Original Research Article

Performance Analysis of Mutual Funds Based on Market Timing Ability and Stock Selection Skill during COVID-19 Pandemic in Indonesia

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Abstract

This research aims to analyze the effect of market timing ability and stock selection skills on the performance of stock mutual funds during the Covid-19 pandemic in Indonesia. Trenor Mazuy Unconditional Model and Trenor Mazuy Conditional Model are used to calculate market timing ability and stock selection skill, considering the account macroeconomic variables named inflation and the rupiah exchange rate. The type of this research is a quantitative descriptive study with a sample of 55 stock mutual funds with assets above IDR 500 billion. The data analysis technique used is multiple linear regressions using STATA 16 analysis tool. The result shows that market timing ability and stock selection skill unconditional model have a significant effect on the performance of stock mutual funds. The calculation of the unconditional model produces a positive value. Investment managers of equity mutual funds in Indonesia do not yet have good market timing skills, while the ability to choose stocks is better. The conditional model shows insignificant results on the performance of equity mutual funds. The market timing conditional model produces a positive number, while the ability to choose the stock produces a negative number. This shows that when considering the economic conditions of a country, the performance ability of investment managers in market timing will increase, while the ability of stock selection will reduce the performance of a stock mutual fund. The level of volatility during the pandemic creates uncertainty so that macroeconomic variables as control variables need to be considered in making investment decisions.
Keyword: Mutual fund performance, market timing ability, stock selection skill, Trenor Mazuy Unconditional Model, Trenor Mazuy Conditional Model.

INTRODUCTION

The coronavirus pandemic that has occurred since March 2020 has caused many mutual fund investors to experience potential investment losses. At this time, the financial crisis is unavoidable.

In early April, it was recorded that the performance of domestic mutual funds was mostly negative since the beginning of the year. It is mainly due to the corona pandemic which had an impact on capital markets at home and abroad. The number of Single Investor Identification (SID) in 2020 compared to 2019 increased. The number of mutual fund investors is the highest compared to other investment instruments in the capital market.

Various kinds of investment manager assessments will be very useful for investors so that they can find out which mutual funds should be chosen that can generate high returns.

The role of the investment manager is needed in achieving optimal mutual fund performance. Investment managers must have stock selection skills and expertise in determining the right time to buy and sell shares from their portfolio (market timing ability).

Comer (2006) researched the market timing performance of equity mutual funds from two samples of hybrid mutual funds. As a result, there is evidence of significant stock timing capabilities in all mutual fund samples for the period of 1992-2000.

Empirical evidence Deb et al. (2007) examined the market timing & selectivity of Indian mutual funds for the period January 2000 to June 2005, with

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conditional & unconditional models. As a result, on the monthly data frequency of Treynor Mazuy and Henriksson Merton models, there is little evidence of market timing. However, the weekly data found an increase in market timing but the results were not significant. The conditional model found no evidence of positive selectivity. Thus, on the monthly data, market timing is negative while selectivity is weak, but weekly data is positive, selectivity is strengthened, while market timing is negative.

Murhadi (2010) examined the performance of mutual funds in Indonesia using the Henriksson-Merton and Treynor-Mazuy models to determine selectivity and market timing for the period February 2008 to June 2009. It is found that some mutual fund products performed well with selectivity and selection of positive market timing.

Olbryś (2011) evaluates market timing on the performance of Polish equity mutual funds for the period January 2003 to June 2011 using the Treynor-Mazuy and Henriksson-Merton models. The results showed that a significant negative value was found in selectivity and market timing ability.

Anita (2013) researched stock selection and timing of Islamic mutual funds in Indonesia using Treynor Mazuy's conditional model. The result is that the investment manager's stock selection ability makes a positive contribution to the return of funds, while the timing ability makes a negative contribution to the return of funds, and the public information that forms the basis for investing in the Islamic capital market is information about changes in exchange rates.

Kaur (2013) evaluated the performance of equity mutual funds in India from 2008 to 2010. It is finding a significant positive alpha, but a small value for market timing and selectivity. Kaur states that with high-frequency data, the positive alpha will be obtained.

Musah et al. (2014) examined the ability to choose stocks and market timing of mutual fund reports from January 2007 to December 2012 in Ghana. Musah found that in general, mutual fund managers in Ghana cannot choose stocks effectively and are unable to predict the magnitude and direction of future market returns.

