

IS HERDING BEHAVIOUR REALLY EXIST? AN EMPIRICAL STUDY ON THE LQ-45 AND JAKARTA ISLAMIC INDEX

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ABSTRACT

Indonesia Stock Exchange provides conventional and Sharia stocks for investors who want to invest. This study aims to detect herding behaviour and analyze whether there are differences in herding behaviour between LQ-45 and Jakarta Islamic Index stocks in the Indonesia Stock Exchange. Totalling 20 sample companies that have observed using the Cross-Sectional Absolute Deviation (CSAD) method based on quantile regression analysis and independent t-test to examine the differences of herding behaviour in both stocks. The results showed that herding behaviour occurs on LQ-45 stock in the market up condition. In contrast, herding behaviour not found in the market down condition. On the other hand, there was no indication of herding behaviour in both market conditions in the Jakarta Islamic Index stock. Furthermore, these results confirm that there are significant differences in herding behaviour between LQ-45 and Jakarta Islamic Index stocks in the Indonesia Stock Exchange. The implication of these findings seems to indicate differences in behaviour based on Sharia principles being a factor in making investment decisions between these both stocks.

Keywords: Herding Behaviour, Cross-Sectional Absolute Deviation, Quantile Regression

INTRODUCTION

The capital market in Indonesia has experienced a rapid increase, as seen from the Financial Services Authority (OJK) Annual Report. In making investment decisions in a conventional capital market, investors will choose a stock index with good fundamentals, liquid, and easy to trade, such as LQ-45 stocks. The Indonesia Stock Exchange has also compiled a particular index consisting of components of stocks whose business activities are following Sharia principles, namely the Jakarta Islamic Index (JII). Based on data on the development of the Indonesia Stock Exchange (IDX) stock price index in 2016 - 2018 published by the Financial Services Authority (OJK) Capital Market Statistics, it appears that the LQ-45 stock index and Jakarta Islamic Index tend to fluctuate. Fluctuations in the stock price index may not be separated from the interrelation or dependence between investors. Fluctuations in the stock price index may occur as a result of investor withdrawals.

The behaviour of investors who withdraw funds massively and jointly simultaneously proves that the Efficient Market Hypothesis (EMH) does not apply to these conditions. Investors take irrational actions by attracting large-scale funds simultaneously. Investors' actions are influenced by psychological aspects that can change the decisions taken by investors, which became known as the behavioural finance concept (Suryawijaya, 2003). According to Ricciardi and Simon (2000), behavioural finance also tries to explain and improve the understanding of patterns of investor reasons, including emotional aspects and the degree of those aspects in influencing the decision-making process. Behavioural finance is built on various assumptions and ideas of economic behaviour. Behavioural finance is a variety of phenomena natural tendencies of different human behaviour in different situations. One such phenomenon is herding.

Herding behaviour is the tendency of investor behaviour to follow market consensus and follow other investors' behaviour without conducting fundamental economic analysis (Gunawan et al., 2011). Chang et al. (2000) state that if herding occurs, the rate spread of stock returns will decrease even though market portfolio returns increase. Besides, it will also result in pricing errors because there is a bias in seeing the results of the expected risk and return. This bias causes the stock price is not reflected according to economic conditions (Hwang and Salmon, 2004).

Prasetyo (2017) said that as people who are kaffah in carrying out their religious Sharia, Muslims must continue to hold fast to Islamic Sharia in all their forms of activity, including investment activities in the capital market. In this case, investing in exchanges that adhere to Islamic Sharia, such as the Jakarta Islamic Index, allows investors to obtain alternative investment stocks with relatively little risk of uncertainty due to lower volatility compared to conventional stocks.

Although there are differences in the principles of Sharia and conventional systems, some researchers consider the stock market with Sharia principles also mimics conventional behavioural finance and deviations contained in the conventional system are also evident in the Islamic system. Therefore, inefficient markets are also proven in the Islamic market as we know that the Islamic market is ethical enough and made to promote social interests, where Muslim investors adhere to Islamic ethical standards in all transactions on the Islamic stock market which usually contain information available to all market participants (Medhioub and Chaffai, 2018).

