Original Research Article

Do Cultural Shocks Have an Impact On Investor Sentiment and Investor Herding Behavior- Evidence During the Covid 19 Pandemic

ABSTRACT

Aims: This study examines herding in emerging markets under pandemic covid 19 conditions from December 2019 to June 2021. Also, the purpose of this research is to measure the effect of investors' sentiment toward herding behavior moderated by culture shock during the pandemic covid 19 on herding behavior.

Study design: Explanatory Research

Place and Duration of Study: The samples of this study are 26 countries and 10.192 observations. The duration of research is from December 2019 to June 2021.

Methodology: This research uses the model of Chang et al (2000) to estimate herding behavior. Besides that, sensitivity analysis was also conducted to explore herding behavior. The samples of this study are 26 countries and 10.192 observations. The dependent variable is herding behavior, and the independent variable is investor sentiment and culture shock is assumed as a moderating variable that will interact with sentiment and herding behavior. The research will be analyzed with Moderated Regression Analysis with Eviews.

Results: First, this study estimates herding in the emerging market, and the result reveals an absence of herding under market conditions and the pandemic covid 19. Second, this research investigates sentiment using VIX and VXEEM and find that sentiment in emerging market effect herding behavior. Lastly, culture shock is evident to be a variable that will strengthen investor sentiment toward herding behavior. The culture shock that happens in the early pandemic, has proven to weaken investor sentiment towards herding behavior.

Conclusion: This study fills the literature gap and empirical gap by comprehensively examining herding with new variables and proxies. Using psychological theory, culture shock, the results of the research prove that psychological shock is able to make investors become irrational and perform herding behavior.

Keywords: Herding Behavior, Investor's Sentiment, Culture Shock, Eviews

1. INTRODUCTION

Classical financial theory says that the dynamics of the stock market are very confusing and inexplicable. Classical financial theory supposes a rational investor will maximize utility and make investment decisions based on all accessible information~~(Fama, 1965, 1970; Markowitz, 1952)~~. However, in practice in the capital market, the assumptions of this financial theory become raw and do not apply to be able to understand the actual behavior of investors. Asymmetric circumstances make investors behave inconsistently with assumptions in existing financial theories and tend to engage in herding behavior.

Herding behavior among investors can present itself in a variety of ways. Herding is described as a state of disregard for their own beliefs and following the behavior of other investors or capital market movements (Bikhchandani, 2001; Hwang & Salmon, 2004a) Herding in a broader sense can be characterized as the behavior of a group of investors who trade in the same and sustainable direction (Nofsinger & Sias, 1999). The focus of this herding behavior is investor trading based on market consensus. Investors in developed capital markets tend to get more information about stock trading in capital markets, compared to investors in emerging capital markets, so they tend to engage in herding behavior (Sharma & Thaker, 2015). This herding behavior is related to several investment risks faced by investors in developing countries, namely the risk of economic instability or financial crisis, political instability, and foreign currency fluctuations (Sharma & Thaker, 2015).

Herding on the stock exchange is a form of social influence (Ottaviani & Sørensen, 2000). Herding refers to the tendency of individuals to ignore beliefs, information analysis skills and culminate in decision-making based on actions taken by other investors in the market (Christie & Huang, 1995). Herding can be intentional or spurious (Bikhchandani & Sharma, 2000) says, the behavior of investors who deliberately imitate the actions of other investors to follow market consensus is called intentional herding. Meanwhile, spurious herding is an action that investors take to perform the same actions as other investors when getting the same information and are carried out by professional investors.

Psychological factors are able to influence irrational behavior, investors feel safer and more secure when following a crowd of investor groups (Devenow & Welch, 1996). Investors who get pressure and stress, uncertainty, anxiety will affect the ability of investors to analyze information rationally, so investors tend to follow market consensus. This act of imitation is done to reduce their anxiety and adjust the preferences they have with other investors (Huang & Wang, 2017a).

This uncertainty and anxiety are often associated with the state of the economy, politics and even outbreaks of diseases that cause financial crises. Some studies mention that there are several crises that cause herding behavior, among them the global financial crisis as occurred in 1998 and 2008. Herding behavior on the stock exchange caused by the financial crisis occurred in several countries such as Mexico, Indonesia, America, South Korea, Thailand, Malaysia, Greece, Italy and Spain (Bowe & Domuta, 2004; Calvo & Mendoza, 1996; Economou et al., 2011; Ghysels & Seon, 2005; Hwang & Salmon, 2004b; S. Khan & Park, 2009), The next factor that can lead to the occurrence of herding behavior is the currency crisis as it occurred in South Korea, Chile, Europe, Latin America, Southeast Asia (Belke & Setzer, 2004; W. Kim & Wei, 2002; Lam, 2002; Saxena, 2004).

In addition to the crisis, there are several factors that can influence the occurrence of herding behavior, including: (1) the existence of extreme stock returns, (Bohl et al., 2014; Dang & Lin, 2016; Jirasakuldech & Emekter, 2020; Mobarek et al., 2013), (2) bullish and bearish market conditions (Blasco et al., 2017; Huang et al., 2015; Klein, 2013), (3) investor sentiment (Mokni, 2020; Philippas et al., 2013a; Teng & Liu, 2014a; Zouaoui et al., 2011a), (4) the presence of market sentiment (Blasco et al., 2012a) , (5) the role of financial analysts (Lin, 2018), (6) the role of forecasters (Tsuchiya, 2021), (7) the role of foreign investors (

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Bowe & Domuta, 2004; Chen et al., 2012), (8) the role of institutional investors (Nakagawa et al., 2012), (9) cascade information (Chari & Kehoe, 2004), (10) the existence of an infectious disease pandemic (Bui et al., 2015; C. L. Chang et al., 2020; Luu & Luong, 2020), (11) government-released macro and micro news (Galariotis et al., 2015, 2016; Hwang & Salmon, 2004c; Messis & Zapranis, 2014), (12) trading volume (Hanafi & Abaoub, 2016; Hsieh et al., 2011; Vo & Phan, 2017), (13) fear (Huang & Wang, 2017b) and (14) pressure in the market (Demirer & Zhang, 2019; Júnior et al., 2020; Júnior et al., 2020; Stavroyiannis & Babalos, 2017, 2019). So, it can be concluded that herding behavior occurs when investors are faced with fear, shock and uncertainty.

This research contributed to herding behavior based on identifying investor sentiment during the Covid 19 pandemic. Based on the results of previous studies, it is known that herding behavior occurs when the stock market movement falls. One of the affected stock markets is the stock markets of Vietnam and Taiwan. During the Covid-19 pandemic, it was found that investors' psychological instability was the cause of the ups and downs in investor sentiment on the stock exchange and triggered investors to behave herding.

The uncertainty caused by the Covid-19 pandemic can give rise to investor sentiment to behave and make investment decisions. Investor sentiment can be said to be the optimism or pessimism of an investor towards future stock market activity (M. Baker & Wurgler, 2007). Investor sentiment is substantially related to stock price volatility. The higher the investor sentiment, the higher the stock price volatility and ultimately have an impact on stock market performance (Lee et al., 2002).

Poor investor sentiment over market conditions will affect investors' investment behavior, namely herding behavior (Aharon, 2020; BenMabrouk & Litimi, 2018; Mokni, 2020; Philippas et al., 2013b; Simoes Vieira & Valente Pereira, 2015; Teng & Liu, 2014b; Zouaoui et al., 2011b). Herding behavior will strengthen in the stock market when the market is overwhelmed by the sentiment shared by investors. Pessimistic investors will tend to assess and evaluate risk-risk situations more negatively and reject risk (M. Baker & Wurgler, 2007).

