Changes in investors risk-taking behavior during Indonesian economic recession due to the Covid-19 in 2020

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Abstract

This research discusses changes in investor risk-taking behavior in Indonesia during the Covid-19. Investor risk-taking behavior consists of three criteria, these are return expectation, risk tolerance and risk perception. Factors that can influence investor risk-taking behavior are economic recession and investor characteristics during this pandemic. This research uses the object of investors in Indonesia. The results show that the Covid-19 causes changes in investor risk-taking behavior which includes return expectations and risk tolerance to decrease and risk perception to increase. Characteristics of Indonesian investors in general have no effect on investor risk-taking behavior because investors are members of investment communities, money markets and capital markets. Communities influence informed decision making because of the exchange of information.

Keywords*: investor characteristics, return expectation, risk tolerance, risk perception*

Abstrak

Penelitian ini membahas perubahan investor risk-taking behavior di Indonesia saat pandemi Covid-19. Investor risk-taking behavior terdiri dari tiga kriteria yaitu return expectation, risk tolerance dan risk perception. Faktor yang dapat memengaruhi investor risk-taking behavior dalam penelitian ini adalah resesi ekonomi dan karakteristik investor saat pandemi. Penelitian ini menggunakan objek para investor di Indonesia. Hasil penelitian menunjukkan bahwa pandemi Covid-19 menyebabkan perubahan investor risk-taking behavior yang meliputi return expectation dan risk tolerance menjadi turun dan risk perception menjadi naik. Karakteristik investor Indonesia secara umum tidak berpengaruh terhadap investor risk-taking behavior karena para investor tergabung dalam komunitas-komunitas investasi, pasar uang dan pasar modal. Komunitas memengaruhi pengambilan keputusan informasi karena terjadi pertukaran informasi.

Kata Kunci*: karakteristik investor, return expectation, risk tolerance, risk perception*

Introduction

In 2020, Indonesia was affected by the Covid-19 Pandemic which resulted in a slowdown in economic activity so that the second and third quarters of 2020 experienced negative economic growth of -5.32% and -3.49%, respectively. ICI (Indonesia Composite Index) trading dropped in March 2020 is another impact caused by the pandemic due to the weakening of economic activity in all industrial sectors. As a result of negative economic growth for two consecutive years, Indonesia was declared a recession in that year. For the investor, changes in investor risk-taking behavior   is likely to occur due to the impact of falling stock prices drastically resulting in the risk tolerance of investors change. However, according to Gerrans, et al. (2015) investors do not change their perception of risk tolerance significantly when the economic crisis hit Australia, North America and the UK.

Hofmann, et al. (2013) and (2015) and Vu, et al . (2020) said that in European countries the investors change the perception of risk when trade again. It is possible that people who are used to making investments suffer huge losses when the pandemic hits the world . This is very likely to happen because traditional financial theory assumes that people always think rationally, that is, they have high profit expectations without paying attention to other factors that could be detrimental (Vu, et al ., 2020). The investors are vying to get the maximum profit when the economy is predicted to be stable. For some party, the impact of the pandemic is very psychological and traumatized when they want to invest again because the losses experienced are so large and can change perceptions   permanently   (Hoffmann, et   al. 2013). Gerrans, et   al . (2015) investigated the risk tolerance limit of each individual in investing in financial markets which changed drastically during the global financial economic crisis in 2007-2009. Risk tolerance is also closely related to a person's psychological condition when he sees the real condition of the financial market occurred in that period.