Refers to several previous studies have detected herding behaviour in conventional stock markets, such as a study conducted by Noviliya and Prasetyono (2017) using an LQ-45 stock sample research sample, found evidence that herding behaviour occurs in the Indonesian and Chinese stock markets in high return conditions. Likewise, Luo and Schinckus (2015) who found indications of herding behaviour when the market conditions were bullish on Shanghai and Shenzhen Stock Exchange Markets. Lao and

Singh (2011) found evidence that herding behaviour occurs in the Chinese stock market when down market conditions. In contrast, in the Indian stock market, herding behaviour occurs when up market conditions. On the other hand, Ramadhan and Mahfud (2016) found no significant evidence of herding behaviour in the Indonesian and Singapore stock markets when market stress conditions, normal and high return.

Rizal and Damayanti (2019) found evidence that there was herding behaviour in the Indonesian Islamic stock market when down market conditions. Chaffai and Medhioub (2018) found significant evidence of herding behaviour occurring on the Islamic Gulf Cooperation Council (GCC) stock market when market conditions were rising. In contrast to Javaira and Hassan (2015) found no evidence of herding behaviour in the Pakistan stock market when the market conditions are bearish and bullish; similarly, Kiran et al. (2020) which shows the absence of herding behaviour based on both methods at various levels of market movements on the Pakistan stock exchange. Medhioub and Chaffai (2018) examined the herding behaviour of investors in five Gulf Cooperation Council Islamic stock markets, then found evidence that there was an indication of significant herding behaviour in the Islamic stock markets of Saudi Arabia and Qatar when down market conditions. The results also show that the Islamic stock market of Kuwait and Emirates with the local conventional stock market implies a relationship of interdependence between the Islamic and conventional markets in both countries. In contrast to research by Beck et al. (2013) found a significant difference between the Islamic and conventional bank system. They consider that Islamic banks are more resistant to shocks than conventional banks.

Some of the research on herding behaviour above illustrates that there are still differences in research results, such as those detected on the conventional stock market in the Indonesia Stock Exchange (Noviliya & Prasetiono, 2017; Luo & Schinckus, 2015; Lao & Singh, 2011), but herding behaviour is not detected in conventional stock markets such as the Indonesian and Singapore stock markets (Ramadhan & Mahfud, 2016). Likewise with the differences in the results of herding behaviour research that were detected on the Islamic stock market (Rizal & Damayanti, 2019; Chaffai & Medhioub, 2018), but were not detected in the Islamic stock market such as the Pakistan stock market (Javaira & Hassan, 2015; Kiran et al., 2020). The research gap also appears in the results of the study, which found that there was no difference between the conventional and Islamic stock market (Medhioub & Chaffai, 2018). However, Beck et al. (2013) found a significant difference between the Islamic and conventional bank system.

The results reinforce the interest of our study to investigate herding behaviour. Based on the phenomenon and research gap that has been explained, this study aims to detect herding behaviour and analyze the difference in herding behaviour between LQ-45 stocks and the Jakarta Islamic Index in the Indonesia Stock Exchange. This study conducted a comparative analysis because the Islamic market has an interesting problem that is there is literature which says that investor behaviour is not only seen by psychological biases but also by other behavioural aspects such as religion (El Ghoul et al., 2012; Goel & Srivastava, 2016).

This study looks at the reasons between religion and its relationship with ethics and moral principles in behavioural finance to see evidence of herding behaviour in the Islamic market. If investors behave according to their beliefs or religions, investors in the Islamic market will not quickly move from one stock to another, let alone to non-Sharia shares, and not easily influenced by market trends. Thus, herding behaviour in the Islamic market should be lower or even not occur when compared to conventional markets (Zakie & Rafik, 2017). Does this apply to the Indonesian Sharia stock market? This study will be devoted to analyzing herding behaviour in conventional and Sharia stock index to answer this question.

Our results showed that herding behaviour occurs on LQ-45 stock in the upmarket condition, whereas herding behaviour not found in the market down condition. On the other hand, in the Jakarta Islamic Index stock, there was no indication of herding behaviour in both market conditions. Furthermore, these results confirm that there are significant differences in herding behaviour between LQ-45 and Jakarta Islamic Index stocks in the Indonesia Stock Exchange. These findings are relevant in achieving a better understanding of market conditions and services for academics and investors. Through an understanding of the level of herding and the nature of its influence, it can contribute to a more accurate assessment, estimate, and can facilitate the identification of potential risks when making investment decisions in the Indonesia Stock Exchange.

