Framing in Decision Making Investment at Indonesia Stock Exchange

M. F. Arrozi Adhikara[1], Abdurrahman[1], Sudarwan[1] and Erman Munzir[1]

[1]*Faculty of Economics and Business, Esa Unggul University, Jakarta 11510,Indonesia*

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Abstract: Investment decision making is rational because investors want the prospect of return with risk preferences through initial confidence determination by framing. The purpose of this study is to obtain empirical evidence of investor's mental accounting behavior in investment decisions with the use of framing in the Indonesia Stock Exchange (IDX). The research design is descriptive qualitative research. The information given is the investor who invests in the Indonesia Stock Exchange. The unit of analysis is individual investors and as members of the Indonesian Securities Investor Society (MISI). The units are analyzedindividual investors. Analyze data using content analysis. The results show investor behavior in investment allocation chooses neutral risk preference for utility maximization if described with a negative frame.Conversely, investor behavior will be different if done with a positive frame.This study provides new theoretical evidence into the behavior of investor decision making with a positive frame in Indonesia. The findings of this research will be useful for public go companies in providing publication and dissemination of information with good news signals in the Indonesian capital market.

1 INTRODUCTION

The capital market is defined as a market for various long-term financial instruments or securities that can be traded, either in the form of debt or equity, whether issued by the government, public authorities, or private companies (Hartono, 2015). As the tool of financial sector outside banking, capital market has some attractiveness for investors. *Firstly,* thecapital market is expected to be an alternative way to obtain rapid and inexpensive funds from investors and creditors through investments in financial assets (such as stocks, bonds, warrants, options and certificates).*Secondly,*the capital market allows investors to obtain various investment options that match their risk preferences. Therefore, investors can diversify their investments and arrange a portfolio based on the risk and the expected return. When the capital market is efficient, there will be a positive relationship between risk and return (East, 1993; Arrozi*et al.*, 2014; Arrozi,2016a; Arrozi, 2016b).*Thirdly,* the attractiveness of investing in financial assets is emphasized on the liquidity, which means the securities can be traded immediately and investors can reposition their securities at any time. For example, an investor invests their securities in the field of food and beverage today. On the next day, he can replace the securities with investment in banking or tobacco industry. He also can reposition his securities in any different industries on the day after tomorrow, next week, or next month.This shows that the capital marketprovides more opportunities for investors to diversify into the most feasible investment (Arrozi, 2016b; Hartono, 2015; Scott, 2015).

Indonesian capital market is included as an emerging market, which is categorizedas a weak capital market (Prabowo, 2000; Arrozi, 2010; Arrozi *et al.,* 2014;Arrozi, 2016a). The characteristics of this market are: *firstly*, investors tend to react naively and unsophisticatedly to information. Investors have limited ability to interpret, analyze, and interpret the information they receive. Therefore, investors tend to use rumours, speculative, and mass behaviour. Mass behaviour will make investors lose their rationalities because the determination of stock prices is a manifestation of the psychological factors and emotions of investors (Arrozi, 2016a). As a result, investors often make the wrong decision. The securities are assessedinappropriately,andthe market often seems to be fooled by the information. *Secondly*, the securities in the capital market belong to the risky

assets, which meansthe financial assets that hasa risk and the expected result is uncertain. Investors can only estimate how much profit is expected from their investments, and how likely the actual outcome will deviate from the expected results. As a result, these assets generally give a higher return whether the return is positive or negative. Therefore, it is reasonable for investors to take protection from the risk of loss.*Thirdly*, the role of financial statements as a support tool for investment decision making has not been optimally used,and the application is still relatively small in Indonesian capital market (Prabowo, 2000; Arrozi, 2016b). This situation occurs because investors behave as *stock fryers* in profit taking through technical analysis. It also shows that investors tend to like short-term investments, speculative behavior, and doing active strategy by paying attention to macro factors such as issues, rumors, politics, conspiracy, insider trading, regulation, market anomalies, and others. As a result, financial statements are not utilized maximally. *Fourthly,* there is a shifting when investors are motivated in looking for return (Paimpo and Didi, 2000). This shifting is caused by the experience of investing based on rumorswhich causing loss.Meanwhile, investors can study all the company's fundamental aspects using fundamental analysis. Such as corporate performance, financial statements, future issuer prospects, corporate actions ranging from business expansion plans, particularly dividend payout plans (Arrozi*et al.*, 2014; JSX team, 2006).

