Do Domestic Investors with the Smallest Trading Orders Use Momentum Strategies in The IDX?

Ghazali Syamni[1], Wardhiah[1], M. Shabri Abd Majid[2], Faisal[2], Said Musnadi[1]

1   Departement of Management, Universitas Malikussaleh, and PhD Student, Faculty of Economics, Universitas Syiah Kuala,Indonesia
    Kampus Bukit Indah, Lhokseumawe, P.O. Box 141, Aceh - Indonesia
2   Departement of Management, Universitas Syiah Kuala, Jl. Teuku Nyak Arief, Kopelma, Darussalam, Aceh - Indonesia

ARTICLE INFO

ABSTRACT

This study aims to examine the use of the momentum strategy of domestic investors who trade small order sizes on IDX. The data used in this study is intraday trade transaction data from the LQ 45 Index for March, April and May 2017 obtained from The Indonesia Capital Market Institute. The method of data analysis used is the market-adjusted model approach. The results of this study indicate that domestic investors who trade in small order sizes tend to use the momentum strategy in government and non-government stock issuers. This finding implies that when IDX is in a good performance, investors should take advantage of this condition because buying stocks that have already been performing well provides a significant short-term abnormal return.

SARI PATI

Penelitian ini bertujuan untuk mengkaji penggunaan strategi momentum investor domestik yang melakukan perdagangan small order size di BEI. Data yang digunakan dalam penelitian ini adalah data transaksi perdagangan intraday dari Indeks LQ 45 bulan Maret, April dan Mei 2017 yang diperoleh dari The Indonesia Capital Market Institute. Metode analisis data yang digunakan adalah pendekatan model yang disesuaikan pasar. Hasil penelitian ini menunjukkan bahwa investor domestik yang melakukan perdagangan dalam ukuran pesanan kecil cenderung menggunakan strategi momentum pada emiten saham pemerintah dan non pemerintah. Temuan ini mengimplikasikan bahwa ketika BEI berkinerja baik, investor harus memanfaatkan kondisi ini karena membeli saham yang sudah berkinerja baik memberikan abnormal return jangka pendek yang signifikan.

Corresponding author:
ghazali.syamni@unimal.ac.id

INTRODUCTION

The capital market is a place of investment for (potential) investors to get a relatively higher rate of return compared to investing in banking. In transactions on the capital market, all parties conducting transactions carry out various strategies to obtain a rate of return. The use of strategies in entering the capital market is not only carried out by professionals such as brokers, and even individual investors must understand the appropriate trading strategies to get returns. One of the strategies used in conducting trading transactions is the momentum strategy.

The momentum strategy is a strategy carried out by investors by buying a group of issuers or stock portfolios that are performing well (Rafik and Marizka, 2017). The existence of this momentum strategy in the capital market has been traced back to the 90s after Jegadeesh and Titman (2001) popularized it on the American stock market. A momentum strategy is recognized after De Bondt and Thaler (1985) introduce a price reversal strategy or contrarian strategy, in which investors who tend to transact by buying a group of stock portfolios that are not performing well have the potential to reverse to better performance. The two expert opinions above are part of the beginning of a shift in the direction of research on irrational investors after decades of being dominated by market efficiency theories.

Many previous research results are related to the testing of momentum strategies in various capital markets in the world with inconsistent results. Some of the inconsistencies in the results of the study, among others, relate to differences in the use of timeframes, group investor groups, types of investors, skills for transacting investors, research models, macroeconomic conditions, stock index groups, and market characteristics.

There are many recent studies in various countries and the Americas and Europe. For example, Imran et al. (2020) have examined 40 countries and find that the capital market is more likely to lead to inefficiency because nearly ninety percent of investors implement momentum strategies. Chakrabarti and Sen (2020) in the market of America, Europe, and Asia Pacifics find that the use of momentum strategies provides significant returns in the long term. Abukari and Otchere (2020) in various countries explain that momentum and contrarian strategies can be carried out in trading transactions for 60 months with a return rate of seven percent for three months. However, using both the momentum and contrarian strategies separately gives a return of 6 percent and 4 percent. Grobys and Kolari (2020) on the American Stock Market claim that the momentum strategy carried out by investors is marked by a sustainable good performance stock return value.

Another study in America by Bhattacharya et al. (2017) that American stock market revealed that the use of the momentum strategy did not provide significant returns due to macroeconomic factors and the market being more efficient. Fan, Kearney et al. (2020) Bursa in London found that the use of the momentum strategy has high uncertainty, which allows the opportunity to get a return to be lost. Berggrun et al. (2020) Stock exchanges in Latin American countries finds that the return expected by investors is only possible when investors control the influence of market size and value. Herberger et al. (2020) German stock market say that there is no indication that the use of a momentum strategy is better. Instead, we get the opposite where the price reversal occurs.

