

Individual Investors Trading Behavior in Indonesia Stock Exchange and the Covid-19

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Abstract. This research aims to determine how individual investors' behavior on the Indonesian stock exchange affects their decision to invest in stocks during the Covid-19 pandemic. The sample in this study amounted to 210 individual investors who made transactions on the Indonesia Stock Exchange during the Covid-19 pandemic. The sample selection technique used in this study is non-probability sampling. The sampling method used is purposive sampling. Data were analyzed using multiple regression. This study will result in the level of investment decision-making on individual investors on the Indonesia Stock Exchange and the effects of herding behavior, overconfidence bias, and representative bias.

Keywords: Pandemic Covid-19, Herding Behavior, Overconfidence Bias, Representative Bias, Investment Decision Making

1 Introduction

The Indonesian Stock Exchange has recorded an increase in the number of stock investors, and it is increasing every year. IDX pointed out that in 2020, the number of investors in the capital market increased from 2.48 million at the end of 2019 to 3.88 million, with an average annual growth rate of 56.21%. For the whole year of 2019, the number of investors was 3.88 million. The turnover in 2019 also increased by 53.41% from 1.61 million at the end of 2018 [1]. Data from the Indonesian Central Securities Depository (KSEI) as of the end of April 2021 noted that the number of single investor identification (SID) in the capital market reached 5,088,093 investors. This realization increased by 31.11 percent from the position at the end of 2020. This data proves that during the first months of 2021, 1,207,340 new investors entered the Indonesia Stock Exchange [2].

The Covid-19 pandemic has become something that we never imagined would happen before because this kind of outbreak has never happened and will continue to persist in the future [3]. The spread of the Covid-19 virus is rapidly spreading worldwide, posing a worrying threat to the economy and uncontrollable deaths [4]. Stock markets around the world are highly unpredictable and volatile from February 2020 to March 2020, which increases the risk for investors by 26.6% [5].

The COVID-19 pandemic has affected various sectors, one of which is the Indonesia Stock Exchange. Besides the role of source financing and investment in an economy, the stock market also functions as a mechanism for signal investment decisions to managers and a catalyst for corporate governance [6]. Due to this Pandemic Issue, many local and foreign investors quit the capital market. Investors sold their stock and then gave the impact on the

decreasing of the stock price. Throughout 2020, affected by the market response to the Covid19 pandemic, the performance of the composite stock index fell by 18.3%, which has occurred in most of the world's stock exchanges [7]. At the beginning of the spread of the coronavirus in Indonesia around March 2020, the JCI experienced a significant decline. JCI's lowest point occurred on March 24, 2020, which closed at 3,937. The index recorded a decline of 37.49% compared to the end of 2019. This level was the lowest since June 28, 2012 at the level of 3,887. JCI's decline during the Covid19 pandemic has also repeatedly occurred when the index fell to 5%. The Indonesian Stock Exchange (IDX) was forced to implement a 30-minute suspension rule (trading interruption) this year [8]. The epidemic's impact has caused share prices to fall, especially for cyclical stocks or issuers that are susceptible to economic cycles and closely related to economic conditions [9].

Stock trading is not an easy thing to do—uncertainty in investing in the stock market results in various behavior of investors. Investors can make mistakes in investing systematically and in the way of thinking, for example, because they are too confident in their abilities [10]. So, they tend to make decisions without prior consideration. In addition, investors also tend to make decisions based on experience without first analyzing the current reality.

It is essential to know how the attitude of individual investors regarding their decision to invest, especially when the Covid-19 Pandemic has created widespread uncertainty and panic around the world [11]. Examining the behavior of individual investors in investment related to Covid-19 is very important because there has not been a documented viral infection that has had this level of impact on financial markets [3]. The rapid and unprecedented spread of the COVID-19 outbreak has sent the market extremely volatile, leaving investors with heavy losses in a short period [4]

The traditional financial theory focuses on the rational and efficient behavior of investors in the capital market. Meanwhile, in uncertain times like today, many investors are irrational in making investment decisions. Behavioral biases and heuristics influence investors' decisions in the stock market. They are interconnected and work simultaneously in the human brain to make decisions. The representativeness heuristic, anchor heuristic, overconfidence bias, and disposition effects follow dual-process and prospect theories [12]. The heuristic follows the logical and emotional aspects of human thought and concludes the different available alternatives. The outlook theory covers the divestiture effect and shows the tendency of investors to sell shares to avoid losses.

