THE INDONESIAN JOURNAL OF ACCOUNTING RESEARCH
Vol. 13, No. 1, January 2010
Page 45-58

The Examination of Recency and Knowledge Effect in Stock Investment Decision Making: an Experimental Study

*LIZA ALVIA**
Universitas Lampung
DEDHY SULISTIAWAN
Universitas Surabaya

Abstract: *Hogarth and Einhorn (1992) document that, under uncertain conditions, people are affected by recency effect in their decision making. Other study finds that knowledge minimizes decision maker's bias (Dilla and Steinbart, 2005). We combine the ideas from these two previous studies by examining recency and knowledge effects in stock investment decision making when mixed information (fundamental and technical information) is sequentially presented.*

Using a laboratory experimental study of 182 accounting undergraduate students, we test the bias in the stock investment decision making. We separate between the treatment and the control groups based on information about simple technical analysis knowledge. The results show that (1) there is recency effect when different information (based on type and content) is sequentially presented; (2) based on technical analysis information, there is a difference in the stock investment decision making between the treatment and the control groups. Contrary to the expectation, there is no difference in stock investment decision which resulted from fundamental analysis information. The results show that decision makers with accounting background tend to use only financial information, while those who understand technical analysis will consider both fundamental and technical data.

Key words: *Recency effect, Technical analysis, Knowledge.*

We are grateful to Prof. Ainun Na'im (Universitas Gadjah Mada), anonymous reviewers of and seminar participants at Simposium Nasional Akuntansi (SNA) XII Palembang for their helpful comments.

*Corresponding author.
E-mail address: alvia_liza@yahoo.com (Liza Alvia).

1. Introduction

This study uses a combination of research idea of Hogarth and Einhorn (1992) and that of Lipe and Saltero (2000) which is subsequently extended by Dilla and Steinbart (2005). Hogarth and Einhorn (1992) investigate the recency effect in the belief revision processing the presentation of sequential information. The idea of Lipe and Saltero (2000) which is expanded by Dilla and Steinbart (2005) correlates the effects of learning in the process of using information for decision-making. Those ideas relates to bias in decision making.

Recency effect leads people to be bias in decision making, because the decision is based solely on recent information received, not in the substance of the information itself. While in terms of knowledge, people tend to use their own knowledge to make decisions without considering the required actual knowledge. A decision which is based on knowledge consistent with its goal is not a bias. However, the decision is bias if it is based on knowledge which is not aligned with the expected conditions. Bias and knowledge in this study become important issues to discuss because by recognizing the existence of bias and its interaction with the knowledge, both companies and investors are expected to gain high profit when making decisions.

Theoretically, investors' considerations for investment decision making are based on systematic and accurate phase. In fact, the existence of bounded rationality causes the decision making process to employ heuristic strategy, which is the simplification of decision-making process (Bazerman, 1994). The use of heuristic strategy often leads to bias in decision making. This bias will affect the efficiency and effectiveness of decision making (Nasution and Supriyadi, 2007). The results of several previous studies empirically support the recency bias in decision-making when two or more different information contents are presented sequentially (Ashton and Ashton, 1988; Hogarth and Einhorn, 1992; Nasution and Supriyadi, 2007; Hartono, 2004; and Alvia, 2009).

This research is based on the concept of belief-adjustment theory proposed by Hogarth and Einhorn (1992). The model shows the individual behavior reactions on the order and timing of two kinds of different information. The belief-adjustment theory predicts that when two loads of available information have different content (mixed information), good and bad news (++/--), and presented in a sequence, people tend to revise their initial belief in a decision. Hogarth and Einhorn (1992) found that under uncertain conditions, individuals tend to weigh more importance on recent information than previous information. In other words there is a recency effect.

The application of belief-adjustment theory was tested in various settings, such as in, auditing (Ashton and Ashton, 1988; Nasution and Supriyadi, 2007), management accounting (Dillard et al., 1991 as quoted by Hartono, 2004), and taxes (Pei et al., 1990 as quoted by Hartono, 2004). In capital markets setting, similar research using empirical studies was conducted (Cheng and Chen, 1991; Maines, 1993 as quoted by Hartono, 2004). Meanwhile, Alvia (2009) in her experimental research shows that there is recency effect in investment decision-making when accounting information and non-accounting information (contains good and bad news) are presented sequentially.