Research by Alexandri (2015) which examined the performance of Indonesian stock mutual funds for the period January 2008 - March 2011 found that Market Timing and Stock Selection were the most dominant variables compared to other variables related to mutual fund performance. It shows negative results while selectivity shows positive results even though market timing is the dominant factor affecting mutual fund performance.

LITERATURE REVIEW

Mutual fund performance is an important thing to know from investors because it will determine their investment decisions. When investors provide funds to investment managers, investors have the right to know what kind of performance the investment manager has done in management. The decision will be taken into consideration whether the invested investment will be maintained in the short or long term. A mutual fund is considered to have good performance if since the issuance of the mutual fund it is above the market index performance.

Market Timing is the ability of market timing where managers can correctly assess the direction of the market when it is bearish and bullish and can adjust their portfolio positions (Deb et al., 2007).

Mutual fund managers have high market timing skills if they can enter and exit the market at the right time, i.e. leave the market before the JCI slumps and enter the market just before the JCI skyrockets. The activity of market timing ability relates to the realization of future forecasts of the market portfolio. If the investment manager believes it can generate better than the average estimated market return, the investment manager will adjust the portfolio risk level in anticipation of market changes.

Stock selection is an activity of market timing ability related to the realization of future forecasts of the market portfolio. If the investment manager believes that it can produce better than the average estimated market return, the investment manager will adjust the level of portfolio risk in anticipation of market changes (Deb et al., 2007).

The investment manager's stock selection ability can be seen from the alpha value (α), an investment manager who has a good stock selection will have > 0. On the other hand, an investment manager with poor stock selection ability will have 0. An investment manager who has this ability in facing a bearish market will reduce/ level of risk of assets in their portfolio by moving their assets to stock portfolios with smaller and less risk (Manurung, 2008).

RESEARCH METHOD

The population of this study is equity mutual funds that have been publicly published in the Financial Services Authority (OJK) and were active during the research period. The technique used in sampling is purposive sampling to obtain a representative sample. The criteria for the selected data are 1) the selected sample is equity mutual funds that are still active until February 2021; 2) the selected sample is equity mutual funds that have assets under management above IDR 500 billion; 3) the availability of data according to the research observation period. The data analysis method

used is the classical assumption test, multiple linear regression, and hypothesis testing (F-statistic test, T-statistic test, and the Coefficient of Determination (R2) test using the Stata 16 program.

Mutual Fund Performance Measurement

Mutual fund performance measurement can be calculated using the Sharpe method. Sharpe's method is done by calculating the average return of the total portfolio, the average risk-free return, and the standard deviation. The calculation between the average return of the portfolio and the average risk-free return produces an excess return. The calculation can be formulated as follows:

$$RVAR = \frac{TR_p - R_{BR}}{\sigma_p}$$

Note:

RVAR : Reward to variability ratio/ Sharpe measurement

TR_P : The average return of the total portfolio in a certain period

R_{BR} : Average risk-free return in a certain period

σ_p : Variability as measured by the standard deviation of portfolio returns in a certain period periode

The RVAR value shows the performance of the portfolio. The greater the RVAR value, the better the performance of the portfolio (Hartono, 2013).

Decision-making criteria
1. The greater the RVAR value, the better the company's performance
2. The smaller the RVAR value, the worse the company's performance

Market timing and selectivity measurement

The Treynor-Mazuy model is used to measure market timing and stock selection. The Treynor Mazuy Conditional model takes into account the fact that there are risks that may arise and the expected level of return that varies according to the country's economic conditions.

The formula of the Treynor-Mazuy unconditional model is:

$$Rp - Rf = \alpha + (Rm - Rf) + \gamma(Rm - Rf)^2 + \varepsilon p$$

The formula of the Treynor-Mazuy condition model is:

$$Rp - Rf = \alpha + \beta 1(Rm - Rf) + \beta 2(\text{inflasi})(Rm - Rf) + \beta 3(\text{kurs})(Rm - Rf) + \gamma(Rm - Rf)^2 + \varepsilon p$$

Information:

Rp = Mutual fund portfolio return
Rf = Risk-free return in period t
Rm = Market return in period t
α = Intercept which is an indication of stock selection from the investment manager
β = Excess market return regression coefficient
γ = Regression coefficient which is an indication of the investment manager's market timing ability
εp = Random error

RESEARCH RESULTS AND DISCUSSION

This study uses stock mutual funds data during the research period March 2020 to February 2021. In determining the population sample, the population is selected based on several criteria and mutual funds that do not meet these criteria are excluded from the research sample. So there are 55 samples of stock mutual funds.

