

## **THE EFFECT OF AGE AND SIZE TO MIXED MUTUAL FUND PERFORMANCE IN INDONESIA**

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### **ABSTRACT**

Mutual funds are other investment opportunities with measurable risk, high return and enough capital affordable to the community. Mutual funds have an investment manager with ability and knowledge which can predict the market condition in the future. This research aims to analyst how age and size of mutual fund can influence the performance of mixed mutual funds. The data that used in this research are monthly data on Net Asset Value (NAV), monthly data on SBI (Certificate of Bank Indonesia), and prospectus of 27 mixed mutual fund that were sampled. As a research methodology, we used Sharpe Index. The result of this study showed that both age and size have influence to the mixed mutual fund performance in Indonesia.

**Keywords:** age, size, performance, mixed mutual fund

### **INTRODUCTION**

Alternative profitable investment activities are offered in the era of globalization. Public ignorance faced with various problems related to the selection of investment instruments that have a rate of return and risk. The existing standard investment instruments such as stocks, bonds and time deposits is not enough to be an alternative choice for people in making investments because of the amount of capital that must be owned by public investors and complexity in managing investment portfolios.

Community as an investor requires knowledge and the ability to monitor the state of the market is always fluctuating so as not to suffer losses or even loss of funds that have been

implanted. However, lack of expertise, information, knowledge, time and capital causes people to feel reluctant to invest.

As a solution to these limitations, the various alternatives available in order to facilitate investors in investing, namely mutual funds. Mutual funds designed to collect funds from people who spread (diversified) in several securities and then traded in the capital market and money market. Mutual funds are managed by experienced investment managers.

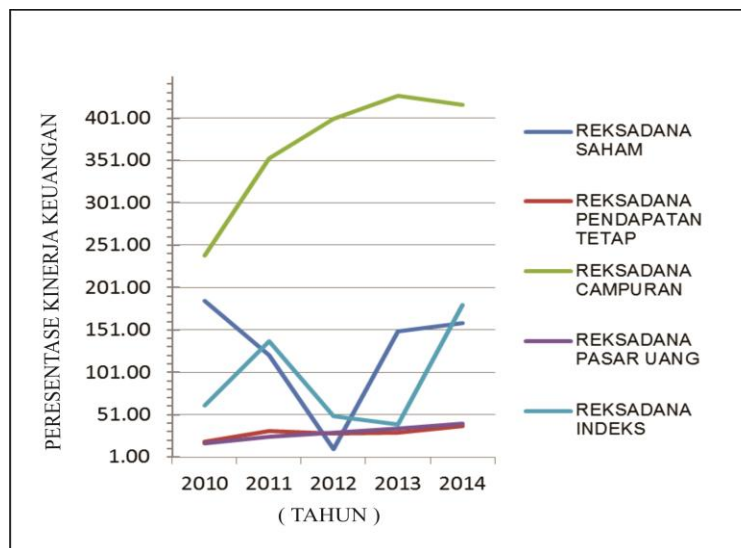
The investment manager is the party whose business is to manage a portfolio of securities to customers or managing collective investment portfolio to a group of customers, except for insurance companies, pension funds and banks that do their own business activities based on the legislation in force (Act No. 8 of 1995). Differences in the performance of investment managers resulted NAV (Net Asset Value) and returns provided for each different mutual fund companies. This is because investment managers have a way, different strategies and policies in managing mutual funds. So investors should be selective in choosing the best mutual funds of the mutual fund is good and according to need.

All funds in mutual funds are not deposited by the investment manager but is kept in a bank custodian. Furthermore custodian bank also serves as administrator that records and to provide confirmation of the entire transaction of purchase and sale of mutual funds and mutual funds calculate NAV per day ([www.reksadana.danareksa-online.com](http://www.reksadana.danareksa-online.com), 2014).

Investors should understand what types of mutual funds in accordance with the needs and objectives in investing activities before investing in mutual funds. The types of conventional mutual funds in Indonesia are categorized into four instruments, ie equity funds, balanced funds, money market funds and fixed income funds.

In 2010 the Indonesian economy grew by 6.38%, 2011 was 6.17%, 2012 amounted to 6.03%. Whereas in 2013 the Indonesian economy grew 5.58%. Economic growth in 2014 is supported by the processing industry with a contribution of 21.02% to the gross domestic product (GDP), which reached US \$ 10542.7 trillion ([www.bps.go.id](http://www.bps.go.id)). Slowing economic growth that occurred the same as the symptoms of the crisis of 2008.