One of the reasons that underlies this study is investors' misconception in the use of fundamental and technical information as reference in short or long term investment decision making. Investors tend to use fundamental information for short and long term investments, because they do not have adequate knowledge and skill on the use of technical analysis in investment decision making. Therefore, technical analysis knowledge is involved in knowledge testing to mitigate the effects of recency bias.

Technical analysis is regarded as new knowledge for the majority of the investment decision maker because it is not popular in the academic environment (including students and alumni). However, it is very popular in the stock trading practices. This condition is in line with the results of a survey on teaching gap in investment analysis conducted by Flanegin and Rudd (2005) and on the investment of teaching material in universities conducted by Eitman and Smith (1974). They demonstrate that technical analysis dominated the teaching of investment until 1930s, which was then followed by fundamental analysis after Benjamin Graham published a book entitled *Security Analysis* in 1934. Portion of technical analysis narrowed after Sauvain published a book with portfolio investment context, and an article by Harry Markowitz explicitly explained the quantitative relationship between risk and return. The technical analysis is popular in stock market communities. Technical analysis on each stock trade monitor, popular technical analysis software, and on-line information are available from several providers, such as Yahoo Finance, Google Finance, Meta Trader and Meta Stock, including analyst recommendations based on technical analysis.

Issues raised in this research are worth studying because researchers integrate recency bias and knowledge variable (technical knowledge) that have not been previously investigated in capital market setting. In addition, previous study (Hartono, 2004) which test bias reviews is more often used by empirical studies based on historical data without being able to directly capture investors' behavior in decision making. This study tries to overcome the weaknesses of previous research using experimental design which has better internal validity. In addition, this experiment supports research by Flanegin and Rudd (2005) and Eitman and Smith (1974) about technical analysis material in investment teaching. Investors who have no knowledge in technical analysis do not include technical analysis information in their decision making, but they still use financial data in their short-term investment. This research assumes that this behavior is bias, because fundamental analysis information is designed for long-term investment, whereas technical analysis information is designed for short-term investment.

Based on those phenomena, we are interested in investigating (1) recency effect on mixed information presented in a sequence (2) knowledge effect of technical analysis on investment decisions.

2. Literature Review and Hypotheses Development

2.1. *Belief-Adjustment Theory-Recency Effects*

The belief-adjustment theory proposed by Hogarth and Einhorn (1992) uses anchoring and adjustment approach. This theory explains the order effects phenomenon that arises from the interaction between information processing strategies and task characteristics. The effect of sequence information which is based on belief-adjustment model predicts if recency effect, no-order effect, anchoring-adjustment effect, and dilution effect will depend on particular characteristics of the information array. This study employs mixed information (containing good news followed by bad news or bad news followed by good news) which is presented in a sequence to examine the recency effect.

Bazerman (1994) suggests that belief-adjustment model is one of heuristic bias. This model is based on the assumption that people process information sequentially and has limited memory capacity. People tend to change their first belief (initial anchor) and adjust their decisions based on available information sequence at the market. Hogarth and Einhorn (1992) state that when individuals obtain new evidence in the form of the information provided, they will review their conviction by using the anchor and adjustment process. The current belief is referred as an anchor that is adjusted by information/evidence received during this sequence. The revised belief becomes the new anchor and the process continues from the beginning. Similarly, according to Tversky and Kahneman (1974), the concept of belief-adjustment is a form of heuristics bias which was developed from prospect theory (Tversky and Kahneman, 1979 as quoted by Bazerman, 1994).

This study applies belief-adjustment model in the field of financial accounting using capital markets setting by adopting the Hogarth and Einhorn's (1992) research design. Ordering information is manipulated between subjects, in which subjects received two pieces of negative information which were followed by two pieces of positive information (--++) and vice versa. This study uses step-by-step (SBS) response model through manipulating presentation order of fundamental information (++/--) and technical information (++/--). The combination of positive and negative information with a variety of possible sequences and type of information is called mixed information.

2.2. *Examination of the Recency Effect*

Beaver (1989) argues that belief is an important component in the decision making process. The existence of the accounting information is also considered to alter investor belief (Bruns, 1968; Beaver, 1989). In addition, the behaviors of decision maker change when new information changes their belief that is defined earlier (Hartono, 2004).

