EXAMINING THE HERD BEHAVIOR BIAS AMONG INVESTORS IN THE IRAQ STOCK EXCHANGE

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Abstract

The period 2017-2021 was characterized by a great deal of political unrest and local popular protests that coincided with the emergence of the Corona pandemic in 2020, which greatly affected the decision-making by investors. Therefore, the main objective of this study is to reveal the herd behavior of investors in the Iraqi Stock Exchange during the mentioned period. This has clearly affected various aspects of the global and local economies. Therefore, to achieve the objective of the study, the research adopted CSAD approach to prove the existence of herd behavior in relation to investors' decisions by analyzing daily data listed on the Iraqi Stock Exchange ISX 60. The results of the study indicate that there is herd behavior among investors in this stock exchange during the testing period. This is the result of the severe local political crises that the country has experienced. Add to that the two global crises: the COVID-19 crisis and the collapse of global oil prices that negatively affected the rentier Iraqi economy. These two crises turned into a global economic crisis that led investors to uncertainty in making their own decisions and trying to imitate the choices of decision-makers and other investors.

Keywords herd behavior, behavioral finance, market return, CSAD

Introduction

Herd behavior is one of the behavioral biases that has been extensively investigated in the field of behavioral finance over the past few decades. This is what the financial literature revealed about the nature of the herd, the reasons behind its occurrence, and its effect on the work of financial markets (Shantha, 2019). Herd behavior can be defined as "the clear intention of the investors to imitate the behavior of other investors" (Ohlson, 2010). Hirshlerfer and Teoh defines herd behavior bias as a reciprocal imitation that leads to work convergence (Alrabadi, et al., 2018). Herd behavior in the stock market occurs when market participants are synchronously trading in the same direction/converge with others over a certain period of time (Koetsier and Bikker, 2021).

This implies that if an investor chooses Security A, others will do the same choice without developing their own plans. According to the theoretical assumptions in economics, investors are rational and evaluate all relevant information before making a decision. However, this cannot be achieved in practice since there is often a vast amount of information that cannot be analyzed and interpreted (Qasim et. al., 2019). This contradicts with the Efficient Market Hypotheses (EMH), which assume that everyone has access to information and hence excess returns cannot be obtained.

Sometimes, researchers differentiate the motives behind the herd behavior into rational and irrational behavior. In rational behavior, investors are convinced that others have more information as well as superior skills in analysis and decision-making (Ohlson, 2010). In irrational behavior, investors act without any reasonable motive. They ignore their own ideas, opinions, and information and blindly follow the investors with absolute faith as a result of social and psychological pressures (Signorelli, et. al., 2021); and this represents the separation line between rational and irrational herd behavior among investors.

Theoretical Review

Christie and Huang (1995) suggest that investors' decisions can vary according to the current market conditions. If the markets are more stable, then the dispersion of individual returns increases in relation to the market returns based on the available information. However, if the markets experience sharp fluctuations, the majority of investors prefer to abandon their opinions and follow collective decisions in the upcoming trade. In this case, the individual return will approach the market return and the herd behavior bias will be achieved (Signorelli, et.al, 2021). In a study presented by Ababio and Mwamba with the aim of analyzing herd behavior in four sectors, namely banking services, public finance, insurance, and real estate for the period (2010-2015), only the banking and real estate sectors had shown the herd behavior (Patel, 2021).

In a study presented by Ballis and Drakos (2019) Kumar (2020) on the cryptocurrency market, motivated by the lack of studies to explore herd behavior during the COVID-19 period, Ballis and Drakos concluded that assessing the efficiency of Bitcoin becomes more effective after the COVID-19 pandemic period, with the prospect of bias reduction during that period (Bouri et. al., 2021). However, Kumar study, which was conducted on a daily data of 100 major cryptocurrencies based on trading volume, revealed the presence of herd behavior during bear market periods (high volatility), whereas investment behavior is contradictory to the herd behavior during bullish market periods (low volatility) (Rubbaniy al.et, 2021).