The remainder of this paper is organized as follows. Section 2 covers a brief review of the literature on herding behaviour. Section 3 describes the data and analysis methods utilized. In section 4, we report the empirical results, and section 5 the results are presented and discussed. Section 6 provides a conclusion. Last but not least, section 7 limitations and recommendations.

LITERATURE REVIEW

Behavioural Finance

Behavioural finance is an application of psychology in the discipline of finance. Behavioural finance is essential in investment decision making. Human behaviour in making decisions based on psychological factors, making a risky decision can be interpreted as a choice or gamble. Manurung (2012) states that individuals in investing not only use estimates of the prospects of their investment instruments, but psychological factors also have a significant role in determining decision making.

Shefrin (2000) defines that behavioural finance is a study that studies how psychological phenomena affect financial behaviour. Nofsinger (2001) defines financial behaviour, namely learning how humans behave in a commercial setting (a financial setting). Specifically, studying how psychology influences financial, corporate and financial market decisions. Both concepts outlined clearly state that financial behaviour is psychological factors influence an approach that explains how humans make investments or relate to finance.

Referring to the arguments of Christie and Huang (1995) regarding what can bridge between herding behaviour and behavioural finance, that when there is very high market volatility (extreme market movements), investors will likely suppress or ignore their opinions and beliefs and prefer to follow (herding) market consensus or sentiment. Investors will prioritize reason and reason in investment decision making rather than conducting the fundamental analysis of issuers and the economy in investment decision making (Widyastuti, 2011). This led to herding behaviour following market sentiment.

Herding Behaviour

Herding in financial markets is identified as a tendency of investor behaviour following the actions of other investors. Herding is also commonly referred to as a correlation in stock trading that occurs from an interaction between investors. According to Bikhchandani and Sharma (2001), herding is a phenomenon of group buying or selling of one or more groups in groups that occur on the capital market or stock exchange. Herding does not merely occur in a planned manner every time a group purchase occurs. When herding occurs, investors make investments without calculating the risk or the return that will be obtained.

Banerjee (1992) defines herding behaviour, that is, everyone does what everyone does, even though their private information suggests doing different things. Such behaviour is considered rational behaviour among unskilled investors, where they follow the decisions of investors who are more skilled than using their information.

Investors conduct herding behaviour because rational and irrational aspects drive it. According to Devenow and Welch (1996), the driving factor of irrational herding behaviour refers to the psychological behaviour of investors which reflects that the investor mimics the behaviour of other investors without conducting a rational analysis based on one's own beliefs. While the rational aspect is based on facts, where investors consider that doing herding is the best decision because external factors influence it.

Herding behaviour cannot be explained by the basics of theoretical analysis and must rely on empirical evidence that determines herding behaviour in the field (Hwang and Salmon, 2004). Researchers in the field state that the existence of herding behaviour will have implications for the Capital Asset Pricing Model (CAPM) of an asset because the herding behaviour will have an effect on stock price movements and will affect the returns and risks of these shares. In the context of asset pricing, if market participants tend to follow market sentiment, it will cause asset prices to deviate from their fundamental values (Lindhe, 2012). As a result, investors will trade inefficiently. Herding behaviour carried out by market participants by following trends will exacerbate the level of volatility of stock returns (Bikhchandani and Sharma, 2001).

RESEARCH METHODOLOGY

This study aims to detect herding behaviour and analyze whether there are differences in herding behaviour between LQ-45 and Jakarta Islamic Index stocks in the Indonesia Stock Exchange. The quantitative data were obtained from several securities companies' real-time transactions in the Indonesian Stock Exchange with purposive method technique sampling. A total of 20 companies were found eligible based on the criteria. The sample was observed using the Cross-Sectional Absolute Deviation (CSAD) method proposed by Chang, Cheng, and Khorana (2000) to detect market-wide herding and independent t-test to test the differences of herding behaviour in these both stocks. The data are the daily stock closing price and index closing price for individual stocks listed on LQ-45 and Jakarta Islamic Index stock markets, which is accumulated by categorizing the existence of herding behaviour in two market periods there was bullish (up) and bearish (down). The study involved 774 daily return observations covering the period from January 1, 2016, to December 31, 2018. The historical data obtained from the website www.investing.com.