The initial step that must be done before performing multiple regression analysis is the classical assumption test. This study has shown that the data is free from deviations from classical assumptions which are characterized by normally distributed data, no heteroscedasticity, and no multicollinearity. The data were normally distributed using the Kolmogorov-Smirnov test with a probability value greater than a significance level of 0.05 (0.438> 0.05). The next test, the heteroscedasticity test was carried out through the ARCH test. With a probability value of 0.933 which is greater than the coefficient value of 0.05, it can be concluded that the data are not distributed heteroscedasticity. The results of the multicollinearity test showed an average VIF value of 3.47< 10, which means that it is free of multicollinearity. And the results of the autocorrelation test through the LM-test showed a probability value of 0.8013 > 0.05 which indicated that the data was free of autocorrelation.

Table-1: Multiple Linear Regression Test

Source	SS	df	MS			
				Number of obs	=	54
				$F(4, 49)$	=	17.52
Model	.306705721	4	.07667643	Prob > F	=	0.0000
Residual	.214464032	49	.004376817	R-squared	=	0.5885
				Adj R-squared	=	0.5549
Total	.521169753	53	.009833392	Root MSE	=	.06616

Y	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
X1	.0292429	.0090288	3.24	0.002	.0110989	.047387
X2	4.102342	1.128679	3.63	0.001	1.834177	6.370508
X3	.0006343	.0035879	0.18	0.860	-.0065758	.0078444
DF_X4	-.424321	.4534213	-0.94	0.354	-1.335505	.4868632
_cons	.1230191	.0119757	10.27	0.000	.098953	.1470851

After the research data has met all the classical assumptions, then regression analysis and hypothesis testing can then be carried out. Hypothesis testing was carried out with the F statistical test, t statistical test, and the coefficient of determination (R^2) test. Based on the equation model, the calculated F is 17.52 while the F-table is 2.54. The calculated F value is greater than the F table, it can be concluded that the variables Market Timing Ability unconditional, Stock Selection Unconditional, Market Timing Ability Conditional, and Stock Selection Conditional simultaneously affect the performance of stock mutual funds. In Table 1 it can be seen that the R square value is at a value of 0.5885, this means that the performance of equity mutual funds as the dependent variable can be explained by the independent variable (market timing ability stock selection skill) of 58.85% while the remaining 41.15% explained by other variables outside the study.

The market timing ability unconditional model variable has a regression coefficient of 0.0292 with a count of 3.24 which is greater than the t table, which is 2.005, and a significance value of 0.002 less than 0.05. This shows that the unconditional market timing ability model has a significant positive effect on the performance of equity funds.

The stock selection skill unconditional model variable has a regression coefficient of 4.102 with a count of 3.63 greater than the t table, which is 2.005 and a significance value of 0.001 less than 0.05. This shows that the stock selection skill unconditional model has a significant positive effect on the performance of stock mutual funds.

The market timing ability conditional model variable has a regression coefficient of 0.0006 with a count of 0.18 which is smaller than the t table which is 2.005 and a significance value of 0.860 which is more than 0.05. This shows that the market timing ability conditional model has no significant positive effect on the performance of equity funds.

The stock selection skill conditional model variable has a regression coefficient of -0.4243 with at count of -0.94 smaller than the t table which is 2.005 and a significance value of 0.354 greater than 0.05. This shows that the stock selection skill unconditional model has an insignificant negative effect on the performance of stock mutual funds.

Table-2: Recapitulation of the Calculation Results of Sharpe and Treynor Mazuy

NO	Mutual Fund Name	Y	X1 Uncond	X2 Uncond	X3 Condi	X4 Condi
		Sharpe	γ	α	γ	α
1	SCHRODER DANA PRESTASI PLUS	0.0714	-0.6320	-0.0014	-1.3050	-0.0007
2	BATAVIA DANA SAHAM	0.0815	-0.8009	-0.0005	-3.4152	0.0036
3	ASHMORE DANA EKUITAS NUSANTARA	0.1292	-0.2215	0.0000	-1.2085	0.0043
4	SCHRODER DANA PRESTASI	0.1017	-0.7194	0.0010	-2.1668	0.0038
5	MANDIRI SAHAM ATRAKTIF	0.0945	-0.7159	-0.0005	-4.8569	0.0058
6	MANULIFE DANA SAHAM UTAMA	0.2267	0.0882	0.0083	-2.7103	0.0161
7	ASHMORE DANA PROGRESIF NUSANTARA	0.1635	-1.6922	0.0116	-4.4545	0.0203
8	ASHMORE SAHAM SEJAHTERA NUSANTARA	0.1461	-0.3803	0.0024	-2.2270	0.0073
9	EASTSPRING INVESTMENTS VALUE DISCOVERY KELAS B	0.1978	-1.7517	0.0150	-2.1460	0.0199
10	MANULIFE DANA SAHAM KELAS A	0.1303	-0.9214	0.0040	-3.5563	0.0113
11	BATAVIA SAHAM CEMERLANG	0.0716	-0.5460	-0.0033	-5.1965	0.0062