Investors' perceptions of the risk and return characteristics of a particular stock or stock market are generally considered to be the main drivers of investor decisions. The results of recent research in the field of behavioral finance show that investors' perceptions can explain their financial portfolio decisions (Hoffmann, et al. , 2015). In investor risk-taking behavior there are return expectations, risk tolerance and risk perception . As an investor, it is very likely to be faced with different investment choices and risks. The results of research conducted by Guiso, Sapienza and Zingales (2011) in Hoffmann , et al . (2015) reported that there is a negative association between investor risk aversion and asset ownership in the share of uncertain asset portfolios. Likewise, research by Merkle and Weber (2014) in Hoffmann , et al . (2015) documented a positive relationship between return expectations and the results obtained. In addition, there is a negative relationship between investor expectations and the level of portfolio risk. Investors' perception will determine the decision to trade the shares or not. Investment decisions are also determined by several intrinsic elements such as past experience due to investment mistakes that have been made in the past as learning for future investments (Limanjaya et al. , 2014).

This research conducted to determine the change in investors ' risk-taking behavior by comparing the perception of investors when the normal state in the year 2019 and the perception of investors when the pandemic occurred in 2020. Earlier studies only discuss changes in investors' risk-taking behavior during the economic crisis, but this study is conducted during the Covid-19 pandemic which resulted in the economic crisis in Indonesia. So that, the problems faced by Indonesia are not only overcoming the economic crisis, but also trying to resolve the spread of the Covid-19 virus. The policy taken by the government during this pandemic has never been taken in world history during the economic crisis, namely the implementation of lockdown (Large-Scale Social Restrictions) .

The analysis of changes in investor risk-taking behavior is examined through three criteria: return expectation, risk tolerance and risk perception aim to determine the changes in risk-taking investment decisions by Indonesian investors during the pandemic in 2020. In addition, the characteristics of the investor to investor risk -taking behavior also tested to determine the influence of the characteristics of the Indonesian people who invest towards the investment decisions taken. The control variable used is the difference in the period of time for investors to trade, namely normal conditions and the time of Covid-19 in 2020. The advantages of this research could be used by brokers who want to trade and cooperate with Indonesian investors. Brokers will be helped to identify shifts in the behavior of Indonesian investors before and during the economic crisis. Clients will feel helped and satisfied when the broker knows what they want . In accordance to the background, the research problem of this study is: Has the impact of the Covid-19 pandemic reduced investor tolerance for risk by that affecting investor risk-taking behavior? and Do investor characteristics have a positive effect on investor risk-taking behavior?

Research Methods

The object of this research was investors in Indonesia who were actively trading with a minimum of one year's experience, because they already had experience investing during normal circumstances and continue to invest during the pandemic. Sample data collected from random online questionnaires with a target sample of 400 data obtained from the formula slovin. The reliability test of the data in this study used the Cronbach's Aplha method with a minimum limit of 0.6 to be declared as reliable. The questionnaire data tested using two methods, namely: *paired t-test* to determine differences in investor risk-taking behavior between normal and pandemic times and ordered logit regression to examine the effect of investor characteristics on investor-risk taking behavior.
Model 1:

$$Paired\ t_{test} = \frac{x_{norm}' - x_{resesi}'}{\sqrt{\frac{s_{norm}^2}{n_{norm}} + \frac{s_{resesi}^2}{n_{resesi}} - 2r\left(\frac{s_{norm}}{\sqrt{n_{norm}}}\right)\left(\frac{s_{resesi}}{\sqrt{n_{resesi}}}\right)}} \tag{1}$$

Model 2:
$$y^* = A + \beta^* investor\ characteristic + \varepsilon \tag{2}$$

X_{norm} is the average value of respondents in normal times. $X_{recession}$ is the average value of respondents during the pandemic. S^2_{norm} is the variant of respondents in

normal times. $S^2_{recession}$ is variance of respondents during the pandemic. n_{norm} and $n_{recession}$ are the same number of respondents. y* is the exact but unobserved value of the dependent variable. A is the intercept or constant. β is a vector of regression coefficients to be estimated. ε is the error value.

