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Article

Performance of Contrarian Investing for Shariah Compliant Stock Portfolio

Nurul Nadia Abd Halim[1,a], Najmahtudiniah Jusoh[1,b], Siti Masitah Elias[1,c], Karmila Hanim Kamil[1,d]

[1]*Faculty of Science and Technology, Universiti Sains Islam Malaysia (USIM), Bandar Baru Nilai, 71800 Nilai, Malaysia*
E-mail: [a]nurulnadiaabhalim@gmail.com, [b]najmah434@yahoo.com.my, [c]masitah@usim.edu.my, [d]karmila@usim.edu.my

***Abstract*— Contrarian strategy is applied in the stock market by buying past losers and selling past winners. In this study, the profitability of contrarian strategy on Shariah compliant stock is explored for Malaysian stock market and the application is targeted for individual investors. Monthly closing price of 50 Shariah Compliant individual stock from January 2012 to December 2016 are utilized in this study. Shariah compliant individual stock portfolios based on contrarian strategy are constructed and the performance of the developed portfolio are measured. This study utilizes three ranking and holding period strategy which are the 12/12 strategy, 12/6 strategy and 6/6 strategy. The results indicate that contrarian investment strategy is profitable in Malaysian market using short-term ranking and holding period which is the 6/6 strategy. The return generated is 3.42% as compared to market benchmark of 2.78% for the same period. Thus, the strategy beats the market benchmark by 0.64%. Furthermore, this strategy gives the highest return per unit of risk taken by investors as measured by the portfolio volatility. This means that short-term contrarian strategies may provide abnormal returns for Shariah compliant investors.**

***Keywords*— Contrarian; ranking and holding period; Shariah compliant stocks.**

I. INTRODUCTION

Contrarian investment is the strategy where investors buy stocks that have the lowest performance (prior losers) over the past periods and sells the stocks that well-performed in the same period (prior winners) to earn positive expected returns in the subsequent period. Contrarian investors believe that the stock that have bad historical performance will perform better in the future and vice versa. Thus, the contrarian stock selection strategy involves of buying the stocks that have been performing badly over the past period and selling the stocks that have been performing well [1].

Several studies have investigated the profitability of trading strategies and show that these strategies could aid investors to earn excess returns. For example, the poor performing stocks for the past three to five years tend to get higher average returns compared to the stocks that have performed well in the past [2]. Furthermore, investors that are using contrarian strategy, which involves buying the prior losers and selling the prior winners, tend to earn profit from market overreaction [3].

The purpose of this study is to construct a Shariah individual stock portfolio based on contrarian strategy and to measure the return and performance of developed portfolios of Shariah individual stock. This is particularly important for individual investors focusing only on Shariah compliant investments. This strategy is suitable for individual investors due to its simplicity and very straight forward to be implemented.

II. LITERATURE REVIEW

The efficient market hypothesis (EMH) was introduced by Fama in 1965. An efficient market is a market with the huge numbers of individuals competing each other actively to earn rational profit and attempt to predict future market values of individual securities where all the important relevant information is almost freely available to all investors. The random walk theory proposes that the future stock price movements cannot be predicted by referring to past stock price movement. Investors cannot earn abnormal profits under the contrarian strategy if the weak form of this hypothesis holds [4].

In Malaysia, it is found that there is a three-year return reversal pattern for stock traded in Kuala Lumpur Stock Exchange [5]. This highlights the long-term reversal return pattern and could be utilised as a long-term contrarian investment strategy to gain abnormal profit. There is also a research on short-run overreaction in share price in Malaysia. A study in [6] utilises weekly share price of 47 individual shares that are listed in the Kuala Lumpur Stock Exchange (KLSE) from January 1990 to December 1994. The study found that short-run overreaction of contrarian strategy of buying underperforming stock and selling outperforming stock could give abnormal profit for investors [6].

In addition, research on contrarian strategy in Kuala Lumpur Stock Exchange has been carried out by utilising weekly stock price to investigate the relationship between short term trading volume and contrarian profits [7]. There is a significant relationship between trading volume and short-horizon contrarian profits. It is proven that portfolios, which

trade more securities are able to generate higher profits than the low trading volume portfolios. This is related to the tendency of high-volume stocks to respond quickly and low volume stocks to respond slowly to the market wide information [7]. A study focusing on market reaction of 13 individual events between January 1987 until December 2006 founds that the Malaysian stock market can also yield profit where the winner of portfolio gives negative returns while loser portfolio yields higher positive return [8].