Calculation of the performance of a mutual fund can be done by calculating the net result obtained in a certain period of time, rate of return, expected return, variance, covariance and value of beta. These values can be used to calculate the index value Sharpe, Treynor index as a parameter and fund performance. The higher the index value, the better the performance of a mutual fund. The establishment of an optimal portfolio of mutual funds may use Single Index Model. Here is the percentage of mutual fund performance in the year 2010-2014, which is presented in chart 1 as follows:



Based on the movement chart 1 above shows that the mutual fund has performed best among other mutual funds, which is 238.33% in 2010, then rose in 2011 to 353% as well as in 2012 rose to 400% and then rose to 427.67 on 2013. But unlike the previous one, in 2014, the performance of mutual fund decreased to 417% at the time of other mutual funds increased. The performance of equity funds rose to 159.50% as compared with the performance in the previous year, namely 149%.

Not only equity funds are increased, but the fixed income funds, money market funds and index mutual funds also increased performance. In 2013, fixed income funds only 29.95 then increased in 2014 to 38.08%. Money market funds increased to 41% compared to the performance of stocks in the previous year of 35%. as well as index funds, also increased to 180% compared with the previous year is only 40%.

Arif and Jawaid (2011) states that the life of the mutual fund has positive influence on the performance of mutual funds. In contrast to the study conducted by Ferreira et al. (2007) showed that the age of the mutual fund negatively affect the performance of mutual funds. It is also supported by research Sjrogen (2005) which states that the life of the fund negatively affect the performance of mutual funds. While Afza and Rauf (2009) states that the life of a mutual fund does not affect the performance of mutual funds.

Lin and Yung (2004) and Afza and Rauf (2009) showed that the size of the assets of mutual funds positive effect on the performance of mutual funds. It is also supported by research and Jawaid Arif (2011) which showed that the size of the assets has positive influence on the performance of mutual funds. In contrast to research conducted by Low (2012) which showed that the size of assets negatively affect the performance of mutual funds. While Sjrogen (2005) show that asset size has no effect on the performance of mutual funds.

Based on the phenomenon and the differences from previous studies on the influence of age and the size of the fund to the performance of mutual funds, the research on the influence of age and the size of the fund to the performance of mutual fund interesting to study further. Research on the effect of age and the size of the mutual fund was measured using the method in which these methods can be used by all types of mutual funds.

The purpose of this study was to determine the effect of age and the size of the fund to the mutual fund's performance during the 2010-2014 period. The existence of this research can be used to provide information to investors in the current decision-making will be investing in mutual funds in terms of the magnitude of the Sharpe index which shows the performance of mutual funds.

## **LITERATURE REVIEW**

Investment is the commitment of a number of funds or other resources committed at this time, with the goal of obtaining a number of advantages in the future (Tandelilin, 2007: 3). Capital Market Law No. 5 of 1995 Article 1 defines the capital markets as the activities concerned with the public offering and trading of securities of public companies related to securities issuance as well as institutions and professions related to the effect. The type of capital markets divided into major markets as well as Over the Counter Market (OTC).

Sunariyah (2004) in Hadi (2013: 10) defines the capital market as an organized financial system, including the commercial banks and all intermediaries in the financial sector and the overall securities outstanding. In a narrow sense, the stock market is divulging market (where the form of the building) are prepared to trade stocks, bonds and other types of securities with the services of the brokerage.

Act 8 of 1995 Article 1 Paragraph 27 of the capital markets defines a mutual fund is a vehicle used to collect funds from investors to be invested in a portfolio of securities by the investment manager. Investors who place their funds in mutual fund investment will get a return in the form of dividends, interest, or capital gains in accordance with the type of fund they choose. There are other types of mutual funds, among others: conventional mutual funds (equity funds, fixed income funds, money market funds and mixed mutual funds), mutual funds structured (exchange traded funds, protected funds), Islamic mutual funds and index mutual funds.

Net Asset Value (NAV) cannot be separated from mutual funds because this term is a benchmark in monitoring the results of the portfolio of a mutual fund. NAV shall be published in the newspaper every weekday. Under the NAV information transparent to the public, anyone can calculate the return on mutual funds during the period of observation. Mutual funds have several benefits that make as one of the attractive investment alternatives include: managed by

professional management, diversification of investment, transparency of information, high liquidity and low cost (Utomo, 2010).