In the audit setting, Ashton and Ashton (1988) examine the sequential belief revision by simplifying the context of reported audit. From the samples of 211 auditors through sequential and simultaneous presentation, they indicate that the auditors' belief revision depends on the order of the evidence received. These results provide evidence of changing attitudes faced by auditors. An adjustment effect is supported by inconsistent information through sequential presentation due to auditor's sensitivity of highly negative evidence.

Hartono (2004) empirically asserts that the belief-adjustment provides models to answer the questions how, why, and when in which sequential information can revise individual beliefs in decision making. The result of those researches support the existence of recency effect, no-order effect, anchoring-adjustment effect, and dilution effect in the earnings and dividend announcements setting presentation as those predicted in the belief-adjustment, except for the recency effects on the condition of negative dividend announcement.

Another experimental research conducted by Nasution and Supriyadi (2007) examine the effect of evidence order with consideration in the belief revision using audit setting. The result shows that auditors put more weight on the latest information rather than prior information. In other words, the recency effect exists. The existence of recency effect in the capital markets setting is also demonstrated by Alvia (2009) through experimental design. The result also confirms the belief-adjustment theory-recency effect proposed by Hogarth and Einhorn (1992). Investors tend to weigh current information more importantly than previous information on the mixed information (combination of good news and bad news).

These expectations are stated as follow:

H1: *There is a recency effect in decision making using mixed information that sequentially presented.*

2.3. Technical Analysis Knowledge and Recency Effect

Lipe and Saltero (2000) show that limited knowledge of the Balanced Scorecard (BSC) makes decision-makers ignore the unique measures and prefer to common measures. Referring to the results of that research, Dilla and Steinbart (2005) examine whether decision makers would show the same behavior or not when training and experience variables in designing the BSC are considered in this study. Those studies show that the knowledge makes different behavioral changes in individuals who obtain the knowledge and those who do not get the knowledge.

In Lipe and Salterio study (2000), the information on technical analysis knowledge as a substitute of unique measures is applied. This analysis was selected because according to a survey by Flanegin and Rudd (2005) and Eitman and Smith (1974), this analysis is not popular among academicians, including students and business school alumni. The main assumption of this research is that the participants who have no such knowledge do not include this information in their decision making.

Technical analysis is the study of market reactions in order to obtain trend in the future (Pring, 1988; Achelis, 1995; Murphy, 1999; Luca, 2000). This analysis uses previous price data as the primary indicator to determine subsequent price movements. The main purposes of the use of this analysis are to maximize profits and minimize risks.

The results of several previous empirical studies show that this trading strategy earns profit in periods of research (Wong, Manzur, and Chew, 2003; Loh, 2006; Balsara et al, 2007). In this experimental test, simple moving average of 30 days of daily stock price is used as an indicator (as part of trend following indicators) and information overbought/oversold. Another type of information used in this research is fundamental analysis information, which is used as proxy for familiar information to participants. In this case, there

is no difference in the decision related to fundamental information.

Englich (2008) examines the effect of different knowledge (given relevant knowledge/ knowledge not relevant) to anchoring assignment. The experimental result shows that knowledge (relevant knowledge) can reduce the amount (magnitude) of anchoring effect. In general, the knowledge minimizes the effect of the order of information presentation. If in the previous studies, researchers use the concept of anchoring effect, in this study, we use the concept of recency effects.

Based on the previous arguments, the second hypothesis stated in an alternative form is as follows:

H2: *There is a difference in recency effects between groups that have technical analysis knowledge and other groups that do not have that knowledge.*

3. Research Method

3.1. Experimental Design

This study uses a full factorial 2 x 2 x 2 between-subject design in which the factors are presentation order of information type (fundamental/FI and technical information/TI), information character sequence (bad and good news) and knowledge factor (given technical analysis knowledge and not given the knowledge).

The fundamental information is represented by (1) accounting information (income, gross profit, operating profit and net income) and (2) interest rates information, while the technical information includes (1) oversold/overbought information, which is based on technical analysis concept and (2) stock charts information that indicates buy/not buy signal through simple moving average (SMA) indicator. Each type of information contains two pieces of good news (++) and bad news (--) information. Participants are divided into two groups: the treatment group (given technical analysis knowledge) and control group (not given technical analysis knowledge) as shown as in Table 1.

