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The Order Effect of Corporate Disclosure Forms Fish-Tail Pattern: Further Evidence in Experimental Study

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Abstract

Human decision is not only affected by information content but also information order. This study provides additional evidence about order effect in the context of corporate disclosure. The same bundle of information should be reacted by the same way because those have same information. Information order affects investor decision. Using an experimental study, we provide that sequential information stimulates recency bias. Participants in a group who receives bad (good) news in their sequential information produces lower (higher) valuation. The order effect forms fish-tail pattern. This article contributes to recent studies and corporate disclosure practices.

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1. Introduction

In stock market, investors face uncertainty. They also have to make decisions quickly before anticipated by other investors. Most of investors obtain limited information because they have limited resources. They cannot collect all available information, either published or unpublished information. This condition stimulates the occurrence of bounded rationality. Bias decisions may be faced by stock investors.

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Currently, accounting information is no longer presented simultaneously. Company disclosures tend to be presented sequentially (Pinsker 2007 and 2011). The companies disclose corporate information conveyed via the stock-exchange website. The phenomenon suggests that investors receive a small piece of information that is presented sequentially, not a bundle of information that is presented on a single event or time. Sequential information stimulates decision bias. The same sequential information presented should result in same decisions. This study believes that same information may produce different decision when presented in a different way.

Research on decision bias audit, especially related to sequential information bias has been done (Ashton and Kenedy, 2002; Ashton and Ashton, 1998; Trotman and Wright, 1996,). This study uses stock investing and corporate disclosure setting.

Order effect studies in the stock market are also conducted (Libby and Tan, 1999, Tuttle, Coller, and Burton, 1997; Pinsker, 2007 and 2011; Alvia and Sulistiawan, 2010). In conclusion, order effect bias occurs in the stock investment decisions. Among these studies, Pinsker (2007 and 2011) specifically indicates the fish-tail pattern. However, their study focuses on long sequences of information. This study tries to provide additional evidence using short series.

In rational decision theory, presentation of the same information sequence should show no significant difference when presented sequentially. However, this study presents that different order produce different decision. This study indicates a fish-tail pattern in the decision resulting from the sequential information. These findings provide additional evidence to order effect studies in corporate disclosure and investing decision context.

This study contributes to theoretical and practical contribution. Theoretically, this study support recency bias literature by providing evidence about fish-tail pattern in sequential information. This article also contributes corporate disclosure practices. Companies may use this sequential information strategy. In bundling information, they need to present bad news before good news in order to produce higher valuation.

This article is presented in several sections. The first, we explain why this topic is important. The second section discusses literature review. The third section describes the research design. The fourth section describes the findings and analysis of experimental results. The last section presents conclusion and suggestion for future researches.

2. Literature Review

In the field of audit, study of the order effect has been widely discussed. This research focuses on stock market environment. Efficient market theory believes that investors are rational. We support behavioral finance studies that assume investors face bounded rationality. They tend to make irrational decision because they have limited information and face uncertainty.

Several studies have examined the impact of an order effect on investment decisions. This study seeks to provide additional evidence. Study Libby and Tan (1999) focused on the sequential information of bad news. Pinsker (2007 and 2011) discusses the impact of long sequence information to bias the order information. Alvia and Sulistiawan (2010) discuss the role of training on order effect. This study focuses on the role of order effect to form fish-tail pattern in the context of corporate disclosure.

When accounting information contains good news (bad) precedes bad news (good) presented sequentially, investors weight on bad news (good news). Same information may generate different stock valuation. This situation produces bias because people weigh more on the latter information than the previous one. Same information produce different decision because the present in different order.

This study seeks to provide additional evidence regarding the effects of information order in investment decision and corporate disclosures. The hypothesis is stated as follows.

H1: In sequential corporate disclosure, stock valuation become lower (higher) when good news (bad news) precedes bad news (good news).

3. Research Design

3.1 Participants

Our experiment uses accounting students as participants because they are the representation of individual investors. This selection is supported by previous researches. There is order effect bias in investing decision when real investors and student as participants are used in an experiment (Pinsker 2007 and 2011; Sulistiawan and Wijaya, 2015).

3.2 Procedure

In terms of the amount of information presented sequentially, Pinsker (2007 and 2011) using the amount of information 20 and 40 sequential information. They present long series of information length because they expect the primacy effect, which hopes to give evidence the idea of Hogarth and Einhorn (1992). The idea is the more information that is presented sequentially, receivers become less sensitive to the information and they tend to take place previous information. In fact, the last information presented is the most dominant information. The show that recency bias dominates investors decision in the sequential information.

Both of good and bad news are adapted from Pinsker (2007). If he uses long series this study focuses on short series. Our corporate disclosures are taken from Pinsker (2007). We select only six-information. There are three-positive information and three-negative information. We only pick three-positive and negative information that produce the greatest magnitude.

To answer our hypotheses, we use two groups of participants. In Table 1 we present the group information. Group1 and 2 were given information sequentially. In group 1, the sequential information of bad news is presented after good news. In group 2, the sequential information of good news is presented after bad news. We expect that group 2 value stock higher than group 1 because the last information of group 1 is bad news and the last information of group 2 is good news. Focusing on the last information received stimulate participants become overreact to those last information.