Mutual funds must also have a risk that must be faced by investors who will invest in mutual funds. Utomo (2010) states that the risk of mutual funds consisting of: risk reduction in the value of fund units, the liquidity risk, the risk insured property fund, the risk of political changes in the economy, the risk of a decline in interest rates and currency exchange risk.

In order to minimize these risks, mutual funds have a specific target in the planting of funds in accordance with the expertise possessed by an investment manager that will distinguish mutual funds with one another as well as investors will be able to choose according to their investment objectives. Investors can find out the target funds to obtain information through the offering prospectus. Usually mutual funds will include targets to be achieved in the prospectus to be studied first. There are four objectives, namely mutual funds: mutual funds with growth targets, mutual funds with target revenues, mutual fund targeting growth and income mutual funds with a target balance (Nindyaswara, 2014).

## **MUTUAL FUND PERFORMANCE**

The investment performance of mutual funds portfolio management is reflected in the NAV, or net asset value (NAV). Whether or not the performance of the investment portfolio managed by investment managers affected by the investment policy and strategy run by the relevant investment manager. Therefore, to determine the development of the value of a mutual fund investment can be seen from the increase in its NAV, which constitute the value of investments owned by the investor, while for calculating the NAV per share or unit of investment is basically the task of custodian banks.

Ekandini (2008) in his study mentioned that mutual funds NAV is calculated by adding up all the value of each of its effect is based on the closing market price of the relevant securities, then reduce the obligations of mutual funds, such as investment management fees, custodian bank fees, audit fees by public accountants and other costs.

Jogiyanto (2003) in Winingrum (2011) mentions that in the calculation of funds consists of: Sharpe index, Treynor index, Jensen index. In this study only used in the measurement method Sharpe index performance, this is due to the Sharpe index can be used in all types of mutual funds. Sharpe index was developed by William Sharpe and often called by the reward-to-variability ratio. Sharpe index calculation based on the concept of capital market line (capital market line) or better known as the Reward to Variability Ratio (RVAR) as a peg (benchmark) that is by dividing the portfolio risk premium to the standard deviation. The risk premium is the difference between the average generated by the portfolio performance with the average performance of its investments based on risk (risk free asset).

## **AGE OF MUTUAL FUNDS**

Age of the mutual fund indicates when a mutual fund began trading on the capital market. Many investors prefer mutual funds for longer-lived. Mutual funds have a longer life would have a longer track record, so it will be able to give a better picture of the performance to its investors. Age of mutual funds reflects the experience of the investment manager to manage mutual funds. The longer the life of a mutual fund, the investment manager more experienced in managing the portfolio when compared to mutual funds is younger (Akbarini 2004 in Winingrum, 2011).

## **SIZE OF MUTUAL FUND**

Assets of a company presenting the amount of wealth owned by the company. Wealth funds can be judged from the magnitude of Total Net Assets (TNA) owned. Property owned by the company in general show the economic scale of a company. The greater the economic scale of the company, the bigger the size of the company. The size of a fund will present a number of mutual fund market capitalization. In many studies conducted to investigate the effect of the size of the excess return indicates that large size would cause the risks facing the company are smaller than the risk faced by smaller companies (Elton and Gruber, 1995 in Winingrum, 2011).

## **THE AGE OF MUTUAL FUNDS AND MUTUAL FUND PERFORMANCE**

Mutual fund longer-lived will certainly have more experience than the newer ones. The older age of the mutual fund, the more experienced investment managers, the fund performance will be better anyway. Mutual funds have a longer life would have a longer track record, so it will be able to give a better picture of the performance to its investors (Akbarini 2004 in Winingrum, 2011).

Arif and Jawaid (2011) in his research show that age has a positive effect on the performance of mutual funds. The older age of the mutual funds the better the performance of mutual funds. This is because the older the fund the more experienced in managing mutual funds. Winingrum (2011) in his study results showed that age has an average value of 2.0294 to 0.59674 irregularities which shows that age possessed sufficiently mature mutual funds manage their portfolios so as to provide good performance.

## **THE SIZE OF THE MUTUAL FUND AND MUTUAL FUND PERFORMANCE**

The larger the size of the managed assets would provide flexibility, improve bargaining power and facilitate the creation of economies of scale that can have an impact on cost reduction that will have a positive impact on the performance of mutual funds (Oktaviani 2009 in Winingrum, 2011).

