
INVESTMENT DECISION-MAKING BEHAVIOR IN THE ERA OF COVID-19: AN ANALYSIS ON THE BASIS OF MENTAL ACCOUNTING, LOSS AVERSION BIAS, AND RISK TOLERANCE

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Abstract

The era of Covid-19 is a condition that illustrates the uncertainty of national and world economic conditions, which encourages individuals to be able to manage their economy and finances. Therefore, this research aims to explain whether mental accounting, loss aversion bias, as well as risk tolerance can affect investment decision-making in the Covid-19 situation from the point of view of behavioral finance theory. The results of research using SEM PLS analysis show that Mental Accounting, Loss Aversion Bias, as well as Risk Tolerance, have an effect on investment decision-making. Based on behavioral finance theory, the results of the study illustrate that in the Covid 19 pandemic situation, individuals will generally respond to information received as a basis for making decisions by paying attention to the level of risk and optimizing the rate of return from the investment made.

Keywords: Mental Accounting, Loss Aversion Bias, Risk Tolerance

1. Introduction

Uncertain economic conditions, which cause many people to be more careful in investing, are one of the impacts of the Covid 19 situation. The current investment phenomenon has spread to various parts of the world, including Indonesia. In this case, according to the records of the Investment Coordinating Board (BKPM), it shows that the amount of

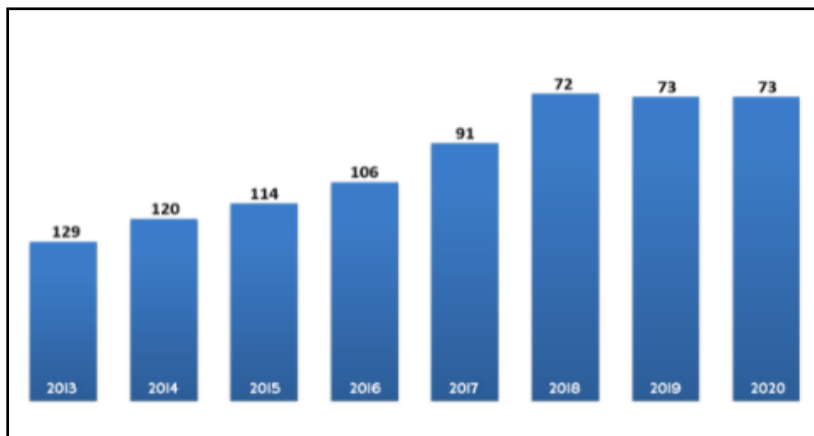
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investment in Indonesia tends to increase from year to year, as shown in the following graphic.:

Graphic 1. Investment Trend 2013-2020 Period



Sources: <https://www.investindonesia.go.id>

The COVID-19 pandemic can be a serious threat that can affect economic stability as a result of restrictions that have an impact on decreasing economic value (Feriyyana, Ida et al, 2020). Investment decisions involve the future and contain doubts and risks. However, an investor may involve psychological factors in their investment. Nahartyo & Utami (2016), stated that when someone makes a decision, sometimes it is often irrational and makes wrong estimates based on several reasons. Therefore, this study focuses on aspects of individual financial behavior, which consists of mental accounting, loss aversion bias, and risk tolerance are considered to have an influence on investment decision-making.

Mental accounting is a cognitive process that is reflected in the attitude to evaluate investments by sorting out each expenditure and income into certain items (Nofsinger, 2005). Investors with mental accounting when making investment decisions will consider the costs and benefits of the decisions taken to maximize returns and minimize risk, so they feel safe because they can avoid big risks (Zahera and Bansal, 2018). Research related to mental accounting on investment decisions, including research by Abdani & Nurdin (2019) where the research results show mental accounting affects investment decision-making. This is in line with the research of Sumtoro & Anastasia (2015), Santi, et al (2019), Anggini, Novia Dwi, et al (2020), which show that mental accounting is a consideration for investors in investing and a significant effect on investment decisions. Loss aversion bias is a psychological tendency of investors who think that losses appear to be greater than gains with a relatively balanced point (Gachter, et al, 2007: 2). Loss aversion bias is defined as a trend to hold back more losses than gain profits (Gupta and Ahmed, 2016), is also a biased behavior that cannot be tolerated because it is contrary to investor expectations such as increased risk and low returns (Areiqat et al., 2019). Loss aversion bias refers to the fact that individuals tend to be more sensitive to losses than gains (Haigh and List,