This study chooses the LQ-45 and the Jakarta Islamic Index as a case study because it is a stock index selected by the Indonesia Stock Exchange with good fundamentals, liquid, and has a large market capitalization that is believed to provide high returns for investors. Thus, many investors are aiming for stocks listed in LQ-45 and the Jakarta Islamic Index. That causes the two stock indices to fluctuate. Fluctuations in the stock price index may be inseparable from the interrelation or dependency between investors which is likely to occur as a result of the withdrawal of funds by investors, thus causing the phenomenon of herding.

The sample data that has been obtained is processed into an input variable to obtain the level of herding behaviour in the Cross-Sectional Absolute Deviation (CSAD) equation. The initial step of the analysis is to calculate the value of the stock returns of each company and the stock index using the equation below:

$$R_t = \frac{P_t - P_{t-1}}{P_{t-1}}$$

Where t is the daily period. R_t is the return of stocks i at time t. P_t is the closing price of the stocks i at time t. P_{t-1} is the closing price of the stocks i at time t-1.

The next step is to calculate the value of the Cross-Sectional Absolute Deviation (CSAD) proposed by Chang et al. (2000). In their measure known as CCK measure, CSAD is calculated by comparing individual stock returns with the market return. Chang et al. (2000) model produced strong evidence of herding behaviour. The measure of stock return dispersion based on the Cross-Sectional Absolute Deviation (CSAD) is measured as follows:

$$CSAD_t = \frac{1}{N} \sum_{i=1}^N |R_{it} - R_{mt}|$$

Where N is the number of stocks in the stock index for the sample. $R_{i,t}$ is the return of individual stocks i at time t . $R_{m,t}$ is the market return at time t .

Chang et al. (2000) proposed a modified measure to test market-wide herding based on a conditional version of the CAPM model, which predicts a linear relation between dispersions in individual assets and the market return. They suggested that the presence of herd behaviour in the market is not the result of a decrease in dispersion only. However, also it is the result of a nonlinear relation between the dispersion and the market return. To detect herd, they based on a general quadratic relationship between return dispersion (CSAD) and market absolute and squared return of average returns as the following regression:

$$CSAD_t = \alpha + \gamma_1 |R_{m,t}| + \gamma_2 R_{m,t}^2 + \varepsilon_t$$

Where α is an intercept variable, γ_1 is the linear coefficient between CSAD and market return. γ_2 is the non-linear coefficient between CSAD and market return. ε_t is the standard error.

This formulation was frequently used in previous studies, including Lao and Singh (2011), Ramadhan & Mahfud (2016), Noviliya & Prasetyono (2017). Based on the above equation, γ_1 will remain positively constant for $R_{m,t}$ both down-and-up market conditions. However, if γ_2 becomes negative and statistically significant, it will be an indication of herding behaviour. On the other hand, if γ_2 becomes insignificant or positive, it will show the absence of herding behaviour. This indication is because when investors herd, they tend to follow the market, and, as a result, stock returns are close to the overall market return. The existence of herding behaviour under bearish (down) and bullish (up) of stock market conditions determines using the equation as follows:

$$CSAD_t^{DOWN} = \alpha + \gamma_1^{DOWN} |R_{m,t}^{DOWN}| + \gamma_2^{DOWN} (R_{m,t}^{DOWN})^2 + \varepsilon_t$$

$$CSAD_t^{UP} = \alpha + \gamma_1^{UP} |R_{m,t}^{UP}| + \gamma_2^{UP} (R_{m,t}^{UP})^2 + \varepsilon_t$$

As investors react differently during bear and bull periods, herding behaviour can be detected in the tails of the market return distribution. Quantile regression enables the examination of effects in different points of the market return distribution. It can be used to obtain estimates for herding in the tails of the market return distribution. For that reason, this study used quantile regression analysis. Quantile regression analysis is used to detect herding in the extreme quantiles of the return distribution. When the dispersion of returns decreases or increases at a decreasing rate and approach the market rate of return, this could be an indicator of herd behaviour. Quantile regression is instrumental if the data distribution is not homogeneous (heterogeneous) and does not have a standard form, for example: asymmetrical, the presence of tails in the distribution, or truncated distribution (Rahmawati et al. 2011). By setting the quantile estimated $\tau = 0.01$ and $\tau = 0.05$ for obtain the extremely low returns. Likewise, setting the quantile estimated $\tau = 0.95$ and $\tau = 0.99$ for obtain the extremely high returns.

