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The Treynor-Mazuy Conditional Model: Overview of Market Timing and Stock Selection on Equity Mutual Funds Performance

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Abstract

This study explores market timing and stock selection by investment managers during the Covid-19 in Indonesia. By applying several sample criteria to the population of mutual funds registered at OJK, we found 55 stock mutual funds using the purposive sampling. We processed data using the STATA16 computer program. The Treynor-Mazuy conditional inflation and exchange rate model, according to the findings of this study, can show that market timing and stock selection for mutual fund managers have a positive and significant impact on improving the performance of equity fund portfolios during the pandemic in Indonesia. In Indonesia, there are 5 equities mutual funds having positive or market timing skills, accounting for 9.09 percent of all equity mutual funds, whereas the remaining 90.91 percent do not. The positive coefficient of the gamma variable shows that the investment manager's ability to market time is expected to result in higher stock mutual fund returns. Positive or stock selectivity characteristics are available in 45 equity mutual funds, or 81.18 percent. The contribution of this study focuses on exchange rate and inflation. However, there needs to be a relevant follow-up comparison before the pandemic occurs. In addition, it is necessary to consider other elements in the macro-economy.

Keywords: Treynor Mazuy, inflation, exchange rate, market timing, stock selection

JEL: C24; E31; E64; A11; C52

Introduction

The Covid-19 pandemic that ravaged Indonesia caused social constraints; there was a volatile health and economic crisis, with a drop in people's purchasing power, while communal income remained unchanged, if not declining (e.g. Oyinlola et al., 2021). Of course, this has a negative influence on the country's economy, particularly the inflation rate and exchange rate, which are

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employed as indicators in the Treynor-Mazuy model's conditional model calculation.

The Treynor Mazuy conditional model is used to test market timing ability and stock selection skill using the same theoretical assumptions as the Treynor Mazuy unconditional model. Deb et al. (2007) discovered favorable but not significant selectivity results for stock mutual funds using the conditional method; this suggests that investment managers do poorly in stock selection when considering economic conditions in a country. Stock selection has a favorable and significant effect on stock mutual fund performance, according to research (Fakhrunnas, 2018), but market timing ability has a negative effect on stock mutual fund performance (Škrinjarić, 2013; Zouaoui, 2019).

Inflation's relative increase might be a decent indicator for capital market investors. When examined using the conditional model, the results of Chang and Lewellen (1994) reveal that inflation has a considerable negative effect on performing equities mutual funds. Mutual fund investors used inflation information on average to make investment decisions; if inflation is high, the rate of return on mutual funds will increase; if inflation is low, the rate of return on mutual funds will decrease.

When the rupiah decreases in value, stock prices decrease as foreign investors exit the Indonesian stock market by selling shares. The net asset value (NAV) of mutual funds dropped because of declining investment and decreasing stock prices. If the rupiah exchange rate strengthens, the stock price rise. The rupiah exchange rate influences the performance of equities. In the stock market, mutual fund investors rely on information on changes in the rupiah exchange rate to make investment decisions; if the exchange rate changes are large, the mutual fund return rate will fall, and vice versa if the exchange rate changes are small.

We structure this article into five parts. Structure 1 highlights the background. It described the literature review in structure 2. Structure 3, data and empirical methods as instruments in data interpretation. We describe the results and discussion of structure 4 and the last is the conclusion which is the subject of structure 5.

1. Literature review

Treynor-Mazuy is a research method that has not been widely used in Indonesia (for example Paramita and Sembiring, 2018; Naveed et al., 2020). This model applies to the possibility of risks and the expected rate of return, which varies depending on the economic conditions in each country. Because the conditional model, which considers inflation and exchange rate conditions, to have better capabilities than the unconditional model, we expect it to outperform the unconditional model.

