy information can be categorized as general performance measurement, while non-accountancy information can be categorized as unique information. In general, decision-makers will give a big proportion on general measurement rather than unique measurement. One reason for this argumentation is that it is easier to compare general measurement because general measurement uses a similar scale. It allows decision makers to directly evaluate relative rating for each alternative. In contrary, comparing alternative of unique measurement is more complex because decision-makers need to evaluate the absolute scale for each unique measurement, so it allows to evaluate performance for each alternative of unique measurement. Therefore, the hypotheses proposed in this research are:

H_3: a subject who is received financial decision frame information will give difference judgment on the company's stock compared to a subject who is received expressive decision frame information

METHODS

Subject criteria in this research are: knowing the field of investment and stock market and finan-

cial report analysis. Based on the subject criteria, then, subject in this research includes accountancy and management students who have knowledge in the field of investment and stock market and financial report analysis. This research uses an experiment which is a method to test causality relationship with some variables that are manipulated to answer the research problems. The research method is 2 x 2 x 2 mixed design experiment (between and within subject). Independent variable includes disclosure pattern (step-by-step and end-of-sequence), evidence order (good news followed by bad news and bad news followed by the good news), and investment decision frame (financial decision frame and expressive decision frame). Research participant in this research is non-professional investors.

The subject's task is to evaluate the company's stock of PT ABC which is a hypothetical company but it was taken from real examples of companies listed on the Indonesia Stock Exchange. In the early stages, subjects will receive background information on companies and the initial value of the company's stock determined by IDR 19,000 as a reference value.

Subjects are asked to re-evaluate the value of investment for each type of information, and the pattern of information presentation (step-by-step and End-of-sequence) with initial value of a company's stock amounted IDR 19,000 and to give the scale for each disclosure of a multiple the price of - 1000 (very bad news) and +1000 (very good news). After reading and responding to the disclosure items, subjects respond to manipulation check questions, questions to measure the participants' basic skills in the field of financial reporting analysis and capital markets, and respondent demographic items.

Case material and instrument are validated (face validity) through discussions with experts and a trial in a testing trial (pilot test) by using small-scale subjects. The purpose of organizing the discussion with the experts is to get indications of information that is not logical, confusing or even failed to ask the important points. Securities analysts and investors are involved in the discussion, either directly (direct discussion) or indirectly (via e-mail discussion). Once the material is considered good, the next step is to conduct the testing trial (pilot test) in order to test whether the subjects can understand the case presented and whether the treatment given is able to function properly. The pilot test is conducted by using small-scale subjects that do not apply the standard procedure in a real experiment.

RESULTS

The participant of this research is accountancy and management students who have knowledge in the field of investment and stock market and financial report analysis. Table 1 presents the number of participants for each scenario. The number of participants in this research is 113 people that are divided into groups as shown in Table 1.

Table 2 presents the difference result of Step-by-step and End-of-sequence presentation patterns. Research data shows that on the type of financial decision frame and information order of good news – bad news, the average of price decision given by participants who receive information with step-by-step presentation pattern is IDR 18,280, while the one given by participants who receive information with end-of-sequence presentation pattern is IDR 18,300.

The result shows that there is no significant difference of decision making between participants who receive information with step-by-step presentation pattern compared to participants who receive information with end-of-sequence presentation pattern in the type of financial decision frame and information order of good news followed by bad news.

In the experiment scenario with financial decision frame and bad news-good news information order, the average of price decision given by participants who receive information with step-by-step presentation pattern is IDR 23,481, while the one given by participants who receive information with end-of-sequence presentation pattern is IDR 19,233. The result shows that there is no significant difference of decision making between participants receiving information with step-by-step presentation pattern compared to participants receiving information with end-of-sequence presentation pattern in financial decision frame and information order of bad news followed by good news.