Lin and Yung (2004) showed that the size of the assets has positive influence on the performance of mutual funds. With the large size of the fund, investors will be more interested to invest in mutual funds. This research was supported by research Afza and Rauf (2009), Arif and Jawaid (2011) and Winingrum (2011) showed that the size of the assets has positive influence on the performance of mutual funds. This shows the larger the asset size of the fund, the more investors to invest in mutual fund company. This will spur investment managers to work effectively and efficiently so as to provide the best performance in managing the funds of investors. Expected greater mutual fund asset size, the more investors who invest in the mutual fund company.

## **HYPOTHESIS**

Based on the theoretical study and previous studies, the hypothesis in this study were: age and size of mutual funds mutual funds positive effect on the performance of mutual fund 2010-2014.

## **METHODS**

This study uses a type of causality or explanatory research. Causality research is a type of research that aims to obtain conclusive evidence of a causal relationship between the independent variable on the dependent variable (Malhotra, 2010: 113). This research includes the study of causality because it aims to find evidence of the influence of independent variables were age and size of the fund on the dependent variable in the form of mutual fund performance in 2010-2014.

The population of this study are all mixed mutual funds registered in BAPEPAM during the period 2009-2014 amounted to 132 types of mutual fund. While the sample used in this study is mutual fund that has a complete NAV during the period 2009-2014 amounted to 27 types of mutual fund.

Variables in this study consists of two variables: the dependent variable and independent variables. The dependent variable in this study is the performance of mutual fund while the independent variable in this study is the age and size of the mutual fund. Fund performance reflects the return or the rate of return provided by a mutual fund to its investors. In this research, fund performance was measured using the Sharpe index. Sharpe index calculation related to the prediction of future performance by using past data to test the model, in which Sharpe stated series of portfolio performance is calculated is the net result of the portfolio with a risk free rate per unit of risk with a given symbol  $s_p$  (Manurung, 2000 in Winingrum, 2011). Calculations used in the Sharpe index is as follows:

$$s_p = \frac{\bar{R}_p - \bar{R}_f}{\sigma_p}$$

$s_p$  = Sharpe Ratio Index

$\bar{R}_p$  = Average return (returns) were expected from the portfolio during the period

$\bar{R}_f$  = average SBI rate in a period

$\sigma_p$  = standard deviation of portfolio return period.

Age of mutual funds are diversified numeric category, where the research shows that the age of each fund, calculated from the date of the effective traded funds (Akbarini 2004 in Winingrum, 2011). Forms used in calculating the age of a mutual fund is as follows:

Age Mutual Funds = Years of research - First Year of Mutual Funds Effectively

The size of the fund is the size of the portfolio managed by mutual funds. The size of the portfolio can be seen from the NAV of a mutual fund. NAB is derived from the value of mutual fund portfolios and innovative. Mutual funds can be a wealth of cash, deposits, interest rate Indonesia, stocks, bonds, rights and other securities (Akbarini 2004 in Winingrum, 2011). The calculation can be done, using the formula:

Size = Ln NAB Mutual Funds Mutual Funds

Initial analysis phase to test the model used in this study so that later can be obtained regression model is to: (1) calculate the value of an investment return, (2) calculate the standard deviation, (3) calculate the risk return, (4) measuring performance mutual funds using the Sharpe index, (5) calculates the value of the life of the mutual fund and (6) calculates the value of the size of the fund. Having obtained the value of mutual fund performance, age and size of the fund, then the next stage is the classic way of doing analysis assumptions.

Analysis of classical assumptions consist of: (1) test for normality, (2) test multicollinearity, (3) autocorrelation and (4) heteroscedasticity test. After the classical assumption test, the next test used in this research is multiple linear regression analysis were used to examine the effect of age and size on the performance of mutual fund asset mix. Testing hypotheses about the influence of independent variables on the dependent variable applying the F test and t test statistics. Testing criteria used by Ghazali (2011: 98) that  $H_0$  accepted and  $H_a$  refused if the significance value  $> 0.05$ . This means that the independent variable has no effect on the dependent variable.  $H_a$  accepted and  $H_0$  rejected if the significance value  $< 0.05$ . This means that independent variables significantly influence the dependent variable.