Market index movements and macroeconomic factors influenced the rate of return on a stock portfolio, such as inflation, interest rate changes, and economic growth. As a result, it must assess economic conditions, as well as their significance for the capital market (Elton et al., 2009), model Treynor-Mazuy conditional is:

$$Rp_t = \alpha_0 + \alpha_1.DP_{t-1} + \alpha_2.T_{Bt-1} + \alpha_3.FX_{t-1} + \beta_0 Rm_t + \beta_1.Rm_t.DP_{t-1} + \beta_2 Rm_t TB_{t-1} + \beta_3 FX_{t-1} + \gamma Rm_t^2 + \varepsilon p \quad (1)$$

Where:

Rp = return portofolio reksa dana;

Rm = return market pada periode t;

DP= market dividend yield;

TB= treasury bill interest rate;
FX= yield on exchange rate fluctuation;
and εp = *random error.*

Grinblatt and Titman (1995), Agarwal and Pradhan (2018), and Panda et al. (2015) derive the components in the Treynor Mazuy regression formula from the portfolio return minus the risk-free return for period t; the value of the reduction is the same as the alpha component added to the first beta, which is multiplied by market return after deducting the risk-free return, then the second beta multiplied by macroeconomic elements multiplied by the alpha component. If there is over one macroeconomic element, repeat the computation using market return minus risk-free return, then add gamma multiplied by market return minus the squared risk-free return.

The macroeconomic values put in the regression model will influence the value of the alpha, beta, and gamma coefficients got by the conditional formula (Issah and Antwi, 2017). Managers will evaluate the macroeconomic conditions of a country when deciding on investment management measures in the conditional model (Koju et al., 2020). If a manager is attentive in predicting the economic state of his country and its expectations, his abilities will bring about the positive value of an organization he manages (Carnevale and Hatak, 2020).

Inflation is one of the economic indicators marked by an increase in the price of needs in the market, hence this condition can describe a reduction in people's purchasing power because of rising prices in the conditional model. The rise in people's income does not keep pace with their needs. When inflation rises, Bank Indonesia will raise the SBI interest rate to keep inflation at bay and encourage investors to keep investing in the stock market. The exchange rate is the value of one currency in relation to other currencies. A status of a country's economy can be reflected in currency exchange rates. The stability of a growing exchange rate shows that the country in question is in reasonably excellent economic shape (Bresser-Pereira, 2013).

Changes in a country's exchange rate affect general economic conditions, primarily people's purchasing power, which are affected by changes in the consumer price index. According to Taylor (1995), the exchange rate's significance has grown significantly in recent years, mainly since the establishment of the Euro currency and the financial crisis. The movement of capital flows is better described by changes in exchange rates and stock prices. The major result of the portfolio method is a decrease in stock prices, which generates a decrease in the wealth of domestic investors, who are the drivers of money demand, and this can cause a decline in interest rates.

2. Data and empirical methods

There are 273 equity mutual funds in the population. Researchers chose this time period because Indonesia had an economic crisis precipitated by the Covid-19 outbreak in the 2020s, making it a good research reference point.

Table 1: Variable measurement

Variabel	Operational Definition	Measuremet
Mutual fund performance	Indicators for assessing a mutual fund	Sharpe ratio
Market timing ability	Ability to read and forecast market situation	Treynor-Mazui model: $Rp - Rf = \alpha + \beta 1\ (Rm-Rf) + \beta 2$ (inflation) $(Rm-Rf) + \beta 3$ (exchange rate) $(Rm-Rf) + \gamma\ (Rm-Rf)2 + \varepsilon p$
Stock selection skill	Ability to determine the selected stock	Treynor-Mazui model: $Rp - Rf = \alpha + \beta 1\ (Rm-Rf) + \beta 2$ (inflaton) $(Rm-Rf) + \beta 3$ (exchange rate) $(Rm-Rf) + \gamma\ (Rm-Rf)2 + \varepsilon p$
Inflation	Inflation is measured by recording the inflation rate of the national consumer price index published by BI during the study period	$\text{Inflation} = \frac{HKn-HKn-1}{HKn-1} x100\%$`
Exchange rate	The exchange rate is measured using the middle rate of the US dollar against the rupiah during the study period	$ER\ \text{ratio} = \frac{ERt-ERt-1}{\text{ERt}-1}$

Source: Bank of Indonesia (2021).