In the experiment scenario with expressive decision frame and information order of good news – bad news, the average of price decision given by participants who receive information with step-by-step presentation pattern is IDR 15,920, while the one given by participants who receive information with end-of-sequence presentation pattern is IDR 17,840. The result shows that there is a significant difference of decision making between participants receiving information with step-by-step presenta-

Table 1. The Number of Participant in the Experimental Research

Type of Information Presentation Pattern	Order of Information	Investment Decision Frame	Number of Participants	Explanation
Step-by-step	Good News followed by Bad News	Financial Decision Frame	25	Within-Subjects
Step-by-step	Good News followed by Bad News	Expressive Decision Frame		
Step-by-step	Bad News followed by Good News	Financial Decision Frame	27	Within-Subjects
Step-by-step	Bad News followed by Good News	Expressive Decision Frame		
End-of-sequence	Good News followed by Bad News	Financial Decision Frame	30	Within-Subjects
End-of-sequence	Good News followed by Bad News	Expressive Decision Frame		
End-of-sequence	Bad News followed by Good News	Financial Decision Frame	31	Within-Subjects
End-of-sequence	Bad News followed by Good News	Expressive Decision Frame		
Number of Participants				**113**

Table 2. The Result of Independent Sample t-Test Processing of Step-by-step and End-of-sequence Presentation Patterns Based on Type of Information and Order of Information ``

Investment Decision Frame	Order of Information	Presentation Pattern	Number of Participants	Average	t-Stat	Sig.
Financial Decision Frame	Good News – Bad News	Step-by-step	25	18.280	-0,027	0,979
		End-of-sequence	30	18.300		
Financial Decision Frame	Bad News – Good News	Step-by-step	27	23.481	1,504	0,138
		End-of-sequence	31	19.233		
Expressive Decision Frame	Good News – Bad News	Step-by-step	25	15.920	-2,592	0,012
		End-of-sequence	30	17.840		
Expressive Decision Frame	Bad News – Good News	Step-by-step	27	21.703	2.257	0,028
		End-of-sequence	31	19.458		

tion pattern compared to participants receiving information with end-of-sequence presentation pattern in expressive decision frame and with information type of good news followed by bad news.

In the experiment scenario with expressive decision frame and information order of bad news – good news, the average of price decision given by participants who receive information with step-by-step presentation pattern is IDR 21,703, while the one given by participants who receive information with end-of-sequence presentation pattern is IDR 19,458. The result shows that there is a significant difference of decision making between participants receiving information with step-by-step presentation pattern compared to participants receiving information with end-of-sequence presentation pattern in expressive decision frame and with information order of bad news followed by good news. The research result shows that participants give a different response when they receive expressive decision frame information with different presentation patterns which are step-by-step and End-of-sequence. The research results show that H_1 partially hold. The difference decision making on step-by-step presentation pattern compared to end-of-sequence pattern only happened on expressive decision frame.

Table 3 presents the result of the difference in information order of good news followed by bad news that is compared to bad news followed by good news. Research data show that in step-by-step presentation pattern and financial decision frame information, the average of price decision given by participants who receive information order of good news followed by the bad news is IDR 18,280, while the one given by participants who receive information order of bad news followed by good news is IDR 23,481. The result shows that there is a significant difference of decision making between participants who receive information with good news followed by bad news order compared to participants who receive information with bad news followed by good news order in step-by-step presentation pattern and financial decision frame information.

In the experiment scenario with step-by-step presentation pattern and expressive decision frame information, the average of price decision given by participants who receive information order of good news followed by the bad news is IDR 15,920, while the one given by participants who receive information order of bad news followed by good news is IDR 21,703. The result shows that there is a significant difference of decision making between participants receiving information with the order of good news followed by bad news compared to participants receiving information with the order of bad news followed by good news in step-by-step information presentation pattern and expressive decision frame information.

Table 3. The Result of Independent Sample t-Test Processing of Information Type of Accountancy and Non-Accountancy Based on Information Order and Presentation Pattern

Presentation Pattern	Investment Decision Frame	Order of Information	Number of Participants	Average	t-Stat	Sig.
Step-by-step	Financial Decision Frame	Good News – Bad News	25	18,280	-1.715	0.097
		Bad News – Good News	27	23,481		
Step-by-step	Expressive Decision Frame	Good News – Bad News	25	15,920	-5.246	0.000
		Bad News – Good News	27	21,703		
End-of-sequence	Financial Decision Frame	Good News – Bad News	30	18,300	-1.424	0.160
		Bad News – Good News	31	19,233		
End-of-sequence	Expressive Decision Frame	Good News – Bad News	30	17,840	-2.483	0.016
		Bad News – Good News	31	19,458		

In the experiment scenario of end-of-sequence presentation pattern and expressive decision frame information, the average of price decision given by participants who receive information order of good news followed by the bad news is IDR 17,840, while the one given by participants who receive information order of bad news followed by good news is IDR 19,458. The result shows that there is a significant difference of decision making between participants receiving information with the order of good news followed by bad news compared to participants receiving information with the order of bad news followed by good news in end-of-sequence information presentation pattern and expressive decision frame information.