The data used in this research is secondary data sources which include mutual fund prospectus, as well as the NAV per month SBI interest rate in the period 2010-2014. Mutual fund



prospectus and NAB [www.aria.bapepam.go.id](http://www.aria.bapepam.go.id) obtained from the site, while the SBI interest rates obtained from Bank Indonesia's website.

## RESULTS

Based on the results of Kolmogorov-Smirnov values are 1.323 and 0.060, the significance of a significance value of 0.060 is more than 0.05, so it can be inferred normal distribution of data. Multicolliniarity test results can be seen by looking at the results of the value of tolerance and VIF. Tolerance between age and size of assets is 0.999 where this value is above 0.10, and VIF of the age and size of the fund is 1.001 where this value is under 10, so that it can be concluded that there is no regression test multicoloniarity symptoms. Autocorrelation test results using the Runs Test shows the value Asymp. Sig. (2-tailed) 0101 greater than 0.05 so that the null hypothesis (Ho) is received and it can be concluded that the regression model there are no symptoms of autocorrelation. Heteroscedasticity test results with Glejser test showed that the value of the significance between independent variable with the absolute value of residuals 0.268 where more than 0.05, so it can be concluded that the regression model no symptoms heteroscedasticity.

The next stage is to test multiple linear regression model. After testing multiple linear regression model, then tested the hypothesis that consists of F test and t test. F-test and t test can be seen in table 1 below:

Table 1. Statistical Result

Variable	Regression Coefficence	F	t	Sig.	Conclusion
Mutual fund performance		3,721		0,027	Significant
Constanta	-4,743		-1,718	0,088	-
Mutual fund Age	-0,077		-1,873	0,063	Not significant
Mutual fund size	0,209		1,940	0,054	Not significant

Based on the table 2 can be seen that the significant value in the variable fund performance is smaller than the value of alpha (0.05), so that H1 is accepted with the conclusion that the age and size of the mutual fund affect the performance of mutual fund. While the results of the t test on

the variable age and size of mutual fund known that the significance of the age and size of the fund is greater than the value of alpha (0.05), so it can be concluded that partial age and size of the fund do not affect the performance of mutual fund, but the result is still significant at a probability level of 0.1. So the regression model proposed can still be used, namely:

$$\begin{aligned} \text{Sharpe Index} &= a + \beta_1 X_1 + \beta_2 X_2 + e \\ Y &= -4.743 - 0.077 + 0.209 + e \end{aligned}$$

Based on the above model is known that the significance of the life of a mutual fund is 0.063 while the size of the fund is 0.054. If used on a probability level of 0.1, the significance of the age and size of the fund is still under the alpha (0,1) which proves that partially funds the age and size affect the performance of mutual fund.

## **DISCUSSION**

The hypothesis proposed in this study were age and size of mutual funds positive effect on the performance of mixed mutual funds in the period 2010-2014. Based on the results of the F test analysis, it can be concluded that independent variables such as age and size of mutual funds mutual funds together have a significant effect on the performance of mutual fund. So it can be concluded that two independent variables together can be used to predict the performance of mixed mutual funds.

These results are consistent with research conducted by Winingrum (2011) that the age and size of the assets has positive influence on the performance of mutual funds. In his research results showed that the age owned mutual funds mature enough to manage the portfolio so as to provide good performance. Winingrum (2011) shows that the larger the size of assets under management will provide flexibility, improve bargaining power and facilitate the creation of economies of scale which have an impact on cost reduction that will have a positive impact on the performance of mutual funds. In this study showed that the older the age of a mutual fund, the better the performance of the mutual fund.

It can be shown from the age of Danareksa Syariah Balanced (RDSB) which has an effective life of 10 years in 2010, this year's RDSB performing calculations indicated by the Sharpe index is -0.0398. With increasing age of RDSB in the next period, so does the value of the Sharpe index of RDSB that in 2011 the age of 11 has a Sharpe index value of 0.9490, in 2012 the age of 13 have a value of 2.4278 Sharpe index, in 2013 with the age of 13 have the value of the index amounted to 0.4560 Sharpe then in 2014 to the age of 14 has a Sharpe index value of -1.2007.

Based on these data it can be seen that the increasing age of RDSB it will increase the value of the Sharpe index that describes the performance of RDSB, although the year on year

decline but the performance is still better when compared with mutual funds that have a mix of younger age.