Besides, a study in the Asian region also has found relatively mixed results. Hameed and Kusnadi (2002) analyzed the Six Asian Exchanges and found that the momentum investment strategy did not provide a significant return. Chhimwal and Bapat (2020) on the Indian Stock Exchange indicate that institutional investors, both foreign and domestic, undertake a momentum strategy in the short term while individual investors use a contrarian strategy. A study on the Korea Stock Exchange by Lee (2019)

indicates that the momentum strategy behavior cannot be explained because other factors affect returns that need to be reexamined. Furthermore, Ryou et al. (2020) have analyzed the momentum strategy using the Hidden Markow Model to find with certainty that there is a momentum strategy on the Korean Stock Exchange. Kwon et al. (2020) analyze momentum strategies in commodity markets and find that the use of momentum strategies occurred in commodity markets for 12 months. Meanwhile, several studies on the China Stock Exchange, Gao et al. (2020), the momentum strategy can be applied in the Chinese Stock Exchange. The same thing is also conveyed by Chen et al. (2020) that the momentum strategy in the medium term still provides promising returns. Furthermore, Chui et al. (2020) have made a test with an experimental approach and find that foreign investors are more likely to use momentum strategies, whereas domestic investors use contrarian strategies.

Furthermore, Zolfaghari and Sahabi (2020) examine the momentum strategy on oil-rich countries in the Middle East, including Iran, Saudi Arabia, Bahrain, Qatar, and the United Arab Emirates. The results of their study show that the use of the momentum strategy provides significant returns both over the short, medium, and long term. Also, Elhaei Sahar et al. et (2020) on the Iran Stock Exchange find that there is a momentum strategy even though it is associated with many factors that cause it, such as; macroeconomic variables, market, and company and even social background. Ali (2020) The Singapore Stock Exchange found that the momentum effect only occurs in the short term.

Murhadi and Abrianto (2019) have examined momentum strategy several capital markets in ASEAN and indicate that not all of them have positive abnormal returns. The results show that the LQ-45 Index, the Singapore Exchange, and the Thailand Stock Exchange have a significant abnormal return. A particular study in Indonesia by Koesrindartoto et al. (2020) and Pasaribu (2019) find that strategic momentum is carried out

by institutional investors, while retail investors used a contrarian strategy. Liem (2012), the momentum strategy can be applied by investors because it has a return above the average market return. Meanwhile, Rafik and Marizka (2017) and Musnadi et al. (2018) use a contrarian strategy more attractive in the long term than a momentum strategy that is only profitable in the medium term.

Although many previous studies have been described, there are still mixed things concerning momentum strategies. This study aims to analyze the use of momentum strategies by domestic investors by transacting in the smallest order of one lot while the Indonesian Stock Exchange is in a bullish state. The selection of domestic investors is due to the asymmetry of information carried out by domestic investors and domestic investors (Vo and Truong, 2018). Besides, domestic investors have a better performance than foreign investors though foreign investors are more initiative in making transactions (Hanafi, 2020). Also, this study conducts a separate analysis of government and non-government companies in the LQ 45 Index because there is a study that states that government companies are closely related to politicians, which causes government companies to be less transparent (Borisova and Yadav, 2015; Bushman et al. 2004; Prabowo, Hooghiemstra, and Van Veen-Dirks, 2018; Shleifer and Vishny, 1994). So, based on the description above, this study aims to examine the momentum strategies carried out by domestic investors on IDX, especially government and non-government companies.

Furthermore, this study aims to provide benefits and knowledge for investors about trading in the capital market when the market is performing well even in one lot because trading in small sizes gives investors abnormal returns based on the momentum strategy. This study consists of several structures, consisting of an introduction to the first part, the second part is the method that discusses the data and the method used in analyzing data, the third part is discussions of the results, and the fourth part is conclusions.

METHODS

Data

Testing momentum strategies carried out by domestic investors with the smallest trade orders use intraday period data for March, April, and May 2017 on the LQ-45 Index issuer. All of these data are from The Indonesia Capital Market Institute (TICMI) with a total of 8,686,030 observations, both government and non-government companies. Based on observations, it is then separated based on the size of the trade orders made by investors and only selected those who transact stocks with small order sizes, in this case, less than 500 shares (Barclay and Warner, 1993). Furthermore, the average values of each stock price are taken based on trading days during the study period.

Data Processing Methods

This study uses a market-adjusted model approach in analyzing the momentum strategy of small domestic investors on the Indonesia Stock Exchange. This market-adjusted model approach is carried out after the data are collected and tabulated, and the abnormal returns are calculated for both winner and loser stock groups. For this reason, there are several steps to analyze and calculate the period of the formation stages and the testing phases. The testing period for April 2017 is carried out based on the results of the formation period in March 2017, and the formation period in April 2017 is tested in May 2017. The formation and testing period is carried out on government and non-government companies in the LQ 45 Index. The steps for the formation and test period are as follows:

A. Steps to calculate the period of formation
    -   Calculate stock return and market return data that have been compressed into daily data during the study period.
    -   Calculate the market return that has been compressed into daily data during the study period
    -   Calculate the abnormal return of each stock during the three months of the study period (AR, i, t)
    -   Calculate the cumulative abnormal return of each share daily during the three months of the study period (CAR, i, t).
    -   Calculate CAR, i, t and sort from largest to smallest values.
    -   The positive CAR, i, t values are sorted from largest to smallest group in the winner stock portfolio group.
    -   The negative CAR, i, t values are sorted from largest to smallest then also grouped into the loser stock portfolio group.