In addition to detecting herding behaviour, this study analyzes whether there are differences in herding behaviour between LQ-45 and Jakarta Islamic Index stocks. Many studies have found evidence of a high correlation between Islamic and conventional stock market returns. For example, Medhioub and Chaffai (2018) suggested that Kuwaiti and Emirates Islamic stock markets herd with the local conventional stock market, implying then the interdependencies between Islamic and conventional markets in both of these countries. Therefore, this study examines the difference in herding behaviour by using an independent sample t-test.

RESULTS

Descriptive Statistics

Descriptive statistics for daily market returns and Cross-Sectional Absolute Deviations (CSAD) for the LQ-45 and Jakarta Islamic Index stock markets over the period from January 1, 2016, to December 31, 2018, are provided in Table 1.

Table 1: Descriptive statistics results

	Variable	Obs.	Mean	Std. Dev.	Max	Min
LQ-45	CSAD	724	0.016695	0.005935	0.044177	0.004438
	R _{mt}	724	0.007917	0.007277	0.051700	0.000000
JII	CSAD	724	0.017138	0.007824	0.053571	0.003943
	R _{mt}	724	0.008306	0.007269	0.052300	0.000000

Source: Data processed, 2020

Table 1 provides that during the observation period, there were 724 observation days with LQ-45 market returns and the Jakarta Islamic Index used to describe market conditions. By comparing the market return variable ($|R_{m,t}|$) of the LQ-45 and Jakarta Islamic Index, it can be seen that the average market return value is almost same, the Jakarta Islamic Index market has a higher average value of 0.831% then followed by LQ-45 market with an average value of 0.792%. Stock return standard deviation provided information about the magnitude of volatility also shows the same thing, LQ-45, and Jakarta Islamic Index stock markets have a similar standard deviation value of 0.723%, which explains that the market has the same price variations caused by unexpected shocks in the index of this stock.

Cross-Sectional Absolute Deviation (CSAD) variable showed that both markets have low and similar average dispersion values. The Jakarta Islamic Index market owns the highest average dispersion value, then followed by the LQ-45 market. The low and

similar CSAD values are inter-related between the two markets with very high directional similarities between these stocks. Similar CSAD values indicate that both markets have the same sensitivity and small to unexpected information or news. Comparison of the maximum and minimum daily CSAD values shows that the Jakarta Islamic Index has the highest value of 5.36%, which occurred on March 17, 2016.

Quantile Regression Analysis Results of LQ-45 Stock

In the regression model on both stock indices, there are different coefficients γ_1 and γ_2 in each quantile. The coefficient γ_1 is not used to detect herding behaviour, but the coefficient γ_2 because the regression model formed in detecting herding behaviour is quadratic. Meanwhile, the coefficient γ_1 can only be used when the regression model that is formed is linear. This model is consistent with the theory developed by Chang et al. (2000) that the herding behaviour over market consensus will form a nonlinear relationship between the average market return with Cross-Sectional Absolute Deviation (CSAD).

The results of the estimated quantile regression parameters for LQ-45 stock can be seen in Table 2 below.

Table 2: Quantile regression results of LQ-45 stock

Market Conditions	Quantile	R-Squared	A	γ_1	γ_2
Down	0.01	0.0478	0.0043 (0.0000)	0.3252 (0.0001)	-1.1403 (0.5388)
	0.05	0.0532	0.0080 (0.0000)	0.1531 (0.0101)	0.8925 (0.5665)
Up	0.95	0.0036	0.0276 (0.0000)	0.0819 (0.6817)	-0.8525 (0.8931)
	0.99	0.0229	0.0326 (0.0000)	0.6124 (0.1524)	-15.4940 (0.0349)**

Significance is shown in parentheses.