Copyright Balance (0085605) which has an effective life of 2 years in 2010, this year is 0,085,605 has shown the performance index calculation Sharpe is -0.4075. In 2011 0085605 at age 3 has a value of 0.2380 Sharpe index, in 2012 with the age of 4 has a value of -0.4297 Sharpe index, in 2013 with the age of 5 has an index value of -0.3418 Sharpe later in 2014 by age 6 have Sharpe index value of 0.2710.

The second is based on a mix of mutual fund data above can be compared to that RDSB who has an older age compared to 0085605, have a better performance. This can be caused by many experiences of being owned by RDSB when compared to the experience of 0085605. In addition, it can be seen that with increasing age of mutual funds and 0,085,605 RDSB the better the performance of mutual funds mixture of both. The results are consistent with research conducted by Arif and Jawaid (2011), which shows that age has a positive effect on the performance of mutual funds. The older age of the mutual funds the better the performance of the mutual fund. This is because the older the age of a mutual fund, the more experienced in managing mutual funds.

This research was also supported by Rao (2000) in Winingrum (2011) shows that mutual funds and younger are not better than the age of the older mutual funds. Mutual funds have a longer life would have a longer track record, and therefore we will get a better picture of the performance to its investors.

This study also addressed that with the larger size of the mutual fund, the mutual fund will increase the value of the index mutual fund that Sharpe. It can be shown from the massive size of the assets being owned by Panin Dana seed (GR002DANAUMI) in 2010 ie 26.47 with Sharpe index value of 2.3848. In 2011 the size of the fund being owned increased to 27.03. This was also followed by the increase of performance GR002DANAUMI is 5.1895 which is indicated by the Sharpe index calculation.

The size of the assets owned by GR002DANAUMI fell to 26.74 in 2012. It is also affected by the decline of Panin GR002DANAUMI Sharpe index is 0.1009. In 2013 the size of the fund from GR002DANAUMI fell back to 26.44 by the Sharpe index value also fell widened -2.5614. Then in 2014 the size of the mutual fund owned by GR002DANAUMI increased to 26.53 so Sharpe index value also increased to -0.7753. In addition to mutual fund GR002DANAUMI some mixed mutual funds increased performance at a time when the size of the mutual fund dimilkinya increased and decreased performance on the current size of the mutual fund dimilkinya also mengalami decrease, namely mutual fund Schroder Dana Integrated II (0094649), TRIM Combination 2 (0086777) and Prospera Balance (00D5IC).

Based on these results it can be seen that in the current fund size of mutual fund increases then the value of the Sharpe index that describes the performance of the mutual fund will rise as well, and vice versa when the size of the fund from a mutual fund has decreased the will impact also on the decline in performance of the mutual fund. This is according to research conducted by Arif and Jawaid (2011) showed that the size of the fund has positive influence on the performance of mutual funds. The larger the size of the fund of funds, it will be more investors who invest in mutual funds. This will spur investment managers to work effectively and efficiently so as to provide good performance in managing the funds of investors.

Gallagher (1988) in Winingrum (2011) shows that the larger the size of the managed mutual funds will provide flexibility, improve bargaining power and facilitate the creation of economies of scale which have an impact on cost reduction that will have a positive impact on the performance of mutual funds. In line with the thinking Otten and Bams (2002) showed that more funds may enjoy economies of scale and provide higher return compared to the size of the smaller mutual funds. From here it can be seen that the size of the fund has positive influence on the performance of mutual funds.

## **CONCLUSION**

Based on research results using multiple regression analysis, with two independent variables such as age and size of mutual funds as well as the dependent variable is the performance of mix mutual funds registered in BAPEPAM during the period 2010-2014, it can be concluded that the age and size of mutual funds positive effect on the performance of mutual fund in the period 2010-2014.

Suggested for investment managers to further optimize the NAB by way of asset allocation mutual funds in order to increase economies of scale that can have an impact on cost reduction that show the performance of the mutual fund company was good when compared with the performance of JCI.

It is advisable for investors to always see information about the age and size of mutual funds of mutual funds registered with BAPEPAM both through financial and daily media reports (bareksa.com, aria.baepam.go.id, etc.) every day to predict the performance of mutual fund in Indonesia as well as precise in making an investment decision.

This study shows that age and size of the fund is very weak in explaining the dependent variable that is equal to 3.9%, which is obtained from the determination coefficient then expected to further research adding independent variables that can affect the performance of mutual funds as asset allocation mix policy, cost manager and others. So by adding the independent variable is expected to get a more complete picture of the performance of mutual fund.

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