B. Steps to calculate the test period
    -   Calculate stock returns and market returns (R i, t) and RM, i, t) based on a predetermined stock order in the formation period, which is then sampled in the testing period.
    -   Calculate the abnormal return in each test period included in the stocks according to the previous formation period.
    -   Calculating (CAR, i, t) for each winner and loser performance share.
    -   Calculate the average Cumulative Abnormal Return in the winner portfolio group and the loser portfolio group according to the sample of the previous formation period.
    -   Finally, the paired t-test between the formation period and the test period was carried out. The results of the two mean difference tests (paired t- test) are expected to provide evidence of differences in abnormal returns in the winner stock group. The results of the two average difference tests are carried out with the SPSS device.

RESULTS AND DISCUSSION

Results

This section discusses the results of research related to momentum strategies carried out by domestic investors who trade in trade sizes of less than 500 shares. The first discussion begins with a description of the abnormal return of the winner and loser domestic stock portfolio groups, including the mean

and standard risk in each research month (Table 1). After discussing the average abnormal return, an explanation and discussion of the results related to the abnormal return test results on all stock portfolios indexed in the LQ 45 Index are carried out (Tables 2a and 2b). Table 2a discusses the winner stock portfolio groups, while Table 2b discusses the loser stock portfolio. Furthermore, a discussion of the stock portfolios of government companies is carried out in Table 3a and Table 3b. Table 3 Panel A discusses the winning government stock portfolio groups, and Panel B discusses the loser of the government stock portfolio. Then, this study provide a discussion on the winner and loser non-government stock portfolio groups (Table 4). Finally, Table 5 presents the results of the significance of the Paired t-tests.

Abnormal returns of domestic stocks in the winner and loser portfolio groups of LQ 45 Index (government and non-government stocks)

Return is the profit that investors get in making transactions, while the risk is the deviation obtained from transacting on the financial market. Return and risk have become benchmarks for investors so that they are known and included in the low-risk low return and high-risk high return.

Based on table 1 above, the abnormal returns of the winner portfolio group (panels A, B, and C) in March and April 2017 are low, none of which exceeded 6%. It means that domestic investors investing in the stock exchange provide benefits in the range of Bank Indonesia Certificates. Meanwhile, in April 2017, except for the government stock portfolio,

Table 1. Abnormal return of domestic stock portfolios in the LQ 45 Index
(government and non-government stocks)

Panel A. Cumulative Abnormal Return of Winner Stock Portfolio of Domestic Investor on LQ 45 Index, 2017			
Average	0,0032	0,2045	0,0043
Standard Deviation	0,0052	0,3350	0,0033

Panel B. Cumulative Abnormal Return of Winner Stock Portfolio of Domestic Investor of Non-government Companies on LQ 45 index, 2017			
Average	0,0019	0,2246	0,0046
Standard Deviation	0,0020	0,3705	0,0041

Panel C. Cumulative Abnormal Return of Winner Stock Portfolio of Government Companies on LQ 45 index, 2017			
Average	0,0055	0,0018	0,0041
Standard Deviation	0,0020	0,0012	0,0028

Panel D. Cumulative Abnormal Return of Loser Stock Portfolio of Domestic Investors on LQ 45 index, 2017			
Average	- 0,0048	- 0,0033	- 0,0064
Standard Deviation	0,0062	0,0022	0,0065

Panel E. Cumulative Abnormal Return of Winner Stock Portfolio of Domestic Investor of Non-government Companies on LQ 45 index, 2017			
Average	- 0,0100	- 0,0044	- 0,0073
Standard Deviation	0,0194	0,0023	0,0066

Panel F. Cumulative Abnormal Return of Loser Stock Portfolio of Government Companies on LQ 45 index, 2017			
Average	- 0,0042	- 0,0026	- 0,0016
Standard Deviation	0,0040	0,0019	0,0016

the return exceeds 20%, and the risk level exceeds 30%. In other words, the principle of low-risk, low-return high-risk high-return occurs. On the other hand, the loser portfolio group in each panel for each study period does not show lower levels of risk and return even though they also have positive abnormal returns.

Data analysis of winner stock portfolio on the LQ 45 Index

After discussing the average abnormal returns during the study period, this section discusses the analysis of winner stock portfolio data for companies included in the LQ 45 Index (Table 2a). Table 2a is a table that describes the results of the analysis of the formation and testing period data during testing.

Based on the data in Table 2a above, there are 13 issuers included in the winner stock portfolio

in the first period of formation and testing, and there are 18 companies included in the winner stock portfolio group from the LQ 45 Index in the second period. In the first period of the 13 winner portfolio issuers, there are 5 government companies and the remaining 8 non-government companies. Furthermore, in the first period, the winner in the period of performance became a price reversal that occurs at 3 companies, consisting of ADHI, BBRI, and BBNI in the testing period. Meanwhile, BBTN and TLKM are consistent winners.