Based on the explanation above, it is clear that the investment process depends on mass psychology and tends to use rumours to act speculatively. The indication ofthis condition is shown by the unsophisticated and naive investors (Prabowo, 2000; Hartono, 2015; Arrozi, 2016a). Investors are less likely to have an understanding of financial knowledge about corporate information disclosure signals because of their limited cognitive ability to interpret the information. As a result, it will cause some negative consequences. *Firstly*, it misleadsinvestors to revise the initial belief about the expected values that have been determined by the interpretation of accounting information.*Secondly,* it gives investor behavior to become impatience, loss control, and more impulsive attitude because it has misinterpreted perceptions on the interpreted object. Therefore, the investment decisions will experience many high risks.*Thirdly*, there is a probability of making a mistake in predicting the subjectivity of return and risk. *Fourthly,*it misleads investors in making

rational decisions because the relevant securities are assessed inappropriately. The investment decision-making process in the capital market for investors is sophisticated and rational, which means investors will choose the investment opportunity that provides the highest utility maximization and welfare (Scott, 2015). Utility maximization indicates the level of expected return subjectivity based on the investment opportunity in an individual stock or stock portfolio. Then, it also depends on the cognitive capacity of each securities analyst according to investor preference. The sophisticated investors must have the ability to think, consider, imagine, and have the skills in processing information, applying investment knowledge, and making changes in investment preferences. This process is a cognitive process which is done by securities analysts through memory, attention, perception, action, problem-solving, mental imagery, human information processing, and strong belief in the investment.

The application of explanation above is necessary because it is important for investors to allocate funds into each of the selected securities in their investments. The objective is to estimate the return and risk of each investment securities. Each security is compared with the return and risk value, then the value of return and risk are sorted from the highest to the lowest (Markowitz, 1952; Nofsinger, 2005). This method is used by securities analysts to establish initial beliefs of selected securities in making investment portfolios based on return and risk preferences. This process is called mental accounting. The implementation of mental accountinguses anchoring or narrow framing, which is the disclosure of the fact in investment about the return(gain) and risk (losses) (Kahneman and Tversky, 1981; Thaler, 1985; Barberis and Huang, 2001). This indicates the investor preference onreturn and risk of the securities.

Barberis and Huang (2001) considered the form of mental accounting, which means investors pay attention about return and risk in their individual stocks. Moreover, investors are also concerned about return and risk of their portfolios. Those investment behaviors show that investors have two possible attitudes, *firstly*, a tendency to accept the risk (risk seeker), avoid risk (risk averter), or having a neutral attitude.*Secondly,* the investors preference to receive a return in the form of capital gains, dividends, or both capital gains and dividends (Djunaidi, 1990; Nofsinger, 2005; Arrozi, 2010; Arrozi, 2016a; Arrozi, 2016b). In order to find out the behavior of securities analysts as the representation of investors in addressing the return and risk, framing is used to

explain investor preferences. Therefore, this causes an attitude for investors which tend to accept gains in a positive frame or accept losses in a negative frame, or even respond equally to both of them.

However, when the decisionmaking in the capital market is under uncertainty condition, investors usually will hold an irrational attitude because there is a possibility of investor will get an abnormal return.Some studies have found that investors often violate the assumption of rationality. This occurs because the decision framing which is adopted by the decision maker depends on the formulation of the problem, cognitive aspects, norms, habits, and characteristics of the decision maker. The adopted frame depends on the cognitive phenomenon of investors in determining and influencing their decisions (Kahneman and Tversky, 1981) which is caused by the available information and how the information is interpreted.

This research has some motivations. *Firstly*, this issue has not been studied empirically in the field of capital market. In the accounting environment, mental accounting has been applied in taxation (White et al., 1993), money markets (Harvey, 1996), and auditing (Karim et al., 1995), however, it has not been applied in the study of the capital market. Indonesian Stock Exchange (IDX) is an emerging market, which means the decision making of investment is speculative,and it is still influenced by opinion and mass psychology. Meanwhile, accounting and financial decision-making focus on the utilization, processing, and evaluation of information from financial statements, particularly in securities investment decisions. *Secondly*, mental accounting provides an alternative explanation for decision making which is beneficial under uncertainty condition. This concept determines the preferences of securities analysts in dealing with securities investment as a form of decision framing based on the preference of return or risk.It makes easier to identify investor behavior that tends to make investment decisions with framing to bear the risk or avoid the risk.*Thirdly*, the preference about investment prospect is dichotomous and confusing. The preference indicates investment risk; however, on the other hand, it implies utility maximization on return. Meanwhile, both of them have very close relevance,and they are not mutually exclusive.