It is necessary to understand the psychological factors that influence individual investors to invest during this Covid-19 pandemic. Researchers believe that the Covid-19 pandemic can provide a unique opportunity to understand how individual investors behave in investing. Currently, there is minimal research to investigate how COVID-19 affects financial markets, especially in developing countries. This study aims to close the gap in previous research on investor behavior, especially on the Indonesia Stock Exchange, by considering the influence of herding behavior, overconfidence bias, and representative bias on individual investors' decision-making during the Covid-19 pandemic. Based on the information above, we want to investigate how the behavior of individual investors on the Indonesia Stock Exchange affects decision-making in investing in stocks during the Covid-19 pandemic, especially by considering herding behavior, overconfidence bias, representative bias towards investment decision making.

1.1 Corona Virus Disease (Covid-19)

Covid-19 attracted worldwide attention in January 2020. The rapid spread of the virus and the increasing number of 4,444 confirmed cases prompted the Chinese government to respond quickly. On January 23, 2020, the lockdown of Wuhan shocked the world, which later proved to be a very effective political intervention by the Chinese government. A week later, WHO declared the outbreak in China as a Public Health Emergency of International Concern (ESPII). At that time, the total number of 4,444 confirmed cases was 7,711, and there were only 83 cases in 18 countries outside of China. On March 11, 2020, the World Health Organization (WHO) officially announced the coronavirus Covid-19 outbreak as a 44,441 global pandemic. As of March 27, 2020, the number of confirmed cases exceeded 500,000 and continues to rise [13]. More than 170 countries have been affected, of which the United States has the majority of confirmed cases. The epidemic has had a significant and noticeable impact on the economy.

1.2 Investment Decision Making

According to Bodie et al. [14], Investment is a kind of agreement produced in the present, especially money or other resources, to obtain benefits in the future. Therefore, investment decisions are decisions or policies taken or taken by investors to invest their funds in one or more assets to obtain the maximum return on investment in the future [14]. Investment is a commitment to many funds carried out at this time to obtain several benefits in the future [15]. Investing is an activity that delays consumption for a while to gain profits in the future [16]. The selling pressure can first drive down the stock price and then generate higher returns. Conversely, if shareholders lose money, they can only decide to sell when the expected price occurs. In this case, prices may increase initially, leading to lower returns later on. [17] provides some insight into the preferred stocks that individual investors want to buy. As mentioned above, sales decisions mainly prioritize winning actions; purchase decisions are related to the previous winning or losing behaviors and pointed out that purchase decisions may result from the attention effect. Every investor in investment activities has a different plan but with the same goal of making a profit. In investing, there are conditions of uncertainty. As investors, we must understand investing in order to make the right investment decisions to achieve profitability. Investment decisions are influenced by investors' experience and rational and irrational behaviors. Rational decision-making is affected by information, and psychological factors affect investment.

1.3 Herding Behavior

Herding behavior is an action taken by investors by imitating what other people do [18]. Herding behavior occurs when investors in the same market ignore their personal information and act according to the behavior of other investors and incur losses [19][20][21]. Herding behavior can influence investment decision-making on the Indonesia Stock Exchange [22]. Several studies have shown herding behavior significantly affect investment decision making [23][24][25][26].

H1: Herding Behavior has a significant influence on Investment Decision Making

1.4 Overconfidence Bias

Overconfidence can be explained as the ability of a person to overestimate their knowledge and skills to predict the future and make decisions. Overconfident investors overestimate the information they have and think they are better than ordinary people [17]. They

underestimated the knowledge of others and tried to decide by obtaining more information for themselves. Several studies have shown that overconfidence significantly affect investment decision making [27][28][29][24][30][31].

H2: Overconfidence Bias has a significant influence on investment decision-making.

1.5 Representative Bias

Representative bias is decision-making based on stereotypical thinking or analogy. It will influence investors in making investment decisions by looking at the company's past performance, the phenomenon of the company, the type of management, and its popularity to generate more profits. Investors believe that their decisions and previous primarily correct experiences will make them make the right investment decisions in the future [32]. Several studies have shown representative bias significantly affect investment decision making [28][33][34][35][31].

H3: Representative Bias has a significant influence on investment decision-making.

H4: There is a significant effect of Herding Behavior, Overconfidence Bias, and Representative Bias on investment decision making.

2 Method

This study uses SPSS 23 statistical tools for multiple regression analysis. Data were obtained by using non-probability sampling technique or not randomly. The data collection method used is purposive sampling, and the data collection technology is an online questionnaire (Google Forms); the distribution of this questionnaire is shared on various social media platforms to obtain potential interviewees more quickly. The population is the individual stock investors in Indonesia who have ever made Investment during the Covid-19 Pandemic. From July 29th 2021, to August 29th, 2021, 250 people completed the questionnaire, but only 210 were selected.