Furthermore, non-government companies from 8 companies with consistent winner formation periods are EXCL, BBCA, ADRO, and AKRO, while the rest occurs price reversals. Different things happen in the second period, where TLKM and BBTN as government companies are included in the winner portfolio consistently. Meanwhile, in the formation period of the second period, there are 16

Table 2a. Data analysis results of winner stock portfolio of companies on the LQ 45 index.

| Company Codes | March (Winner) | | Company Codes | April (Winner) | |
	Formation	Test		Formation	Test
ADHI (Persero) Tbk	0.0079	- 0.0044	ANTM Tbk	0.7523	0.0003
BBTN (Persero) Tbk	0.0063	0.0054	BBCA Tbk	0.7382	- 0.0041
EXCL Tbk	0.0060	0.0019	GGRM Tbk	0.7368	0.0104
BBRI (Persero) Tbk	0.0040	- 0.0037	INTP Tbk	0.7236	0.0048
BBNI (Persero) Tbk	0.0037	- 0.0005	ELSA Tbk	0.6951	- 0.0284
BBCA Tbk	0.0034	0.7396	LPPF Tbk	0.0076	0.0185
ICBP Tbk	0.0021	- 0.7364	LPKR Tbk	0.0056	- 0.0092
PTBA Tbk	0.0017	- 0.0066	AKRA Tbk	0.0051	0.0009
TLKM (Persero) Tbk	0.0014	0.0074	EXCL Tbk	0.0028	- 0.0007
MNCN Tbk	0.0011	- 0.0060	TLKM (Persero) Tbk	0.0027	0.0062
ADRO Tbk	0.0008	0.0037	SCMA Tbk	0.0022	- 0.0007
AKRA Tbk	0.0002	0.0048	INDF Tbk	0.0021	0.0031
SSMS Tbk	0.0001	- 0.0056	ICBP Tbk	0.0019	- 0.0020
			KLBF Tbk	0.0017	- 0.0024
			UNVR Tbk	0.0016	0.0063
			ASII Tbk	0.0009	- 0.0081
			BBTN (Persero) Tbk	0.0009	0.0105
			ADRO Tbk	0.0003	- 0.0260
Cumulative Average AR	**0.0030**	**- 0.00004**		**0.2045**	**- 0.0011**

non-governmental companies, and in the testing period, 14 companies have price reversals. Thus, it concludes that there is no momentum strategy in the LQ 45 Index group.

Data analysis of loser stock portfolio on LQ 45 Index

This section discusses the analysis of loser stock portfolio data for companies included in the LQ 45 Index (Table 2b). Based on the data in Table 2b above, during the first formation and testing period, there are 22 issuers included in the loser stock portfolio group, and 17 companies included in the loser stock portfolio group from the LQ 45 Index in the second period. In the first period of the 22 issuers of the loser portfolio, there are 7 government companies, and the remaining 15 are non-government companies. Furthermore,

in the first period, government companies lost in the formation period experienced price reversals, which occurred at BMRI in the testing period while WSKT, WIKA, JSMR, PTPP and SMGR, and PGAS are consistently loser.

Meanwhile, the 15 non-governmental companies in the consistent formation period are 6 issuers, consisting of HMSP, INCO, UNVR, KLBF, SRILL, and BSDE. The remaining 9 issuers that experience a price reversal towards a positive return are ASII, LPKR, INDF, GGRM, ANTM, SCMA, LPFF, ELSA, and INTP. Furthermore, in the second period in the abnormal return formation, there are 17 issuers, and in the testing period, 9 companies are losers consistent. As well as the rest, most of the government companies, including BMRI, BBRI,

Table 2b. Data analysis results of loser stock portfolio of companies on LQ 45 Index.

Company Codes	March (Loser)		Company Codes	April (Loser)	
	Formation	Test		Formation	Test
HMSP Tbk	- 0.0003	- 0.0035	BMRI (Persero) Tbk	- 0.0003	0.0029
BMRI (Persero) Tbk	- 0.0010	0.0032	SSMS Tbk	- 0.0005	- 0.0075
WSKT (Persero) Tbk	- 0.0019	- 0.0014	BBRI (Persero) Tbk	- 0.0009	0.0141
ASII Tbk	- 0.0020	0.0026	WIKA (Persero) Tbk	- 0.0009	- 0.0097
LPKR Tbk	- 0.0020	0.0047	BBNI (Persero) Tbk	- 0.0014	0.0022
INCO Tbk	- 0.0026	- 0.0133	WSKT (Persero) Tbk	- 0.0017	- 0.0018
INDF Tbk	- 0.0026	0.0099	SMGR (Persero) Tbk	- 0.0021	0.0045
UNVR Tbk	- 0.0028	- 0.0005	MNCN Tbk	- 0.0033	- 0.0066
GGRM Tbk	- 0.0028	0.7352	JSMR (Persero) Tbk	- 0.0035	0.0073
KLBF Tbk	- 0.0041	- 0.7351	HMSP Tbk	- 0.0035	- 0.0074
WIKA (Persero) Tbk	- 0.0044	- 0.0026	ADHI (Persero) Tbk	- 0.0044	0.0065
JSMR (Persero) Tbk	- 0.0045	- 0.0025	BSDE Tbk	- 0.0045	- 0.0057
PTPP (Persero) Tbk	- 0.0046	- 0.0016	PTBA Tbk	- 0.0047	- 0.0142
ANTM Tbk	- 0.0047	0.7574	PTPP (Persero) Tbk	- 0.0050	0.0170
SMGR (Persero) Tbk	- 0.0065	- 0.7544	PGAS (Persero) Tbk	- 0.0057	- 0.0050
SRIL Tbk	- 0.0072	- 0.0044	SRIL Tbk	- 0.0065	0.0109
SCMA Tbk	- 0.0086	0.0087	INCO Tbk	- 0.0077	- 0.0258
LPPF Tbk	- 0.0099	0.0053			
BSDE Tbk	- 0.0102	- 0.0121			
ELSA Tbk	- 0.0108	0.6996			
PGAS (Persero) Tbk	- 0.0119	- 0.7008			
INTP Tbk	- 0.0791	0.7293			
Cumulative Average AR	**- 0.0084**	**0.0329**		**- 0.0033**	**- 0.0011**