12	SAM DANA CERDAS	0.0554	-1.5774	-0.0003	-4.4604	0.0070
13	BATAVIA SAHAM SEJAHTERA	0.0715	-0.5495	-0.0033	-5.2020	0.0062
14	SUCORINVEST EQUITY FUND	0.2223	1.1886	0.0006	-3.6102	0.0080
15	SEQUIS EQUITY MAXIMA	0.0508	-0.8563	-0.0033	-5.2451	0.0006
16	TRIMEGAH SAHAM NUSANTARA	0.0894	-0.5218	-0.0019	-5.3398	0.0061
17	DANAREKSA MAWAR EKUITAS PLUS	0.0625	0.1638	-0.0083	-5.1348	-0.0007
18	HPAM SMART BETA EKUITAS	0.1463	-2.4191	0.0145	-4.3535	0.0134
19	SYAILENDRA DANA EKUITAS SEJAHTERA	0.0322	0.0512	-0.0103	-3.7326	-0.0041
20	MANULIFE DANA SAHAM ANDALAN	0.2729	0.2044	0.0119	-0.2330	0.0188
21	SIMAS SAHAM UNGGULAN	-0.1248	-1.7960	-0.0108	-1.2657	-0.0097
22	SCHRODER 90 PLUS EQUITY FUND	0.0871	-0.6635	-0.0002	-2.3561	0.0004
23	BAHANA PRIMAVERA 99 KELAS S	0.0340	-0.8724	-0.0041	-5.1296	0.0013
24	BNP PARIBAS PESONA	0.0759	-1.0312	-0.0001	-3.9909	0.0070
25	BNP PARIBAS EKUITAS	0.0758	-0.6388	-0.0022	-3.9382	0.0055
26	BNI-AM INSPIRING EQUITY FUND	0.0326	-1.6806	-0.0002	-6.1426	0.0075
27	BNP PARIBAS MAXI SAHAM	0.0417	-0.6271	-0.0057	-6.1284	0.0032
28	PANIN DANA MAKSIMA	0.0796	-0.2543	-0.0045	-3.1282	0.0017
29	SCHRODER DANA PRESTASI PRIMA	0.0749	-0.3450	-0.0031	-3.5878	0.0007
30	SCHRODER DANA ISTIMEWA	0.1875	-1.8562	0.0144	-2.4895	0.0177
31	BNP PARIBAS INFRASTRUKTUR PLUS	0.0674	-1.2383	0.0002	-5.4752	0.0098
32	CAPITAL EQUITY FUND	0.0130	2.0117	-0.0079	12.8300	-0.0138
33	BAHANA STELLAR EQUITY FUND	0.0317	-0.2486	-0.0081	-3.4107	-0.0037
34	MANDIRI INVESTA ATRAKTIF	0.0901	-0.3986	-0.0026	-4.7161	0.0010
35	SAM INDONESIAN EQUITY FUND	0.2963	6.5225	0.0583	10.8225	0.1069
36	FWD ASSET DIVIDEND YIELD EQUITY FUND	0.0864	0.1140	-0.0051	-3.1045	-0.0031
37	DANAREKSA MAWAR EKUITAS UTAMA	0.0651	-0.0554	-0.0068	-5.1867	0.0008
38	BNP PARIBAS SOLARIS	0.2447	0.6430	0.0077	-2.3359	0.0165
39	MANULIFE DANA EKUITAS UTAMA	0.1419	-0.4664	0.0025	-5.6932	0.0112
40	MANDIRI INVESTA CERDAS BANGSA	0.0652	-0.7895	-0.0027	-3.9212	0.0015
41	SCHRODER DANA EKUITAS UTAMA	0.1308	-0.7792	0.0033	-2.3703	0.0061
42	PANIN DANA BERKEMBANG	0.1052	-0.6264	0.0004	-4.7119	0.0049
43	ASHMORE SAHAM SEJAHTERA NUSANTARA II	0.1032	-0.5879	-0.0003	-3.7680	0.0058
44	PANIN DANA TELADAN	0.1590	-1.4605	0.0097	-0.6648	0.0147
45	TRIMEGAH BHAKTI BANGSA	0.1455	-1.1509	0.0068	-4.5553	0.0137
46	TRAM CONSUMPTION PLUS	0.1058	-1.2326	0.0035	-6.0054	0.0103
47	PAN ARCADIA DANA SAHAM BERTUMBUH	0.4709	7.6902	-0.0048	23.2547	-0.0585
48	ASHMORE SAHAM DINAMIS NUSANTARA	0.2299	0.0114	0.0079	-2.5171	0.0169
49	PINNACLE DANA PRIMA	0.3409	5.4136	-0.0168	8.4968	-0.0283
50	SYAILENDRA EQUITY GARUDA FUND	0.0939	0.0655	-0.0051	-3.0738	0.0053
51	MANDIRI DYNAMIC EQUITY	0.2516	-2.7381	0.0285	-6.9340	0.0363
52	PANIN DANA BERDEDIKASI	0.0443	-0.8708	-0.0044	-6.3179	0.0052
53	BAHANA DANA EKUITAS ANDALAN	0.0357	-1.2165	-0.0020	-5.2229	0.0024
54	MANDIRI INVESTA EQUITY MOVEMENT	0.0756	-0.7358	-0.0021	-4.7041	0.0001
55	POOL ADVISTA KAPITAL OPTIMAL	0.3381	8.2343	-0.0266	13.8990	-0.0444
	Average	**0.1221**	**-0.1139**	**0.0010**	**-2.2563**	**0.0056**
	Good Performance	54	14	21	5	45
		98.18%	25.45%	38.18%	9.09%	81.82%