There were 58 mutual funds that met the sample requirements of having assets under management of over 500 billion rupiah, and there were three stock mutual funds whose data availability was incomplete throughout the research period, thus we gained 55 stock mutual fund samples. Because the enormous number of managed funds shows high public trust in mutual fund businesses, the examination is limited to mutual funds with AUM above 500 billion rupiah.

NAV data from each mutual fund sample during the observation period, BI rate information, JCI data, inflation data, and the rupiah exchange rate during the observation period are among the data collected. The STATA16 computer application is used to process the data that has been got (see *Table 1*).

3. Results and discussion

Table 2 shows a minimum value of *-6.934006* originating from Mandiri Dynamic Equity mutual funds with investment manager PT. Mandiri Manajemen Investasi, and a maximum value of *23,25468* originating from Pan Arcadia Dana Saham Growing with investment management PT. Pan Arcadia Capital. The mean value obtained is *-2.256315*, with a standard deviation of *5.574203*, showing a data spread of *55.74 percent* on the independent variable market timing ability conditional model. Compared to other companies, the market timing ability conditional model data fluctuation in each observed firm was substantially higher and showed the highest level of variability.

Table 2: Descriptive statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
kinerja	55	.1220691	.0984873	-.1247642	.4709219
markettiming	55	-2.256315	5.574203	-6.934006	23.25468
stockselec~n	55	.005566	.0199809	-.0584528	.1068816

Source: calculated by STATA 16.

The Pan Arcadia Mutual Fund, the Growing Stock Fund, is with PT. Pan Arcadia Capital as investment manager, has a minimum value of *-0.0584528*, while the Sam Indonesian Equity Fund, with PT. Samuel Asset Management as investment manager, has a maximum value of *0.1068816*.

Tabel 3: Normality test

Smaller group	D	P-value
Residual:	0.1038	0.306
Cumulative:	-0.1515	0.080
Combined K-S:	0.1515	0.160

Source: calculated by STATA 16.

Table 4: Multicollinearity test

Variable	VIF	1/VIF
markettiming	1.11	0.900362
stockselec~n	1.11	0.900362
Mean VIF	1.11	

Source: calculated by STATA 16.

The average result is *0.005566*. The standard deviation of *0.0199809* shows the level of distribution of the independent variable data from the stock selection skill conditional model of 1.20 percent. The results of the Kolmogorov-Smirnov normality test show the residual probability level of *0.306> 0.05*, these results show the data was normally distributed. *Table 4* and *Table 5* show that the results of the multicollinearity test show the VIF value exceeds 10, meaning that it is free of multicollinearity.

Table 5: Heteroscedasticity test

Source	SS	df	MS	Number of obs	=	54
				F(1, 52)	=	0.00
Model	2.4289e-07	1	2.4289e-07	Prob > F	=	0.9701
Residual	.008899747	52	.000171149	R-squared	=	0.0000
				Adj R-squared	=	-0.0192
Total	.008899989	53	.000167924	Root MSE	=	.01308

Residual2	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
Lag_Residual2	-.0052223	.1386263	-0.04	0.970	-.2833963	.2729517
_cons	.0055717	.0019362	2.88	0.006	.0016864	.0094571

Source: calculated by STATA 16.