BBNI, SMGR, JSMR, ADHI, PTPP price reversal, except for SRIL, which is a non-government company.

Based on the results above, in the LQ 45 Index, only in the short term of the first 1 month occurs a contrarian strategy, and then it does not happen again. It is indicated by the presence of the cumulative abnormal return in the first period, the average loser portfolio turns to a positive value, but the following period returns negative. Thus, it concludes that there is no momentum in the LQ 45 Index group of stocks.

Data analysis of portfolio winners and losers of government stocks

This section describes the average abnormal return of the winner and loser group of government stocks. In general, it explains that the winner stocks in the formation period are consistent winners in the testing period, except in the second period, namely BBTN and BMRI issuers (Panel A). Meanwhile, the portfolio group of most issuers remains consistently negative (Panel B).

Based on Table 3 above, it concludes that domestic investors are pursuing a momentum strategy in

Table 3. Abnormal Cumulative AR of Domestic portfolio winner and loser of Government stocks

Panel A. Cumulative Average AR of domestic portfolio winners of government stocks					
Company Codes	March (Winner)		Company Codes	April (Winner)	
	Formation	Test		Formation	Test
TLKM (Persero) Tbk	0.0027	0.0048	BBRI (Persero) Tbk	0.0095	0.0068
BBTN (Persero) Tbk	0.0009	0.0018	BBTN (Persero) Tbk	0.0056	- 0.0035
			JSMR (Persero) Tbk	0.0054	0.0023
			SMGR (Persero) Tbk	0.0047	0.0028
			ADHI (Persero) Tbk	0.0045	0.0039
			BMRI (Persero) Tbk	0.0029	- 0.0025
			BBNI (Persero) Tbk	0.0021	0.0000
			PTPP (Persero) Tbk	0.0016	0.0045
			WSKT (Persero) Tbk	0.0002	0.0004
Cumulative Average AR	**0.0018**	**0.0033**		**0.0076**	**0.0016**

Table 3b. Cumulative average AR of domestic portfolio lossers of government stocks

Company Codes	March (Loser)		Company Codes	April (Loser)	
	Formatiom	Test		Formation	Test
BMRI (Persero) Tbk	- 0.0003	- 0.0012	WIKA (Persero) Tbk	- 0.0002	0.0009
BBRI (Persero) Tbk	- 0.0009	0.0005	TLKM (Persero) Tbk	- 0.0011	- 0.0053
WIKA (Persero) Tbk	- 0.0009	- 0.0036	PGAS (Persero) Tbk	- 0.0034	- 0.0080
BBNI (Persero) Tbk	- 0.0014	- 0.0029			
WSKT (Persero) Tbk	- 0.0017	- 0.0007			
SMGR (Persero) Tbk	- 0.0021	0.0029			
JSMR (Persero) Tbk	- 0.0035	- 0.0032			
ADHI (Persero) Tbk	- 0.0044	- 0.0028			
PTPP (Persero) Tbk	- 0.0050	0.0007			
PGAS (Persero) Tbk	- 0.0057	- 0.0023			
Cumulative Average AR	**- 0.00057**	**- 0.00023**		**- 0.0005**	**- 0.0012**

transacting on publicly traded companies indicated by most of the cumulative abnormal returns with positive values both in the formation period and testing period on winning issuers (Panel A). On the other hand, in the loser stock emitter group, domestic investors do not provide an abnormal return value that causes price reversal (Panel B).

Data Analysis of non-government winner stocks portfolio

This section describes the average abnormal return of a group of non-government stock portfolio issuers. In Table 4 (Panels A and B), it shows that the results of non-government issuers are not much different from Table 3 (Panels A and B) on previous government issuers.