Based on the theory of financial behavior developed by Kahneman and Tversky (1979) known as the prospect theory, it is said that investors will give different reactions depending on the consequences they will get. When investors are faced with favorable circumstances, investors will prefer to avoid such risks. When investors are faced with a losing condition, investors tend to take risks. It can be said that investors in pandemic circumstances tend to take actions that mimic the majority of other investors rather than taking their own decisions (Bohl et al., 2014; Dang & Lin, 2016; Jirasakuldech & Emekter, 2020; Mobarek et al., 2013). One of the factors causing this herding behavior is investor sentiment in the market during the Covid-19 pandemic. So, this research focuses on investor sentiment which is associated with pessimism or investor optimism towards the stock market during the Covid 19 pandemic.

The findings of previous studies on the influence of investor sentiment on herding behavior are still inconsistent. Some previous studies on investor sentiment are known that investor sentiment affects herding behavior, but there are also research results that say that investor sentiment does not affect herding behavior (Simoes Vieira & Valente Pereira, 2015). BenMabrouk (2018) says that during the financial crisis, the sentiment index had no effect on herding behavior. Lee et al (2002) based on the intelligence sentiment index show that sentiment changes are negatively correlated with market volatility. Volatility increases (decreases) as investors become more optimistic (pessimistic).

Based on these unconclusive results, this study tries to reuse investor sentiment as a variable that can influence herding behavior. This research not only tests the influence, but also wants to contribute to factors that can strengthen or weaken investor sentiment to influence investors to behave herding. There are two factors used in this study, namely the fear felt by investors during the Covid 19 pandemic and culture shock.

The cultural shock felt by investors during the Covid 19 pandemic will strengthen investor sentiment in the stock market. High fear of death, worsening economic conditions reinforced investor pessimism sentiment in the stock market and made investors engage in herding behavior. Wynes (2021)says that anger or fear will influence investors in accessing information. Frightened investors will access as much information as possible and read the details well before deciding. Aharon (2020)says that investors will herding when their sentiments lead to pessimism towards the stock market.

The novelty of this research is cultural shock. This research considers culture because culture is designed to provide consideration in everyday behavior, including making its investment decisions. Cupsa (2018), and Fakir (2018) say that cultural shocks are up and down, these cultural shocks are continuous for a long time. This new cultural shock can strengthen or weaken a person's psychological state.

Symptoms of this cultural shock include depression, helplessness, hostility with residents, anxiety, over-identification, withdrawal, loneliness, paranoid, irritability, confusion, disorientation, isolation, tension, ambiguity, and impatience. Furnham and Bochner (1982) say that cultural shocks can occur in social gatherings, social situations, social episodes or social transactions between the living person and the exact citizen a person lives in. Cultural shock refers to a specific aspect of the process of cultural adjustment that as a whole is associated with a level of psychological comfort (Harrison et al., 1996). Furthermore, the existence of intercultural adaptation refers to the process of improving one's health to meet the demands of the new cultural environment. Getting into a new culture will be accompanied by culture shock.

Based on the cultural concept and characteristics of the cultural shock above, associated with the current Covid 19 pandemic situation, it has changed the world culture to stay at home, avoid crowds, use masks, wash hands, commercialize sluggishly, the concept of trade switches 90% to online commerce, even the learning process is 100% to online learning. This condition gives rise to anxiety, tension, confusion, depression, and helplessness, which indicates the presence of cultural shocks. This psychological condition can strengthen investor sentiment and have an impact on investor behavior in the stock market. Most stock markets experienced extreme conditions during the Covid 19 pandemic and forced investors to engage in herding behavior.

The motivation of this study is to re-investigate the influence of investor sentiment on herding behavior in emerging capital markets during the Covid 19 pandemic. There is an empirical gap in previous research and unconclusive theoretical views examined in the previous literature that say that investor sentiment influences herding behavior (Aharon, 2020; Mokni, 2020; Philippas et al., 2013b; Teng & Liu, 2014b; Youssef & Mokni, 2018) and investor sentiment have no effect on herding behavior (Simoes Vieira & Valente Pereira, 2015) on the state of the global financial crisis in some emerging capital markets. The study covers countries that belong to emerging capital markets and uses fears and cultural shocks during the Covid 19 pandemic that can strengthen or weaken investor sentiment.

This research proves that no herding behavior occurs in the world's emerging stock markets. Investor sentiment is proven to influence investor behavior in emerging stock markets. Investor sentiment that tends to be pessimistic can influence the occurrence of herding behavior. The cultural shocks felt during the pandemic, especially in the early phases of the Covid-19 pandemic (honeymoon phase) have proven to weaken investor sentiment towards herding behavior. The more investors feel the stress of cultural changes at the beginning of the pandemic, the more it will make investors think and make investment decisions irrationally which results in herding behavior. Based on the results above, this research can contribute to the development of research on herding behavior.

2. MATERIAL AND METHODS /

2.1.Investor Sentiment and Herding Behavior

The theoretical literature on investor sentiment and herding behavior consists of two views: (i) sentiment can give rise to herding behavior and (ii) sentiment views can reduce herding behavior. Theories that highlight the role of investor sentiment on investor behavior bias, especially herding behavior, argue that investor sentiment is a psychological factor that is influenced by the physical, psychic, and external environment of the human being, forms the system, and influences the behavior and attitudes of an individual. Kahneman and Tversky (1979) say that the behavior of the individual in theory, differs from his practice. So, the classical mathematical model of finance is not able to explain the financial decisions of an investor.

The prospect theory proposed by Olelh Kahneman and Tversky (1979) states that individual behavior exists in various ways of facing situations of uncertainty as measured by risk, some approaching and some even staying away from risk. Herding behavior is a behavior that tends to avoid losses or risks. Philippas, Economou, Babalos and Kostakis (2013c) show that poor investor sentiment about market conditions and the presence of economic shocks will increase herding behavior.

Teng and Liu (2014a) examined the Chinese stock market, which during the financial crisis, the stock markets of Taiwan and Hong Kong had investor sentiment influencing herding behavior. Furthermore, Abbes (2013) found a relationship between investor sentiment and herding behavior. This behavior is further increased during periods of crisis compared to periods of calm in financial markets. Similarly, Aharon (2020) based on his research managed to prove that investor sentiment will increase herding behavior during the crisis in 2008 and 2011 in Europe.

Zouaoui (2011b) said that investor sentiment increased during a crisis in the stock market over a period of 1 year. This sentiment is felt in countries that are culturally more prone to group behavior, overreaction, and low institutional involvement. The existence of too pessimistic or optimistic expectations affects the price of assets for a significant period and eventually leads to a crisis. Investor sentiment affects the occurrence of a crisis in the stock market on a period of 1 year. Investor sentiment also provides additional predictive power from the crisis compared to other variables. The impact of investor sentiment on the stock market is stronger on countries that are culturally more vulnerable to the behavior of groups and institutions with low levels of efficiency.

This research refers to the view of prospect theory because it refers to the argument that the environment and circumstances that occur will have an impact on a person's psychology. The higher a person's psychological pressure, the more biased an individual will behave like herding behavior. So, it can be said that the sentiment of an investor will cause herding behavior. The higher the investor sentiment, the more likely it is to increase its herding behavior. The cultural shock felt by investors will strengthen the influence of investor sentiment and cause herding behavior.

H1: There is a herding behavior in the emerging stock market during the covid 19 pandemic

H2a: Investor sentiment proxied with the VIX affects herding behavior.

H2b: Investor sentiment proxied with VXEEM affects herding behavior.