Table 6: Autocorrelation test

Source	SS	df	MS	Number of obs	=	53
				F(4, 48)	=	0.43
Model	.010243676	4	.002560919	Prob > F	=	0.7889
Residual	.288367589	48	.006007658	R-squared	=	0.0343
				Adj R-squared	=	-0.0462
Total	.298611264	52	.005742524	Root MSE	=	.07751

Residual	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
markettiming	-.0002556	.0020045	-0.13	0.899	-.004286	.0037748
stockselection	-.0200955	.5572225	-0.04	0.971	-1.140466	1.100275
Lag_Residual_1	.0716579	.1437973	0.50	0.621	-.217466	.3607817
Lag_Residual_2	.1660969	.1437034	1.16	0.253	-.1228381	.4550319
_cons	.0012739	.0116078	0.11	0.913	-.0220652	.024613

Source: calculated by STATA 16.

The ARCH test shows the probability value of Lag-residual of *0.970*, which is more than the coefficient value of *0.05*, then heteroscedasticity does not occur in the research data (see *Table 3*). The results of the autocorrelation test using the Lagrange Multiplier Test (LM test) show that the value of lag-residual is above the significance value of *0.05*, which shows that the data is free of autocorrelation. On the basis of *Table 7*, we can explain it:

$$Sharpe\ ratio = 0.143 + 0.012\ MTA\ conditional + 1.117\ SSS\ conditional \quad (2)$$

Where:

T-table (*2.004879*), and F-table (*3.168246*). The Sharpe ratio shows that the market timing ability conditional model variable has a considerable positive effect on performing stock mutual funds. These findings show that inflation and exchange rates have a major impact on market timing management by assessing an investment manager's ability to decide about when to sell and buy stocks in order to improve the performance of an equity mutual fund portfolio. In the Covid-19 situation that occurred in Indonesia, the market timing ability conditional model of the investment manager indicates a positive direction, showing that the manager's ability to manage the portfolio considered in increasing the rate of return of his portfolio with the conditional model of inflation and exchange rates (see *Table 6*).

Table 7: Multiple regression

Source	SS	df	MS	Number of obs	=	55
				F(2, 52)	=	19.04
Model	.221416134	2	.110708067	Prob > F	=	0.0000
Residual	.302370342	52	.005814814	R-squared	=	0.4227
				Adj R-squared	=	0.4005
Total	.523786476	54	.00969975	Root MSE	=	.07625

kinerja	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
markettiming	.0121049	.0019619	6.17	0.000	.008168	.0160418
stockselection	1.117081	.5473267	2.04	0.046	.0187899	2.215373
_cons	.1431639	.0112288	12.75	0.000	.1206316	.1656962

Source: calculated by STATA 16.

This study's findings are consistent with Deb et al., (2007), Azis et al. (2021), and Maulana and Ardiansari (2017), all of whom found conditional market timing to be favorable and significant in improving the performance of equity mutual fund portfolios. During the pandemic in Indonesia, fluctuations in the value of inflation and the rupiah exchange rate had a positive and significant impact on the selection of stock mutual funds, where investment managers were careful in choosing the stocks they managed, but economic conditions were unpredictable.

According to the Treynor-Mazuy Conditional model's recapitulation, which is shown in *Table 4*, there are 5 equity mutual funds in Indonesia, or *9.09 percent*, with positive or market timing capabilities, while the remaining *90.91 percent* do not. The gamma variable's coefficient is positive, showing that the investment manager's ability to market time is predicted to lead to higher stock mutual fund returns. When making investment selections, investment managers should take inflation and the rupiah currency rate into account. If inflation rises, which is followed by an increase in firm costs and a decrease in profitability, mutual fund demand will decrease.

Stock selection skill is a conditional model variable that has a positive and large impact on stock mutual fund performance. It described the capacity of stock selection conditional models of investment managers to increase mutual fund performance in this paper, which describes the activities of investment managers in their ability to choose stocks. The mutual fund's performance improves as the investment manager's stock selection competence improves. In the presence of macroeconomic variables as control variables in the Treynor-Mansuy allows investment managers to improve the performance of stock mutual fund portfolios through stock picking abilities.