Long term past losers have been shown to outperform long-term past winners with the time length of three to five years [2]. It indicates that the stocks that show three to five years of low and bad performance tend to get higher returns compared to the stock that have performed very well during the past. They also found that people overreact to the unexpected and dramatic news. The past losers are able to earn 25% of profit compare to past winners. This abnormal return clearly violates the efficient market hypothesis, in its weak form [2]. In contrast, the momentum investing strategy had also earned profits in the Swedish stock market. However, the profits are coming solely from the past winners, while past losers didn't contribute any profit at all, which indicate that the profitability of contrarian strategy is still debatable [9].

A study in [10] conducted a research on the contrarian effect on 100 individual stocks which are listed on the New York Stock Exchange. Monthly data are utilized from 1926 to 1982. The study constructs 35 best performances of the winner portfolio and 35 worst performed stocks of the loser portfolio. The result finds that the loser portfolio performs much better in the next three years with a 25% higher average cumulative return compared to the winner portfolio, which indicates the existence of a long-term contrarian effect [10].

Evidence from Japanese and Malaysian stock market shows an abnormal profit of short-term contrarian strategies could be obtained by investors [7][11]. Thus, the ability to get abnormal returns by using contrarian investment strategies contradicts with the weak form of the efficient market hypothesis (EMH) as equity prices are argued to be predictable based on historical share price information [7]. Based on past literatures, it can be seen that many studies have been carried out on contrarian investment and it would be interesting to extend the research on Shariah compliant investment framework focusing on individual investors. This will allow Shariah compliant investors to understand the efficacy of the investment strategy in aiding stock selection process.

III. RESEARCH METHODOLOGY

A. Data

This study utilizes 50 stocks, which has been screened following certain criteria. Monthly closing price for the 50 Malaysian Shariah compliant stocks are collected from January 2012 to December 2016. All the data were obtained from Datastream. The proxy for risk free rate and market benchmark is 3-month government bond and Malaysia Bursa EMAS Shariah Index respectively.

B. Portfolio Construction Methodology

1) Screening Process: The screening process is conducted to choose suitable Shariah compliant stocks to be included in this study. The criteria of stock selection include stocks must be from Bursa Malaysia main board and must be actively traded. Since this study focuses on individual investors, only stock below RM10 will be shortlisted. The selected stocks must include all sectors in Bursa Malaysia. The sorting procedure yields a total of eight sectors: Construction, Consumer Products, Finance, Industrial Products, Plantation, Properties, Technology and Trade & Services. The screening process results in a final sample of 50 stocks. FTSE Bursa EMAS Shariah Composite Index is used as the Shariah compliant stock market return proxy.

2) Portfolio Construction Process: Different combinations of ranking and holding periods are used to get comparable results. This strategy is done to get the returns generated which determined by the lengths of the ranking and holding periods. To obtain the best and comparable results with previous researches, different combinations of ranking and holding periods is employed. The combination of ranking and holding period that were tested are shown Table I.

TABLE I
RANKING (R) AND HOLDING (H) PERIOD

R/H	12/12	12/6	6/6

3) Stock Selection Process: The stock selection process is based on the contrarian strategy. This strategy selects the stock that has the lowest past return in the ranking period. The contrarian strategies are formed by evaluating the stock returns over the past periods and hold the position for the next periods. The stock returns will be ranked and divided into quantile. In particular, at the end of each period, the lowest 20 percent of stocks are ranked according to their past returns and group them into equally weighted portfolios. In this study, each quantile will consist of 10 stocks. Shariah compliant investors will buy the stocks in the bottom quantile to apply contrarian strategy and hold the stock in accordance with the selected holding period length.

C. Performance of Portfolio

1) Sharpe's Measure: Sharpe's ratio computes the risk premium of the investment portfolio per unit of risk. The risk premium known as excess return and the total risk is the standard deviation of returns of the portfolio. It measures the degree to which a portfolio is able to earn an excess return of the risk-free return to cash, per unit of risk. The higher the value of Sharpe ratio, the better its risk-adjusted performance. Additionally, a negative Sharpe ratio indicates that a risk-less asset would perform better than the security being analyzed.

