International Journal of Asian Social Science
ISSN(e): 2224-4441
ISSN(p): 2226-5139
DOI: 10.55493/5007.v13i12.4928
Vol. 13, No. 12, 423-431.

URL: www.aessweb.com

Do foreign investors trading behaviors affect mutual fund performances or vice versa?

Noor Azryani Auzairy[1+]
Ahmad Ibn Ibrahimy[2]

[1]*Faculty of Economics and Management, Universiti Kebangsaan Malaysia, Malaysia.*
Email: azryani@ukm.edu.my
[2]*Faculty of Business and Economics, University of Malaya, Malaysia.*
Email: dr.ahmad.ibrahimy@um.edu.my

(+ Corresponding author)

Article History
Received: 15 September 2023
Revised: 23 October 2023
Accepted: 27 November 2023
Published: 8 December 2023

Keywords
Feedback effect
Foreign investors
Information contribution effect
Institutional investors
Investment decisions
Mutual funds
Retail investors
Trade volume
Trading behavior.

ABSTRACT

This paper is to examine the trading behavior, buy and sell, by foreign investors: institutional and retail investors, on the performance of the mutual funds (information contribution effect). The impact of mutual funds performances on the trading behavior (feedback effect) of foreign investors are also to be investigated. Since there have been increasing demand for much more secured and cheaper investment, such as mutual funds, the study on these funds is crucial. Granger causality, Spearman's rho and Vector Autoregressive model analyses are applied on daily data of foreign institutional and retail buy, sell and net flows volume and Malaysia's average mutual fund returns from 1st October 2009 to 31st December 2019. The findings reveal that only foreign retail investors have cause-effect relationships with the performance of the mutual funds. Thus, mutual funds companies, especially in the emerging countries, should be given more attention to foreign retail investors in attracting them to remain invest in our mutual funds for long-term. Having better anticipated returns would also discourage those foreign retail investors from selling the funds, indeed, would motivate them to contribute more into the funds. The findings would be able to guide the Mutual Fund companies in managing and promoting foreign investors and enhancing the mutual funds performances.

Contribution/ Originality: Previous studies mainly focuses on stock market performances. This paper contributes to the knowledge by examining not only on the interrelationships between investors' trading behaviors and mutual funds performances but also emphasizing on foreign investors involvement, specifically by foreign institutional versus retail investors, their buy versus sells volumes.

1. INTRODUCTION

A mutual fund or unit trust is an investment vehicle in which investors' money is pooled and to be invested in different securities. The proceeds are managed by a professional fund manager who will invest the money in various financial assets.

Mutual funds have existed in Malaysia for nearly 60 years. The first unit trust or mutual fund company in Malaysia, Malayan Unit Trust Ltd., was established in 1959. However, it was not until the 1970s that mutual funds began to be recognized by Malaysian investors. Ten years later, it has enjoyed rapid growth through banks and other institutions, such as Permodalan Nasional Berhad through its subsidiary Amanah Saham Nasional (ASN). Since then, the industry has developed relatively well, and the government has enacted laws to regulate the industry and protect

investors' interests. Today, there are many mutual funds which are a branch of services offered by many financial institutions such as major banks, insurance service providers and investment vehicles. Mutual funds are useful for investors who do not have advanced knowledge or do not have the time to devote themselves to investing money and diversifying their portfolio.

According to the Securities Commission Malaysia Website (2023), as of today, there are a total of 767 mutual funds in the country, from 38 management companies. Mutual funds play a crucial role in providing financial support for development, aligning with the Sustainable Development Goals, adapting to evolving global priorities, and remaining essential in promoting the growth and stability of businesses and nations.

Thus, it is important to ensure the availability and the high demand of the mutual funds as well as the performance of the funds. The performance, which could also indicate an efficient use of the funds, is presented in terms of its returns. The funds generally are highly dependent on local investors. Thus, this paper is analyzing how significant is the contribution from foreign investors, specifically on retail versus institutional investors, in terms of their buy and sell volumes on the mutual fund's performances. This paper is also analyzing whether the performances of the mutual funds are the ones which manage to affect foreign investors' buy and sell volumes. Previous studies have been mainly focusing on the impact of investors' trading behaviors on stock market performances, not specifically on mutual funds. Thus, the results would be able to identify the types of relationships between foreign retail versus institutional investors and the mutual fund performances, either information contribution effect or feedback effect. The mutual funds managers would be able to better promote and manage their potential investors and to better manage their funds performances.