According to the Treynor-Mazuy conditional model's recapitulation shown in *Table 8*, 45 equity mutual funds (*81.18 percent*) have positive or have stock selectivity capabilities. Another *18.82 percent* cannot choose their own stocks. The findings of this study are comparable to those of Paramita et al., (2017), who found that mutual fund investment managers' stock selection skills and market

timing abilities are stronger in times of crisis than in periods of stability. This is because, during a crisis, investment managers are more cautious in their decisions.

Table 8: Recapitulation of Treynor Mazuy calculation

NO	Mutual Funds	Y	X3 Condi	X4 Condi	Sharpe Ratio	MTA condi-tional	SS condi-tional
		Perform RD	y	α			
1	Schroder Dana Prestasi Plus	0.0714	-1.3050	-0.0007	✓	–	–
2	Batavia Dana Saham	0.0815	-3.4152	0.0036	✓	–	✓
3	Ashmore Dana Ekuitas Nusantara	0.1292	-1.2085	0.0043	✓	–	✓
4	Schroder Dana Prestasi	0.1017	-2.1668	0.0038	✓	–	✓
5	Mandiri Saham Atraktif	0.0945	-4.8569	0.0058	✓	–	✓
6	Manulife Dana Saham Utama	0.2267	-2.7103	0.0161	✓	–	✓
7	Ashmore Dana Progresif Nusantara	0.1635	-4.4545	0.0203	✓	–	✓
8	Ashmore Saham Sejahtera Nusantara	0.1461	-2.2270	0.0073	✓	–	✓
9	Eastspring Investments Value Discovery Kelas B	0.1978	-2.1460	0.0199	✓	–	✓
10	Manulife Dana Saham Kelas A	0.1303	-3.5563	0.0113	✓	–	✓
11	Batavia Saham Cemerlang	0.0716	-5.1965	0.0062	✓	–	✓
12	Sam Dana Cerdas	0.0554	-4.4604	0.0070	✓	–	✓
13	Batavia Saham Sejahtera	0.0715	-5.2020	0.0062	✓	–	✓
14	Sucorinvest Equity Eupd	0.2223	-3.6102	0.0080	✓	–	✓
15	Sequis Equity Maxima	0.0508	-5.24	0.0006	✓	–	✓
16	Trimegah Saham Nusantara	0.0894	-5.3398	0.0061	✓	–	✓
17	Danereksa Mawar Ekuitas Plus	0.0625	-5.1348	-0.0007	✓	–	–
18	Hpam Smart Beta Ekuitas	0.1463	-4.3535	0.0134	✓	–	✓
19	Syailendra Dana Ekuitas Sejahtera	0.0322	-3.7326	-0.0041	✓	–	–
20	Manulife Dana Saham Andalan	0.2729	-0.2330	0.0188	✓	–	–
21	Simas Saham Unggulan	-0.1248	-1.2657	-0.0097	–	–	–
22	Schroder 90 Plus Equity Eund	0.0871	-2.3561	0.0004	✓	–	✓
23	Bahana Primavera 99 Kelas S	0.0340	-5.1296	0.0013	✓	–	✓
24	BNP Paribas Pesona	0.0759	-3.9909	0.0070	✓	–	✓
25	BNP Paribas Ekuitas	0.0758	-3.9382	0 .0055	✓	–	✓
26	BNI-AM Inspiring Equity Eund	0.0326	-6.14 26	0 .0075	✓	–	✓
27	BNP Paribas Maxi Saham	0.0417	-6.1284	0.0032	✓	–	✓
28	Panin Dana Maksima	0.0796	-3.1282	0.0017	✓	–	✓
29	Schroder Dana Prestasi Prima	0.0749	-3.5878	0.0007	✓	–	✓