2) Treynor's measure: Treynor's measure computes the risk premium per unit of systematic risk. The systematic risk is that part of the total risk of an asset which cannot be eliminated through diversification. It also uses the portfolio beta to measure the risk of a portfolio. Treynor's measure is used to measure the returns, which are earned in excess,

which could have been earned on a riskless investment per each unit of market risk. This measurement focuses only on non-diversifiable risk. It is also compared between the other portfolios. The higher the value of Treynor's measure, the greater the risk premium per unit of non-diversifiable risk.

3) Jensen's alpha: Jensen's alpha is based on the Capital Asset Pricing Model (CAPM) and it is used to calculate an excess return. The alpha represents the amount by which the average return of the portfolio differs from the expected return given by the CAPM. The CAPM specifies the expected return in terms of the systematic risk, market risk premium and risk-free rate. The alpha can be less than, greater than or equal to zero. An alpha greater than zero suggests that the portfolio generates an excess return of the expected return of the portfolio. In other words, if the value is positive, then the portfolio is earning excess returns and indicates that investor has "beat the market" with his or her stock picking skills.

IV. RESULT AND DISCUSSION

Table II, III and IV below shows holding period return (HPR) for 12/12 strategy, 12/6 strategy and 6/6 strategy respectively.

From the formation of 12/12 strategy in Table II, the contrarian portfolio generates returns within the range of -10.18% to 33.64% per month. This is followed closely by 12/6 strategy. As seen below, the 12/12 portfolio return is negative during 2014, which is -10.18%. However, in 2013 until 2016 the return shows return. The annualized portfolio returns of the 12/12 portfolio is 11.45%, which greater than the market return.

TABLE II
HPR FOR 12/12 STRATEGY

12/12	Monthly HPR, %
2013	21.24
2014	-10.18
2015	6.02
2016	33.64
Annualized HPR, %	**11.45**
Annualized market return, %	**2.94**

Table III illustrates the results for the formation of the ranking period of twelve months and holding period of six months. It is found that the contrarian's portfolio yield returns in the range of -19.99% to 16.10% per months. For this portfolio, there are only two out of eight stocks manage to generate positive return during the period of Jan13-Jun13 (7.77%) and Jan16-Jun16 (16.10%). While the other periods which are Jul13-Dec13 (-6.79%), Jan14-Jun14 (19.99%), Jul14-Dec14 (-18.10%), Jan15-Jun15 (-3.42%), Jul15-Dec15 (-8.61%) and Jul16-Dec16 (-1.55%) generate a negative return and did not obtain an abnormal return to individual investors. It shows the periods 12/6 strategy is not a suitable strategy to generate excess return because there are only two out of eight portfolios with positive returns. Other than that, the total portfolio returns did not able to beat the market return.

TABLE III
HPR FOR 12/6 STRATEGY

12/6	Monthly HPR, %
Jan 13 – Jun 13	7.77
Jul 13 – Dec 13	-6.79
Jan 14 – Jun 14	-19.99
Jul 14 – Dec 14	-18.10
Jan 15 – Jun 15	-3.42
Jul 15 – Dec 15	-8.61
Jan 16 – Jun 16	16.10
Jul 16 – Dec 16	-1.55
Annualized HPR, %	**-0.10**
Annualized market return, %	**2.23**

Table IV shows the formation of the portfolio with ranking and holding period of six months (6/6). The return generated by contrarian portfolio is between the ranges of -18.10% to 15.60% per month. This portfolio gives a positive return in only five out of the total nine sub periods. The positive returns are in the following periods: Jan13-Jun13 (5.53%), July13-Dec13 (7.23%), Jan15-Jun15 (6.85%), Jan16-Jun16 (15.60%) and July16-Dec16 (6.55%). While the other periods generate negative returns, which are Jul12-Dec12 (-7.12%), Jan14-Jun14 (-9.2%), Jul14-Dec14 (-18.10%) and Jul15-Dec15 (-8.19%). The portfolio returns are capable to beat the market benchmark and thus this strategy generate an abnormal return.