This research is a replication study from Kahneman and Tversky (1981). This research will provide empirical evidence about investment decision making in Indonesia can be which explained by the theory of prospect. This research does not propose any hypothesis because it is

exploratory research. Moreover, this research is expected to give important contribution inbehavioral accounting and behavioral finance whereas the decision making and information processing are the main activity factors.

2 LITERATURE REVIEW

The concept of mental accounting refers to the way investors frame their financial decisions and evaluate their investment decisions (Thaler, 1985), and it refers to the way individuals decide current and future assets to be separate, non-transferable parts (Nofsinger, 2005). This concept provides a broad description through a cognitive process when people feel, categorize, evaluate, and engage in financial activities. Mental accounting has an individual content item that determines the different utility levels in each asset group which affects their consumption decisions and other behaviors.This concept provides descriptions through the cognitive processes in which individuals perceive, categorize, evaluate, and engage in financial activities with a form of mental accounting. The manifestations are individuals classifying expenditures in budgets (e.g. food, housing), welfare distribution in accounts (e.g. pensions, insurance), and dividing income sources into categories (eg.. regular income, winning money from the lottery, savings, investment). The accounting process of mental accounting provides important goals, such as facilitating decisions that use our funds, and the function of self-control through spending rules into the placement of funds in the threshold of accounts.

The mental accounting of investor pays attention to gains and losses (Barberis and Huang, 2001). The implementation of mental accounting is by using narrow framing, which means investors frame their financial decisions by expressing their attention to gains/returns or losses/risks and evaluating their investment decisions. Therefore, investors frame a transaction subjectively in their minds to determine the utility that they accept.This reflects the non-consumption resources of utility when the experience of nature exceeds narrow framed gains and losses. Furthermore, investors consider two forms of mental accounting. Firstly, investors are concerned about gains and losses in the value of individual stocks (individual stock accounting); secondly, investors care about gains and losses in the value of the entire portfolio and shows that the mental accounting affects the price of assets in a significant way.The investment behavior shows that

investors have two possible attitudes, *firstly*, a risk seeker preference, risk averter, or neutral attitude. *Secondly*, abehavior to receive a return in the form of capital gains, dividends, or both of capital gains and dividends (Djunaidi, 1990).Framing is used to explain the preferences of securities analysts to show the behavior of securities analysts as the representation of investorsin addressing the return and risk. This causes an attitude that tends to accept gains/returns in a positive frame and accept losses/risk in a negative frame, or respond equally to both attitudes.

The assumption model of investor preferences (Markowitz, 1952) is based on expected returns and risk from portfolios that implicitly assume investors have the same utility function. However, each investor has a different utility function (Hartono, 2015). If investor preferences on the portfolioaredifferent because investors have different utility functions, the optimal portfolio for each investor will also be different. The Markowitz model does not consider this, because the focus lies on the value of the portfolio with the smallest risk for a given expected return. However, there are some vary investor preferences. A risk-averse investor will choose according to Markowitz's model response. Meanwhile a risk seeker investor will choose a high risk with the high returns implication. The selection of portfolio is based on investor preferences is an efficient portfolio, which is still in the efficient set. The chosen portfolio depends on the function of each utility. The optimal portfolio for each investor lies at the point of intersection between the utility function of the investor and the efficient set.