2.2. The Role of Cultural Shocks as a Moderation of the Influence of Investor Sentiment on Herding Behavior

The theory of cultural shock, with reference to the theory of cultural learning, says that the existence of cultural changes felt by a person can cause a reaction for the individual. These reactions can be attitudes, feelings and emotions and indirectly convey feelings such as liking, friendliness, domineering and trust. Socially skilled individuals tend to be sensitive to how others respond to them and what happens around them psychologically. On the contrary, socially inadequate individuals have not mastered the conventions of their society,

either because they are not aware of the rules of social behavior that govern interpersonal behavior in their culture or, if aware of those rules, are unable or unwilling to obey them.

The psychological state of investors can also be influenced by anxiety about whether investor behavior is evaluated positively. Prospect theory is also used in the explanation of behavior in situations where cultural shocks are affected by sentiment. Schein (1990) says that cultural shocks have an impact on the individual level and have a huge effect at the community level. Fakir (2018) investigates the influence of psychological and social problems that can affect individuals and result in cultural shocks. The results of the study stated that the curve of cultural shocks can go up and down and be sustainable for a long period of time. This trend can turn up or down if there are social psychological problems that negatively affect the individual's ability to adjust to a new culture.

The current Covid-19 pandemic has changed the culture of most countries in the world, especially developing stock market countries. This cultural shock gives rise to stress and behavioral biases. Investors who experience the psychological effects of these cultural shocks may tend to be more pessimistic about the market (rising investor sentiment) and tend to engage in herding behavior.

H3a: Cultural shocks in the honeymoon phase may strengthen or weaken the influence of investor sentiment proxied with the VIX on herding behavior.

H3b: Cultural shocks in the lockdown phase may strengthen or weaken the influence of investor sentiment proxied with the VIX on herding behavior.

H3c: Cultural shocks in the new normal phase may strengthen or weaken the influence of investor sentiment proxied by the VIX on herding behavior.

H3d: Cultural shocks in the honeymoon phase may strengthen or weaken the influence of investor sentiment proxied by VXEEM on herding behavior.

H3e: Cultural shocks in the lockdown phase may strengthen or weaken the influence of investor sentiment proxied by VXEEM on herding behavior.

H3f: Cultural shocks in the new normal phase may strengthen or weaken the influence of investor sentiment proxied by VXEEM on herding behavior.

2.3. Theoritical Framework

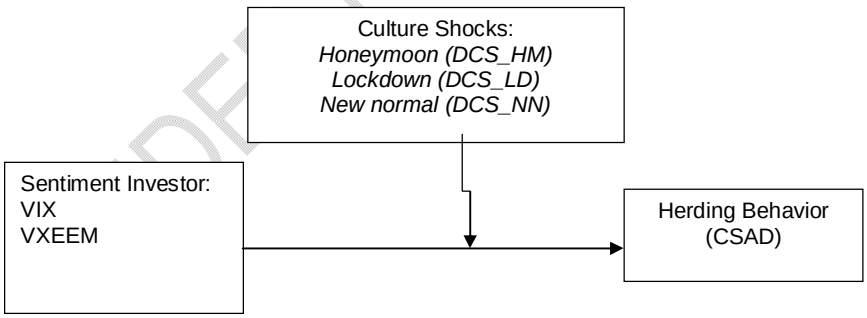

Figure 1: Theoritical Framework

Description:

Herding Behavior: proxied by CSAD

Investor sentiment: proxied by the VIX and VXEEM indices

Cultural shocks: dummy variables divided into 3 phases, honeymoon (HM), lockdown phase (LD) and new normal phase (NN).

The model above consists of independent variables, namely investor sentiment, which is proxied by VIX and VXEEM, moderation variables, namely cultural shocks which are measured by 3 differences in the ups and downs of covid 19 cases. cultural shocks are distinguished by the honeymoon phase (HM), the lockdown phase (LD), and the new normal phase (NN). While the dependent variable is herding behavior which is measured by the value of cross-sectional absolute deviation (CSAD). Model 1 measures the role of fear proxied by GFI and SI to strengthen or weaken investor sentiment towards the occurrence of herding behavior in emerging stock markets.

2.4.Research Design

This study aims to test hypotheses, explaining the relationship between independent variables to dependent variables. This type of research is a causal study, which the researcher wants to find the cause of a single problem and determine a definitive causal relationship. This study attempts to manipulate certain variables to study the consequences of such manipulations against bound variables. The analysis unit of this study is investors who are on the stock market in emerging stock market countries. Studies are carried out with data that is only collected once, that is, a daily period to answer research questions.

There are 3 (three) types of variables used in this study, namely independent variables consisting of investor sentiment (X1) and cultural shocks (X2), dependent variables namely herding behavior (Y), and moderation variables, namely cultural fears, and shocks.This study used a dependent variable, namely herding behavior (PH) which was proxied with CSAD (cross section absolute deviation).

To measure herding behavior in research with the use of models from (E. C. Chang et al., 2000) because this model is a modification of the Christie and Huang (1995) model. This model measures the level of stock dispersion by using the cross-sectional absolute deviation (CSAD) model of stock returns. The model uses non-linear regression to estimate the relationship. The steps in the measurement are as follows:

1. Calculating Rm and $Rm.t^2$ is calculated based on the value of the market return whose formula is:

$$\mathbf{Rm,t = Pm,t - Pm,t\text{-}1/ Pm,t\text{-}1}$$

Information:
Rm,t= market return at time t
Pm,t= closing price of market stock at time t
Pm, t-1= closing price of market stock at time t-1

2. Calculates the value of Ri,t which is based on stock returns by using stock data as follows:

$$\mathbf{Ri,t = Pi,t - Pi,t\text{-}1/ Pi,t\text{-}1}$$

Information:
Ri,t= return on shares of company I at time t
Pi,t= closing price of the company's shares to i at wkatu t
Pi, t-1= closing price of the company's shares to I at time t-1

3. Calculating CSAD values

CSAD values are calculated with the use of Chang et.al (2000) models:

$$\mathbf{CSADt = 1/N\ Ri,t - Rm,t|\sum_{i=1}^{N}|}$$

Information:
CSADt= cross sectional absolute deviation at time t
Ri,t= individual stock return at time t

Rm,t= market return at time t
N= number of companies on the sample.

Herding behavior in emerging stock market countries can be measured globally by the MSCI index and that occurs locally in individual countries. Local herding behavior can be measured using indices in each country. The index used is an index that summarizes companies that have good liquidity levels.

Table 1. Indices On foreign m foreign countries summarized in emerging stock markets

Country Name	Index Used	Data Sources
Argentina	S&P MERVAL	Investing.com and Yahoo Finance
Brazil	BOVESPA BRAZIL 50	Investing.com and Yahoo Finance
Chile	S$P CLX IPSA	Investing.com and Yahoo Finance
Colombia	COLCAP	Investing.com and Yahoo Finance
Mexico	E-pasts	Investing.com and Yahoo Finance
Peru	SPBLPGPT	Investing.com and Yahoo Finance
Czech Republic	PX	Investing.com and Yahoo Finance
Greek	ATG	Investing.com and Yahoo Finance
Hungary	BUX	Investing.com and Yahoo Finance
Poladia	WIG30	Investing.com and Yahoo Finance
Qatar	QSI	Investing.com and Yahoo Finance
Russia	MOEX	Investing.com and Yahoo Finance
Saudi Arabia	MISAT0002PSA	Investing.com and Yahoo Finance
South Africa	South Afrika TOP 40	Investing.com and Yahoo Finance
Turkish	BIST 100	Investing.com and Yahoo Finance
United Arab Emirates	ADI	Investing.com and Yahoo Finance
China	CSI 1000	Investing.com and Yahoo Finance
Indonesian	COMPASS 100	Investing.com and Yahoo Finance
India	SPCITIC 300	Investing.com and Yahoo Finance
Korea	KOSPI 51	Investing.com and Yahoo Finance
Malaysia	Malaysia TOP 100	Investing.com and Yahoo Finance
Pakistan	Karachi 100	Investing.com and Yahoo Finance
Philippines	PSEI COMPOSITE	Investing.com and Yahoo Finance
Taiwan	TPEX 50	Investing.com and Yahoo Finance
Thailand	SET 100	Investing.com and Yahoo Finance

Chang et al. (2000), Gleason et al. (2004), and Tan et al. (2008) using a model from CSAD:

$$\mathbf{CSADt = + \alpha\beta_1 |Rm,t| + \beta_2 (Rm,t)^2 + \varepsilon_t}$$

Negative and significant values for coefficient β_2 is evidence of the presence of herding behavior.