In the experiment scenario of end-of-sequence presentation pattern and financial decision frame information, the average of price decision given by participants who receive information order of good news followed by the bad news is IDR 18,300, while the one given by participants who receive information order of bad news followed by good news is IDR 19,233. The result shows that there is no significant difference of decision making between participants receiving information with the order of good news followed by bad news compared to the participants receiving information with the order of bad news followed by good news in end-of-sequence information presentation pattern and financial decision frame information. The research results show that H_2 partially hold. The research result shows that participants give a different response when they receive information order of good news followed by bad news with participants who receive information order of bad news followed by good news.

Table 4 presents the result of the difference in financial and expressive decision frame. The research data show that in information order of good news-bad news and step-by-step presentation pattern, the average of price decision given by participants who receive financial decision frame information is IDR 18,280, while the average of price decision given by participants who receive expressive decision frame information is IDR 15,920. The result shows that there is a significant difference of decision making between participants receiving financial decision frame information compared to participants receiving expressive decision frame information in information order of good news followed by bad news and step-by-step presentation pattern.

In the experiment scenario with information order of bad news – good news and step-by-step presentation pattern, the average of price decision given by participants who receive financial decision frame information are IDR 23,481, while the one given by participants who receive expressive decision frame information is IDR 21,703. The result shows that there is no significant difference of deci-

Table 4. The Result of Independent Sample t-Test Processing of Information Type of Accountancy and Non-Accountancy Based on Information Order and Presentation Pattern

Order of Information	Presentation Pattern	Investment Decision Frame	Number of Participants	Average	t-Stat	Sig.
Good News – Bad News	Step-by-step	Financial Decision Frame	25	18,280	2.625	0.012
		Expressive Decision Frame	25	15,920		
Bad News - Good News	Step-by-step	Financial Decision Frame	27	23,481	0.573	0.571
		Expressive Decision Frame	27	21,703		
Good News – Bad News	End-of-sequence	Financial Decision Frame	30	18,300	0.812	0.420
		Expressive Decision Frame	30	17,840		
Bad News - Good News	End-of-sequence	Financial Decision Frame	31	19,233	-0.308	0.759
		Expressive Decision Frame	31	19,458		

sion making between participants receiving financial decision frame information compared to participants receiving expressive decision frame information in order of bad news followed by good news and step-by-step presentation pattern.

In the experiment scenario with information order of good news followed by bad news and end-of-sequence presentation pattern, the average of price decision given by participants who receive financial decision frame information is IDR 18,300, while the one given by participants who receive expressive decision frame information is IDR 17,840. The result shows that there is no significant difference of decision making between participants receiving financial decision frame information compared to participants receiving expressive decision frame information in order of good news followed by bad news and end-of-sequence presentation pattern.

In the experiment scenario with information order of bad news – good news and end-of-sequence presentation pattern, the average of price decision given by participants who receive financial decision frame information are IDR 19,233, while the one given by participants who receive expressive decision frame information is IDR 19,458. The result shows that there is no significant difference of decision making between participants receiving financial decision frame information compared to participants receiving expressive decision frame information in order of bad news followed by good news and end-of-sequence presentation pattern. The research results show that H_3 partially hold.

DISCUSSION

The first hypotheses examine the differences of presentation pattern (step-by-step and end-of-sequence) on investment decision making. Table 5 shows that there is no significant difference of decision making between participants receiving information with step-by-step presentation pattern compared to participants receiving information with end-of-sequence presentation pattern in financial decision frame and information order of bad news followed by good news or bad news followed by good news. The other findings of H_1 show that there is a significant difference of decision making between participants receiving information with step-by-step presentation pattern compared to participants receiving information with end-of-sequence presentation pattern in expressive decision frame and information order of bad news followed by good news or bad news followed by good news. The research results not consistent with Pinsker (2011) and Almilia & Supriyadi (2013) for the financial decision frame, but the research results consistent with Pinsker (2011) and Almilia & Supriyadi (2013) for the expressive decision frame. The finding of these results show that non-professional investors are more sensitive if there are differences of information order and presentation pattern only on non-accounting information (expressive decision frame).