Investors use some axioms in the investment decision-making process based on the expected utility model (Scott, 2015; Schoemaker, 1982). This is the underlying model of investment selection in the portfolio in the context of the mean-variance model. The expected utility model historically provides normative and descriptive models for risk-making decisions. This theory assumes that the decision maker is a rational investor. The decision makers are considered to be capable of processing information perfectly in determining the best option. The assumption of rationality also requires consistency and coherence in decisions making. The axioms of investment decision making are stated below:

a. Investors can choose some alternatives by arranging the ranking from various alternatives to make decisions.

b. Each rank of these alternatives is transitive. This means if investment A is preferred over B, and B is preferred over C, then A will be certainly preferred over C.

c. Investors will consider alternative risks they and do not pay attention into of these alternative characteristics. For example, investors will not consider whether an investment opportunity is more capital intensive or more labour-intensive.

d. Investors can determine the certainty equivalent of any uncertain investment. The certainty equivalent of investment indicates a certain value that is equivalent to the expected value of the investment.

Those axioms can be used to construct utility functions from investors as a basis for an investor's attitude model against risk. The objective is maximizing the expected utility index of income (discounted interest rate). The utility functions are used to select investments that have an element of uncertainty. Investors will choose investments based on expected returns at a maximum or high level. Investors may have different utility functions. Therefore, they may choose the different investment or equal investment opportunities. The utility function can be different between one investor and another investor. The differences in functioning investor utilities can be illustrated by indifference curves, which means investors will not feel different as long as investors are on the curve. The utility rate of investors will differ from each other at the same level of risk, but investors will prefer to choose utility rates at higher returns. Thisshows a risk preference for investors (Scott, 2015; Arrozi et al., 2014; Arrozi et al., 2016a).

The concept of mental accounting is similar to the prospect theory (Kahneman and Tversky, 1979). Mental accounting adopts many of the prospect theory structure as a value function in the analysis. The prospect theory describes how investors frame and assess a decision in uncertainty condition.First, the investor frames the option regarding potential profit and loss relative to a specific referent point. Second, investors assess the advantages or disadvantages which are related to S-shape function. This is useful as an alternative explanation in decision making. The main element of the prospect theory is the value function in the form of concave (risk averse) in the profit domain,and a convex in the loss domain, both of them measures the relative to a neutral referent point with a value of 0. Mental accounting provides basic thinking for decision-makers in designing referent points on the accounts which determine profits and losses. The decision

makers tend to separate the different types from speculation into separate accounts, and then they use the prospect theory on each account by ignoring possible interactions.

3 RESEARCH METHOD

3.1 Type of Research

This research is descriptive research which is developed from Kahneman and Tversky (1981). This study uses the methodology of the survey, which means the data is collected by using a questionnaire instrument.

3.2 Source of Data

This research uses questionnaires which are filled by respondents. Therefore, the data is the primary data. The object research is an individual of investors.

3.3 Criteria for Determination of Population, Sample, and Respondent

The population of this study is investors who invest in capital markets and members of the Indonesian Securities Investor Society (MISI). The sample includes individual investors using investment strategies.

3.4 Method of Collecting Data

Data were collected using a questionnaire survey method. The questionnaire was provided with a personal interview. The purposive sampling and snowball method are used to handle the data collected from investors.

4 RESULTS AND DISCUSSION

The data were collected through a survey with 150 sheets of questionnaires. However, only 110 questionnaires are returned from the respondents. Therefore, the response rate of the questionnaire is 73.3%. The questionnaire tabulation is shown in Table 1.

Table 1:Return Questionnaires

Information	Total
Questionnaires sent	150 copies
The questionnaires are invalid because the address is unknown	0 copies
Total questionnaires sent	150 copies
The returned questionnaires	110 copies
Percentage returns	73,3 %
A usable questionnaires	110 copies
The percentage which can be used	73,3 %

4.1 Demographics of Respondents

The analysis is based on the answers of 110 respondents. The male respondents amount to 78 people (70.9%),and female respondents amount to 32 people (29.1%). The respondents who worked

between 1 to 5 years amount to 19 people (17.3%), respondents who worked for 6 - 10 years amount to 38 people (34.5%), and respondents who worked more than 10 years amount to 53 people (48, 2%). Table 2 shows the demographic data of respondents:

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Table 2:Demographics of Respondents

Information	Total
Gender	
Male	78
Female	32
Total	110
Experience	
1 – 5 years	19
6 -10 years	38
> 10 years	53
Total	110
Education	
<Bachelor	87
>Master or post-graduate	23
Total	110

4.2 Discussion

The results of respondents answers are summarized in Table 3. This table shows a summary of the comparison between research results with Kahneman and Tversky (1981).