This study used 3 independent variables, namely, investor sentiment, and cultural shocks. Investor sentiment is also defined as an investor's optimism or pessimism towards future stock market activity (Baker & Wurgler, 2007) or as a way for investors to form beliefs (Barberis et al., 1998). This variable is measured by the use of two investor sentiment indices. First, investor sentiment can be measured by the VIX index. This index is a volatility index on the stock market to measure investor sentiment in the global stock market.

The VIX is a measure of market volatility for a bearish or bullish direction. When this index rises high it indicates that investors believe in significant risks that the market could move sharply, both downwards and upwards. A high VIX occurs when the average investor anticipates that there could be a potential big movement in the market. The VIX is at a low

level when investors do not feel any downside risks or significant upside potential. When this index is above level 30, it means the potential for high volatility due to pressure and fear that causes investor sentiment. The VIX index which is below level 20 reflects reduced sentiment in the market which can lead to high volatility (CBOE Index, 2020).

The second measure of investor sentiment is the use of the VXEEM index. This index is a special index used to measure investor sentiment in emerging stock markets. This index measures the volatility of stocks in emerging stock markets in Morgan Stanley Capital International Emerging Market ETF (MSCI EEM) stock data. VXEEM follows the algorithm of the VIX. VBEEM (volatility of bid emerging ETF market) and VAEEM (volatility of ask emerging ETF market) are variations of VXEEM that use their respective bid and ask prices in their calculations. The higher the value of VXEEM indicates the higher investor sentiment towards the market. This VXEEM index data was obtained from the investing.com website with daily data usage from December 1, 2019, to June 30, 2021.

The investor sentiment coefficient is expected to be negative, indicating a relationship opposite to herding behavior. A negative value indicates that the more pessimistic investors can improve herding behavior in the stock market.

2.5.Culture Shock

Oberg (1960) defines cultural shock as anxiety that is the result of losing all the familiar signs and symbols of social relationships. Cultural shocks are seen as temporary stress reactions whose prominent psychological and physical states are generally uncertain and difficult to control or predict. A person becomes anxious, confused, and apathetic until the individual can develop a new cognitive constructive to understand and apply the appropriate behavior

The model was created with the use of perceptions from Pedersen (1995) and Cupsa (2018) positing that culture shock consists of several stages involving continuous processes, reorganization and restructuring that occur in cognitive, emotional, and physical areas. It is this process that drives the transformation and change of the individual towards more tangible self-development.

1. At the beginning of the pandemic, it was called the honeymoon (HM) stage, namely the beginning of 2020, at the end of 2020 and in the first quarter of 2021. This variable is perceived that D= 1 if there is an increase in covid 19 cases, and D=0 other than that. Each country's data is based on a graph of the development of the covid 19 pandemic on the Oxford University website.
2. During the lockdown (LD), namely on March 1, 2020 – June 30, 2020, during the lockdown re-enactment in the first quarter of 2021, this stage is called the disintegration stage, the perception that D=1 if there is strictness of government policies related to stay at home, and D=0 apart from that. Each country's lockdown data is based on each country's government's stay at home or work from home policy. This data is obtained from the stringency index.
3. In the new normal (NN) period, namely the adaptation period, namely on July 1, 2020 – December 31, 2020, and in the second quarter of 2021. This variable perceives that D=1 if government policies have been relaxed regarding the covid 19 pandemic, D=0 apart from that. Each country's new normal data is based on loose government policies, which are below 70 on the stringency index and the exit of face covering policies.

Table 2. Variable Definitions and Data Sources

Variable	**Indicator**	**Source**
Herding Behavior	CSAD	Data on the Stock Exchange
Investor Sentiment	VXEEM	VXEEM index in Investing.com

Fear	GFI	WHO Global Fear Index website
Cultural Shock	Dummy 1 and 0	Stock Exchange Data

The population of this study is emerging stock markets that are members of the MSCI (Morgan Stanley Capital International) index. This index measures the performance of stock markets in emerging markets. Sampling in this study can use purposive sampling technique, which is a sample determination technique with certain considerations. Purposive sampling is the selection of non-random samples whose samples must meet the criteria or requirements that have been adjusted to the problem of this study. The criteria of the sample in this study are stock exchanges that are summarized in the developing stock exchange.

Countries summarized in emerging stock markets include: South Africa, Argentina, Brazil, Chile, China, Philippines, India, Indonesia, Colombia, Korea, Malaysia, Pakistan, Poland, Qatar, Russia, Taiwan, Thailand, Turkey, United Arab Emirates, Greece, Peru, Egypt, Hungary, Saudi Arabia, Czech, and Mexico (www.msci.com). The data used are daily data for market returns, daily data on covid 19 cases and covid 19 death cases, and daily data on stringency index. The number of observations of this study was 10,192 observations.

The analysis method used in this study is statistical analysis. Statistical analysis is carried out to analyze sample data and data that have been obtained that are used for hypothesis testing (Sugiyono, 2016). The data analysis obtained in this study can be processed using the help of the EViews application program.

2.6.Multiple Linear Regression Analysis

The initial analysis was performed with several equations for multiple linear regression analysis which include:

1. To test whether herding behavior occurs:
   $CSAD = \alpha+\beta_1 AbsRm + \beta_2 Rm^2 +\varepsilon$ .....(1)

If the value of Rm^2 is negative, it is suspected that there is herding behavior that occurs in the stock markets of developing countries.

2. To test whether there is an influence of sentiment on herding behavior:
   $CSAD = \alpha+\beta_1 AbsRm + \beta_2 Rm^2 + \beta_3 Rm^2 * VIX +\varepsilon$ ..... (2)
   $CSAD= \alpha+\beta_1 AbsRm + \beta_2 RM\ 2 + \beta_3 Rm^2 * VXEEM +\varepsilon$ ..... (3)

3. To test whether there is a direct influence of cultural shocks proxied by the index of 3 phases of cultural shocks during the covid 19 pandemic
   $CSAD = \alpha+\beta_1 AbsRm+\beta_2 Rm^2+\beta_3 Rm^2*dcs\_hm +\beta_4 Rm^2*dcs\_ld+\beta_5 Rm^2*dcs\_nn+\varepsilon$ ... (6)
4. The equation below is a moderating equation with cultural shocks as variables that are thought to moderate the influence of sentiment on herding behavior:
   $CSAD = \alpha+\beta_1 AbsRm+\beta_2 Rm^2 +\beta_3 Rm^2*dcs\_hm + \beta_4 Rm^2*VIX*dcs\_hm + \varepsilon$..... (4)
   $CSAD = \alpha+\beta_1 AbsRm+\beta_2 Rm^2 +\beta_3 Rm^2*dcs\_hm + \beta_4 Rm^2*VXEEM*dcs\_hm + \varepsilon$....(5)
   $CSAD = \alpha+\beta_1 AbsRm+\beta_2 Rm^2 +\beta_3 Rm^2*dcs\_ld + \beta_4 Rm^2*VIX*dcs\_ld + \varepsilon$……..(6)
   $CSAD = \alpha+\beta_1 AbsRm+\beta_2 Rm^2 +\beta_3 Rm^2*dcs\_ld + \beta_4 Rm^2*VXEEM*dcs\_ld+\varepsilon$..... (7)
   $CSAD = \alpha+\beta_1 AbsRm+\beta_2 Rm^2 +\beta_3 Rm^2*dcs\_nn + \beta_4 Rm^2*VIX*dcs\_nn + \varepsilon$ ……(8)
   $CSAD = \alpha+\beta_1 AbsRm+\beta_2 Rm^2 +\beta_3 Rm^2*dcs\_nn + \beta_4 Rm^2*VXEEM*dcs\_nn + \varepsilon$..... (9)