Table 4. Abnormal Cumulative AR winners and losers stock portfolio of non-government stocks

Panel A. Cumulative Average AR of domestic non-government winner stock portfolio					
Company Codes	**March (Winner)**		**Company Codes**	**April (Winner)**	
	Formation	**Test**		**Formation**	**Test**
BBCA Tbk	0.7382	0.7373	INTP Tbk	0.0115	0.0102
GGRM Tbk	0.7368	0.7339	SRIL Tbk	0.0075	0.0094
INTP Tbk	0.7235	0.7214	GGRM Tbk	0.0066	0.0140
ELSA Tbk	0.6950	0.6995	UNVR Tbk	0.0033	0.0079
LPPF Tbk	0.0075	0.0019	LPPF Tbk	0.0016	0.0092
LPKR Tbk	0.0056	0.0039	INDF Tbk	0.0013	0.0196
EXCL Tbk	0.0028	- 0.6922	ANTM Tbk	0.0003	0.0070
SCMA Tbk	0.0022	0.0069			
INDF Tbk	0.0021	0.0098			
ICBP Tbk	0.0018	0.0053			
KLBF Tbk	0.0017	- 0.7218			
UNVR Tbk	0.0015	0.0020			
ASII Tbk	0.0009	- 0.7513			
Cumulative Average AR	**0.2246**	**0.0582**		**0.0046**	**0.0110**
Panel B. Cumulative Average AR of domestic non-government loser stock portfolio					
Company codes	**March (Loser)**		**Company codes**	**April (Loser)**	
	Formation	**Test**		**Formation**	**Test**
SSMS Tbk	- 0.0005	0.0060	ICBP Tbk	- 0.0006	0.0013
MNCN Tbk	- 0.0033	- 0.0109	BSDE Tbk	- 0.0012	0.0026
HMSP Tbk	- 0.0035	- 0.7403	SCMA Tbk	- 0.0018	0.0136
BSDE Tbk	- 0.0045	- 0.7428	MNCN Tbk	- 0.0019	- 0.0035
PTBA Tbk	- 0.0047	- 0.0014	HMSP Tbk	- 0.0019	- 0.0086
SRIL Tbk	- 0.0065	- 0.0087	KLBF Tbk	- 0.0030	- 0.0145
INCO Tbk	- 0.0077	- 0.0096	BBCA Tbk	- 0.0038	0.0010
			SSMS Tbk	- 0.0046	- 0.0121
			ASII Tbk	- 0.0048	- 0.0052
			AKRA Tbk	- 0.0067	0.0136
			EXCL Tbk	- 0.0074	0.0095
			LPKR Tbk	- 0.0076	- 0.0045
			PTBA Tbk	- 0.0154	- 0.0135
			ELSA Tbk	- 0.0169	- 0.0157
			INCO Tbk	- 0.0182	- 0.0176
			ADRO Tbk	- 0.0203	- 0.0223
Cumulative Average AR	**- 0.0044**	**- 0.2154**		**- 0.0009**	**- 0.0005**

Based on Table 4 above, it concludes that domestic investors are pursuing a momentum strategy in transacting on issuers of shares of non-government companies. It is indicated by most of the abnormal returns on winning issuers (Panel A), some of which remain positive in both the formation period and the testing period. Meanwhile, the loser stock issuers group and domestic investors do not provide an abnormal return value, which causes a price reversal because some issuers remain negative (Panel B).

Results of the paired t-test of winner and loser stock portfolios on the LQ 45 Index (government and non-government companies).

After analyzing the abnormal return results on the three groups of portfolio issuers, namely the LQ 45 Index, government companies, and non-government companies. Furthermore, an analysis of the significance of the cumulative abnormal return obtained by domestic investors is carried out. The analysis of the significance level of cumulative abnormal returns is carried out using paired t-tests (Table 5).

Based on Table 5 above, it appears statistically significant abnormal returns of the winner portfolio group obtained by investors in the second period. It shows the significance value of 5% in the LQ 45 index and non-government companies and 10% in government companies. Although the data in the first period shows positive abnormal returns such as government and non-government companies,

except for the negative LQ 45 Index data, the absence of significance in the first period in this study is due to the not far differences in abnormal values in the formation and observation periods. Meanwhile, the loser portfolio does not show a significant abnormal return. It means that there is no reversal in the share price of the loser issuers.

Discussion

This study analyzes the behavior of momentum strategies by small domestic investors on the Indonesia Stock Exchange. The test is carried out on the LQ 45 Index stock portfolio, then separated into the non-government and government stock groups. The results show that there are indications that when the capital market conditions are in a bullish state during the three months of the study period, it gives better hope (Table 1). It appears on the acquisition of abnormal returns that lead to a positive direction for both the winner stock portfolio group, as well as the loser stock portfolio. The winners stock portfolio group of April 2017 is a period of high profitability, especially the LQ 45 Index listed company portfolio group, and the government stock group. But when the rate of return is high, it will also be accompanied by a high-risk level of stock returns in the portfolio group that is the research sample. So, it concludes that the principles of low-risk low return and high-risk high return occur on the IDX.