4.2.1 Case Analysis 1

Case 1: Imagine that the Government of Indonesia is preparing a business to eradicate highly dangerous speculators who will attack the issuers on Indonesia Stock Exchange. The speculators attempt to destroy 600 emitters. The Financial Authority Service has two choices of programs to eradicate it, each of them has the following effects:

If program A is selected, 200 issuers will be saved. (59%).

If program B is selected, the probability of 600 issuers will be savedis1/3, whereas the probability that the issuer cannotbe saved is 2/3 (41%).

This problem is shown by using positive framing, which means it emphasizeson the problem that can be saved. Based on the expected utility theory, program A and program B will have the same expected utility value (A: 100% x 200 = 200 | B: 1/3 x 600 + 2 / 3 x 0 = 200). In case 1, the positive framing indicates that many respondents choose program A compared to program B, even though the difference is not big. This shows that investors perceive an investment based on the profit-is-proportional-to-the-loss. The higher the desired return will also make the higher risk probability of the investment. Based on the positive framing, investors in Indonesian Stock Exchange shows a neutral attitude in choosing an alternative.

Table 3: The Comparison Between Research Result and Tversky dan Kahneman (TK)'s Result

Case Number	Percentage Result	
	Research Result (%)	TK's Result (%)
Case 1		
Alternative A	59	72
Alternative B	41	28
Case 2		
Alternative A	32	22
Alternative B	68	78
Case 3 – Part 1		
Alternative A	37	84
Alternative B	63	16
Case 3 – Part 2		
Alternative A	28	13
Alternative B	72	87
Case 4		
Alternative A	20	0
Alternative B	80	100
Case 5		

Alternative A	58	88
Alternative B	42	12
Case 6		
Alternative A	56	46
Alternative B	44	54

4.2.2 Case Analysis 2

Case 2: Imagine that the Government of Indonesia is preparing a business to eradicate highly dangerous speculators who will attack the issuers on Indonesia Stock Exchange. The speculators attempt to destroy 600 emitters. The Financial Authority Service has two choices of programs to eradicate it, each of them has the following effects:

If program A is selected, 400 issuers will be liquidated (32%). If program B is selected, the issuer's probability of not being liquidated is 1/3, meanwhile the probability of issuer's profit is 2/3. (68%).This problem is shown by using negative framing, which means it emphasizes the problem

4.2.3 Case Analysis 3

Case 3: Imagine that you are facing two alternative sets of decisions. Learn each alternative carefully, then choose which one you like

Decision 1. Choose one according to your preference:
A. The certain profit of Rp. 240.000, - (37%)
B.The profit probability of Rp. 1,000,000 is 25%
The profit probability Rp. 0 is 75%. (63%)
If you are asked to decide, which alternatives do you like?

Decision 2. Choose one according to your preference:
C.The certain loss of Rp. 750.000, - (28%)
D. The loss probability of Rp. 1,000,000 is 25%
    The loss probability of Rp. 0 is 25%. (72%)
If you are asked to decide, which alternatives do you like?
In this case, there is the difference between decision 1 and decision 2 in framing financial decision. Investors have the opportunity to see each type of decision case.

The decision 1 shows that the investors prefer alternative B with the big difference(36%) compared to investors who choose alternative A. The results of this study is different from Kahneman and Tversky (1981) because the positive framing is clearly different from the results of Kahneman and Tversky (1981). The investors in Indonesian Stock Exchange

that the issuerwhich is going to be liquidated. Based on the expected utility theory, program A and program B will have the same expected utility value (A: 100% x 400 = 400| B: 1/3 x 0 + 2 / 3 x 600 = 400).). In the case of negative framing, respondents chose program B compared to program A. This shows that investors are more daring to take the risk, which means that investors prefer to choose B that have 2/3 chance of liquidity instead of choosing A with a chance only 400 issuers liquidity. This proxy provides an understanding that investors preferences for investment regarding expected returns and risk are not singular,butthey have different preferences.

is neutral for choosing alternatives in positive framing.

In decision 2, many investors choose alternative D. This shows that investors act as a risk taker, which means investors prefer to choose risk alternatives than the alternative without risk. The participants can make a combination of alternative options to maximize their utility because the exposure of decisions 1 and 2 in case 3 is displayed simultaneously. The alternative combination of options can be done according to investor preferences, which are AC, AD, BC, and BD. The results show that the investor choosing combination B and D is consistent with investor preference.