2. LITERATURE REVIEW

Mutual funds are the investment companies that pool investors' funds together to purchase financial instruments, and create diversified portfolio, which would reduce the investment risk (Brigham, Houston, Jun-Ming, Yoon, & Bany-Ariffin, 2018). Country funds, which are also type of mutual funds, are the investment companies that issue a fixed number of shares, normally traded in the U.S. stock exchanges, and invest the proceeds in equity securities from a particular foreign country (Patro, 2005). However, in terms of relationships between the mutual fund returns and equity flows, there are not much previous studies have been identified. Most of the previous studies have been focusing on the relationships between the stock market or equity funds in general, not specifically on the mutual funds.

Some of the studies on mutual funds have been focusing on other factors affecting the mutual fund equity flows. Wang, Watson, and Wickramanayake (2018) state that past performance of the mutual funds in the US could be triggered by the advertisement in determining the performance of the mutual fund trading flows throughout the global financial crisis period. In addition, they find that the fund with low-risk strategy could result in greater flow performance sensitivity. Alsubaiei, Calice, and Vivian (2020) states that the mutual fund trading flows are highly demanded during high-risk scenario, including during high oil market volatility. This is especially to the case in which the funds are high-oil exposed funds. However, study by Wang and Young (2020) states that the increasing events of terrorist attacks could affect the mutual funds trading flows negatively, despite of having high market risk in which there could be greater trading flows for lower-risk mutual funds. Inflation is another factor that is negatively related to mutual fund equity flows Krishnamurthy, Pelletier, and Warr (2018).

In terms of factors affecting mutual funds performances, it is found that the mutual funds could earn higher or better returns when the funds are active, meaning that the fund managers quickly offset and reverse underperformance equity (Hippler, Hassan, & Pezzo, 2021; Tanos & Jimenez-Garcès, 2022). Pástor and Vorsatz (2020), on the other hand, claim that most active funds underperform passive benchmark in the US market, especially during crisis. Other factors contributing to better performances of mutual funds are those investment with familiar cultural proximate markets (Tanos, 2022) and sustainability (Durán-Santomil, Otero-González, Correia-Domingues, & Reboredo, 2019; Pástor & Vorsatz, 2020). Sustainability turns up to be a necessity and not a luxury good. Other

than sustainability, funds with stable factor exposures outperform funds with volatile factor exposures (Ammann, Fischer, & Weigert, 2020).

This paper is focusing on the relationships between the mutual fund returns and trading equity flows by applying the theories applied to equity or stock market returns. The relationship between the equity flows and the stock returns could be addressed in two theories: 1) feedback trading effect, in which the equity flows are affected by market returns, and 2) information contribution effect, in which the equity flows affect market returns (Tsai, 2009). The trading feedback effect could be explained further based on its reaction. When investors purchase (sell) stocks in anticipating for further increase (decrease) in returns, it is called positive feedback effect or momentum investment. On the other hand, when the investors purchase (sell) stocks in anticipating for a decline (increase) in returns, it is called the negative feedback effect or contrarian investment (Ahmed, 2014).

Majority of the studies reveal the significance of feedback trading effect, in which the market returns affect the trading behavior of investors (Adaoglu & Turan Katircioglu, 2013; Ahmed, 2014; Boyer & Zheng, 2009; French & Li, 2012; Goh & Sapian, 2017; Grinblatt & Keloharju, 2000; Jinjarak, Wongswan, & Zheng, 2011; Qureshi, Kutan, Khan, & Qureshi, 2019; Sapian, 2017b; Sapian & Auzairy, 2015). The effects of the stock returns on the local equity flows by institutional investors are found to be positive or momentum by Ahmed (2014) in Qatar Stock Exchange as well as Ng and Wu (2007) in Shanghai Stock Exchange. The local retail or individual net equity flows are found to be affected positively (momentum) by the Malaysian stock markets returns (Goh & Sapian, 2017) and New York stock market returns (Kaniel, Saar, & Titman, 2008).