2.1 Questionnaire Design and Measure

The use of questionnaires in this research aims to determine the respondent's responses to phenomena related to the research variables. This questionnaire contains three parts. The first part contains data surveyed (age, gender, occupation, educational history). The second part contains statements about the knowledge of the respondent over the Indonesia Stock Exchange. The third section has questions related to the research variables. The representative bias indicators [36][37], Herding behavior [20][23], Overconfidence bias [37][38], Investment decision making [24][39]. The sample for this study amounts to 210 people, including people of different ages, occupations, and social statuses. All statements use a Likert scale with five response options (1 means "totally disagree," and five means "totally agree"). Respondents took 4-5 minutes to complete this questionnaire.

3 Result

3.1 Respondent Profile

Table 1 shows that from 210 respondents are investor in Indonesia Stock Exchange during this Covid-19 Pandemic, there were 84 (40%) female and 126 (60%) male. The age of the

respondents are 118 (56.2%) < 30 years old ; 52 (24.8%) 31- 40 years old ; 40 (19%) > 41 years old. And 95 (45.2%) respondents had a high school education, 24 (11.5%) a diploma degree, 81 (38.5%) a bachelor's degree, 10 (4.8%) a master's degree. And 68 (32.4%) people work as private employees; 63 (30%) people work as entrepreneur; 43 (20.5%) people are students; and 36 (17.1%) work as officer.

Table 1. Respondents Profile

Feature	Category	Frequency	%
Sex	Male	84	40
	Female	126	60
Age	< 30	118	56.2
	31 - 40	52	24.8
	>41	40	19
Education	High school	95	45.2
	Diploma	24	11.5
	Bachelor	81	38.5
	Master Degree	10	4.8
Job	Private Employees	68	32.4
	Entrepreneur	63	30
	Students	43	20.5
	Officer	36	17.1

3.2 Classic Assumption Test Result

3.2.1 Normality Test Result

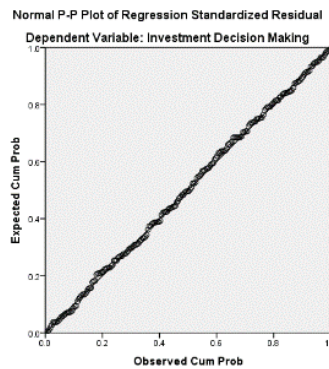


Fig 1. P-P Plot

From Fig. 1, it can be seen that the points are approaching or in the direction of the diagonal line. Based on the data above, it can be concluded that the data is normally distributed

3.2.2 Heteroscedasticity Test Results

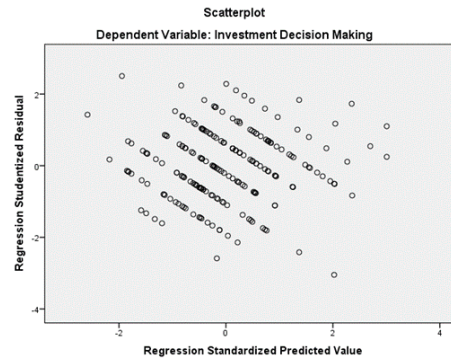


Fig 2. Scatter Plot

Based on Fig. 2, it can be seen that the points spread with an indeterminate pattern and are above and below the number 0 on the Y axis, so it can be concluded that there is no variance and residual inequality in an observation.

3.2.3 Multicollinearity Test Results

Table 2. Multicollinearity Test Results

Model	Collinearity Statistics	
	Tolerance	VIF
1 (Constant)		
Herding Behavior	.991	1.009
Overconfidence Bias	.985	1.015
Representative Bias	.977	1.024

a. Dependent variable: Investment Decision Making

Based on table 2, it can be seen that the tolerance value for the Herding variable (X1) is 0.985 > 0.1, the Overconfidence variable (X2) is 0.991 > 0.1 and the Representative Bias variable is 0.977 > 0.1, which means that there is no multicollinearity. Meanwhile, the value of VIF (Variance Inflation Factor) for the Herding variable (X1) is 1.015 < 10, the overconfidence variable (X2) is 1.009 < 10, the representative bias variable (X3) is 1.024 < 10, which means that there is no multicollinearity. So based on the table above, it can be concluded that there is no multicollinearity between variables.

3.3 T-Test

Table 3. T-Test Result

Model	Coefficients ^a		t	Sig.	Supported ?	
	Unstandardized Coefficients					Standardized Coefficients
	B	Std. Error				Beta
1 (Constant)	3.263	1.495		2.182	.030	
Herding Behavior	.059	.051	.059	1.158	.248	Not Supported

Coefficients ^a						
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Supported ?
	B	Std. Error	Beta			
Overconfidence Bias	.374	.043	.442	8.720	.000	Supported
Representative Bias	.410	.044	.472	9.275	.000	Supported

a. Dependent variable, Investment Decision Making

Based on the table 3, the value of T-calculate in variable Herding Behavior (X1) $1,158 < 1,165$ so that it can be concluded hypothesis 1 rejected. While in variable Overconfidence (X2), the T-calculated value of $8.72 > 1,165$ so that hypothesis 2 can be concluded accepted. In variable Representative Bias (X3), the T-count value of $9,275 > 1,165$ so that hypothesis 3 can be concluded accepted.