The behavioral finance literature has revealed the existence of herd behavior in emerging stock markets that suffer from information inefficiency and other factors unique to these markets. A study conducted by Bouri et. al.(2021) indicates the uncertainty of investors in emerging markets as well as European stock markets PIIGS during the chaos that occurred in January 2020 and the spread of the Coronavirus from the Chinese city of Wuhan to the rest of the world. A study conducted by Kizys et. al.(2021) also showed the presence of herd behavior in a sample consisting of 72 foreign and Arab countries. It is worth mentioning that governmental and regulatory restrictions imposed to control the spread of Covid-19 within the country can reduce the presence of herd behavior among investors in the stock market. According to Abdeldayem and Dulaimi's (2020) study, the Corona pandemic had a positive impact on herd behavior bias in the markets of Arab Gulf countries.

Several arguments are presented in the literature addressing the herd behavior of investors in the market. Devenow and Welch argue that investors feel safe when their decisions match those of others, especially in periods of extreme uncertainty. Moreover, investors are compelled to imitate others due to the high cost of gaining experience (Bouri et al., 2021). They tend to believe that it is unlikely that a large group of investors will behave wrongly. Some individuals try to achieve social acceptance and avoid the potential regret that might happen to them if they make incorrect personal decisions, believing that in the case of a collective decision there will be less regret if they make a wrong personal decision (Alrabadi et. al., 2018).

Measuring the herd behavior using the CSAD model

Since there is no direct measure in the financial literature to detect herd behavior in financial markets, the researchers and specialists in the field of financial economics intended to identify the existence of the effect of herd behavior using the CSAD model presented by Christie and Huang in 1995 (Shah et.al., 2019). The model used nonlinear regression to examine the link between the level of stock returns dispersion and market return. When there is moderate or severe herd behavior, the dispersal of stock returns is expected to reduce (or rise at a decreasing rate) as market return increases (Aawaar et.al., 2020). Chang et. al. suggest that there should be a linear correlation between CSAD and the absolute value of the stock. However, when a herd bias occurs and investors trade in the same direction as the market, individual security returns tend to cluster around the market return. Consequently, the linear relationship turns into a nonlinear one. (Shah et.al., 2019). (Signorelli, et. al., 2021) argued that in all financial markets, the higher dispersion (as estimated by CSAD) compared to market returns is greater in a market recovery than in times of downturn and recession, arguing that the market tends to respond more quickly when there is complete negative economic news. The CSAD is calculated as:

$$CSAD = \frac{1}{n}\sum_{n=1}^{\infty}|R_{it} - R_{mt}|$$

where:

CSAD: Cross-Sectional Absolute Deviation of returns

R_{it}: the return on security i at time t

R_{mt}: the return on market at time t

n: The number of assets being analyzed

The model is based on a modified regression equation that added a non-identical coefficient to express the potential nonlinear relationship between the dispersion of returns for individual assets and market returns according to the following equation:

$$CSAD = a_0 + \gamma_1 |R_{mt}| + \gamma_2 |R_{mt}^2| + \varepsilon$$

where Y_1 is the absolute value coefficient of the market return, and Y_2 is the coefficient of the squared return on market R_{mt}. In the presence of herd behavior, the correlation between individual asset returns and the corresponding dispersion is expected to decrease, or at least increase less than proportionally to the market return. In addition, the effect of herd behavior is verified if the coefficient of Y_2 is negative and statistically significant, but if Y_2 is positive, it indicates that there is no effect of herd behavior (Ohlson, 2010). This model was widely used in the financial and economic literature to examine herd behavior in both developed and emerging financial markets. The existence of this bias was proven, especially in light of the financial crises, natural disasters, the emergence of technology and the spread of viruses, the most of which was the financial crisis in 2008 and the spread of the covid-19 virus in January 2020, which exacerbated globally and caused a significant increase in uncertainty and the transition from the health care crisis into a global economic and financial crisis.