Jinjarak et al. (2011) prove the feedback trading effects between the stock returns and the foreign equity flows in 20 developed countries and 47 emerging countries stock markets, while Grinblatt and Keloharju (2000) in Finnish stock market, and Phansatan, Powell, Tanthanongsakkun, and Treepongkaruna (2012) in Thailand stock market. French and Li (2012) state that foreign, specifically the U.S., institutional equity flows are significantly influenced by the Brazilian stock returns. Chandra (2012) finds the influence of Indian stock returns on foreign institutional investors. Significant momentum (positive) feedback effect of stock market returns on foreign institutions equity flows are realized in the Malaysian equity market (Sapian & Auzairy, 2015), the U.S. country funds (Tsai, 2009), and the U.S. stock markets (Boyer & Zheng, 2009).

There are more of negative or contrarian feedback effects than those of positive feedback effects. The significant negative feedback effects of stock returns on local equity flows are found by Grinblatt and Keloharju (2000) in Finnish market and Kaniel et al. (2008) in New York stock market. Goh and Sapian (2017) and Sapian (2017b) state that both local institutions and retails equity flows are negatively affected (contrarian) by the Malaysian market returns. Ahmed (2014) and Ng and Wu (2007) confirm the contrarian feedback effect of local retail equity flows by Qatar and Shanghai exchanges, respectively.

In terms of the upstream feedback effect of stock returns on foreign equity flows, Adaoglu and Turan Katircioglu (2013) as well as Ülkü and İkizlerli (2012) find such effect for the Istanbul stock exchange in pre-EU period. However, there is no causal relationship between foreign stock flows and Istanbul stock returns in post-EU period. The opposite effects on foreign institutional and retail equity flows were also found in the Malaysian stock market by Goh and Sapian (2017) and Sapian and Auzairy (2015).

Instead of acknowledging the impact of stock returns on the equity flows, there are also some findings on the impact of equity flows, both local and foreign investors, on country's stock returns. Domestically, the institutional investors play significant role in affecting the performance of South Korean equity market (Hong & Lee, 2011). Local retail investors, however, do not have significant impact on South Korean equity market (Hong & Lee, 2011). Malaysian retail investors, on the other hand, have significant impact on the returns of its equity market (Sapian, 2017a). Gebka, Henke, and Bohl (2006), in their studies record the negative influence of institutional traders on Polish stock market.

In terms of the impact of foreign equity flows, Hong and Lee (2011) and Tsai (2009) prove the significant impact of foreign equity flows on stock market returns. Lin and Swanson (2008) find the significance impact of U.S. equity flows on the returns of Latin America, Asia, Europe, Canada and Japan, but not vice versa. Specifically, Chandra (2012) proves the significant of foreign institutional investors on Indian stock market and Sapian (2017a) on Malaysian stock market. Sapian and Auzairy (2015), however, claim the importance of foreign retail investors in determining the returns of Malaysian stocks, instead of foreign institutional investors.

There are also very few authors who manage to find bidirectional relationship in some of the exchanges. Tsai (2009) proves of the bidirectional between the U.S. equity flows in foreign countries funds. French and Naka (2013), on the other hand, find no cause-effect relationship at all between U.S. equity flows and China and India stock returns.

3. METHODOLOGY

In analyzing the behavior and cause-effect relationships between trading volume of foreign investors and returns of country's mutual or trust funds, foreign traders are divided into two types: the institutional and retail foreign investors, which would specifically identify and differentiate the behaviors of the two main groups of investors. Malaysian daily data from 1st October 2009 to 31st December 2019 as in Table 1 are mainly collected from Bursa Malaysia.

Table 1. Variables and abbreviations (Daily 2009 – 2019).