2005:525). The results of the study indicate that loss aversion bias has an influence on individual investment decisions in a positive direction (Luu, 2014; Khan et al., 2017). Risk tolerance is an individual's acceptable ability to take investment risks. A person's risk tolerance can be influenced by various factors, including factors such as age level, gender type, level of income and level of wealth, experience possessed, and income from investment. A high-risk tolerance ability; encourages someone to tend to be more courageous in making decisions than someone who has a low-risk tolerance. (Budiarto, et al., 2017). This is following research by Wulandari (2104), Pujiyanto (2013), Johnson (2008), and Bailey (2005), which state that risk tolerance affects investment decision-making.

2. Literature Review

2.1. Behavioral finance theory

Behavioral financial theory explains how a person responds to information received as a basis for making decisions by considering risks and optimal returns. Nofsinger (2001) states that behavioral financial theory is a theory that studies how a person makes investments related to finance which is influenced by psychological factors. Psychological factors consist of two, namely cognitive biases and emotional biases. Cognitive biases is an error in thinking when individuals collect, process, and interpret information. This error can arise because of inaccurate information or a hurry in choosing a solution so it has an impact on errors in decision-making. While emotional bias is a distortion of decision-making due to emotional factors (Pompian, 2012). Investment decisions that are dominated by psychological factors (cognitive and emotional) can cause investors to act irrationally (Baker, 2017).

2.2. Mental Accounting

Nagy & Obenberger (1994) stated that two factors influence investment decision-making, namely economic factors and behavioral finance factors. One of the representations of behavior finance is mental accounting. Thaler (1985) defines mental accounting as human cognitive behavior that is used to categorize and evaluate situations when there are two or more related possible outcomes, in particular how to reconcile these possible outcomes. There are three components of mental accounting, namely: (1) mental budget, which is the behavior of individuals to manage their expenses based on predetermined categories which include goals, sources, and time (Thaler, 1985); (2) self-control, namely the behavior of individuals to be able to control their emotions or desires (DeLisi & Berg, 2006); (3) time horizon, namely individual behavior that focuses on short-term orientation compared to long-term orientation (Loewenstein & Thaler, 1989). Theoretically, cognitive psychology in the form of mental accounting can be associated with various things in decision-making, household activities, and investment, as the results of research conducted by Abdani & Nurdin (2019) show that mental accounting affects a manager's investment decisions in investment machines. production. This is the same as the results of Sumtoro & Anastasia's research (2015), which explains that mental accounting is a

consideration for investors in making investments because investors tend to consider each asset owned separately rather than combining it with their investment. Other studies including by Santi, et al. (2019) explain that mental accounting has a significant influence on making stock investment decisions.

2.3. Loss Aversion Bias

Loss aversion holds that a person may tend to be more sensitive to something that is harmful than beneficial. A person can be called to be loss averse when his prudence focuses more on things that are detrimental than profitable (Haigh and List, 2005:525). The loss aversion phenomenon was explained by Kahneman and Tversky (1991:1041) through an experiment conducted, in which the group was given a beautiful cup and asked to write down the price they were willing to pay for the cup (1). While the next group saw 6 mugs and was asked to decide on the appropriate price for the mugs (2). The experimental results obtained showed that Group 1 is much larger than Group 2. The results of the experiment explained that when someone has a mug, even if it is used briefly, the mug is more valued than someone who does not have a mug. In other words, the frustration of losing something you once had outweighs the joy of getting it. This phenomenon is referred to as loss aversion.