3. RESULTS AND DISCUSSION

The descriptive statistical results of this study are as follows:

Table 3 Descriptive Statistics

Variable	Obs	Average	Minimum	Maximum	Std Deviation
CSAD	10,192	0.019	0.00	0.987	0.021
VIX	10,192	26.211	12.10	82.690	11.029
VXEEM	10,192	27.299	14.19	92.460	10.589
DCS_HM	10,192	0.236	0.00	1.000	0.425
DCS_LD	10,192	0.631	0.00	1.000	0.483
DCS_NN	10,192	0.816	0.00	1.000	0.387

Source: Data processed, EViews 2022

In the table above, the number of observations of this study is 10,192. The average value of CSAD for countries including emerging capital markets is 0.019297. Emerging stock market conditions recorded a low CSAD average with a range below 0.5. The minimum value of CSAD is 0 and the maximum is 0.987719. Meanwhile, the standard deviation of CSAD is around 0.09%, which means that the volatility of stock returns of companies on the liquid index in 26 countries summarized in emerging stock markets has increased or decreased by 0.09% during the Covid-19 pandemic. The disperse return or CSAD value of stocks in 26 emerging stock markets is on average positive and low.

Investor sentiment proxied with the VIX, it is known that the average value of the VIX is 26.21, which means that the stock market operates in low-risk conditions. The value of the VIX index that indicates low investor sentiment is when the value of the VIX is in the range of 1 to 20. The average value of the VIX index in this study is 26.21, which means that the stock market is in a state of panic or turmoil. The highest value of the VIX that occurs in the emerging stock market is 82, which means that during the covid 19 pandemic there has been turmoil and panic in the stock market which increases stock volatility and indicates that investor sentiment over the stock market is high.

The next index of investor sentiment is VXEEM. The value of this index indicates low investor sentiment if the value of the VXEEM index is still in the range of 1 to 20. The results showed that the average value of VXEEM was 27.30 which indicates that the emerging capital market is volatile and shows signs that investors are panicking about the state of the Covid-19 pandemic. The maximum value of this index is at 92, which means that the stock market developed during the covid pandemic has been affected by investor sentiments that feel fear and panic.

Cultural shocks are proxied in the initial phase (honeymoon), the disintegration phase (lockdown), and the reintegration phase (new normal). The honeymoon phase occurred at the beginning of 2020, repeating again at the end of 2020 and in the first half of 2021 in several countries. The disintegration phase, which is measured by restrictions on people from activities outside the home, was shown in early 2020 after the honeymoon phase. Finally, the reintegration phase marked by the emergence of new rules for wearing masks when doing activities outside the home occurred in the second half of 2020.

The results of the regression test to see the presence or absence of herding behavior in the exchange are as follows:

Table 4. Regression Tests for Testing Herding Behavior

Variable	Coefficient	T Statistics	Probability	
$CSAD = \alpha+\beta_1 AbsRm + \beta_2 Rm^2 +\varepsilon$				
C	0.0142	73.52	0,0000	
Rm^2	0.673	35.62	0,0000	
AbsRm	0.415	35.17	0,0000	**There is no herding behavior. H1: rejected**
R-squared			0,5294	
Adjusted R-squared			0,5281	
F Statistics			423,49	
Probability			0,0000	

Source: Data processed, EViews 2022

In the table above, the research model is declared to be fit, with a probability level of 0.0000. The ability of variable X to explain variable Y is 52.8%. To see if there is any herding behavior on the stock exchange is from the value of Rm^2. If the value of Rm^2 is negative, it means that there is a herding behavior on the stock exchange. The results of this study showed that the value of Rm^2 was positive, which means that the overall sample was not proven to occur in 26 developing stock exchanges in the world.

3.1. Investor Sentiment Proxied by VIX and Herding Behavior

The results of the study that tested investor sentiment (VIX) towards herding behavior are shown in the table below:

Table 5. Investor Sentiment Regression Test (VIX) Results on Herding Behavior

Variable	Coefficient	T Statistic	Probability	
$CSAD = \alpha+\beta_1 AbsRm + \beta_2 Rm^2 + \beta_3 Rm^2 * VIX +\varepsilon$				
C	0.014	73.13	0.0000	
AbsRm	0.419	35.21	0.0000	
Rm^2	0.677	35.67	0.0000	
dRm^2*VIX	-0.015	-2.40	0.0162	
R-squared			0.5303	**H2a accepted**
Adjusted R-squared			0.5289	
F Statistics			408.72	
Probability			0.0000	

Source: Data processed, EViews 2022

Based on the results of the regression test, it is known that the statistical F value is 408.7239 and the probability is 0.000000 which means that the above model is fit and worthy of testing. The value of adj R^2 is known that the independent variable, namely investor sentiment, can influence the dependent variable, namely herding behavior by 52.8%. Testing hypothesis 2a to prove the presence or absence of herding behavior influenced by investor sentiment. Investor sentiment in proportion to the VIX has proven to influence herding

behavior. In the equation ditas the probability value is worth 0.0162 < 0.05. So, hypothesis 2a **is accepted.**

3.2. Effect of Investor Sentiment (VXEEM) on Herding's behavior

The results of the study that tested investor sentiment (VXEEM) towards herding behavior are shown in the table below:

Table 6. Investor Sentiment Regression Test (VXEEM) Results On Herding Behavior

Variable	Coefficient	T Statistics	Probability	
CSAD= $\alpha+\beta_1$AbsRm + β_2RM 2 + $\beta_3 Rm^{2*}$ VXEEM +ε				
C	0.014	73.16	0.0000	
AbsRm	0.416	34.82	0.0000	
Rm^2	0.670	34.24	0.0000	
dRm^{2}*VXEEM	-0.003	-0.56	0.5735	H2b rejected
R-squared			0.5300	
Adjusted R-squared			0.5287	
F Statistics			408.30	
Probability			0.0000	

Source: data processed EViews, 2022

Based on the results of the regression test, it is known that the statistical F value is 408.3089 and the probability is 0.000000 which means that the model above is fit and worthy of testing. The magnitude of adjusted R^2 ranges from 0 to 1. If the adjusted value of R^2 gets closer to one the better the model's ability to explain dependent variables and vice versa. In this equation, the independent variables are absolute market return and squared market return, and investor sentiment (VXEEM).

Based on the value of adj R^2, it is known that the independent variable, namely investor sentiment, can influence the dependent variable, namely herding behavior by 52.8%. 2b hypothesis testing to prove the presence or absence of herding behavior influenced by investor sentiment. Investor sentiment proxied with VXEEM has not been shown to have any effect on herding behavior. In the equation ditas the probability value is worth 0.5735 > 0.05. So, the 2b hypothesis **is rejected.**

3.3. Investor Sentiment and Herding Behavior Moderated by Cultural Shocks.

The results of the study that tested cultural shocks to herding behavior are shown in the table below:

Table 7. Cultural Shocks and Herding Behavior

Variable	Coefficient	T Statistic	Probability	
C	0.014	73.12	0.000	Cultural shocks have a direct effect on herding behaviour in the Lockdown Phase
AbsRm	0.420	35.35	0.000	
Rm^2	0.668	35.30	0.000	
dRm^2 *dcs_hm	-1238.766	-0.38	0.701	
dRm^2 *dcs_ld	-3061.485	-6.91	0.000	
dRm^2 *dcs_nn	-1808.095	-1.08	0.2784	

Variable	Coefficient	T Statistic	Probability
R-squared			0.532
Adjusted R-squared			0.531
F Statistics			384.47
Probability			0.0000

Source: data processed EViews, 2022

Based on the results of the regression test, it is known that the statistical F value is 384.4718 and the probability is 0.000000, which means that the model above is fit and worthy of testing. The magnitude of adjusted R^2 ranges from 0 to 1. If the adjusted value of R^2 gets closer to one the better the model's ability to explain dependent variables and vice versa.