Variables	Abbreviation	Variables	Abbreviation
Foreign institutional buy volume	FIBV	Foreign retail buy volume	FRBV
Foreign institutional sell volume	FISV	Foreign retail sell volume	FRSV
Net flows volume of foreign institutional investors	NFFIV	FBMKLCI index returns	KLCIR
Average mutual fund returns	MFR	FBMKLCI volatility	KLCIVy
Net flows volume of foreign retail investors	NFFRV		

The trading volumes represent market liquidity, which is the ability to easily buy and sell the securities. Both buy and sell volumes as well as the net flows are considered in the analyses. The net equity flows are calculated as in Equation 1. The equation is used for both the net flows of trade volume of foreign institutional investors and foreign retail investors.

$$NFV_t = (FBV_t - FSV_t) / (FBV_t + FSV_t) \quad (1)$$

or $Net\ flows\ volume = (Buy\ volume_t - Sell\ volume_t) / (Buy\ volume_t + Sell\ volume_t)$

The average mutual fund returns are the returns obtained from 348 mutual funds prices in Malaysia and calculated by using Equation 2. The equation is applied to the calculations of both the average mutual fund returns and the Financial Times Stock Exchange Bursa Malaysia Kuala Lumpur Composite Index (FBMKLCI) returns (KLCIR).

$$R_t = (P_t - P_{t-i}) / P_{t-i} \quad (2)$$

Where R_t = market return, P_t = market index's end-of-day price on day t, and P_{t-1} = market index's end-of-day price on day t - 1.

FBMKLCI is a capitalization-weighted stock market index of 30 largest companies in Bursa Malaysia, which is jointly indexed by the Financial Times Stock Exchange and Bursa Malaysia. Both FBMKLCI returns and volatility are treated as controlled variables. The volatility is then calculated by using the Equation 3:

$$V_t = \sqrt{\sum(R_t - \mu)^2 / N} \quad (3)$$

Where V_t = market volatility, R_t = market return, μ = mean of all market return data, and N = total amount of data.

All those data are checked for unit root using the Augmented Dickey-Fuller test. Those data are stationary at level, which are integration of order zero, I(0). They are then being used in the analyses of Vector Autoregression

(VAR) Granger causality, Spearman's correlation and Vector Autoregression estimates, while the original data are used in descriptive statistics.

4. RESULTS AND DISCUSSION

4.1. Descriptive Statistics

In more than nine years, the daily mutual fund returns have been averaging around 0.007%, with 1.785% the highest and -2.16% the lowest returns (Refer to Table 2). The returns vary by 0.38%, skew to the left and are normally distributed. Between the two types of foreign investors, institutional investors generally represent around 92 while only 8% represent retail investors in terms of average buying and selling volumes.

Table 2. Descriptive statistics.

	MFR	FIBV	FISV	FRBV	FRSV	NFFIV	NFFRV	KLCIR	KLCIVy
Mean	0.000	128	134	11	11.53	-0.016	-0.001	0.000	0.000
Median	0.000	114	116	10	10.31	-0.02	-0.006	0.000	0.000
Max.	0.018	978	1084	48	58.91	0.45	0.73	0.03	0.001
Min.	-0.022	19	13	2	1.8	-0.49	-0.67	-0.03	0.00
Std. dev.	0.004	61	70	5	6	0.14	0.20	0.006	0.000
Skew	-0.60	3.10	2.70	1.50	1.70	-0.16	0.20	-0.20	5.70
Kurtos	6	29	25	8	9	3	4	5	55
J-B	683	51068	3664	2332	3384	1	30	426	194206
Prob.	0.00	0.00	0.00	0.00	0.00	0.54	0.00	0.00	0.00

For both foreign institutions and retails, their sell volume means are greater than those of buy volumes, in which result in negative net flows trade volumes. There is greater difference by foreign institutional investors than those by retails. The sell volumes of both institutional and retails exhibit their higher and lower volumes than those of buy volumes. All the four volumes are normally distributed, including the net flows of retail volumes and controlled variables: returns and volatility of Kuala Lumpur Composite Index (KLCI) index. Only net flows of foreign institutions volumes are not normally distributed.

4.2. Spearman's Rho Correlation

Spearman's rho correlation coefficient results in Table 3 portray the strength and direction of a relationship between the equity flows of foreign investors' trade volumes and mutual fund returns. Looking at the relationships between foreign retail volumes and mutual fund returns, all the three volumes of foreign retails, buy, sell and net flows, have very weak linear relationships. The net flows and buy volumes of those variables are negatively correlated. Only the sell volumes by the retail investors are positively related to mutual fund returns. Another weak significant, but uphill correlations exist between buy and net flows volumes of foreign institutional investors and mutual fund returns.