2.4. Risk Tolerance

Risk tolerance is another predictor in making investment decisions. Abdul Halim (2005:42) argues, regarding investor preference for risk, there are three groups of investors, namely risk seekers, risk-neutral, and risk-averse. The difference in the level of risk tolerance of investors can affect investment decision-making. Some investors dare to take risks by ignoring huge losses and even risking all of their wealth to get a large rate of return. But there are also investors who are more conservative by providing a very small risk tolerance to obtain a relatively small rate of return. Al-Ajmi (2008), states that there is a difference in risk tolerance given by investors to their investment decisions caused by various factors, namely age level, gender, income level, and level of wealth, as well as experience and income level from investment. The level of risk tolerance possessed by stock investors will be different from investors who invest in deposits. This is because a stock is an investment instrument that has the characteristics of high risk and high return, whereas stock investment has high risk but the profit received is also high. While time deposits are investment instruments that have low-risk characteristics and the profits received are also low and tend to be fixed. Research conducted by Kinerson & Bailey (2005) and Johnson (2008) shows that the level of risk tolerance has a significant effect on investment decision-making. The research results obtained prove that investors who have a high level of risk tolerance will tend to choose to invest in stocks. Investors who have a low level of risk tolerance will tend to invest in deposits. This is in accordance with the results of research conducted by Pujiyanto, N., et al. (2013) where risk tolerance is the main influence in influencing investment decisions. Research by Budiarto, A. & Susanti (2017) shows that risk tolerance has an influence on investment decision-making from

investors, this proves that capital market players participating in this study have a high level of risk tolerance.

Based on the explanation that has been described, the research hypothesis consists of:

H₁: Mental accounting influences individual investment decisions

H₂: Loss aversion bias has an influence on individual investment decisions

H₃: Risk tolerance has an influence on individual investment decisions

3. Research Methodology

The research variables used consisted of exogenous mental accounting variables, loss aversion bias, and risk tolerance. The endogenous variable is investment decisions. The following is an explanation of each variable:

Exogenous Variable

Mental accounting is a series of cognitive operations used by individuals or households in managing, assessing, and maintaining their financial activities. Mental accounting is based on decision-making theory, where decisions are based on considerations or logic that is made in other words choosing the best of several alternatives. This can be seen from the decision-making of the choices made (Thaler & Shefrin, 1988). The indicators used in measuring mental accounting consist of 9 indicators such as those used by Loewenstein & Thaler (1989), Nofsinger, (2005) which contain aspects of the mental budget, self-control, and time horizon.

Loss aversion bias holds that a person tends to be more sensitive to something that is a loss than something that is profitable. A person can be said to be a loss averse if his caution is focused on something that is detrimental rather than something that is profitable (Haigh and List, 2005:525). The indicators used in measuring loss aversion bias consist of 4 indicators such as those used by Aini and Luthfi (2019), namely being able to estimate losses, prioritizing the principle of prudence, seeking information about the performance of the type of investment to be chosen, and being able to analyze the benefits and losses.