Table 1. Group in experiment.

Corporate Disclosure	Group 1	Group 2
Sequential Information	+++---	--- +++

Participants were given background information on the company and awarded a point of reference share price of 50. The time was 3 minutes. In each of these disclosures participants were asked (a) re-assess the company's stock price based on the initial value 50. For any information/new disclosure, participants have to answer in 2 minutes. If there are six disclosures, participants need 12 minutes. Participants are prohibited from reopening evidence and answers in advance.

3.3 Hypothesis Testing

Testing was conducted by comparing the Group 1 to Group 2. The same information should produce same conclusion even if presented with a different sequence produces the same assessment. However, the order effects produce different result. We predict the average rating of Group 2 is expected to be larger than the Group 1. Independent samples t-test is used to test the hypothesis. This study also uses ANOVA to test the impact of order effect to decision. GPA and gender are used as control variables.

4. Results

In this section we discuss data description, the results and analysis. Data descriptions are presented in Table 2. Order is divided by two, those are good news bad news (+++---) and bad news good news (---+++). Participants in both of groups are 20. The number of participants is equal.

Table 2. Participants

Variables	N	
Information order	+++---	20
	---+++	20
Gender	Female	27
	Male	13
GPA	<3	18
	>3	22

Table 2 shows the number of participants of the experiment. There are forty participants. The first group is the group receiving positive information followed negative information. The second group is the group receiving negative information followed positive information. The numbers of each group are twenty participants. Based on gender, the numbers of male participants are thirteen and the numbers of female participants are twenty seven. Participants having GPA of more than 3 are 18 persons while the participants who have GPA of less than 3 are as many as 22 persons.

The results of experiments are presented in Table 3. The results show that same information but different order generates a different decision. Order effect variable produces sig <0.001. Gender and GPA participants have no influence on the decision. These findings suggest that differences in the decision only because of order effect. Information order is a strong treatment to produce different decision.

Table 3. Hypothesis Testing

Dependent Variable: VALUATION					
Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	4891.324	3	1630.441	9.312296	<0.01
Intercept	101366.7	1	101366.7	578.9578	<0.01
ORDER	2637.686	1	2637.686	15.06519	<0.01
GENDER	1.233232	1	1.233232	0.007044	0.93
GPA	375.1688	1	375.1688	2.142784	0.15
Error	6303.051	36	175.0848		
Total	128375	40			
Corrected Total	11194.38	39			

a	R Squared = .437 (Adjusted R Squared = .390)

To see the magnitude of decision, this study uses independent sample t-test. The test results are presented in Table 4.The valuation of group +++--- is 43.5, while the valuation of group ---+++ is6 4.75. These numbers suggest that the same corporate disclosures in different order produce a different decision. This phenomenon leads to a fish-tail pattern.

Decision data is presented in Table5. In the group+++---, participants assessment increases in the beginning, but decreased after the third information. Conversely, participants assessment decreases in the beginning of group ---+++, but increased after the third information. It appears that participants weigh final information greater than the initial information.

Table 4. The Final Decision Based on Different Order

	ORDER	N	Mean	Std. Deviation	t-test	Sig
VALUATION	+++---	20	43.5	12.78362	-5.069	<0.001
	---+++	20	64.75	13.71467		

Table 5. Valuation on Each Disclosure

	1	**2**	**3**	**4**	**5**	**6**
Order	+	+	+	-	-	-
Valuation +++---	58.75	62.75	64.25	53	47.75	43.5
Order	-	-	-	+	+	+
Valuation ---+++	46.75	40.5	41.75	52.75	61.5	64.75

The findings confirm the results of Pinsker (2007 and 2011) which uses the sequence information along the 20 and 40 disclosures. This study uses three-negative information and three-positive information. Additional evidence is expected to solidify the sequence of information on the impact of the phenomenon in the context of stock investment decisions and corporate disclosure.

This disclosure corporate technique could be used to help the company public in announcing a bundle of positive and negative information to the market. When companies have both of positive and negative information, negative disclosures should be presented first and then the company may present positive information.

Theoretically, this study support order effect phenomenon. In anticipating sequential information, the last information received is more dominant information than the previous one.

5. Results

This study demonstrates that the disclosure of the same company form a different decision. The disclosure of positive information followed by negative information produces negative reaction. Conversely, the disclosure of negative information followed by positive information gives better impact for the company because participants tend to focus and last information they received than previous one. Those conditions form fish-tail pattern.

These results provide additional evidence in order effect literature using an experimental study. These findings can also be applied to the company's strategy to reveal a bundle of good and bad news. The sequence information would influence the formation of public opinion. Subsequent studies could be developed by comparing the decision in the group with different educational backgrounds and experiences. The future studies may develop order effect studies by using real time data. It is important to improve the generality of the order effect studies in accounting and finance in the context of equity investment and corporate disclosure because, in fact, there are many bias can be solved or anticipated by mitigating the impact of sequential information.

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