Table 3. Spearman's rho correlations.

Variables	MFR coef.	Prob.	Variables	MFR coef.	Prob.
FIBV***	0.077	*0.002*	NFFIV***	0.199	*0.000*
FISV	-0.045	*0.067*	NFFRV***	-0.149	*0.000*
FRBV**	-0.06	*0.015*	KLCIR***	0.729	*0.000*
FRSV**	0.057	*0.020*	KLCIVy	0.020	*0.412*

Note: *** 1% significant level, ** 5% significant level.

Among all variables above, only controlled variable, the KLCI returns have positive strong correlation (73%) with the mutual fund returns. The greater the returns obtained by the FBMKLCI, the greater the returns to be

obtained by the mutual funds too. The KLCI volatility, however, has no significant correlation with the mutual fund returns.

4.3. VAR Granger Causality

Granger causality is a way to investigate causality between two variables in a time series. VAR Granger causality is applied to analyze the short-run cause-effect relationship in the VAR environment, taken into consideration all other variables. The results in Table 4 indicate whether the buy, sell and net flows volumes of foreign investors, both institutional and retailers, as well as the KLCI returns and market volatility could affect the returns of the mutual funds in Malaysia, in the short run.

The results show that the mutual fund returns (MFR) are to be affected by foreign retail investors instead of foreign institutional investors, even though the percentage of the volumes by the retail investors are a lot smaller than those of institutional investors. Both the sell (FRSV) and net flows volumes (NFFRV) of retail investors give impact on MFR at 5% significant level. However, the buy volumes of the foreign retail investors are not significant. Generally, foreign retail investors do give impact on the returns of country's mutual funds, which indicates the existence of information contribution effect. The foreign institutional investors do not have significant information contribution effect on mutual fund returns, despite of having weak Spearman correlation.

Indeed, the mutual fund returns have been highly dependent on the performance of its controlled variables: the FBMKLCI, both of its market returns and market volatility. KLCI returns are significant at 10%, while KLCI volatility is significant at 1%. Investors need to be extremely careful on the factors or determinants which could affect the performance of country's main index, since such performance could affect the performance of country's mutual funds.

Table 4. VAR granger causality – MFR as dependent variable.

Dependent variable: MFR									
Independent:	**FIBV**	**FISV**	**FRBV**	**FRSV** **	**NFFIV**	**NFFRV** **	**KLCIR** *	**KLCIVy** ***	**All** ***
Chi-sq	0.895	1.367	3.439	6.152	2.440	9.096	5.165	16.188	37.148
Prob.	0.639	0.505	0.179	0.046	0.295	0.011	0.076	0.000	0.002

Note: *** 1% significant level, ** 5% significant level, * 10% significant level.

Table 5. VAR granger causality – MFR as independent variable.

Independent variable: MFR								
Dependent:	**FIBV**	**FISV**	**FRBV**	**FRSV***	**NFFIV**	**NFFRV**	**KLCIR** ***	**KLCIVy** ***
Chi-sq	0.723	4.260	1.410	5.056	3.322	2.433	13.706	12.603
Prob.	0.697	0.119	0.494	0.080	0.190	0.296	0.001	0.002

Note: *** 1% significant level, * 10% significant level.

Table 5 shows how the returns of the mutual funds could affect the equity flows of foreign investors. Similar to the results above, there is no cause-effect relationship between the mutual fund returns and the equity flows of foreign international investors. However, the mutual fund returns have some impact on foreign retail sell volumes at 10% significant level. Thus, foreign retail sell volumes have bidirectional cause-effect relationship with the mutual fund returns. This indicates the existence of both feedback trading and information contribution effect between the foreign retail sell volumes and mutual fund returns.

For the controlled variables, similar to the results in Table 4, there are cause-effect relationships between mutual fund returns and KLCI market returns and its volatility. There is another bidirectional relationship at 1% significant level. The performances of KLCI and mutual funds are very closely related, both for feedback trading and information contribution effect.