Result and Discussions

A total of 435 respondents were collected. The data obtained are as follows:

Tabel 1. Questionnaire Data

No	Average	Combined Average	No	Average	Combined Average
Normal Condition			Pandemic Covid-19		
Return Expected (RE)					
1	2.6943		14	3.8207	
2	2.5885		15	3.2115	
3	2.6184	2.7793	16	3.5126	3.3908
4	3.5701		17	3.6874	
5	2.4253		18	2.7218	
Risk Tolerance (RT)					
6	4.7517		19	5.0069	
7	3.8529	4.0109	20	4.5333	4.3925
8	3.2598		21	3.8989	
9	4.1793		22	4.1310	
Risk Perception (RP)					
10	4.3908		23	3.1793	
11	4.5793	4.5598	24	4.1609	3.8178
12	4.7241		25	3.7839	
13	4.5448		26	4.1471	

By using 95% Confident Interval , the results of the paired t-test are as follows:

Table 2. The paired t-test on changes in investor risk taking behavior

Variable	P-value
Return expectation	0,000
Risk tolerance	0,000
Risk perception	0,000

Based on Indonesian investor respondents, the results of the paired t-test for the three criteria are accept H_1, so that if it is taken as a whole it can be concluded that the first hypothesis in this study which says "the Covid-19 pandemic can reduce investors' tolerance for risk by that changing investors' risk-taking behavior in the form of decreased return expectation and risk tolerance and increased risk perception " is acceptable. This is in accordance with previous research conducted by Hoffmann, et al. in 2013. In his research, it was explained that when the economic crisis occurred, investors experienced a shift in risk taken when they began to actively trade again. The basis of this change is because risk tolerance decreases, then the perception of risk will increase.

Table 3. Results of ordered logit regression test between investor characteristics and investor risk taking behavior

Characteristics Respondents	*Covariates*	*Sig.*	Conclusion	Characteristics Respondents	*Covariates*	*Sig.*	Conclusion
Age	RE norm	0,285	Reject H_1		RE Cov19	0,656	Reject H_1
	RT norm	0,649	Reject H_1		RT Cov19	0,767	Reject H_1
	RP norm	0,611	Reject H_1		RP Cov19	0,591	Reject H_1
	RE Cov19	0,752	Reject H_1	Last Education	RE norm	0,264	Reject H_1
	RT Cov19	0,469	Reject H_1		RT norm	0,646	Reject H_1
	RP Cov19	0,894	Reject H_1		RP norm	0,233	Reject H_1
Gender	RE norm	0,113	Reject H_1		RE Cov19	0,954	Reject H_1
	RT norm	0,878	Reject H_1		RT Cov19	0,363	Reject H_1
	RP norm	0,174	Reject H_1		RP Cov19	0,604	Reject H_1
	RE Cov19	0,084	Reject H_1	Income per Month	RE norm	0,867	Reject H_1
	RT Cov19	0,066	Reject H_1		RT norm	0,296	Reject H_1
	RP Cov19	0,722	Reject H_1		RP norm	0,942	Reject H_1
Working Status	RE norm	0,096	Reject H_1		RE Cov19	0,742	Reject H_1
	RT norm	0,886	Reject H_1		RT Cov19	0,667	Reject H_1
	RP norm	0,961	Reject H_1		RP Cov19	0,938	Reject H_1
	RE Cov19	0,043	Accept H_1	Net Worth	RE norm	0,458	Reject H_1
	RT Cov19	0,912	Reject H_1		RT norm	0,825	Reject H_1
	RP Cov19	0,108	Reject H_1		RP norm	0,351	Reject H_1
Occupation	RE norm	0,01	Accept H_1		RE Cov19	0,981	Reject H_1
	RT norm	0,98	Reject H_1		RT Cov19	0,835	Reject H_1
	RP norm	0,169	Reject H_1		RP Cov19	0,858	Reject H_1
	RE Cov19	0,055	Reject H_1	Investment Experience	RE norm	0,793	Reject H_1
	RT Cov19	0,262	Reject H_1		RT norm	0,892	Reject H_1
	RP Cov19	0,806	Reject H_1		RP norm	0,452	Reject H_1
Marital Status	RE norm	0,731	Reject H_1		RE Cov19	0,084	Reject H_1
	RT norm	0,833	Reject H_1		RT Cov19	0,298	Reject H_1
	RP norm	0,53	Reject H_1		RP Cov19	0,792	Reject H_1

Information: RE is return expectation, RT is risk tolerance, RP is risk perception, norm is normal period, and Cov19 is pandemic period.