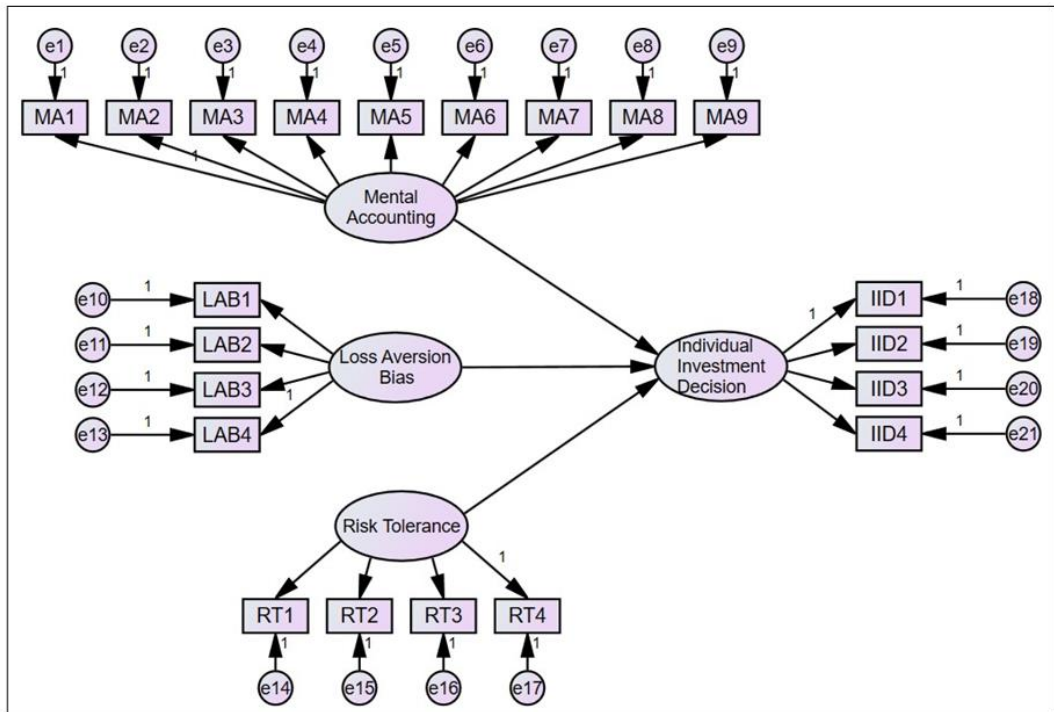
Risk tolerance is another predictor in making investment decisions. Abdul Halim (2005:42) argues that investors' preferences for risk are divided into three groups of investors, namely risk seekers, risk-neutral, and risk-averse.

Endogenous Variables

Investment decisions are the process of selecting the most profitable options that are influenced by interrelated conditions in the investment determination process (Asandimitra, Aji, & Kautsar, 2019). There are 4 decision-making indicators used to measure investment decision-making variables as used by Angga Budiarto, and Susanti (2017), namely decision-making based on investment returns, risk, period, and understanding of investment products.

This study uses analytical techniques with structural models as follows:

Figure 1 Research Model Structure



Source: Author, 2022

from the picture, mathematically the model in this study can be written as follows:

$$IID = \rho MA + \rho LAB + \rho RT + \varepsilon_1 \tag{1}$$

Where:

- IID = Individual Investment Decision
- MA = Mental Accounting
- LAB = Loss Aversion Bias
- RT = Risk Tolerance

because the sample used in the study is a small sample, the data analysis technique that can be used is PLS, as explained by Latan & Ghazali (2016) that PLS is suitable for research with small samples. The research sample consisted of 52 lecturers, students, and educational staff at STIE Ekuitas-Bandung Indonesia.

5. Results

WRAP-PLS SEM version 8.0 is used to analyze how mental accounting, loss aversion bias, and risk tolerance affect one's investment decision-making in the COVID-19 situation. The results of the goodness of fit test as shown in Table 1 show that the model proposed in this study shows that the model is fit. it can be concluded that the predictive power of the model has high predictive power (Latan & Ghazali, 2016), this is indicated by the goodness of fit value of 0.366