4.4. Vector Autoregressive Estimates

Vector autoregressive estimates are used to check on the direction of causality at 2 lags between foreign investors' trade volumes and mutual fund returns. Table 6 shows the significant signs or directions of the MFR lags on all variables, which is on feedback trading effect. Table 7 on the other hand, shows the significant sign or direction of all variables lags on the MFR, which is on the information contribution effect. The mutual fund returns seem to have strong positive impact from its own lag 1. Table 6 reveals that the previous performance of mutual funds has significant positive impact on foreign retail sell volumes (at lag 1) and foreign institutional sell volumes (at lag 2). The significant effect of MFR on foreign retail sell volumes is consistent with the findings of Granger causality. Now the results show the existence of positive feedback trading effect by foreign retail and institutional investors in terms of their sell volumes.

Table 6. Vector autoregressive estimates – The effect of MFR (Independent).

Variables	MFR	FIBV	FISV	FRBV	FRSV	NFFIV	NFFRV	KLCIR	KLCIVy
MFR (-1)	0.21 ***	143.74	-69.27	16.44	109.82 **	1.02	-2.42	0.213 ***	-0.003
T-stats.	[5.67]	[0.27]	[-0.13]	[0.36]	[2.19]	[0.88]	[-1.21]	[3.58]	[-0.97]
MFR (-2)	0.01	403.81	1121.82 **	-53.14	14.29	-1.96	-1.71	0.03	0.00 ***
T-stats.	[0.32]	[0.77]	[2.06]	[-1.16]	[0.28]	[-1.68]	[-0.85]	[0.55]	[-3.29]

Note: *** 1% significant level, ** 5% significant level.

Table 7. Vector autoregressive estimates – The effect on MFR (Dependent).

Variables	FIBV	FISV	FRBV	FRSV	NFFIV	NFFRV	KLCIR	KLCIVy	C
MFR (-1)	2.5E-6	-4.0E-06	5.8E-5	-9.3E-05 **	-0.00	-0.00 ***	-0.006 **	5.27 ***	2.4E-4
T-stats.	[0.37]	[-0.66]	[1.27]	[-2.15]	[-1.08]	[-2.74]	[-2.27]	[3.86]	[0.79]
MFR (-2)	0.00	7.1E-6	5.3E-5	0.00	0.00	0.00	0.01	0.52	-
T-stats.	[-0.94]	[1.12]	[1.18]	[-0.93]	[1.41]	[-0.92]	[0.22]	[0.38]	-

Note: *** 1% significant level, ** 5% significant level.

Other than its impact on its own self, MFR lag 1 also have strong positive impact on KLCI returns, the controlled variable. This is consistent with the results obtained from earlier tests, VAR Granger causality and Spearman's correlation. However, the MFR lag 2 manage to affect negatively to KLCI market volatility. Table 7 reveals the significant negative information contribution effect between the foreign retail investors and mutual fund returns, which is consistent with the findings in Granger causality. Thus, foreign retail investors could affect the performance of the mutual funds negatively. None of the foreign institutional investors trade volumes has significant impact of MFR. KLCIR lag 1 on the other hand has negative effect on MFR at 5% significant level. This is contradicted to the earlier results in which the MFR has positive impact on the KLCIR. Granger causality proves on the significant bidirectional cause-effect relationships between the MFR and KLCIR, but the VAR estimates show such relationships are having opposite directions. The greater the MTR, the greater the KLCIR is. On the other hand, the greater the KLCIR, the lower the MFR is. In terms of the contribution by the KLCI volatility, the MFR is positively correlated.

5. CONCLUSION

This study investigates the existence of relationships between the equity fund flows of both foreign institutional and retail investors, and mutual fund returns of Malaysian equity market. Throughout the analyses, there are four main findings of this study. (i) The information contribution effects of equity flow on mutual fund returns are supported by foreign retail sell and net flows volumes. The relationships are negative and significant, which indicate that foreign retail investors act as contrarian traders. (ii) The feedback trading effect of mutual fund returns is supported only by the sell volumes of foreign retail investors. The relationship is positive and significant, which indicate that foreign retail investors act as momentum traders. (iii) There are bilateral relationships between foreign

retail sell volumes and mutual fund returns, which indicates the effects of both information contribution and feedback trading roles by foreign retails in their selling behavior. In addition, they act both as contrarian and momentum traders. (iv) There is, however, no association between mutual fund return and equity fund flows of foreign institutional investors. (v) Mutual funds returns are highly and positively affected by their on past performances. (vi) There are bilateral relationships between both controlled variables and mutual fund returns. Both domestic stock market (KLCI) returns and volatility have significant cause-effect relationships with mutual fund performances. This is clearly understood since mostly, the collection of equity or assets in the mutual fund portfolio are from the domestic stock markets.