Furthermore, after analyzing the stock portfolio group, this study finds the existence of a momentum strategy occurring in non-government and govern-

Table 5. Results of paired t-test of winner and loser stock portfolios of domestic investors

Panel B. Results of Paired t-test of Domestic Investors								
No	Stock Portfolio Groups	Domestic Investor Stock Portfolio		Domestic Investor Stock Portfolio		Domestic Investor Stock Portfolio		Domestic Investor Stock Portfolio
		Winner 1		Winner 1		Losser 1		Losser 2
		Value	significance	Value	significance	Value	significance	Value	Significance
1	LQ 45 Index	- 1,363	0,173	- 2,722	0,024**	- 1,607	0,108	- 0686	0,492
2	Non-Government Companies	- 0,943	0,345	- 0,089	0,028**	- 1,183	0,237	- 1,034	0,301
3	Government Companies	- 1,342	0,18	- 1,96	0,066*	- 1,376	0,169	- 1,096	0,285

ment companies. Meanwhile, there is no momentum strategy practice in the LQ 45 Index listed companies. These findings appear in Tables 3 and 4, which show that all data of cumulative abnormal return winner values are positive. Meanwhile, the loser stock portfolio group has no positive cumulative abnormal returns. In other words, based on data from the winner stock portfolio group, the performance is consistent both during the study period, and the loser stock portfolio remains negative, or there is no price reversal. However, based on statistical tests, this study finds that there are positive and significant differences in abnormal returns obtained by domestic investors using the momentum strategy even though these differences do not occur in the period in one month but the next month.

These findings are consistent with Imran et al. (2020) and have examined 40 countries. It states that there is a tendency to use momentum strategies in the stock market that has the potential to reduce the use of market efficiency theory. Grobys and Kolari (2020) have researched industrial issuers and state that the use of momentum strategies in the market provides better returns. Besides, Ryou et al. (2020) focus on the Korean Stock Exchange that uses the Hidden Markov Model and makes findings of the behavior of momentum strategies in Korea. Gao et al. (2020) claim that the momentum strategy can be applied in stock trading on the China Stock Exchange. Zolfaghari and Sahabi (2020) reveal that the use of momentum strategies provides profits in the short and medium-term in several Middle Eastern countries and find that. Elhaei Sahar et al. (2020) reveals that the momentum strategy cannot be said as speculation in the Iranian capital market. Ali (2020) strengthens that the use of the momentum strategy is more profitable in the Singapore market.

Meanwhile, several previous studies on the Indonesian Stock Exchange are also in line with this research, such as Liem (2012), Rafik and Marizka (2017), Murhadi and Abrianto (2019) state that the momentum strategy is slightly superior to use. In other words, all the research results agree

that although the use of a momentum strategy sometimes only provides a short-term profit rate, it can be an alternative strategy for investors in making transactions in the capital market.

The results of this study prove that the movements of investors who transact in the capital market lead to irrational patterns. Even so, investors in investing should also pay attention to other factors that can affect the performance of the stock portfolio, such as macroeconomic, market, and company as well as the company social background, Elhaei Sahar et al. (2020). These findings indicate that small domestic investors behave relatively irrationally. It means that small domestic investors tend to use the perspective of financial behavior theory rather than market efficiency theory, which states that investors are rational individuals.

MANAGERIAL IMPLICATION
By using the adjusted model, this study model concludes that domestic investors practice momentum strategy in the Indonesia Stock Exchange after the separation of the issuers of the public and non-government stocks. The momentum strategy is carried out by domestic investors who trade in small trade sizes of less than 500 stocks. This study implies that when the stock market is in a good performance, investors can consider the momentum strategy as an alternative strategy for investing in the capital market even though they trade in small amounts.

CONCLUSION
The results of this study from an empirical perspective summarize that there is a potential shift or deviation in the assumption that domestic investors behave rationally to a little towards irrational behavior. This study has limitations in terms of using a research model with a simple method and only using a small investor side. Future research should research groups of investors who trade in medium-size and even groups of investors who make large transactions, both domestic investors and foreign investors. ∎

REFERENCES

Abukari, K., and Otchere, I. (2020). *Dominance of Hybrid Contratum Strategies Over Momentum and Contrarian Strategies: Half A Century Of Evidence.* Financial Markets and Portfolio Management, 1-35.

Ali, S. R. M. (2020). *Do Momentum and Reversal Matter in the Singapore Stock Market?* Asia-Pacific Journal of Accounting & Economics, 1-17.

Barclay, M. J., and Warner, J. B. 1993. *Stealth Trading and Volatility: Which Trades Move Prices?* Journal of Financial Economics, 34(3), 281-305.

Berggrun, L., Cardona, E., and Lizarzaburu, E. 2020. *Profitability of Momentum Strategies in Latin America.* International Review of Financial Analysis, 101502.

Bhattacharya, D., Li, W.-H., and Sonaer, G. 2017. *Has Momentum Lost Its Momentum?* Review of Quantitative Finance and Accounting, 48(1), 191-218.

Borisova, G., and Yadav, P. K. 2015. *Government Ownership, Informed Trading, and Private Information.* Journal of Corporate Finance, 33, 196-211.

Bushman, R. M., Piotroski, J. D., and Smith, A. J. 2004. W*hat Determines Corporate Transparency?* Journal of Accounting Research, 42(2), 207-252.

Chakrabarti, G., and Sen, C. 2020. *Time Series Momentum Trading in Green Stocks.* Studies in Economics and Finance, 37(2), 361-389. doi:10.1108/SEF-07-2019-0269.