The value of adj R^2 is known to be 53%, which means that the variables of cultural shock (dcs_hm, dcs_ld and dcs_nn) can affect the dependent variable, namely herding behavior by 53%. The results of the study above are known that the level of probability or significance of 0.0000 which is worth below 0.05 is found in cultural shocks in the lockdown phase. Which means that in this phase, investors feel a high cultural shock and increase herding behavior on the stock exchange. The table above shows that cultural shock variables have a direct effect on herding behavior in the lockdown phase (dcs_ld).

3.4.Investor Sentiment (VIX) and Herding Behavior Moderated by Cultural Shock In The Honeymoon Phase (dcs_hm)

The results of the study that tested the influence of investor sentiment proxied with the VIX index on herding behavior moderated by cultural shocks in the honeymoon phase (dcs_hm) are shown in the table below:

Table 8. Investor Sentiment (VIX) and Herding Behavior Moderated by Cultural Shocks in The Honeymoon Phase (dcs_hm)

Variable	Coefficient	T Statistic	Probability		
$CSAD = \alpha+\beta_1 AbsRm+\beta_2 Rm^2+\beta_3 Rm^2*dcs\_hm + \beta_4 Rm^2*VIX*dcs\_hm + \varepsilon$					
C	0.014	73.16	0.000		
AbsRm	0.418	35.19	0.000		
Rm^2	0.670	35.36	0.000		
dRm^2 *dcs_hm	1992.451	2.16	0.030		
dRm^2 *VIX*dcs_hm	-0.254	-3.25	0.0012		H4a: Accepted
R-squared				0.537	
Adjusted R-squared				0.536	
F Statistics				394.95	
Probability				0.0000	

Source: data processed EViews, 2022

Based on the results of the regression test, it is known that the statistical F value is 394.9508 and the probability is 0.000000 which means that the model above is fit and worthy

of testing. The magnitude of adjusted R^2 ranges from 0 to 1. If the adjusted value of R^2 gets closer to one the better the model's ability to explain dependent variables and vice versa.

The value of adj R^2 is known to be 53.6%, which means that the investor sentiment variable (VIX) and the cultural shock moderation variable (dcs_hm) can influence the dependent variable, namely herding behavior by 53.6%. The results of the study above are known that the probability or significance level of dRm2 *VIX*dcs_hm of 0.0000 which is worth below 0.05 and has a negative value, which means that high investor sentiment towards the stock market is strengthened by the cultural shock felt during the honeymoon phase (the beginning of the pandemic) will increase herding behavior on the stock exchange.

The results of this study show that the variable of cultural shock in the honeymoon phase (dcs_hm) is full moderation, which can moderate investor sentiment towards herding behavior.

3.5. Investor Sentiment (VIX) and Herding Behavior Moderated by Cultural Shocks In Lockdown Phase (dcs_ld)

The results of the study that tested the influence of investor sentiment proxied by the VIX index on herding behavior moderated by cultural shocks in the lockdown phase (dcs_ld) are shown in the table below:

Table 9. Investor Sentiment (VIX) and Herding Behavior Moderated by Cultural Shaken In Lockdown Phase (dcs_ld)

Variable	Coefficient	T Statistics	Probability	
$CSAD = \alpha+\beta_1 AbsRm+\beta_2 Rm^2+\beta_3 Rm^2*dcs\_ld + \beta_4 Rm^2*VIX*dcs\_ld + \varepsilon$				
C	0.014	73.24	0.000	
AbsRm	0.419	35.41	0.000	
Rm^2	0.669	35.41	0.000	
dRm^2 *dcs_ld	-3026,534	-6.76	0.000	H4b: Rejected
dRm^2 *VIX*dcs_ld	-0.020	-0.49	0.625	
R-squared			0.532	
Adjusted R-squared			0.531	
F Statistics			397.69	
Probability			0.0000	

Source: data processed EViews, 2022

Based on the results of the regression test, it is known that the statistical F value is 397.6907 and the probability is 0.000000 which means that the model above is fit and worthy of testing. The magnitude of adjusted R^2 ranges from 0 to 1. If the adjusted value of R^2 gets closer to one the better the model's ability to explain dependent variables and vice versa.

The value of adj R^2 is known to be 53%, which means that the investor sentiment variable (VIX) and the cultural shock moderation variable (dcs_ld) can influence the dependent variable, namely herding behavior by 53%. The results of the study above are known that the probability level or significance of dRm2 *VIX*dcs_ld of 0.6248 which is worth above 0.05 which means that investor sentiment moderated by cultural shocks during the lockdown phase is not able to influence herding behavior. The 4b hypothesis is rejected.

3.6. Investor Sentiment (VIX) And Herding Behavior Moderated by Cultural Shocks In The New Normal Phase (dcs_nn)

The results of the study that tested the influence of investor sentiment proxied by the VIX index on herding behavior moderated by cultural shocks in the new normal (dcs_nn) phase are shown in the table below:

Table 10. Investor Sentiment (VIX) and Herding Behavior Moderated by Cultural Shocks In The New Normal Phase (dcs_nn)

Variable	Coefficient	T Statistics	Probability	
$CSAD = \alpha+\beta_1 AbsRm+\beta_2 Rm^2+\beta_3 Rm^2*dcs\_nn + \beta_4 Rm^2*VIX*dcs\_nn + \varepsilon$				
C	0.014	73.31	0.000	
AbsRm	0.417	35.16	0.000	
Rm^2	0.672	35.47	0.000	
dRm^2 *dcs_nn	-2177.485	-1.24	0.214	
dRm^2 *VIX*dcs_nn	-0.252	-0.79	0.428	H4c: Rejected
R-squared			0.530	
Adjusted R-squared			0.528	
F Statistics			394.29	
Probability			0.0000	

Source: data processed Eviews, 2022

Based on the results of the regression test, it is known that the statistical F value is 394.2941 and the probability is 0.000000, which means that the model above is fit and worthy of testing. The magnitude of adjusted R^2 ranges from 0 to 1. If the adjusted value of R^2 gets closer to one the better the model's ability to explain dependent variables and vice versa.

The value of adj R^2 is known to be 52.8%, which means that the investor sentiment variable (VIX) and the cultural shock moderation variable (dcs_nn) can influence the dependent variable, namely herding behavior by 52.8%. The results of the study above are known that the probability level or significance of dRm2 *VIX*dcs_nn of 0.4288 which is worth above 0.05 which means that investor sentiment moderated by cultural shocks during the new normal phase is not able to influence herding behavior. The 4c hypothesis is rejected.