Funding: This research is supported by Ministry of Higher Education, Malaysia - Fundamental Research Grant Scheme (Grant number: FRGS/1/2020/SS01/UKM/02/12) and Yayasan Tun Ismail Ali @ Universiti Kebangsaan Malaysia (Grant number: EP-2017-011)
Institutional Review Board Statement: Not applicable.
Transparency: The authors state that the manuscript is honest, truthful, and transparent, that no key aspects of the investigation have been omitted, and that any differences from the study as planned have been clarified. This study followed all writing ethics.
Data Availability Statement: The corresponding author can provide the supporting data of this study upon a reasonable request.
Competing Interests: The authors declare that they have no competing interests.
Authors' Contributions: All authors contributed equally to the conception and design of the study. All authors have read and agreed to the published version of the manuscript.

REFERENCES

Adaoglu, C., & Turan Katircioglu, S. (2013). Foreign investor flows and "blue chip" stock returns. *International Journal of Emerging Markets*, *8*(2), 170-181.

Ahmed, W. M. (2014). The trading patterns and performance of individual vis-à-vis institutional investors in the Qatar exchange. *Review of Accounting and Finance*, *13*(1), 24-42. https://doi.org/10.1108/raf-09-2012-0089

Alsubaiei, B. J., Calice, G., & Vivian, A. (2020). How does mutual fund flow respond to oil market volatility? *The European Journal of Finance*, 1-25. https://doi.org/10.1080/1351847x.2020.1842784

Ammann, M., Fischer, S., & Weigert, F. (2020). Factor exposure variation and mutual fund performance. *Financial Analysts Journal*, *76*(4), 101-118. https://doi.org/10.1080/0015198x.2020.1809224

Boyer, B., & Zheng, L. (2009). Investor flows and stock market returns. *Journal of Empirical Finance*, *16*(1), 87-100. https://doi.org/10.1016/j.jempfin.2008.06.003

Brigham, E. F., Houston, J. F., Jun-Ming, H., Yoon, K. K., & Bany-Ariffin, A. N. (2018). Essentials of financial management. In (4th ed., pp. 4-40). Singapore: Cengage Learning Asia Pte Ltd.

Chandra, A. (2012). Cause and effect between FII trading behaviour and stock market returns: The Indian experience. *Journal of Indian Business Research*, *4*(4), 286-300.

Durán-Santomil, P., Otero-González, L., Correia-Domingues, R. H., & Reboredo, J. C. (2019). Does sustainability score impact mutual fund performance? *Sustainability*, *11*(10), 2972. https://doi.org/10.3390/su11102972

French, J. J., & Li, W. X. (2012). A note on US institutional equity flows to Brazil. *Review of Accounting and Finance*, *11*(3), 298-315. https://doi.org/10.1108/14757701211252609

French, J. J., & Naka, A. (2013). Dynamic relationships among equity flows, equity returns and dividends: Behavior of US investors in China and India. *Global Finance Journal*, *24*(1), 13-29. https://doi.org/10.1016/j.gfj.2013.03.005

Gebka, B., Henke, H., & Bohl, M. T. (2006). Institutional trading and stock return autocorrelation: Empirical evidence on Polish pension fund investors' behavior. *Global Finance Journal*, *16*(3), 233-244. https://doi.org/10.1016/j.gfj.2006.01.007

Goh, Y. M., & Sapian, R. Z. Z. (2017). Return, volatility and fund flows linkages: Malaysian evidence. *Management & Marketing Journal*, *15*(2), 59-69.