**Statistical significance at the 5% level.

Table 2 present the estimated results for the full period using the quantile regression method under down and up markets. Based on the results of 13 stocks listed on LQ-45, the detection of herding behaviour in the Indonesia Stock Exchange shows there is a herding behaviour in the upmarket condition. That is indicated by the non-linear coefficient (γ_2) which is statistically significant and negative at the extreme upper quantiles ($\tau = 0.99$), where the quantile represents an upmarket condition. In that condition, the level of spread stock returns will increase lower when compared to the increase in market portfolio returns or even decrease. However, the analysis did not find herding behaviour in the lower quantiles ($\tau = 0.01, 0.05$) under the down-market condition. That is indicated by the fact that there is no non-linear coefficient (γ_2) which is negative and significant in each quantile that describes the condition of a falling market. From the $\tau = 0.01$ to the $\tau = 0.99$ quantiles, the coefficient γ_2 can be seen which tends to be lower. That shows that the condition of LQ-45 shares experienced a significant definite decline so that it is probable that herding behaviour was detected at high quantiles.

When down market conditions, the R-square value of LQ-45 stocks at the quantile $\tau = 0.01$ of 0.0478 shows that market returns can explain 4.78 % of the variance of the level of dispersion return (CSAD). In contrast, the remaining 95.22% is explained by variables other than market returns. While the value of R-square at the $\tau = 0.05$ is 0.0532. That means that 5.32% of the return dispersion rate variance is explained by market returns, while the remaining 94.68% is explained by variables other than market returns.

When upmarket conditions, the R-square value at the quantile $\tau = 0.95$ of 0.0036 indicates that market returns can explain 0.36 % of the variance of the rate of return dispersion. In comparison, the remaining 99.64% is explained by variables other than market returns. While the value of R-square at the quantile $\tau = 0.99$ is 0.0229 which means that 2.29% of the variance of the return dispersion rate can be explained by market returns, while the remaining 97.71% has explained by variables other than market returns.

Quantile Regression Analysis Results of Jakarta Islamic Index Stock

The results of the estimated quantile regression parameters for Jakarta Islamic Index stock can be seen in Table 3 below.

Table 3: Quantile regression results of Jakarta Islamic Index Stock

Market Conditions	Quantile	R-Squared	A	γ_1	γ_2
Down	0.01	0.0178	0.0047 (0.0000)	0.0353 (0.7154)	2.2796 (0.2613)
	0.05	0.0364	0.0061 (0.0000)	0.2513 (0.0009)	-3.0138 (0.1132)
Up	0.95	0.0002	0.0324 (0.0000)	-0.2250 (0.7561)	6.1600 (0.7528)
	0.99	0.0079	0.0451 (0.0000)	-0.2627 (0.4988)	-1.4663 (0.8276)

Significance is shown in parentheses.

There is a difference with the detection of herding behaviour on LQ-45 stocks, the detection of herding behaviour in 7 stocks listed on the Jakarta Islamic Index shows that there is no herding behaviour in both market conditions. The results showed that nonlinear coefficient (γ_2) values are statistically significant and negative were not present at the lower quantiles ($\tau = 0.01, 0.05$) and upper quantiles ($\tau = 0.95, 0.99$) under both down and upmarket conditions. Under these conditions, the level of spread of stock returns will increase higher when compared with an increase in market return. From $\tau = 0.01$ to $\tau = 0.99$ quantiles, the coefficient γ_2 can be seen, which is on average unstable, there are an increase and a decrease in each quartile. That indicates that the condition of the Jakarta Islamic Index shares is in an unstable condition. Under these conditions, herding behaviour might be detected if investors in the Jakarta Islamic Index stock are not well educated.

When down market conditions, the R-square value of Jakarta Islamic Index stocks in the quintile $\tau = 0.01$ of 0.0178 indicates that market returns can explain 1.78 % of the variance of the level of dispersion of returns (CSAD). In contrast, the remaining 98.22% is explained by variables other than market returns. While the value of R-square at the quintile $\tau = 0.05$ is 0.0364, which means that 3.64% of the return dispersion rate variance can be explained by market returns, while the remaining 96.36% is explained by variables other than market returns.