3.7. Investor Sentiment (VXEEM) and Herding Behavior moderated by Honeymoon Phase Cultural Shock (dcs_hm)

The results of the study that tested the influence of investor sentiment proxied with the VXEEM index on herding behavior moderated by cultural shocks in the honeymoon phase (dcs_hm) are shown in the table below:

Table 11 Investor Sentiment (VXEEM) and Herding Behavior Moderated by Cultural Shocks In The Honeymoon Phase (dcs_hm)

Variable	Coefficient	T Statistics	Probability	Conclusion
$CSAD = \alpha+\beta_1 AbsRm+\beta_2 Rm^2+\beta_3 Rm^2*dcs\_hm + \beta_4 Rm^2*VXEEM*dcs\_hm + \varepsilon$				
C	0.014	73.14	0.000	
AbsRm	0.418	35.19	0.000	
Rm^2	0.670	35.34	0.000	
dRm^2*dcs_hm	1716.435	1.98	0.047	
dRm^2*VXEEM*dcs_hm	-0.211	-3.20	0.001	H4d: Accepted
R-squared			0.530	
Adjusted R-squared			0.529	
F Statistics			394.93	
Probability			0.0000	

Source: data processed Eviews, 2022

Based on the results of the regression test, it is known that the statistical F value is 394.9276 and the probability is 0.000000, which means that the model above is fit and worthy of testing. The magnitude of adjusted R^2 ranges from 0 to 1. If the adjusted value of R^2 gets closer to one the better the model's ability to explain dependent variables and vice versa.

The value of adj R^2 is known to be 52.91%, which means that the investor sentiment variable (VXEEM) and the cultural shock moderation variable (dcs_hm) can influence the dependent variable, namely herding behavior by 52.91 %. The results of the study above are known that the probability or significance level of dRm2 *VXEEM*dcs_hm of 0.0014 which is below 0.05 and negative value which means that high investor sentiment towards the stock market is strengthened by the cultural shock felt during the honeymoon phase (the beginning of the pandemic) will increase herding behavior on the stock exchange.

The results of this study show that the variable of cultural shock in the honeymoon phase (dcs_hm) is full moderation, which can moderate investor sentiment towards herding behavior. So, the 4d hypothesis is **accepted.**

3.8. Investor Sentiment (VXEEM) And Herding Behaviour moderated by Lockdown Phase Cultural Shock (dcs_ld)

The results of the study that tested the influence of investor sentiment proxied with the VXEEM index on herding behavior moderated by cultural shocks in the lockdown phase (dcs_ld) are shown in the table below:

Table 12. Investor Sentiment (VXEEM) and Herding Behaviour Moderated By Cultural Shocks In The Lockdown Phase (dcs_ld)

Variable	Coefficient	T Statistics	Probability	
$CSAD = \alpha+\beta_1 AbsRm+\beta_2 Rm^2+\beta_3 Rm^2*dcs\_ld + \beta_4 Rm^2*VXEEM*dcs\_ld+\varepsilon$				H4e: Rejected
C	0.014	73.23	0.000	
AbsRm	0.419	35.45	0.000	

Variable	Coefficient	T Statistics	Probability
Rm^2	0.669	35.39	0.000
dRm^2*dcs_ld	-3066.535	-6.93	0.000
dRm^2*VXEEM*dcs_ld	-0.032	-0.86	0.386
R-squared			0.532
Adjusted R-squared			0.530
F Statistics			397.73
Probability			0.0000

Source: Data processed, Eviews 2022

Based on the results of the regression test, it is known that the statistical F value is 397.7284 and the probability is 0.000000 which means that the above model is fit and worthy of testing. The magnitude of adjusted R^2 ranges from 0 to 1. If the adjusted value of R^2 gets closer to one the better the model's ability to explain dependent variables and vice versa.

The value of adj R^2 is known to be 53%, which means that the investor sentiment variable (VXEEM) and the cultural shock moderation variable (dcs_ld) can influence the dependent variable, namely herding behavior by 53%. The results of the study above are known that the probability or significance level of dRm2 *VXEEM*dcs_ld of 0.3866 which is worth above 0.05 which means that cultural shocks during the lockdown phase cannot strengthen or weaken the influence of investor sentiment on the occurrence of herding behavior on the stock exchange. So, the 4e hypothesis **is rejected.**

3.9. Investor Sentiment (VXEEM) And Herding Behavior moderated by Cultural Shocks (dcs_nn)

The results of the study that tested the influence of investor sentiment proxied with the VXEEM index on herding behavior moderated by cultural shocks in the lockdown phase (dcs_ld) are shown in the table below:

Table 13. Investor Sentiment (VXEEM) and Herding Behavior Moderated By Cultural Shocks In The New Normal Phase (dcs_nn)

Variable	Coefficient	T Statistics	Probability	
$CSAD = \alpha+\beta_1 AbsRm+\beta_2 Rm^2 +\beta_3 Rm^2$*dcs_nn + $\beta_4 Rm^2$*VXEEM*dcs_nn + ε				
C	0.014	73.33	0.000	
AbsRm	0.416	35.14	0.000	
Rm^2	0.672	35.50	0.000	
dRm^2*dcs_	-1087.784	-0.60	0.543	H4e: Rejected
dRm^2*VXEEM*dcs_nn	0.239	1.03	0.300	
R-squared			0.530	
Adjusted R-squared			0.528	
F Statistics			394.32	
Probability			0.0000	

Source: Data processed, Eviews 2022

Based on the results of the regression test, it is known that the statistical F value is 394.3269 and the probability is 0.000000, which means that the above model is fit and

worthy of testing. The magnitude of adjusted R^2 ranges from 0 to 1. If the adjusted value of R^2 gets closer to one the better the model's ability to explain dependent variables and vice versa.

The value of adj R^2 is known to be 52.87%, which means that the investor sentiment variable (VXEEM) and the cultural shock moderation variable (dcs_nn) can influence the dependent variable, namely herding behavior by 52.87 %. The results of the study above are known that the probability or significance level of dRm2 *VXEEM*dcs_nn of 0.3004 which is worth above 0.05 which means that cultural shocks during the new normal phase cannot strengthen or weaken the influence of investor sentiment on the occurrence of herding behavior on the stock exchange. So, the 4f hypothesis **is rejected.**

3.10. Discussion

3.10.1. Herding's Behavior in Emerging Stock Markets

The test results proved that in a large sample there was no herding behavior found in emerging market stock markets in the world. Research data indicate that during a decline or increase in market value, investors are not influenced to make investment decisions based on the decisions of most other investors in the market. Investors in emerging stock markets are more likely to be cautious in making investment decisions.

The behavior of investors in the stock market develops leading to the presence of anti-herding. Anti-herding behavior implies the presence of a dispersion of returns during lower market pressures. Investors in the market are more likely to focus on most of the information conveyed by price movements throughout the market and take decisions rationally. Most investors in emerging market equities are more likely to make decisions not to follow the pace of other dominant investors.

The dispersion of returns during higher market pressures can be seen from the excessive investor confidence. Investors are more likely to choose stocks and time to invest on their own merits rather than overall market conditions. In the results above, it can also be seen that the estimation of herding behavior in rising and falling markets shows that anti-herding occurs when the market is in rising conditions as well as in falling conditions. When market returns fall, investors tend to feel terrified and make decisions based on only a few groups of investors. Likewise, when market returns rise, investors also feel that investment decisions are made based on the opinions of some investors alone without following the majority group.

However, based on the results of rolling window regression tests conducted per 50 days of observation, the results of deeper research on the existence of herding behavior were obtained. Herding behavior exists throughout the observation period, namely from the end of 2019 to June 30, 2021. Some of the world stock markets such as South Africa, Mexico, Czech Rep,Saudi Arabia, Egypt, Peru, Greece, United Arab Emirates, Turkey, Thailand, Taiwan, Russia, Qatar, Poland, Pakistan, Malaysia, Colombia, Indonesia, India, China, Philippines, Brazil and Chile. The results of this study indicate that herding behavior occurs in most sample countries.