Table 1
Experimental Treatment

Treatment Group	Information (1)	Information (2)	Information (3)	Information (4)	Final Decision
Group-1: Information given: FI (++) followed by TI (--)	+	+	-	-	Buy/Not Buy
Grup-2: Information given: FI (--) followed by TI (++)	-	-	+	+	Buy/Not Buy
Grup-3: Information given: TI (++) followed by FI (--)	+	+	-	-	Buy/Not Buy
Grup-4: Information given: TI (--) followed by FI (++)	-	-	+	+	Buy/Not Buy
	S1	S2	S3	S4	

3.2. Experimental Subjects

The subjects were drawn on undergraduate accounting students who studied at the Surabaya University (treatment group) and University of Lampung (control group). They are considered as the representatives of real stock investors. Experimental subjects are selected using purposive random sampling method, in which the participants have passed Accounting Theory course (as a representation of subject covered by undergraduate accounting students in their last year of study).

Students with knowledge in accounting are selected as participants in this experiment because they have knowledge on financial information and they will utilize the fundamental information. Conversely, students with additional knowledge in technical analysis will proportionally use this information for their decision making process. These results are expected to support Flanegin and Rudd (2005) and Eitman and Smith (1974) which demonstrate the gap between professional investment analysts and academicians.

3.3. Research Instruments

This research uses paper and stationery instruments. The experimental subjects will respond by writing the answers manually as outlined in the paper provided.

3.4. Experimental Procedures

The model and experimental procedures of this research are modified from Alvia (2009). Total number of participants was 182 students who were divided into eight different groups. The first four groups were treated as treatment groups. They were given basic principles of technical analysis for 15 minutes, while control groups were not given this simple training. For uniformity, each treatment group was guided by trainers who were experts in the field of training and stock trading consultancy.

Furthermore, subjects in each group received an experimental instrument package that includes (a) initial information (S0); (2) additional information (S1, S2, S3, and S4); (3) final decision; (4) manipulation checks; and (5) demographics tests. All of the information was presented sequentially to subjects.

The initial information describes general description of "PT Alam Raya" which initial score of the company performance is determined at 50 (as the initial anchor (S0)). Furthermore, each subject of group receives sequential presentation of fundamental information (FI) and technical information (TI), which contained good and bad news for PT Alam Raya performance as supplementary information (S1, S2, S3, and S4). At the end of each presentation of additional information (S1-S4), subjects are asked to make investment decisions to buy/not buy PT Alam Raya shares through writing an assessment score from 0 (very bad) to 100 (very good). Afterwards, subjects are asked to make a final decision to buy/not buy PT Alam Raya shares based on a series of information (S0-S4) that is presented sequentially. At the final stage of the experiment, subjects are required to answer the manipulation check questions. Finally, subjects are asked to fill demographic data.

3.5. Hypotheses Testing

All of the subjects should pass manipulation check prior to hypotheses testing. The first hypothesis (H1) is tested by comparing the latest information decision (S4) to the initial information (S0) using independent sample t test. It expected that people in ++-- sequence information have negative (positive) value of S0-S4 (S4 minus S0). This technique is adopted from Hogarth and Einhorn (1992) experiment.

Hypothesis two (H2) is examined by comparing belief revision of both treatment and control group participants. Groups who have received the technical knowledge should take different decisions from groups that have not received the knowledge. This technique is adopted from Lipe and Saltero (2000) experiment which was subsequently updated by Dilla and Steinbart (2005). Because of the lack of conceptual theories and previous research's result on the direction of the hypothesis, this second hypothesis uses non-directional hypothesis statement for its examination. To test the hypothesis, this study uses two independent samples t-test and Unbalance ANOVA for supplementary testing.

4. Analysis and Research Discussion

4.1. Descriptive Statistic

Table 2 shows the demographic statistics of subjects which are grouped into two groups: namely treatment and control groups. The subjects have relatively homogeneous background.

Table 2
Subjects Description Based on GPA and Gender

GPA	Gender		Group		Total
			Treatment	Control	
>3	Gender	Man	9	18	27
		Woman	34	43	77
	Total		43	61	104
<3	Gender	Man	28	10	38
		Woman	34	6	40
	Total		62	16	78
	Investment Knowledge	Yes	11	17	28
		No	94	60	154
	Total		105	77	182

Before testing the hypotheses, this study uses ANOVA to investigate that belief revision is affected by the characteristics of respondents. S4-S0 are dependent variables, while GPA and Gender are independent variables. The test results demonstrate that S4-S0 variables are not affected by GPA and Gender.