NO	Mutual Funds	Y	X3 Condi	X4 Condi	Sharpe Ratio	MTA condi-tional	SS condi-tional
		Perform RD	y	α			
30	Schroder Dana Istimewa	0.1875	-2.4895	0.0177	✓	–	✓
31	BNP Paribas Infrastruktur Plus	0.0674	-5.4752	0.0098	✓	–	✓
32	Capital Equity Eund	0.0130	12.8300	-0.0138	✓	✓	–
33	Bahana Stellar Equity Eund	0.0317	-3.4107	0.0037	✓	–	–
34	Mandiri Investa Atraktif	0.0901	-4.7161	0.0010	✓	–	✓
35	Sam Indonesian EQuity 6u.ru;t,	0.2963	10.8225	0.1069	✓	✓	✓
36	Fwd Asset Dividend Yield Equity Eund	0.0864	-3.1045	-0.0031	✓	–	–
37	Danareksa Mawar Ekuitas Utama	0.0651	-5.1867	0.0008	✓	–	✓
38	BNP Paribas Solaris	0.2447	-2.3359	0.0165	✓	–	✓
39	Manulife Dana Ekuitas Utama	0.1419	-5.6932	0.0112	✓	–	✓
40	Mandiri Investa Cerdas Bangsa	0.0652	-3.9212	0.0015	✓	–	✓
41	Schroder Dana Ekuitas Utama	0.1308	-2.3703	0.0061	✓	–	✓
42	Panin Dana Berkembana	0.1052	-4.7119	0.0049	✓	–	✓
43	Ashmore Saham Sejahtera Nusantara II	0.1032	-3.7680	0.0058	✓	–	✓
44	Panin Dana Teladan	0.1590	-0.6648	0.0147	✓	–	✓
45	Trimegah Bhakti Bangsa	0.1455	-4.5553	0.0137	✓	–	✓
46	Tram Consumption Plus	0.1058	-6.0054	0.0103	✓	–	✓
47	Pan Arcadia Dana Saham Bertumbuh	0.4709	23.2547	-0.0585	✓	✓	–
48	Ashmore Saham Dinamis Nusantara	0.2299	-2.5171	0.0169	✓	–	✓
49	Pinnacle Dana Prima	0.3409	8.4968	-0.0283	✓	✓	–
50	Syailendra Equity Garuda Eund	0.0939	-3.0738	0.0053	✓	–	✓
51	Mandiri Dynamic Equity	0.2516	-6.9340	0.0363	✓	–	✓
52	Panin Dana Berdedikasi	0.0443	-6.3179	0.0052	✓	–	✓
53	Bahana Dana Ekuitas Andalan	0.0357	-5.2229	0.0024	✓	–	✓
54	Mandiri Investa Equity Movement	0.0756	-4.7041	0.0001	✓	–	✓
55	Pool Advista Kapital Optimal	0.3381	13.8990	-0.0444	✓	✓	–
	Average & Good Performance	**0.1221**	**-2.2563**	**0.0056**	**54**	**5**	**45**
	Percentage				**98.18%**	**9.09%**	**81.82%**

Source: calculated by STATA 16.

The alpha variable's coefficient is positive, showing that the investment manager's stock selection ability contributes to a decrease in stock mutual fund returns. When the rupiah weakens, stock prices fall as foreign investors sell their shares and exit the Indonesian capital market, resulting in a decline in stock prices,

which leads mutual fund NAVs to decrease, and vice versa.

Conclusion

This study has the ambition to investigate market timing and stock selection by investment managers during the Covid-19 time in Indonesia based on the exchange rate and inflation. Interestingly, the conditional model of investment managers requires inflation and exchange rates to be taken into consideration while making management decisions, resulting in positive and significant results. The results show an exorbitant amount of positive numbers, as well as 5 equity funds is 9.09 percent having market timing ability. The conditional model shows that stock selection skills have a positive and significant coefficient value on stock mutual fund performance. The number of investment managers with the ability to choose stocks was determined to be 81.18 percent in the conditional model during the epidemic that sparked the crisis.