Grinblatt, M., & Keloharju, M. (2000). The investment behavior and performance of various investor types: A study of Finland's unique data set. *Journal of Financial Economics*, *55*(1), 43-67. https://doi.org/10.1016/s0304-405x(99)00044-6

Hippler, W. J., Hassan, M. K., & Pezzo, L. (2021). Partial adjustment towards performance-based mutual fund returns: Evidence from US-based equity funds. *International Journal of Finance & Economics*, *26*(4), 5864-5883.

Hong, G., & Lee, B. S. (2011). The trading behavior and price impact of foreign, institutional, individual investors and government: Evidence from Korean equity market. *Japan and the World Economy*, *23*(4), 273-287. https://doi.org/10.1016/j.japwor.2011.10.002

Jinjarak, Y., Wongswan, J., & Zheng, H. (2011). International fund investment and local market returns. *Journal of Banking & Finance*, *35*(3), 572-587.

Kaniel, R., Saar, G., & Titman, S. (2008). Individual investor trading and stock returns. *The Journal of Finance*, *63*(1), 273-310.

Krishnamurthy, S., Pelletier, D., & Warr, R. S. (2018). Inflation and equity mutual fund flows. *Journal of Financial Markets*, *37*, 52-69.

Lin, A. Y., & Swanson, P. E. (2008). US investors and global equity markets. *International Review of Financial Analysis*, *17*(1), 83-107.

Ng, L., & Wu, F. (2007). The trading behavior of institutions and individuals in Chinese equity markets. *Journal of Banking & Finance*, *31*(9), 2695-2710.

Pástor, Ľ., & Vorsatz, M. B. (2020). Mutual fund performance and flows during the COVID-19 crisis. *The Review of Asset Pricing Studies*, *10*(4), 791-833.

Patro, D. K. (2005). Stock market liberalization and emerging market country fund premiums. *Journal of Business*, *78*(1), 135-168.

Phansatan, S., Powell, J. G., Tanthanongsakkun, S., & Treepongkaruna, S. (2012). Investor type trading behavior and trade performance: Evidence from the Thai stock market. *Pacific-Basin Finance Journal*, *20*(1), 1-23. https://doi.org/10.1016/j.pacfin.2011.07.004

Qureshi, F., Kutan, A. M., Khan, H. H., & Qureshi, S. (2019). Equity fund flows, market returns, and market risk: Evidence from China. *Risk Management*, *21*, 48-71. https://doi.org/10.1057/s41283-018-0042-3

Sapian, R. Z. Z. (2017a). The lead-lag relationships of equity fund flows: Evidence of an emerging market. *Journal of Management*, *51*, 1-7.

Sapian, R. Z. Z. (2017b). Trading behavior of emerging equity market investors. *The IUP Journal of Applied Finance*, *23*(2), 46-61.

Sapian, R. Z. Z., & Auzairy, N. A. (2015). Foreign equity flows and market linkages: Evidence of Malaysian stock market. *Global Business Review*, *16*(5S), 1-14.

Securities Commission Malaysia Website. (2023). Summary of statistics – unit trust funds for 2023. Retrieved from https://www.sc.com.my/analytics/fund-management-products

Tanos, A. B., & Jimenez-Garcès, S. (2022). Foreign investments during financial crises: Institutional investors' informational skills create value when familiarity does not. *Journal of International Financial Markets, Institutions and Money*, *79*, 101585. https://doi.org/10.1016/j.intfin.2022.101585

Tanos, B. A. (2022). Culture and mutual funds' performances. *Finance Research Letters*, *46*(B), 102466.

Tsai, P.-J. (2009). International equity flows and country funds. *Journal of International Financial Markets, Institutions and Money*, *19*(5), 862-894.

Ülkü, N., & İkizlerli, D. (2012). The interaction between foreigners' trading and emerging stock returns: Evidence from Turkey. *Emerging Markets Review*, *13*(3), 381-409.

Wang, A. Y., & Young, M. (2020). Terrorist attacks and investor risk preference: Evidence from mutual fund flows. *Journal of Financial Economics*, *137*(2), 491-514.

Wang, Y., Watson, J., & Wickramanayake, J. (2018). The global financial crisis and the mutual fund flow–performance relationship. *The World Economy*, *41*(11), 3172-3193.