Chen, T.-Y., Chou, P.-H., and Yang, N.-T. 2020. *Momentum and Reversals: Are They Really Separate Phenomena?* Finance Research Letters, 32, 101102.

Chhimwal, B., and Bapat, V. 2020. Comparative *Study of Momentum and Contrarian Behavior of Different Investors: Evidence* from the Indian Market. Asia-Pacific Financial Markets, 1-35.

Chui, A. C., Subrahmanyam, A., and Titman, S. 2020. *Momentum, Reversals, and Investor Clientele.* Available at SSRN 3674871.

De Bondt, W. F., and Thaler, R. 1985. *Does the Stock Market Overreact?* The Journal of Finance, 40(3), 793-805.

Elhaei Sahar, M., Hejazi, R., Salehi, A. K., and Moltafet, H. 2020. *Stock Price Momentum Modeling: A Grounded Theory Approach.* Advances in Mathematical Finance and Applications, 5(2), 1-17.

Fan, M., Kearney, F., Li, Y., and Liu, J. 2020. *Momentum and the Cross-section of Stock Volatility.* QMS Research Paper, 1.

Gao, Y., Guo, B., and Xiong, X. 2020. *Signed Momentum in The Chinese Stock Market.* Pacific-Basin Finance Journal, 101433.

Grobys, K., and Kolari, J. 2020. *On Industry Momentum Strategies.* Journal of Financial Research, 43(1), 95-119.

Hameed, A., and Kusnadi, Y. 2002. *Momentum Strategies: Evidence From Pacific Basin Stock Markets.* Journal of Financial Research, 25(3), 383-397.

Hanafi, M. M. 2020. *Trading Performance of Foreign and Domestic Investors: Evidence From Indonesia During the Crisis And Recovery Periods.* International Journal of Economics & Management, 14(2).

Herberger, T. A., Horn, M., and Oehler, A. 2020. Are *Intraday Reversal and Momentum Trading Strategies Feasible? An Analysis for German Blue Chip Stocks.* Financial Markets and Portfolio Management, 1-19.

Imran, Z. A., Wong, W.-C., and Ismail, R. 2020. *Momentum Effect All Over the World.* International Journal of Banking and Finance, 14, 75-93.

Jegadeesh, N., and Titman, S. 2001. *Profitability of Momentum Strategies: An Evaluation of Alternative Explanations.* The Journal of Finance, 56(2), 699-720.

Koesrindartoto, D. P., Aaron, A., Yusgiantoro, I., Dharma, W. A., and Arroisi, A. 2020. *Who Moves the Stock Market in an Emerging Country–Institutional or Retail Investors?* Research in International Business and Finance, 51, 101061.

Kwon, K. Y., Kang, J., and Yun, J. 2020. *Weekly Momentum in the Commodity Futures Market.* Finance Research Letters, 35, 101306.

Lee, K. 2019. *Price Momentum in Korea and the Effect of Investors' Trading.* Journal of Derivatives and Quantitative Studies, 27(3), 329-364. doi:10.1108/JDQS-03-2019-B0004.

Liem, R. W. 2012. *Momentum Investing Strategy in IDX: An Experiment.* Journal of Applied Finance & Accounting, 5(1), 71-109.

Murhadi, W. R., and Abrianto, D. Y. P. 2019. *A Study on Short Momentum Phenomenon.* Paper Presented at the 16th International Symposium on Management (INSYMA 2019).

Musnadi, S., Faisal, and Majid, M. S. A. 2018. *Overreaction and Underreaction Anomalies in The Indonesian Stock Market: A Sectoral Analysis.* International Journal of Ethics and Systems, 34(4), 442-457. doi:10.1108/IJOES-12-2017-0235.

Pasaribu, R. B. 2019. *Value At Risk of Momentum Investment Strategy: Indonesia's Liquid Stocks Portfolio.* Jurnal Manajemen Indonesia, 19(1).

Prabowo, R., Hooghiemstra, R., and Van Veen-Dirks, P. 2018. *State Ownership, Socio-Political Factors, and Labor Cost Stickiness.* European Accounting Review, 27(4), 771-796.

Rafik, A., and Marizka, S. P. 2017. *Concurrent Momentum and Contrarian Strategies: Evidence from Indonesia.* Indonesian Capital Market Review, 9(2), 63-74.

Ryou, H., Bae, H. H., Lee, H. S., and Oh, K. J. 2020. *Momentum Investment Strategy Using A Hidden Markov Model.* Sustainability, 12(17), 7031.

Shleifer, A., and Vishny, R. W. 1994. Politicians and Firms. The Quarterly Journal of Economics, 109(4), 995-1025.

Vo, X. V., and Truong, Q. B. 2018. *Does Momentum Work? Evidence from Vietnam Stock Market.* Journal of Behavioral and Experimental Finance, 17, 10-15.

Zolfaghari, M., and Sahabi, B. 2020. *The Impact of Oil Price and Exchange Rate on Momentum Strategy Profits in Stock Market: Evidence from Oil-Rich Developing Countries.* Review of Managerial Science, 1-43.