The results of this study are in line with the research of Bowe and Domuta (2004) which states that investors tend to do anti-herding when a crisis occurs in the stock market. Lee (2017) also said that anti-herding behavior also occurs in the American stock market, where investors are not affected by negative or positive stock price movements. Galariotis, Krikida and Spyrou (2016) also did not find any herding behavior at the time of the economic crisis. Bui, Nguyen, and Nguyen (2015) reinforce the results of this study that in the stock market in Asia, namely the Philippine stock market, there is also an anti-herding perilkau during the economic crisis. Finally, Tsuciya (2021) stated that in the Japanese stock market there was also anti-herding behavior during the global financial crisis.

This study provides a different view from previous studies, in general by using a sample of all research results confirming with prospect theory that explains investor behavior

in several markets in Asia and parts of America and Europe. Investors tend to be cautious in making decisions in the stock market during the Covid 19 pandemic. Prospect theory explains investors can behave differently depending on the consequences they get. Investors can take risk aversion when faced with profits and take risks when faced with losses. The results of this study explain that in a state of loss, investors tend to take risks based on rational thinking.

3.10.2. The Effect of Investor Sentiment on Herding's Behavior

Investor sentiment proxied with the VIX was proven in this study to influence herding behavior. It is evident that the higher the value of the VIX index which indicates that investors are pessimistic about market performance can improve the herding behavior of investors on the stock exchange. Investor sentiment proxied by the VIX index can explain that pessimistic that investors are able to make investors act more irrationally and engage in herding behavior. However, in contrast to sentiment measurements using the VXEEM index, the results show that investor sentiment measured by VXEEM is not capable of influencing investors to behave herding.

A stock market that continues to rise or continues to fall can be low volatile. However, a drastically rising and falling market indicates high volatility. The VIX index, which is above 20, indicates a growing fear. Investors can tend to be pessimistic or optimistic about the state of the market. The results of this study show that the average value of the VIX shows a number above 20, which means that the stock market is developing in a state of panic and stress in the face of the Covid-19 pandemic. Panicked investors can tend to be pessimistic and end up herding behavior.

The results of this study are in line with Athion's research (2020) which states that herding behavior is determined by investor sentiment in the market. Sun, Bao, and Lu (2021) emphasize that what can shape sentiment in the market is more in the presence of institutional investors compared to individual investors. Aharon (2020) added that in addition to institutional and individual investors, there are other market participants. Zouaoui (2011) also stated that investor sentiment can increase during a crisis in the stock market compared to a quiet period

This research does not specialize in institutional investors or individual investors but specializes in the movements of the VIX and VXEEM indices formed from the perceptions of the two investors. Furthermore, Vuong and Suzuki (2020) say that investor sentiment can shape the value of market returns that influence investors' behavior to invest. A positive market return indicates that investor sentiment can steer stock returns in a positive direction and shape herding behavior on stock exchanges in emerging markets. This study proves that there is a herding behavior in the emerging stock market during the Covid 19 pandemic.

The results of this study confirm the prospect theory of Kahneman and Tversky (1979) who said that people with irrational tendencies are capable of risking gains rather than losses. An irrational investor when they are in a profit position, they tend to avoid risk and if the losing position can face the risk. Investors in emerging stock markets tend to be pessimistic about market conditions so that they can make irrational decisions based on information they obtain from other investors and herd.

Based on the results of sensitivity tests with rolling window regression, it is known that there is a herding behavior in most countries summarized in emerging stock markets. Investor sentiment has proven to influence herding behavior during the Covid-19 pandemic. The sensitivity results explained that both sentiments measured by VIX and VXEEM were able to influence the occurrence of herding behavior in several countries such as: Argentina, Brazil, Chile, China, India, Indonesia, Malaysia, and Pakistan. The results of this sensitivity test add to the results of an even more comprehensive study by identifying the occurrence of herding behavior every 50 days of observation.

3.10.3. The Effect of Investor Sentiment on Herding Behavior Moderated By Cultural Shocks

This research proves that the cultural shock felt by investors can strengthen investor sentiment in the stock market in a pessimistic direction and encourage investors to behave herding. Cultural shock is a very powerful process of transforming and adjusting to the surrounding circumstances (Cupsa, 2018). The research found that the cultural shock that investors felt towards new cultures during the pandemic proved to influence herding behavior.

The cultural shock, which is divided into 4 phases, namely the honeymoon period, the phase at the beginning of the outbreak of the COVID-19 virus around the world which occurred at the end of 2019 until the end of March 2020 has been proven to affect investor behavior in making investment decisions. Investors tend to herd in this phase with decision making based on the opinions of some investors.

The strongest cultural shock was felt by investors in the honeymoon phase across emerging stock markets. The different honeymoon periods between countries lead investors to restrictions on activities and socialization movements. This condition makes investors stressed and feel shaken, forcing investors to quickly adapt to changes that occur. This condition leads to the decision of investors to invest in the capital market. The more investors in the stock market feel shaken in the honeymoon phase making their pessimistic sentiment towards the market and directing their behavior in an irrational direction with herding behavior.

Cultural shocks during lockdowns, new normal and integration periods have not proven to strengthen or weaken investor sentiment towards herding behavior. This research proves that investors are more shaken when investors enter the early phases of the covid 19 pandemic and the delta covid 19 outbreaks in each country as seen from the covid case reports provided by the WHO and Oxford websites. Repeated honeymoons cause the public and investors to feel shaken and get used to adapting to the changes in habits that have existed so far. Investors' despair at this pandemic situation and conditions, gave rise to investors' pessimistic sentiment towards the state of the stock market.

This research is supported by the research of Cupsa (2018) which states that culture shock involves a powerful process of transformation that occurs at the level of individuals and societies. Individuals are required to be able to immediately adapt to their environment. This cultural shock is a new factor used in research on herding behavior

The results of this study confirm the theory of cultural shock (culture shock). A cultural shock that is an anxiety that arises because of losing all the social signs and symbols that have been previously possessed. The covid 19 pandemic has caused tension due to the efforts made by individuals to be able to adapt psychologically to new habits, feelings of loss of friends, family, rejecting new habits, confusion over rapid changes, anxiety and anger at the situation that occurs. This cultural shock causes changes in investors' psychology that can lead to changes in investor behavior in investment decision making. The results of this study add to the update in the explanation of herding behavior during the COVID-19 pandemic.

The results of this study on sensitivity tests can be seen that cultural shocks can generate negative sentiment for investors and can cause investors to engage in herding behavior. It is known that investors in countries such as Brazil, Chile, China, the Philippines, India, Indonesia, Pakistan, the United Emirates, Saudi Arabia, Colombia, Russia, Thailand, Greece, Hungary, the Czech Republic, and Mexico carried out herding behavior in the early phases of the pandemic at the end of 2019 and at the beginning of the outbreak of the delta covid virus in early 2021. Herding behavior also occurred in the lockdown phase in early 2020 and in the first quarter of 2021 in the following countries: Qatar, and Taiwan. Thus, in

detail it can be said that not all investors in emerging stock market countries engage in herding behavior.

4. CONCLUSION

This study aims to review the literature on investor sentiment towards herding behavior in world emerging stock markets from December 2019 to June 2021. Specifically, this study investigates whether cultural fear and shock variables influence herding behavior directly and moderate the influence of investor sentiment on herding behavior.

The results of the study confirm the influence of investor sentiment on the occurrence of herding behavior on the stock exchange develops. The findings show robust results when using other estimation models in the measurement of herding behavior. The usage model in the sensitivity test is by using the Christie and Huang herding equation model (CSSD) and rolling window regression to analyze herding behavior in each country with a shorter time window.

Furthermore, the cultural shock felt by investors during the Covid-19 pandemic can also strengthen investor sentiment towards herding behavior in the early phase of the COVID-19 pandemic (honeymoon phase). Investors who are in shock tend to feel confused by circumstances that change very quickly and end up weakening their sentiment towards the market and influencing their behavior to take investment decisions that mimic the investment decisions of other investors (herding).

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