In general, the conclusion on the second hypothesis which says "characters investors positively influence on investor risk-taking behavior because it is based on the demographics of investors are different" is rejected. This is not in accordance with the research conducted by Hoffmann, et al. in 2015 because in his research stated that the characteristics of investors have a positive effect on investment decision making. According to Hoffmann, et al. (2015) investors who have longer investment experience have a riskier portfolio and have many asset derivatives. However, the variable "Working Status" on the return expected decision during Covid-19 and "Occupation" on the return expected decision during normal condition had a positive effect.

After testing the two hypotheses, the next step was to find out the correlation between respondents' characteristics and Investor Risk-Taking

Behavior. The purpose is to determine the characteristics that significantly influence decision making. Here is the correlation:

Table 4. Correlation of Respondents Characteristics with Investor Risk-Taking Behavior

Correlations	RE_{norm}	RT_{norm}	RP_{norm}	RE_{Cov19}	RT_{Cov19}	RP_{Cov19}
Age	-0,067	0,0406	0,0518	-0,048	-0,008	0,0491
Gender	0,0247	0,0550	0,0734	-0,043	0,085*	0,0226
Working status	-0,051	0,0344	0,0325	0,0610	0,0427	0,0690
Occupation	-0,104	0,0173	0,085*	0,0196	-0,004	0,0179
Marital status	-0,001	0,0105	-0,023	0,0116	-0,005	0,0217
Last education	-0,054	0,0049	-0,020	-0,016	0,0402	0,0142
Income per month	-0,003	-0,049	-0,026	-0,012	-0,014	-0,008
Net worth	-0,037	0,0161	0,0499	0,0032	0,0274	0,0283
Investment experience	0,0513	-0,023	0,0319	0,0572	-0,039	-0,007

Note: (*) significant at 10% level

During normal condition, Indonesian investors have a high return expectation value with an average value of 2.7793 from the questionnaire. In addition, investors who are less satisfied with returns tend to take greater risk than investors who are easily satisfied. In this case, Indonesian investors can be categorized as investors who are not satisfied with returns during normal conditions because the average value of the questionnaire proves that respondents have high return expectations so that the risk taken is quite large. This phenomenon is in accordance with that found by Vu, et al. in 2020 in his research which revealed that investors want to get the maximum profit when the predicted situation is stable. When the Covid-19 pandemic hit Indonesia, of course, money and capital market trade was immediately disrupted. As a result, the return from direct investment changed 180 degrees which caused a lot of losses. This incident caused investors to change their investment decisions by lowering their return expectations. The shifting in expected returns during a pandemic in this study can be proven by the average value of 3.3908 from the questionnaire. The same thing was also described in the research of Hoffmann, et al. (2013) which stated that investors' return expectations decrease significantly when investors experience times with poor returns when the economic crisis hit Europe. Investors' perception of this risk significantly influences the analysis to make trades. During the 2008 crisis, investors' expectations of returns declined as the economy worsened.

It is the same with the risk tolerance of Indonesian investors, which turned out to have a higher tolerance value during normal conditions, with an average value of 4.0109 from the questionnaire when compared to the average value during the pandemic, which is 4.3925. This shows a shift in risk tolerance as well when the Covid-19 pandemic hit Indonesia to a lower level. Investors become more selective in spending on the money market and capital market by choosing a portfolio with a minimum standard deviation. Investors who initially have a higher risk tolerance tend to direct investors to choose a portfolio with a higher standard deviation (Vu, et al., 2020). From the results of this analysis which shows this decision shift, it is known that investors seem to know the risks of their

portfolios, thus when making purchases again they are aware of the chosen risks because investor risk tolerance is positively related to their actual portfolio risk. According to Hoffmann et al. (2015) in their research that investors who are more tolerant of risk experience greater exposure to the stock market, while investors who view higher risk lower their exposure to the stock market. Therefore, the shift in risk tolerance decisions held by investors also changes when economic conditions change.