4.2. Research Results

The first hypothesis (H1) states that recency effects occur in the investment decisions when mixed information is presented sequentially. The recency effect of Hogarth and Einhorn (1992) model is employed by comparing the average belief revision (S4-S0) between groups (treatment and control) in four treatment conditions. The recency effect may occur when the average of belief revision from groups which have received --++ information order is higher than groups which have received ++-- information order and the value is statistically different (when independent sample t-test is used). The test results for each treatment are presented in Table 3.

Table 3

The Examination of Recency and Knowledge Effect

Treatment Groups		Order of Information							
		FI-TI (1)		TI-FI (2)		FI-TI/TI-FI (3)		TI-FI/FI-TI (4)	
		--++	++--	--++	++--	--++	++--	--++	++--
Not given knowledge (*Control Group*)	mean	0,8	-11,25	16,5	-1,25	0,8	-1,25	16,5	-11,25
	t	-2.430		-4.041		0.369		-8.237	
	sig	0,020		0,000		0,014		0,000	
	n	25	16	20	16	16	25	20	16
Given knowledge (*Treatment Group*)	mean	13	4,5	20	-2	13	-2	20,6	4,5
	t	-1.708		-4.056		2.660		-3.267	
	sig	0,003		0,000		0,011		0,002	
	n	30	30	30	15	30	30	30	15
t-test**		**2.592 (p=0,012)**	**2.765 (p=0,008)**	**1,008 (p=0,319)**	**-0.116 (p=0,909)**				

Remark: *H1 test
**H2 test

Table 3 shows that the first hypothesis (H1) is supported. It means that there is a recency effects phenomenon for both treatment and control groups.

The second hypothesis (H2) is examined by unbalance-ANOVA method. The result shows that belief revision is affected by the order/sequence of information which is based on type (TI/FI), nature (++-- or --++), and treatment groups (with given knowledge and not given knowledge). The results are presented in Table 4.

Table 4
The Result of the Effect of *Group Treatment* and Information Order on Recency Effect

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	17269.388(a)	7	2467.055	8.557	.000
Intercept	4397.208	1	4397.208	15.253	.000
Group	2577.820	1	2577.820	8.942	.003
Type (TI&FI)	1891.226	1	1891.226	6.560	.011
Nature(--++/++--)	9738.693	1	9738.693	33.780	.000
Group * Type	1576.990	1	1576.990	5.470	.020
Group * Nature	4.894	1	4.894	.017	.896
Type*Nature	1034.108	1	1034.108	3.587	.060
Group*Type*Nsture	187.820	1	187.820	.651	.421
Error	50163.167	174	288.294		
Total	76225.000	182			
Corrected Total	67432.555	181			

a R Squared = .256 (Adjusted R Squared = .226)

Table 4 shows that belief revision is affected by the separation of treatment and control groups. In this result, H2 is statistically supported. Related to H2 testing, this study also confirmed the ANOVA results in which mean of each group (1, 2, 3, and 4) between treatment and control groups is statistically significant when tested by t-test. The results (Table 3) illustrate the differences in belief revision between treatment and control groups for Group 1 and 2 (FI - TI). However, there is no statistical difference between treatment and control groups for Group 3 and 4 (TI - FI).

4.3. Discussions

The result of H1 shows that recency effect exists in investment decision making process which is based on sequential presentation of mixed information. In other words, H1 is statistically supported. It is indicated by the mean of belief revision of groups in --++ sequence information (S4-S0) which is significantly larger than those of groups with the ++-- sequence information. The results suggest that investors are more likely pay attention to the order of information presentation rather than the substance of the information itself during decision making process. This results confirm the studies by Ashton and Ashton (1988), Hartono (2004), Nasution and Supriyadi (2007) and Alvia (2009).

Using unbalance ANOVA, additional analysis shows that order/sequence information variables for both types and nature are individually interacting. It affirms the conclusion that the recency effect is influenced by the type and nature of information. However the interaction does not affect investor belief revision.

The next examination of H2 shows that there is a difference in the decision between participants who receive the knowledge and those who do not receive knowledge. The interaction between knowledge (treatment and control groups) and sequence of informa-

tion type (FI-TI and TI-FI) also exhibits statistically different mean in the participant decision. This phenomenon is also proven by different decision test between groups with knowledge and no knowledge (Table 4). In the groups with the FI-TI sequence information; there are differences in recency effects of the participants who know technical analysis. However, it does not occur in the groups with TI-FI sequence information.