When upmarket conditions, R-square value obtained at the quintile $\tau = 0.95$ is 0.000224, which indicates that market returns can explain 0.02 % of the variance of the rate of return dispersion. In comparison, the remaining 99.98% is explained by variables other than market returns. Whereas in the quintile $\tau = 0.99$ of 0.0079, it means that 0.79% of the return dispersion rate variance can be explained by market returns. In comparison, the remaining 99.21% is explained by variables other than market returns.

Comparison of Detection Results of Herding Behavior between LQ-45 and Jakarta Islamic Index Stocks

This section shows the independent sample t-test between LQ-45 and Jakarta Islamic Index stock that can be seen in Table 4 below.

Table 4: Independent Sample t-Test between LQ-45 and Jakarta Islamic Index Stocks

	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
RMT ² Equal variances assumed	-2.200	52	.032**	-4.4699	2.0317

**Statistical significance at the 5% level.

In table 5, the Sig. (2-tailed) value is 0.032. This value is smaller than the level of significance (α) of 5%, as the basis of decision making in the independent sample t-test, it was concluded that the null hypothesis is rejected. That means that there is a significant difference in herding behaviour between LQ-45 and Jakarta Islamic Index stocks.

DISCUSSION

Based on the results described earlier, that was found herding behaviour on LQ-45 stocks when up market conditions. It was explained that when market conditions arise, investors on LQ-45 stocks have irrational behaviour in making investment decisions. Investors do not trust their information and tend to follow market consensus. Bikchandani and Sharma (2001) said that when they have limited information, they tend to follow the movements of other investors in making investment decisions, ignoring their signals, and following the majority’s decision (herding behaviour). Therefore, this result supports the research conducted by Noviliya and Prasetyono (2017), which states that herding behaviour is detected in emerging market stock exchanges, which are Indonesia and China in high return conditions. Herding behaviour occurs when high return market conditions are caused by overreactive investor behaviour towards these market conditions. This result also supports the study conducted by Luo & Schinckus (2015) and Lao & Singh (2011). The results have implications that market conditions and information owned by investors can be a factor in making investment decisions. That is important because it can be an alternative for investors who are interested in the LQ-45 stock market in terms of planning investment activities by reducing the risk of uncertainty.

In contrast to the results which showed that no herding behaviour was found on Jakarta Islamic Index stocks in the Indonesia Stock Exchange in both market conditions, explain that investors have rational behaviour in making investment decisions. Investors on Jakarta Islamic Index stocks classified as Sharia principles are well educated. They have sufficient knowledge in managing information for decision making, so they do not follow market consensus and make investment decisions based on available information. It also explains that investors have applied ethics with Sharia principles, which are considered as worship intended to believe in their virtues and avoid the bad qualities, including in making investment decisions. This result supports the research conducted by Javaira & Hassan (2015), which proves that herding behaviour was not found on the Pakistan stock market in both bearish and bullish market conditions. This result also supports the result conducted by Özsü (2015) that indicate there is no herding for both up and down markets for daily and intraday intervals in Borsa Istanbul. However, the tendency of herding is higher in up markets. Another study that supports the results is the study which is conducted by Kiran et al. (2020). The results show no herding behaviour based on both methods at different levels of market movements in the Pakistan stock exchange. The implication of the results explains that investors' knowledge and ethics based on Sharia principles in managing information available in the market can be a factor in making investment decisions. This result is significant because it is an alternative for investors who are interested in the Jakarta Islamic Index stock market in terms of wanting to plan investments by applying ethics based on Sharia principles and reduce the risk of uncertainty.

Based on the comparison of results between LQ-45 and Jakarta Islamic Index stocks, there are significant differences in herding behaviour. This gap means that there are differences in Sharia principles and conventional systems for investors during the observation period. Herding behaviour was found in conventional stock markets but did not find in the Islamic stock markets. Therefore, the Islamic stock market is more efficient when compared to the conventional stock market. That means investors on Jakarta Islamic Index stocks have behaviour according to their beliefs or religion, and compliance with Sharia principles are not easy to move from one stock to another as well as non-Sharia stocks and investor behaviour on Jakarta Islamic Index stocks are not easily influenced by market consensus. Therefore, these finding supported the Beck et al. (2013) results, which shows a significant difference in business orientation between Islamic and conventional banks systems. They consider that Islamic banks are more resistant to shocks than conventional banks.