Investors' risk perception also experienced the same changes as the two previous criteria during the Covid-19 pandemic. This shift is indicated by the average value during normal conditions, which is 4.5598 from the questionnaire, which means that investors' risk perception at normal times is lower because the value is more than 4. The average value during the Covid-19 situation shifted to 3.8178 which it means that the risk perception of investors during the pandemic is higher because the value is below 4. This risk perception is very likely to experience a shift because when the pandemic hits Indonesia, more and more uncertainty can be seen from the sluggish economy condition. As a result, the money market and capital market are also affected by increasing risk due to high volatility. This makes the risk perception of investors higher because investors do not want to experience losses when transacting when the country's economy is not stable. Just like risk tolerance, this risk perception is also one of the parameters of investor portfolio risk because this risk perception is positively related to portfolio risk, which means that each investor is aware of the risks of their investment portfolio. Hoffman, et al. in 2013 also said investor perceptions showed significant fluctuations during the crisis, with risk tolerance and risk perception being less stable than expected returns. During the worst month of the crisis, investors' perception of risk increased, so investors were very careful when shopping at that time to avoid losses.

As previously mentioned, this research with Indonesian investor as the respondents concluded that investor character does not have a positive effect on risk-taking behavior because in practice, practitioners during trading in the money market and capital market rely more on community discussion. Most likely decisions to trade in the money market and capital market are taken based on the results of discussions in the community. This community contains various characteristics of investors. This is the reason consumer characteristics have no effect because individual investors do not purely have their own decisions but are influenced by their community.

Although the majority of the characteristics of investors in this study do not have a positive effect on risk-taking behavior, there are still two characteristics that have an effect, namely working status and occupation. The respondent's work status has a positive effect on return expectations during Covid-19 and the respondent's profession has a positive effect on return expectations during normal conditions or before the Covid-19 pandemic. Characteristics of working status have a positive effect because they are based on different sources of income for each individual. When Covid-19 occurs, it is likely happened that the status of work will change which has an impact on changes in income as well. This different income causes the purchasing power and investment decisions of each investor to be different. Even though investors are members of one or many communities, the purchasing power of investors is not the same

because when they invest, investors do not cooperate. They only discuss to make trade decisions and investment risk analysis. Meanwhile, occupation characteristics have a positive effect because different work backgrounds will certainly build different characteristics of investors.

Overall, the respondents' occupations are private employees (63.7%) and entrepreneurs (23.0%) who usually tend to have different decisions. Private employees usually prefer to play it safe, so that the return expectation will be low because the risk taken is also low. In contrast to the background of entrepreneurial respondents who have more character that can accept and play at high risk, therefore the return expectation of entrepreneurial respondents is higher because their portfolio investment is at high risk. This can be evidenced by the shift in the average return expectation during normal times and during the Covid-19 pandemic between private employees and entrepreneurs, each shifting ($\Delta \underline{R}_{Private\ Employees}$) 0,6708 for private employees and shifting ($\Delta \underline{R}_{Entrepreneurs}$) 0,5240 for entrepreneurs. Theoretically, this conclusion is also supported by Kurniullah, et al. (2021) that entrepreneurs have many risks and they are used to the pressure of various risks arising from the running of their business, so entrepreneurs have their own way of dealing with them. As for the changes experienced by employees described by Markovits, et al. (2014) that when employees faced the economic crisis in 2009 in Greece overall job satisfaction and motivation decreased. In addition, the sense of security that employees have is also reduced. The relationship between investor characteristics and risk tolerance and risk perception does not have a positive effect because again, their decisions are influenced by their community. Meanwhile, during the Covid-19 pandemic, employment did not have a positive effect on the overall criteria for risk-taking behavior because the impact of this pandemic directly affected all the investor profession in Indonesia. This is also found in the research of Gerrans, et al. (2015) which states that many variables of investor characteristics are not significant to the determination of risk tolerance . In his research, it was found that only age had a significant negative effect on investors' risk tolerance . This proves that when there is an economic crisis, the impact will make the distinction between investor characteristics

between investor characteristics become blurry.