This experimental results show that the groups which sequence information FI-TI (-- ++), the directions of differences in decision of knowledgeable groups that weight on TI ++ is greater than groups who are unknowledgeable of technical analysis. However, in (TI --) group, the participants' decision do not show an ideal result.

In relation with the recency effect, decision makers tend to weigh the last information more importantly than the earlier one. If the last information is fundamental information, the knowledgeable and unknowledgeable groups have no difference because there is no knowledge difference. Both groups are considered to have knowledge of accounting information, so the decision will not be different. The results of this study support the expectations of this research.

In the context of technical analysis knowledge, both groups are considered to have different knowledge about technical analysis. Technical analysis is not mandatory material and it is not academically popular (Flanegin and Rudd, 2005; Eitman and Smith, 1974). If the last information is technical analysis (FI-TI), the decision makers tend to be more concerned with the latest information. Nevertheless, different knowledge would lead to different weighing of information. The results of this study support the findings of Dilla and Steinbart (2005) that knowledge will lead to differences in the decision.

5. Conclusions, Limitations, and Research Implications

The conclusions of this study are as follow:

1. Using Hogarth and Einhorn's (1992) model, this study shows that there is a recency effect on the information. This result explains why investors sometimes do not use information properly because they tend to consider the most recent information for decision making.
2. Utilizing Dilla and Steinhart's (2005) ideas, this study shows that there is difference in decision based on technical information between control and treatment groups. However, there is no difference in decision based on fundamental information between them. It means that technical knowledge will impact decision making. This result support Flanegin and Rudd (2005) finding about the gap of investment strategy between academicians and investment professionals. In addition, this finding also verify the idea of Eitman and Smith (1974) that describe technical analysis as a minor discussion in investment teaching and research.

Although this study shows the recency effect on the stock investment decision setting, it also shows decision differences because of the existence of investment analysis knowledge. This research has not tested the personality aspects. Personality aspects can be included as variables for next research. For examples, Mach Index, Cognitive Indices and

Personality Plus can be used as tools to develop the next research. Similarly, the interaction between personal and knowledge aspects should get more attention for further research in terms of decision making.

Another crucial issue of this experiment is demand effect. In task sheets, this research provides information to the participants that this is an experiment about decision making, however participants never know the purpose of this study. Another consideration related to answer demand effect is that the participants never learn behavioral accounting and experimental design. Those conditions may not support the possibility of demand effect problem.

References

Achelis, Steven B. 1995. *Technical Analysis form A to Z.* Retrieved from http://www.equis.com/education/taaz.

Ashton, A. H., and R. H. Ashton. 1988. A Sequential Belief Revision in Auditing. *The Accounting Review* 63: 623-641.

Alvia, Liza. 2009. *Pengaruh Urutan Peyajian Informasi dan Gaya Kognitif terhadap Proses Revisi Keyakinan Investor (Sebuah Studi Eksperimen Pengambilan Keputusan).* Tesis dalam proses publikasi.

Balsara, Nauzer J., Chen, Gary and Zheng, Chen. 2007. An Examination of the Random Walk Model and Technical Trading Rules. *Journal of Business & Economics* 46(2): 43-63

Bazerman. 1994. *Judgment in Managerial Decision Making*. New York: Willey & Sons. Inc.

Beaver, W.H. 1989. Financial Reporting: An Accounting Revolution, 2nd ed. Englewood Cliffs, N.J: *Prentice Hall.*

Bruns, William J. 1968. Accounting Information and Decision Making: Some Behavioral Hypotheses. *Journal of Accounting Review* 43(3): 469-480.

Dilla, William N., and Steinbart Paul J. 2005. Relative Weighting of Common and Unique Balanced Scorecard Measures by Knowledgeable Decision Makers. *Behavioral Research In Accounting* 17: 43-53.

Eitman, David K., and Smith, Keith V. 1974. A Portfolio Analysis of Teaching of Investments. *Journal of Financial and Quantitative Analysis*. Proceedings: 771-780.

Englich, Birte. 2008. When Knowledge Matters-Differential Effects of Available Knowledge in Standard and Basic Anchoring Tasks. *European Journal of Social Psychology* 38: 896-904.

Flanegin, Frank R., and Rudd Denis P. 2005. Should Investments Professor Join the 'Crowd'. *Managerial Finance* 31 (5): 28-37.