There is only one stock mutual fund, the Sam Indonesia Equity Fund mutual fund from the investment manager of PT. Samuel Asset Management, was found to have both market timing and positive stock selection capabilities when the conditional model was calculated. According to Sharpe's estimate, the Sam Indonesia Equity Fund mutual fund has a good timing capability of 10,8225 and a stock selection capability of 0.1069, resulting in outstanding performance. The public's faith in this investment manager is similarly high, with assets under management (AUM) exceeding 1 trillion rupiah throughout the research period. Based on the conditional model, 1.82 percent of funds are invested.

References

Agarwal, P.K., and Pradhan, H.K., (2018). "Mutual fund performance using unconditional multifactor models: evidence from India", *Journal of Emerging Market Finance*, 17(2), S157–S184.

Alexandri, M.B., (2015). "Mutual fund performance: stock selection or market timing", *Proceedings of the International Conference on Economics and Banking 2015*, pp. 173-179.

Aziz, M., Ilmi, Z., Hakim, Y.P., Qodri, M., and Darma, D. C., (2021). "Monte Carlo simulation Predicting on the movement of investments – during the covid pandemic in Indonesia", *Jurnal Dinamika Manajemen*, 12(2), 262-274.

Bresser-Pereira, L.C., (2013). "The value of the exchange rate and the Dutch disease", *Review of Political Economy*, 33(3), 371-387.

Bank of Indonesia., (2021). Inflasi 2020 rendah [Low 2020 inflation]. Available: www.bi.go.id. https://www.bi.go.id/id/publikasi/ruang-media/news-release/Pages/sp_230221.aspx [Accessed 7 November 2021].

Bauer, R., Otten, R., and Rad, A.T., (2006). "New Zealand mutual funds: measuring performance and persistence in performance", *Accounting and Finance*, 46(3), 347–363.

Chang, E.C., Lewellen, W.G., (1994). "Market timing and mutual fund performance", *The Journal of Business*, 57(1), 57-72.

Carnevale, J.B., and Hatak, I., (2020). "Employee adjustment and well-being in the era of COVID-19: implications for human resource management", *Journal of Business Research*, 116(4), 183–187.

Comer, G., (2006). "Hybrid mutual funds and market timing performance", Journal of Business, 79(2), 771–797.

Cuthbertson, K., Nitzsche, D., and O'Sullivan, N., (2010). "The market timing ability of UK mutual funds", *Journal of Business Finance and Accounting*, 37(1–2), 270–289.

Deb, S.G., Banerjee, A., and Chakrabarti, B.B., (2007). "Market timing and stock selection ability of mutual funds in India: An empirical investigation", *Vikalpa*, 32(2), 39–51.

Drew, M.E., Veeraraghavan, M., and Wilson, V., (2005). "Market timing, selectivity and alpha generation: Evidence from Australian equity superannuation funds", *Investment Management and Financial Innovations*, 2(2), 111–127.

Elton, E.J., Gruber, M.J., Brown, S.J., and Goetzmann, W.N. (2009). Modern portfolio theory and investment analysis. New Jersey: John Wiley & Sons.

Fakhrunnas, F., (2018). "The performance of Islamic mutual funds, why is it not better than conventional?", *The Conference on Islamic Management, Accounting and Economics (CIMAE)*, vol. 1, pp. 19-28.

Ferson, W.E., and Schadt, R.W. (1996). "Measuring fund strategy and performance changing economic conditions", *Journal of Finance*, 51(2), 425–461.

Grinblatt, M., and Titman, S., (1995). "Chapter 19 performance evaluation", *Handbooks in Operations Research and Management Science*, 9, 581-609.

Issah, M., and Antwi, S., (2017). "Role of macroeconomic variables on firms' performance: evidence from the UK", *Cogent Economics & Finance*, 5(1), 1405581.

Indonesia Stock Exchange., (2018). Reksa dana [Mutual funds]. Available: idx.co.id/produk/reksa-dana/ [Accessed 15 August 2021].