If you look at the correlation of respondent characteristics with investor risk-taking behavior in Table 4, there are only two characteristics that are correlated with each other, namely occupation and gender. As previously discussed regarding job characteristics, if previously that work had a positive effect on expected return under normal circumstances, it was different from job characteristics which turned out to be not significantly correlated with expected return. In fact, occupation has a significant positive correlation with risk perception (0.085*) under normal conditions. This correlation occurs presumably because different work backgrounds make investors view different perceptions of risk in the money market and capital market. However, job characteristics are not significantly correlated either positively or negatively for other risk-taking behavior criteria because it is assumed that the decisions taken by respondents are influenced by the results of their community discussions with various work backgrounds. Meanwhile, during the Covid-19 pandemic, all respondents' occupations were affected by this pandemic.

In the same Table, 4 it is also stated that the gender characteristics of the respondent has a significant positive correlation with risk tolerance during the Covid-19 pandemic. This correlation occurs because the gender background between men and women has a psychologically different approach to risk acceptance. The shift in risk tolerance of the male group is lower than the shift in the female group. The male group change has an average value delta $(\Delta \underline{RT}_{Men})$ of 0.3579 while the female group shift has an average value delta $(\Delta \underline{RT}_{Women})$ of 0.4491. The conclusion of this answer is also supported by Jurajda, et al. (2011) and Shurchkov (2012) which stated that the male group tends to be more receptive to changing circumstances that turn out to be worse than women. In this study, the change in question can be equated with a bad economic situation due to the Covid-19 pandemic, so that the shift in risk tolerance of the male is less than the female group. Meanwhile, the other risk-taking behavior criteria are not correlated with the respondent's gender. This finding is caused by the main cause in the discussion of this subsection, namely the existence of the respondent community. Discussion in the respondent community is very influential on decision making regardless of the background characteristics and status of investors. In addition, most investors not only join one community, but many communities to get more information and discuss with more investors. So, it is possible that the topics of discussion and decisions taken in one community and other communities are interrelated. By that, it can be said that there is no community that stands independently in making shopping or selling decisions from a discussion. The importance of discussion in this community to analyze investment instruments because it is in accordance with previous research by Limanjaya, et al. (2014) revealed that new investors will invest when they really know the investment instrument. Recognition (familiarity) is the most important factor when investing. In addition to familiarity, the research also discusses that other factors that influence investment decisions are considering the past, data mining, social interaction, fear and greed, and emotion. These factors are all present in the community.

The behavior of investors in Indonesia varies due to the diverse characteristics of investors. The characteristics of investors are caused by several criteria such as their investment experience, motivation, purchasing power, and level of knowledge. Therefore, it will make a difference in the level of expectation of return and risk as well as how confident in trading at certain times in order to get a return close to the expected. The results of statistical testing prove that 435 respondents made a change in investment decisions to be safer when compared to investment activities before the pandemic. In Indonesia, the majority of investors are millennials, which are under the age of 40 with most of them having no more than four years of investment experience, so that the shift in decision-making is considered very fast and easy. Moreover, investors have high expectations of returns when conditions are normal. Automatically, Indonesian investors take action to secure their investment assets when they are at the height of the tensions of the Covid-19 Pandemic. They are in a position to play it safe and are gradually starting to adapt to economic developments and circumstances during the pandemic. In the research of Hoffmann, et al. , (2013) and Vu, et al. (2020) also concluded the same thing because it was found that during the economic crisis, investors immediately

refrain from spending and focus on securing their investment. When the investment is safe, investors will trade again selectively through deeper analysis. When the crisis period enters the final stage, the expected return, risk tolerance and risk perception of investors slowly begin to recover as they adjust to the situation that has occurred.