3.4 F Test

Table 4. F Test Result

ANOVA ^a						
Model	Sum of Squares	df	Mean Square	F	Sig.	
1 Regression	272.171	3	90.724	63.085	.000 ^b	
Residual	296.253	206	1.438			
Total	568.424	209				

a. Dependent Variable: Investment Decision Making
b. Predictors: (Constant), Representative Bias, Overconfidence, Herding

Based on the table 4, it is known that the F-count ($63.085 > F\text{-Table } (3.30)$) and Significant ($0.000 < 0.05$). So it can be concluded that herding behavior, overconfidence bias, and representative bias have a simultaneous and significant influence on Investment Decision Making.

Table 5. R Square Result

Model Summary ^b				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.692 ^a	.479	.471	1.19922

a. Predictors: (Constant), Representative Bias, Overconfidence, Herding
b. Dependent Variable: Investment Decision Making

Based on the table 5, the value of R Square from the coefficient of determination of herding behavior (X1), overconfidence bias (X2), representative bias (X3), and investment decision making (Y) is 0.479. So it can be concluded that the investment decision-making variable is influenced by herding behavior, overconfidence bias, and representative bias variables by 47.9%, while other variables influence the remaining 52.1%.

4 Discussion

This research aims to show the level of investment decision-making in individual investors and examine the factors that influence the behavior of individual investors in investing in the Indonesia Stock Exchange. The results showed that herding behavior had no significant effect on investment decision-making. These results suggest that individual investors are less likely to follow the behavior of other investors themselves in making decisions in investing. The results of this study are in line with the findings [40][29]. While in the results of testing the influence of overconfidence bias on investment decision-making shows there is a significant influence. These results show that investors have high confidence in making investment decisions, especially in uncertain times such as today. The results of this study are in line with the findings [12][41][42][43]. The results of representative bias influence testing showed a significant influence. These results show that investors make decisions based on their experience without further analysis, and investors are likely to invest in companies that perform well. The results of this study are in line with the findings [29][31][34].

5 Conclusion dan Implication

This research aims to determine how the influence of individual investor behavior on the Indonesia Stock Exchange influences decision-making in investing stocks in the Covid-19 pandemic through herding behavior, bias overconfidence, and representative bias. In this study, questionnaires were used to determine the factors that influence investor behavior in investing in stocks. A total of 250 questionnaires have been disseminated, but only 210 questionnaires are valid for analysis. The results of this study showed that herding behavior had no significant effect on investment decision-making. In contrast, overconfidence bias and representative bias significantly affect the investment decision-making of individual investors on the Indonesia Stock Exchange.

5.1 Theoretical Implication

By examining the effect of herding behavior, overconfidence bias, and representative bias, to help investors make investment decisions, this study has shown the pattern of influence of each of these variables based on the community's perspective during a pandemic. This research contributes to behavioral finance theory, which can be a source of reference in developing countries as it has revealed the impact of COVID-19 on the emerging stock market like Indonesia. This research is useful for investors who want to increase their knowledge of psychological factors on investors' investment decisions. This study can be a source of reference and inspire other researchers to examine how individual investors behave by considering the same variables or other variables in the pandemic covid-19.

5.2 Practical Implication

The results of this research test contribute to the implementation of investors' activities during the pandemic. This research is useful for investors to understand the impact of their decision-making on the stock market to take appropriate steps to prevent irrational decision-making. First, by not having herding behavior, investors can make their own choices in investing and not be affected by the behavior of other investors. Second, investors must believe in their abilities and be rational in investing. Third, investors must be careful in

looking at market conditions before determining the choice to invest. Fourth, investors must first analyze the company to be selected in investing by considering the company's experience and performance to minimize the losses that may be obtained.

6 Limitation and Future Research

This research has limitations that can be considered for future research materials. First, this research is cross-sectional, where the data in the study is only observed once and simultaneously (during the pandemic situation in Indonesia). So that further research is recommended to use longitudinal research so that research results can be generalized. Second, this study is only located in a region (Indonesia Stock Exchange). Future research can be done in different places. The same model can compare other developing markets to find similarities and differences in research studies' findings. Third, this study does not cover all the behavioral biases, heuristics, and market anomalies [40]. Future research attempts to use other variables related to investor behavior such as available bias, conservatism, economic expectations, disposition effect [33][41]. Fourth, further research may consider using mediation variables such as market anomalies, gender, income, and financial literacy to obtain detailed results. [41][44]. Fifth, future research can be considered the effects of demographic characteristics such as age, level of education, experience, gender in investors in determining investment decisions [45].

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