The second hypotheses examine the differences in information order (good news followed by bad news and bad news followed by the good news) on investment decision making. Table 6 shows that:

Table 5. The Summary Results Hypothesis 1

Investment Decision Frame	Order of Information	Presentation Pattern	Research Hypothesis
Financial Decision Frame	Good News – Bad News	Step-by-step End-of-sequence	H_1 Not Supported
Financial Decision Frame	Bad News – Good News	Step-by-step End-of-sequence	H_1 Not Supported
Expressive Decision Frame	Good News – Bad News	Step-by-step End-of-sequence	H_1 Supported
Expressive Decision Frame	Bad News – Good News	Step-by-step End-of-sequence	H_1 Supported

(1) there is significant difference of decision making between participants who receive information with good news followed by bad news order compared to participants who receive information with bad news followed by good news order in step-by-step presentation pattern and financial decision frame information; (2) there is significant difference of decision making between participants receiving information with the order of good news followed by bad news compared to participants receiving information with the order of bad news followed by good news in step-by-step information presentation pattern and expressive decision frame information; (3) there is significant difference of decision making between participants receiving information with the order of good news followed by bad news compared to participants receiving information with the order of bad news followed by good news in end-of-sequence information presentation pattern and expressive decision frame information; and (4) there is no significant difference of decision making between participants receiving information with the order of good news followed by bad news compared to the participants receiving information with the order of bad news followed by good news in end-of-sequence information presentation pattern and financial decision frame information. The finding of these results shows that non-professional investors are more sensitive if there are differences in information order and presentation pattern.

The third hypotheses examine the differences of investment decision frame (financial and expressive decision frame) on investment decision making. Table 7 shows there is a significant difference on decision making between participants receiving financial decision frame information compared to participants receiving expressive decision frame information in information order of good news followed by bad news and step-by-step presentation pattern. The research results not consistent with Hockert & Moir (2004) that investors pay attention to non-accounting information than accounting in-

Table 6. The Summary Results Hypothesis 2

Presentation Pattern	Investment Decision Frame	Order of Information	Research Hypothesis
Step-by-step	Financial Decision Frame	Good News – Bad News Bad News – Good News	H_2 Supported
Step-by-step	Expressive Decision Frame	Good News – Bad News Bad News – Good News	H_2 Supported
End-of-sequence	Financial Decision Frame	Good News – Bad News Bad News – Good News	H_2 Not Supported
End-of-sequence	Expressive Decision Frame	Good News – Bad News Bad News – Good News	H_2 Supported

Table 7. The Summary Results Hypothesis 3

Order of Information	Presentation Pattern	Investment Decision Frame	Research Hypothesis
Good News – Bad News	Step-by-step	Financial Decision Frame Expressive Decision Frame	H_3 Supported
Bad News -Good News	Step-by-step	Financial Decision Frame Expressive Decision Frame	H_3 Not Supported
Good News – Bad News	End-of-sequence	Financial Decision Frame Expressive Decision Frame	H_3 Not Supported
Bad News -Good News	End-of-sequence	Financial Decision Frame Expressive Decision Frame	H_3 Not Supported

formation. The finding of these results shows that non-professional investors provide the same proportion of accounting and non-accounting information in investment decision making. The research result shows that there is no difference of response between participants receiving financial decision frame information compared to participants receiving expressive decision frame information in end-of-sequence presentation pattern. However, when participants receive financial decision frame information compared to expressive decision frame in step-by-step presentation pattern, it shows the existence of response difference.

CONCLUSION AND SUGGESTIONS

Conclusion

This research aims to examine the factors of presentation order, presentation pattern, and investment decision frame that are predicted to cause bias in investment decision making. This research is experimental research. The research result shows: (1) the non-professional investors are more sensitive if there are differences of information order and presentation pattern only on non-accounting information (expressive decision frame); and (2) non-professional investors provide the same proportion of accounting and non-accounting information in investment decision making. This research is expected to give benefit in the development of the belief-adjustment model in investment decision making by considering factors, evidence order, type of information, framing effect, and investment decision frame.

Suggestions

Based on the results, it was necessary to conduct further study in the future. First, the future study might use more information and not only fundamental information. In practice, it was necessary to use not only fundamental analysis but also technical analysis and the information of the state economy in investment decision making. Second, the future studies might examine the information of the economy of a country and used technical analysis in testing Hogarth and Einhorn's belief-adjustment model.

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