The results of the study show that the average performance of equity mutual funds shows a positive number where the majority of 98.18% equity funds have good performance.

The average unconditional during the study period is negative, namely -0.1139. This value indicates that in general, equity fund investment managers in Indonesia cannot yet determine the right time to sell and buy shares (market timing). The results of this study are by Comer's (2006) research on Treynor Mazuy's model and provide evidence of significant stock market timing capabilities in all samples of funds studied.

Meanwhile, the average unconditional during the study period is positive, namely 0.0010. Although this value is very minimal, this value shows that during the Covid-19 pandemic in general, equity fund investment managers in Indonesia can choose stocks that are by their investment objectives (stock selection) of 38.18%. The results of this study are under the research of Kaur (2013) and Alexandri (2015) finding evidence that the ability of stock selection has a positive effect.

The average conditional during the study period is -2.2563. This value indicates that in general, equity fund investment managers in Indonesia cannot yet determine the right time to sell and buy shares (market

timing). However, the results of the statistical calculations of this study which showed positive results were not significant, not following the results of Deb et al (2007) research which found that the monthly market timing conditional model data gave significant negative results. This is also not following research conducted by Anita (2013) where the statistical significance value was found to be negative on the market timing ability of equity fund investment managers.

While the positive conditional value is 81.81% mutual funds with an average calculation of the value of 0.0056. This value indicates that in general, equity fund investment managers in Indonesia already have stock selection capabilities. During the Covid-19 pandemic, investment managers were quite able to identify undervalued stocks in the market. However, through this conditional calculation, the ability of stock selection results in a negative performance for the mutual funds it manages. The results of this study are not following the research of Deb et al (2007) and Anita (2013) who found that stock selection has a significant positive effect.

CONCLUSION

The effect of market timing and stock selection unconditional model on mutual fund performance during the Covid-19 pandemic was found significant. Investment managers of equity mutual funds in Indonesia have positive market timing and stock selection capabilities even though the value of market timing is small. Meanwhile, the conditional model shows insignificant results. The results show a positive value of market timing ability even though it is very small. Although there are a lot of investment managers in Indonesia who have stock selection capabilities, it can be seen that this ability reduces the performance of mutual funds because the results show a negative effect.

SUGGESTION

For further research, it is better to use other independent variables that have more potential to affect the performance of equity funds. The macroeconomic control variables can be expanded. Those are money supply, Gross Domestic Product, and others. Research should be taken from several types of mutual funds with a larger number of samples and research periods so that they can describe the performance of mutual funds more clearly.

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