Hogarth, M. Robin, and Einhorn, Hillel. 1992. Order Effects in Belief Updating: The Belief-Adjustment Model. *Cognitive Psychology* 24: 1-55.

Hartono, Jogiyanto. 2004. *How, Why and When Investors Revise Their Beliefs To Company Information and Their Implications to Firms Announcement Policy.* Yogyakarta: Penerbit ANDI.

Lipe, M. G., and S. E. Salterio. 2000. The Balanced Scorecard: Judgmental Effects of Common and Unique Performance Measures. *The Accounting Review* 75: 283-298.

Loh, Elaine. 2006. A Proxy for Weak Form Efficiency Based on Confirming Indicators in Technical Analysis. *The Business Review* 5(1): 301-306.

Luca, Cornelius. 2000. *Technical Analysis Applications in the Global Currency Markets*. Second Edition. New York: Institute of Finance.

Murphy, John J. 1999. *Technical Analysis of the Financial Markets*. Institute of Finance: New York.

Nasution, Damai and Supriyadi. 2007. *The Impact of Evidence Sequence, Cognitive Style, and Personality to Belief Revision Process*. Proceeded, National Accounting Simposium X.

Pring, Martin J. 1988. *Technical Analysis Explained*, 2nd ed. Singapore: McGraw-Hill Book Company.

Tversky, Amos and Kahneman, Daniel. 1974. Judgment Under Uncertainty: Heuristics and Biases. *Science, New Series*, Vol. 185(4157): 1124-1131.

Wong, Wing-Keung, Meher Manzur, and Boon-Kiat Chew. 2003. How Rewarding is Technical Analysis? Evidence from Singapore Stock Market. *Applied Financial Economics* 13 (17): 543-551.

Intentionally Blank

The Indonesian Journal of Accounting Research

Vol. 13, No. 1, January 2010 Accreditation No. 83/DIKTI/Kep./2009 ISSN 1410-6817

INDONESIAN INSTITUTE OF ACCOUNTANTS
COMPARTMENT OF ACCOUNTING ACADEMICIAN

Editorial Staff
The Indonesian Journal of Accounting Research

Editorial Board

Ainun Na'im
Universitas Gadjah Mada

Khomsiyah
Universitas Trisakti

Supriyadi
Universitas Gadjah Mada

Unti Ludigdo
Universitas Brawijaya

Eddy R. Rasyid
Universitas Andalas

Editor in Chief
Setiyono Miharjo
Universitas Gadjah Mada

Managing Editor
Mahfud Sholihin
Universitas Gadjah Mada

Reviewers/Referees

Abdul Hamid Habbe
Universitas Hasanuddin

Bambang Riyanto L.S.
Universitas Gadjah Mada

Bambang Sudibyo
Universitas Gadjah Mada

Djoko Susanto
STIE YKPN

Dody Hapsoro
STIE YKPN

Ertambang Nahartyo
Universitas Gadjah Mada

Grahita Chandrarin
Universitas Merdeka Malang

Ilya Avianti
Universitas Padjajaran

Indra Wijaya Kusuma
Universitas Gadjah Mada

Iwan Triyuwono
Universitas Brawijaya

Jogiyanto Hartono
Universitas Gadjah Mada

Nur Fajrih Asyik
STIESIA Surabaya

Ronny K. Moentoro
Universitas Indonesia

Sidharta Utama
Universitas Indonesia

Sujoko Efferin
Universitas Surabaya

Suwardjono
Universitas Gadjah Mada

Sylvia Veronica Siregar
Universitas Indonesia

Tarmizi Achmad
Universitas Diponegoro

Tjiptohadi Sawarjuwono
Universitas Airlangga

Zaki Baridwan
Universitas Gadjah Mada

Editorial Secretary
Handayani

Editorial Office
Magister Sains and Economics Doctoral Program of Universitas Gadjah Mada
Jl. Nusantara, Bulaksumur, Yogyakarta 55281
Phone. (62) 87738770588
Fax. (62) 274 524606
Website: www.jrai-iai.org
E-mail: jrai2008@gmail.com
Acc.: Bank Mandiri UGM Acc. No. 137.0096046350 p.p. Kompartemen Akuntan Pendidik IAI

The Indonesian Journal of Accounting Research (Jurnal Riset Akuntansi Indonesia)

Vol. 13, No. 1, January 2010 Accreditation No. 83/DIKTI/Kep./2009 ISSN 1410-6817