The results have implications that explain financial behaviour based on Sharia principles about managing information held can be one factor in making investment decisions. This fact is an alternative for investors in general, especially investors who want to invest with relatively little risk of uncertainty due to lower volatility compared to LQ-45 stocks. Basically, investors must understand the company's technical and fundamental analysis in making investment decisions. So, investors can be more confident about the information they have and have rational behaviour by not quickly following market consensus.

CONCLUSION

Our study contributes to the literature on this issue by examining of herding behaviour among investors on LQ-45 and Jakarta Islamic Index in the Indonesia Stock Exchange over the 2016-2018 time period. The objective of this paper is twofold. First, we examine the presence of herding behaviour on LQ-45 and Jakarta Islamic Index stocks in the Indonesia Stock Exchange. Second, we analyze whether there are differences in herding behaviour between these both stocks. This study also examines herding behaviour in two market conditions: bullish (up) and bearish (down). Using the Cross-Sectional Absolute Deviation (CSAD) method proposed by Chang, Cheng and Khorana (2000) to detect market-wide herding based on quantile regression analysis and independent t-test to test the differences of herding behaviour in these both stocks.

The estimated model found evidence of herding behaviour on LQ-45 stocks in the upmarket condition, whereas herding behaviour did not find in the down-market condition. This finding is indicated by the non-linear coefficient between the return dispersion and the market return (R_{m2}), which is negative and statistically significant due to fact that when the market is rising, investors have irrational behaviour by following the movements of other investors in making investment decisions that ignore their signals and follow the majority's decisions. On the other hand, no evidence of herding behaviour was found in the Jakarta Islamic Index stocks. Also, unlike the LQ-45 stocks, investors seem to have rational behaviour in making investment decisions as applied ethics with Sharia principles, which are considered as worship, are intended to believe in their virtues.

This study has several important implications. Firstly, this study consists in the fact that herding behaviour is limited in the Islamic market can have a significant contribution to moderate the behaviour in the financial markets. Secondly, the study focusses on the role of ethics in the financial markets and their ability to reduce the impact of behavioural biases. It helps the investors to know that knowledge of traditional finance theory is not sufficient to excel in the stock market. Hence, they need to know more about behavioural finance. Thirdly, investors are reminded that understanding the financial settings before investing is essential. Finally, policymakers in the stock market can understand retail investors' behaviour. Irrational and herd behaviour may encourage investors to take excessive risks that may result in excessive market volatility. Better market sentiment information, easily accessible to investors, always improves their financial decision-making. It is crucial to inform the investor about the market and idiosyncratic risk of their investments. In this context, the Securities and Exchange Commission may require total disclosure of technical and fundamental information regarding relevant risks faced by the company.

A conducive environment for proper financial education facilitates better use of information relevant for investment decisions. One priority of policymakers is to enhance the effectiveness of financial education. Integrating investor psychology in the development of financial education is an effective way to enhance financial education. Creating materials relevant to target investor group that takes into account the differential preference and psychology, developing analytical tools to identify investor's needs and biases and reinforcing communication level to link education policy method to an immediate application are some critical areas of focus for policymakers. Metawa et al. (2019) suggest a similar policy suggestion. This study is also essential for

policymakers who aim at stabilizing investor sentiment to control market volatility. Also, this study is essential for portfolio managers who take their investors' sentiment into account when assessing stocks and hedging risks. From the results of this study imply that there are differences of herding behaviour between LQ-45 and Jakarta Islamic Index stocks in the Indonesia Stock Exchange. Indeed, Islamic stock market indices offer diversification benefits for investors who wish to diversify their portfolios through Islamic actions, mainly during the financial turmoil period. So, investors should benefit from portfolios diversification between these both stocks.

LIMITATIONS AND RECOMMENDATIONS

This study has limitations that might affect the results of the study. There are two limitations to this study. First, the detection of herding behaviour in market conditions in this study is only two market periods of both down-and-up market conditions, not looking at the extreme market condition. Second, the observation period for analysis of herding behaviour in this study was limited only three years. Based on the results of this study, some recommendations can be given to stimulate research in this area since much work remains for future research. They can use different market conditions or add different market conditions by looking at economic conditions during market crises where extreme stock price movements occur. Future research can also use the extension of the observation period to make the research results more accurate.

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