TABLE IV
HPR FOR 6/6 STRATEGY

6/6	Monthly HPR, %
Jul 12 – Dec 12	7.12
Jan 13 – Jun 13	5.53
Jul 13 – Dec 13	7.23
Jan 14 – Jun 14	-9.20
Jul 14 – Dec 14	-18.10
Jan 15 – Jun 15	6.85
Jul 15 – Dec 15	-8.19
Jan 16 – Jun 16	15.60
Jul 16 – Dec 16	6.55
Annualized HPR, %	**3.42**
Annualized market return, %	**2.78**

Based on holding period return, the contrarian investment strategy is a profitable investment strategy in Malaysia. With regard to portfolio's HPR, 12/12 strategy is the most profitable strategy as compared to the other strategies. However, the usage of HPR as the main performance indicator might give myopic views to a portfolio's performance as it only focuses on the return side and ignore the risk faced by investors. Therefore, other performance measurements are presented in the next section.

A. Performance of Developed Portfolio

1) Sharpe's Measure: The result of Sharpe ratios shown in Table V indicates that the 6/6 strategy is the most profitable strategy. The portfolio of Sharpe ratio provides the highest return per unit of risk out of the three strategies over the 5-year period. It experiences the most volatility, with the highest standard deviation of 29.44%, but at the same time the portfolio produces the highest return. Thus, for every unit of risk taken by investors, they are being compensated with reasonable return. In contrast, the 12/6 strategy

produces the lowest ratio where the value is -0.63. The ratio is relatively low because 12/6 strategy have negative average returns over the investment period. Therefore, the value of Sharpe ratio becomes very small and negative. The last strategy is 12/12 strategy. It shows a higher standard deviation than 12/6 strategy with a standard deviation of 25.05%. The Sharpe ratio for 12/12 strategy is 0.04 per unit of risk (standard deviation). The potential of 12/12 strategy in obtaining an abnormal return could be observed, but not as effective as 6/6 strategy as this strategy gives the highest return per unit risk taken. In this research, the ranking and holding period of 12/12 strategy and 6/6 strategy shows that both strategies are greater than the measure of the market portfolio. It indicates that these portfolios outperform the market and earn an excess return. Besides that, the portfolios' returns exceed the risk-free rate (0.03%). Hence, it is recommended to invest in the riskier assets via 6/6 and 12/12 strategy. While, 12/6 strategy shows a negative return value. These negative values indicate an unfavorable return on this portfolio. This portfolio return is less than the risk-free rate, then it makes less sense to invest in the risky assets using 12/6 strategy. From the result above, it can be summarized that, in term of Sharpe ratio, it has been observed that 6/6 are the best strategy because it has the best performance with the highest Sharpe ratio to generate excess return.

TABLE V
SHARPE'S MEASURE

R/H	Portfolio Sharpe Ratio	Market Sharpe Ratio
12/12	0.04	-0.18
12/6	-0.63	-0.18
6/6	0.18	-0.07

2) Treynor's Measure: The result in Table VI shows that the Treynor ratio for the 12/12 strategy is -0.08 per unit of risk measured by beta. Meanwhile, for the 12/6 strategy, it is 2.40 per unit of risk measured by beta and for the 6/6 strategy, it is -0.34 per unit of risk measured by beta. The 12/12 strategy is the second-best performing investment among the three. It can be clearly notice from the obtained Treynor ratio values that the 12/6 strategy has the highest Treynor ratio and hence, this is the investment with a relatively lowest risk with beta value and also generate the lowest return. While, for the 6/6 strategy generates the highest return which is 8.40% and also with the highest value for beta. It generates -0.34 points of returns for each unit stock market risk. Even though 12/6 strategy has the highest Treynor ratio, evaluation on investment strategy solely on Treynor ratio is not recommended. Thus, it is important to evaluate the portfolio performance alongside with other performance indicators.

TABLE VI
TREYNOR'S MEASURE

R/H	Portfolio Treynor Ratio	Market Treynor Ratio
12/12	-0.08	-0.02
12/6	2.40	-0.02
6/6	-0.34	-0.01

3) Jensen's Measure: In this research, for Jensen's measure as depicted in Table VII, the data for ranking and holding periods for 12/12 strategy and 6/6 strategy show that both portfolios experienced positive values on Jensen's alpha. The Jensen alpha has 4.26% for 12/12 strategy and 8.78% for 6/6 strategy. This indicates that the strategies gave excess return above its required return. Clearly, 12/12 and 6/6 strategies has outperformed the market on a risk-adjusted basis. This also means that stock allocation on equally weighted portfolio outperforms the market. While, 12/6 strategy shows that the portfolio experienced negative value on Jensen's alpha, which is -10.35%. This means that the portfolio has not been able to earn excess returns in its portfolio and does not outperform the market. Hence, this result concludes that in term of Jensen ratio, 6/6 is the most favorable strategy because it has the best performance with the highest Jensen alpha and average return to generate an excess return and outperformed the market.