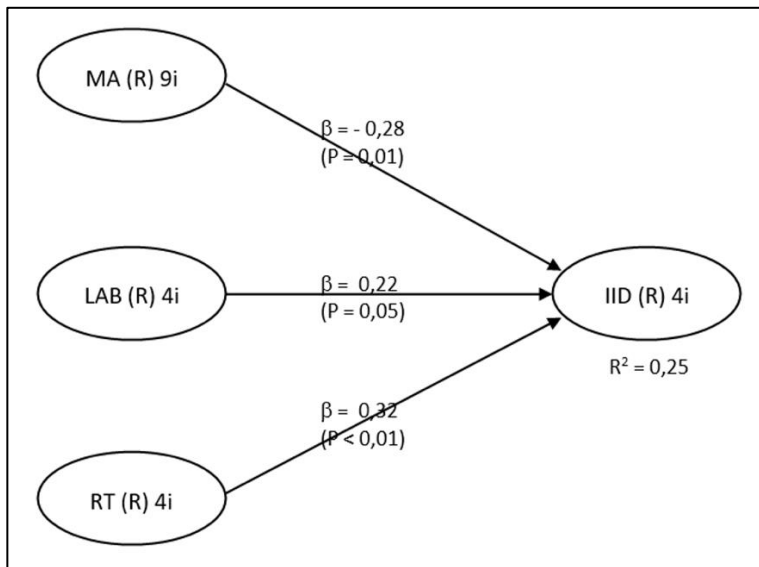
Table Research Model Test Results

<i>The goodness of Fit Test</i>	Results	Criteria	Meaning
<i>Average Path Coefficient (APC)</i>	0.272, P=0.009	≤ 0.05	Fit
<i>Average R-Square (ARS)</i>	0.249, P=0.014	≤ 0.05	Fit
<i>Average Adjusted R-Square (AARS)</i>	0.202, P=0.031	≤ 0.05	Fit
<i>Average Block VIF (AVIF)</i>	1.020	≤ 3.3	Fit
<i>Average Full Collinearity VIF(AFVIF)</i>	1.187	≤ 3.3	Fit
<i>Goodness Tenenhaus (GoF)</i>	0.366	Small ≥ 0.1, Average ≥ 0.25, Large ≥ 0.36	Large

Source of: Warps PLS 8.0 results, 2022

Hypothesis testing can be done after the research model is declared “fit”. In the following, the results of hypothesis testing using Warp-PLS version 8.0 are presented on various relationships between variables as shown in the following figure 2 and table 2:

Figure 2 Path Model Estimate Results Based on Warps PLS



(Source: Warps PLS 8.0 output, 2022)

Table 2 Hypothesis Testing Result

Variable	Estimation	P-Value	R ²
MA → IID	-0.282	0.048***	0.249
LAB → IID	0.216	0.006***	
RT → IID	0.317	0.014***	

The table shows that mental accounting, loss aversion bias, and risk tolerance partially influence investment decisions significantly, at a significance level of 5% and 10%. This finding strengthens the opinion of Thaler (1985) and Loewenstein & Thaler (1989) who explain that mental accounting is a human cognitive behavior that is used to categorize and evaluate situations when there are several possible outcomes, especially how to combine the several possible outcomes. In addition, the results of hypothesis testing also show that mental accounting has a negative effect on investment decision-making. The results of this study indicate that the behavior of respondents from the mental budget aspect tends to consider the investment as an effort to manage income by considering the aspects of purpose, source, and time. From the aspect of self-control, it shows that the respondent's behavior is related to emotional control or the desire to invest. And from the time horizon aspect, it shows the behavior of respondents in investing which is based on a short-term or long-term orientation. In addition, Table 2 also shows the simultaneous effect of exogenous variables consisting of mental accounting, loss aversion bias, and risk tolerance on investment decision endogenous variables of 24.9. Thus 75.1% is influenced by other variables.

6. Discussion, and Conclusions

The results obtained from this study provide a clear explanation of behavioral finance theory from the aspect of making investment decisions during the COVID-19 pandemic. Important findings from the results of research related to behavioral finance theory conclude that mental accounting, loss aversion bias, and risk tolerance are aspects that can influence individual investment decision making which generally invest in precious metals/gold during the Covid-19 pandemic which can trigger economic volatility as an illustration of the uncertainty of economic conditions, and impact on the lives of individuals. In other words, they don't want to take big risks in an uncertain situation. The findings from this study support the theory of financial behavior which explains how a person responds to information received as a basis for making decisions by considering the optimal level of risk and return.

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