Most of the Indonesian investors are considered to have a behavior that is not very confident when facing difficult situations due to the pandemic. This can be seen from the change in their investment decisions to become safer, namely return expectations and decreased risk tolerance and increased risk perceptions. When the market return is positive, investors will also show optimism in trading, but vice versa during this pandemic. The market return has a negative value, even a very large negative, so investors will much reduce the frequency of trading and buying stocks with low volatility. This optimism is also influenced by the mood experienced by investors. Mood in this context is a socio-economic condition that occurs in society. Socio-economic conditions will have a positive impact on stock market optimism in Indonesia (Metawa, et al, 2019), but this did not happen during the pandemic. The socio-economic situation of the community when the pandemic turned into chaos. The direct visible impact is the under reaction in the capital market with the extreme drop in the ICI at the end of March 2020. It happened quickly and drastically because investors responded excessively to this pandemic problem in the form of trading with extreme caution or even stopping trading in the market. capital. Coupled with the behavior of investors observed in this study is the behavior of decision-making based on decisions made by many people because they are members of many communities. All these actions taken by investors are due to a lot of uncertainty in a time like this, especially since most investors in Indonesia are less than 40 years old and with relatively short experience, thus they do not have enough experience. It can also be seen that Indonesian investors are not too brave to speculate during this pandemic then the trading decisions taken are mostly short-term decisions. If in normal times investors will use the strategies they are used to, but during this pandemic the investors make decisions based on long considerations and more analysis through conversations in community forums. This investor behavior provides the ability to collect more information and more accurate data. The experience of investors who are judged to be lacking is what causes most of the decisions taken are decisions that are not too confident, so they choose to play in the safe zone.

Conclusion

The COVID-19 pandemic experienced by Indonesia in 2020 can reduce investor tolerance for risk, thereby changing investor risk-taking behavior in the form of decreased return expectations and risk tolerance and increased risk perception. The changes in investor decision-making when trading again in the money and capital markets is due to the impact of this pandemic in the form of a slowdown in the Indonesian economy. The fear and trauma are the triggers for this shift in risk taking behavior. In testing the investor's character towards investor risk-taking behavior, it turns out that it has no effect. The characteristics of investors have no effect because the majority of investors in Indonesia are members of communities. As a result, the

decisions of individual investors are influenced by the results of discussions in the community. The age of investors is mostly under 40 years old which is relatively young and the investment experience is less than four years, so that the level of self-confidence and lack of experience causes these shifts to occur and depend on shared decisions in the community. The community helps investors' ability to collect data and helps investor analysis more accurately.

This research helps brokers to know the changes in the behavior of Indonesian investors before and during the economic crisis. Brokers can also easily understand and deal with their customers to make portfolio swifting when it is felt that the country's economy or even the world will face problems. Clients will feel helped and satisfied when the broker knows what they want. In addition, this research can provide potential information and considerations in making policies for shareholders and securities trading stakeholders.

Researchers provide advice to related parties based on problems that occur such as the need for further research to determine the changes in risk-taking behavior in the recovery period after the economic crisis in 2020 due to the Covid-19 pandemic by entering investor criteria (risk averse, neutral and risk –taker). It also requires support from the government or the campus as research funders, thus they can collect data more intensely to get a shift in risk-taking behavior every month so as to provide more accurate results. In addition, it is hoped that further research in data collection can be supported by interviews with several respondents, then researchers get investors' conditions that are not revealed in the questionnaire points. Usually about emotions or other intrinsic factors. This quantitative data is helpful in analyzing and supporting the explanation of the results of research data processing.

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