TABLE VII
JENSEN'S MEASURE

R/H	Jensen Alpha (%)
12/12	4.26
12/6	-10.35
6/6	8.78

V. DISCUSSION

Based on the results of the average monthly returns on 50 Shariah individual stocks, it is observed that the contrarian strategy of selling past winners and buying past losers is profitable in Malaysian stock market. This is obtained by testing the combination of ranking period 12/12, 12/6 and 6/6 strategy. From the ranking and holding return result, it shows that 12/12 strategy is the best strategy to use because it had yielded the highest return and beat the market return. This strategy gives positive total returns and generate abnormal profit in Malaysia. In conclusion, the contrarian strategy is able to yield an abnormal return in Malaysia.

For the performance of the portfolio, Sharpe ratio indicates the reward to variability ratio. It is an excess return over risk free return per unit of risk, i.e., per unit of standard deviation. Positive values of Sharpe ratio designate better performance. So, from the result show that 6/6 strategy has positive value and give the best performance to generate an abnormal return. Positive value indicating all strategies are favorable option of investment for current and potential investors. In addition, these portfolios also are the riskiest because the standard deviation is the highest. Higher standard deviation representing higher risk and should be compensated with reasonable total returns. For the Jensen's alpha, it measures the differential return of securities. Higher

Jensen's alpha indicates better performance. The value of alpha found in the 6/6 strategy is the highest which indicates better performance among the strategies.

While for Treynor ratio, it indicates a risk adjusted return, i.e., excess return over the risk free rate per unit of systematic risk. This strategy found that 12/12 is the best performance because it has the highest ratio even though it has the lowest negative return. This happens possibly because it has been contributed by the negative average return and negative value of beta. Hence, it cancels out the volatility of beta and average return to produce the highest ratio of Treynor. Although the ratio is the highest, but it is not applicable in Malaysian market of the negativity of beta. In addition, this strategy also has a low R-squared. R-squared measure of how close the data are fitted to the market. Since the value of beta is negative, it shows the data are not converge to the market return. This study finds Treynor ratio is not recommended to be used as one of the characteristic to compare the performance.

In a nutshell, based on portfolio performance, when holding periods are compared between 12/12 and 6/6 strategy, it could be observed that the holding periods where the contrarian investment strategy is the most profitable in Malaysia is in the short-term which is the 6/6 strategy. The 12/12 strategy ignored the fluctuation of price in between the two dates. Therefore, measuring the return without considering the risk would be unfavorable for investors, especially for Shariah compliant investors.

V. CONCLUSION

This study concludes that short-term period, which is 6/6 strategy is the best strategy to generate more profit. The result of this study is in line with [10] and [12], which suggests that contrarian strategies of buying prior losers and selling prior winners tend to produce significantly positive abnormal returns for long-term and short-term portfolio formation and holding periods. Along the period, the contrarian strategy generated monthly returns between 18.10% to 15.60% for 6/6 strategy. Furthermore, it is found that 6/6 strategy beats the market return, which is in line with results from [11] and [12].

Besides that, short term strategy outperforms intermediate term strategy because it records the highest range of return generated for the combination of period. The findings are in line with the previous study about the profitability of contrarian strategy in Malaysian market [8]. The results demonstrate that Malaysia Shariah stock market is inefficient in the weak form, in support of behavioral finance assumptions because it is able to generate abnormal returns using information from past prices. In other words, it could be argued that the assumptions of traditional finance and weak form market hypotheses are not valid in Malaysia specifically for Islamic stock market.

Therefore, this study suggests individual Shariah investors to consider contrarian strategy as one of the options in stock investment since it can generate an excess profit. In addition, this strategy is also straightforward to be followed due to its simplicity. However, investor must be more careful in term of selecting the length of ranking and holding period. Shariah investors also need to always monitor the performance of their portfolios to avoid excessive risk taking as it would be against Maqasid Shariah principle that aims to protect the wealth. Thus, investors need to closely monitor their portfolio to ensure that their portfolios' value do not fall below certain threshold to avoid continuous loss. Over the investment period, portfolio risk need to be monitored while taking advantage of market inefficiency.

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