4.2.4 Case Analysis 4

Case 4: Choose one of the alternatives that you like:
Alternative 1:
A and D: The profit probability of Rp. 240.000 is 25%, - andnThe loss probability is Rp. 760.000 is 75% - (20%)
Alternative 2:
B and C:The profit probability of Rp. 250.000 is 25%, - andThe loss probability at Rp.750.000 is 75% - (80%)
If you are asked to decide which alternatives do youlike?

Many investors choose alternative 2 (B and C shows). This result shows a different decision making with the case 3. It also indicates that investors may not have the ability to combine discrete information about the financial investment and financial fundamentals of the issuer to make

optimal choices in the decision making of securities investment.

This questionnaire answer shows that investors in decision-making process, especially in selecting individual securities, ranking expected returns and risk of individual securities, and compiling a portfolio of individual securities will be able to reverse 360 degrees in a securities analysis if the investors can combine facts to be analyzed when the investment is not mutually exclusive.

4.2.5 Case Analysis 5 and 6

Case 5: Imagine the situation where you intend to attend a Financial Investment seminar where the ticket price/seminar fee is Rp. 20.000. When you arrive at the seminar building, yourealize that you lost Rp. 20.000 from your wallet.

Are you still willing to spend Rp. 20,000, - to attend the Financial Investment seminar?

ANSWER: YES (58%) NO (42%)

Case 6: Imagine that you have purchased a ticket for Rp. 20,000.0 to attend Financial Investment seminar. When you enter the seminar building,you suddenly realize that the ticket is missing. Therefore, you are not allowed to enter the building.
Are you still willing to spend Rp. 20,000 to attend the Financial Investment seminar?

ANSWER: YES (56%) NO (44%)

These cases are used to perform an analysis in a situation when an action may alter the balance which is previously created by the action. This shows a change in the balance due to the result of the new decision. Case 5 and case 6 are the influence of sunk-cost effects which arise from an action that has been done before; the evaluation uses a negative referent point that appears as a failure of the last decision. That means that the investors who already have risk taker preferences will bear all the risks from investment activities and the investment planning. The investments that have been issued will be able to provide the maximum expected return or zero return. Investors will subjectively make assessment and decisions from the referent point (the value function of prospect theory). Therefore, the investor will feel as if the value of a certain amount of money in investment will be greater than the winning the similar amount of money. In a loss situation, the investor will tend to act recklessly at

risk, since further losses will result in lower subjective value than profit. The result of case 5 and case 6 indicates that a loss of money is not specifically related to the purchase of a ticket. The implications of the investor will be indifference to the fair incident.

5 CONCLUSIONS

This study provides evidenceof mental accounting investor regarding the preferences of financial investments. This evidence can be used to explain the phenomenon of investor investment decision making in the Indonesian Stock Exchange. The research result is different with Kahneman and Tversky (1981), particularly for case 2, cases 3 part 1, case 4, case 5, and case 6. They specifically indicate that investmentdecision-making cases are described by negative framing (case 2 and 4) and positive framing (case 3 part 1).This shows that investors in Indonesian Stock Exchange tend to be risk neutral in maximizing their utility. It also providesevidence that investors ten to be indifference in fair investment. Also, case 5 and case 6 indicate that Indonesian investors' decisions tend to be consistent in valuing Rp. 20,000,which means they do not considerwhether it is money or ticket.

However, this study also shows similarities with Kahneman and Tversky's research (1981). This similarity can be seen in case 3 part 2, which is the case using negative framing. This indicates that the negative framing of both Indonesian investors and U.S. investors (Kahneman and Tversky's research, 1981) are a risk taker.

5.1 Limitations and Direction for Future Research

This research concludes that the positive framing of Indonesian behavior may differ from foreigners. This condition occurs because of several factors. For example, the cultural differences that cause differences in attitude in making investment decisions. Then, the behaviorof Indonesian people in receiving information with a positive framing can affect the personality, behavior, and perceptions of a person

This study was conducted on investorswho have different investment strategies, which area speculative investment strategy, aggressive investment strategy, and core investment strategy. The results indicate a generalization of investor preference attitude to investment. The future

researchare expected to create clusters for each strategy. Therefore, there will be investor preferences in groups.

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