Jensen, M.C., (1964). "The Performance of mutual funds in the period 1945-1964*", Journal of Finance, 23(2), 389–416.

Kaur, I., (2013). "Performance, timing and selectivity skills of Indian equity mutual funds: an empirical approach", *Journal of Arts, Science and Commerce*, IV(4), 87–94.

Koju, L., Koju, R., and Wang, S., (2020), "Macroeconomic determinants of credit risks: evidence from high-income countries", *European Journal of Management and Business Economics*, 29(1), 41-53

Koulis, A., Beneki, C., Adam, M., and Botsaris, C., (2011). "An assessment of the performance of greek mutual equity funds selectivity and market timing", *Applied Mathematical Sciences*, 5(4), 159–171.

Lee, W., and Lee, J., (2012). "A study on Taiwan's bond market integrity and market timing ability - based on the Armax-Garch model", *Asian Economic and Financial Review*, 2(8), 991–1000.

Maulana, F., and Ardiansari, A., (2017). "Stock selection and market timing of Indonesia sharia equity mutual funds", *ATESTASI: Jurnal Ilmiah Akuntansi*, 2(1), 21-30.

Murhadi, W.R., (2010). "Mutual funds performance evaluation based on selectivity and market timing", *Iqtishoduna*, 7(2), 1-12.

Musah, A., Senyo, D.B., and Nuhu, E., (2014). "Market timing and selectivity performance of mutual funds in Ghana", *Management Science Letters*, 4(7), 1361–1368.

Mustofa, F.S., and Kusumawardhani, A., (2016). "Pengaruh stock selection ability dan market timing ability terhadap menggunakan model conditional dan unconditional pada periode 2009–2015", *Diponegoro Journal of Management*, 5(3), 746–755.

Naveed, F., Khawaja, I., and Maroof, L., (2020). "Are Islamic mutual funds exposed to lower risk compared to their conventional counterparts? empirical evidence from Pakistan", *ISRA International Journal of Islamic Finance*, 12(1), 69-87.

Olbryś, J., (2011). "ARCH effect in classical market-timing models with lagged market variable: the case of Polish market", *Dynamic Econometric Models*, 11, 185-222.

Oyinlola, M.A., Oloko, T.F., and Orekoya, S., (2021). "Ratchet effect in import prices – inflation rate nexus", *Economic Alternatives*, 3, 335-354.

Panda, B., Mahapatra, R.P., and Moharana, S., (2015). "Myth of equity mutual fund performance", *Vision*, 19(3), 200–209.

Panjaitan, M.V., (2012). "Analisis kemampuan stock selection dan market timing manajer investasi pada reksadana saham di Indonesia", *Jurnal Ilmiah Mahasiswa Manajemen*, 1(2), 1–6.

Paramita, V.S., Sembiring, F.M., and Safitri, D., (2018). "Measuring selectivity and market timing performance of mutual funds in Indonesia using single and dual beta models", *KnE Social Sciences*, 3(10), 1800-1809.

Paramita, V.S., Jafar, B., and Siregar, I.W., (2017). "Market timing and stock selection performance of mutual fund in bull and bear market condition", *International Journal of Monetary Economics and Finance*, 10(3–4), 309–321.

Philippas, N., (2011). "Market timing and selectivity: an empirical investigation into the features of greek mutual fund managers", Journal of Applied Business Research, 18(3), 97–108.

Škrinjarić, T., (2013). "Market timing ability of mutual funds with tests applied on several Croatian funds", *Croatian Operational Research Review*, 4(1), 176-186.

Taylor, M.P., (1995). " The economics of exchange rates", *Journal of Economic Literature*, 33(1), 13-47.

Zouaoui, M., (2019). "Selectivity and market timing ability of fund managers: comparative analysis of Islamic and conventional HSBC Saudi mutual funds", *International Journal of Financial Studies*, 7(3), 48.

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