Description and analysis of the Iraq Stock Exchange ISX 60 Data

The average quarterly data for market returns and stock returns for the selected banks were based on daily data collected during the period (2017-2021). A total of 1022 notes were taken as a trading day. In order to search for the presence or absence of herd behavior during that period, the researcher applied the widely adopted CSAD model in the field of behavioral finance because it is less biased in interpreting the results and can be used to search for herd behavior while the market is up or down. On contrary, the CSSD model explains the existence of behavior only in periods of severe deterioration and it does not take into account the non-linear relationship between return dispersion and market return. Therefore, this study uses the alternative model CSAD, which measures the cross-sectional absolute deviation of stock returns of the market return. The following table details the results of the model and the market return:

Table (1): Descriptive statistics of market returns and cross-sectional absolute deviation model

	ST.D	Med	Mean	Min	Max
RM	0.85	0.04	-0.02	-3.8	**6.85**
CSAD	1.93	1.46	1.88	0	**33.9**

Table (1) gives a summary of descriptive statistics for the main variables, including weighted market return Rm and cross-sectional absolute deviation CSAD. Over the study period, the results show that both the CSAD and the squared value of the weighted market return have a positive mean value . In general, herd behavior occurs when decision-makers are affected based on what others do instead of using their data or information they have, this results in similar purchasing or selling decisions and drives prices toward imbalance and inefficiency in the financial markets.

Table (2): Estimations of regression for herd behavior bias.

Year	Quarterly	A	y1	y2	R2
2017	**S₁**	0.68**	1.047**	-0.079	**0.59**
		5.174	4.491	10.94	
	S₂	1.14**	0.297**	0.207**	**0.24**
		5.787	3.579	7.69	
	S₃	0.625**	2.694**	(-1.163)*	**0.29**
		2.69	2.95	2.19	
	S₄	1.19**	0.576**	(-0.036)*	**0.15**

		6.57	5.55	2.74	
2018	**S₁**	0.86**	0.615*	0.014*	**0.41**
		5.86	2.32	2.58	
	S₂	1.125*	1.344**	(-0.892)**	**0.11**
		2.601	6.02	6.52	
	S₃	0.364**	2.594**	(-0.319)**	**0.20**
		4.77	3.95	3.42	
	S₄	0.576**	2.146**	(-0.624)**	**0.22**
		2.99	2.89	2.914	
2019	**S₁**	0.617**	0.748**	0.121**	**0.4**
		3.16	3.04	3.9	
	S₂	0.874**	1.343**	(-0.319)**	**0.14**
		2.95	4.19	6.2	
	S₃	0.84**	1.169*	(-0.254)**	**0.05**
		2.717	2.103	2.84	
	S₄	2.753**	5.686**	(-4.02)***	**0.1**
		4.18	6.98	7.07	
2020	**S₁**	1.31**	2.116**	(-1.011)*	**0.08**
		3.42	2.6	2.077	
	S₂	3.912*	(-12.539)**	(-6.042)**	**0.88**
		2.96	5.01	7.69	
	S₃	1.685**	0.205**	0.133	**0.068**
		3.93	2.51	0.541	
	S₄	1.336**	0.954**	(-0.05)*	**0.155**
		4.163	2.59	2.1	
2021	**S₁**	2.136**	1.646**	(-0.385)**	**0.06**
		3.41	2.77	5.72	
	S₂	0.73**	0.908**	0.129	**0.339**
		2.96	4.25	0.47	
	S₃	0.767**	1.352**	(-0.14)**	**0.429**
		4.18	4.72	2.88	
	S₄	1.056**	0.971**	0.026	**0.173**
		4.219	3.42	0.078	

Note: ***,**, and * equals significance on the 1%, 5%, and the 10% level in the t-table

Table (2) shows that herd behavior was evident in the Iraqi stock exchange during the study period, especially in the fourth quarter of 2019 and the first and second quarters of 2020 at the level of 1% and then increased to 5%. This reveals the growing levels of herd behavior, which drives managers and decision-makers to have a greater tendency to make similar decisions. During that time period, prices and returns experienced a dramatic decrease to their lowest level as illustrated in Figures (1) and (2).

Figure (1): Market price for the period (2017-2021)
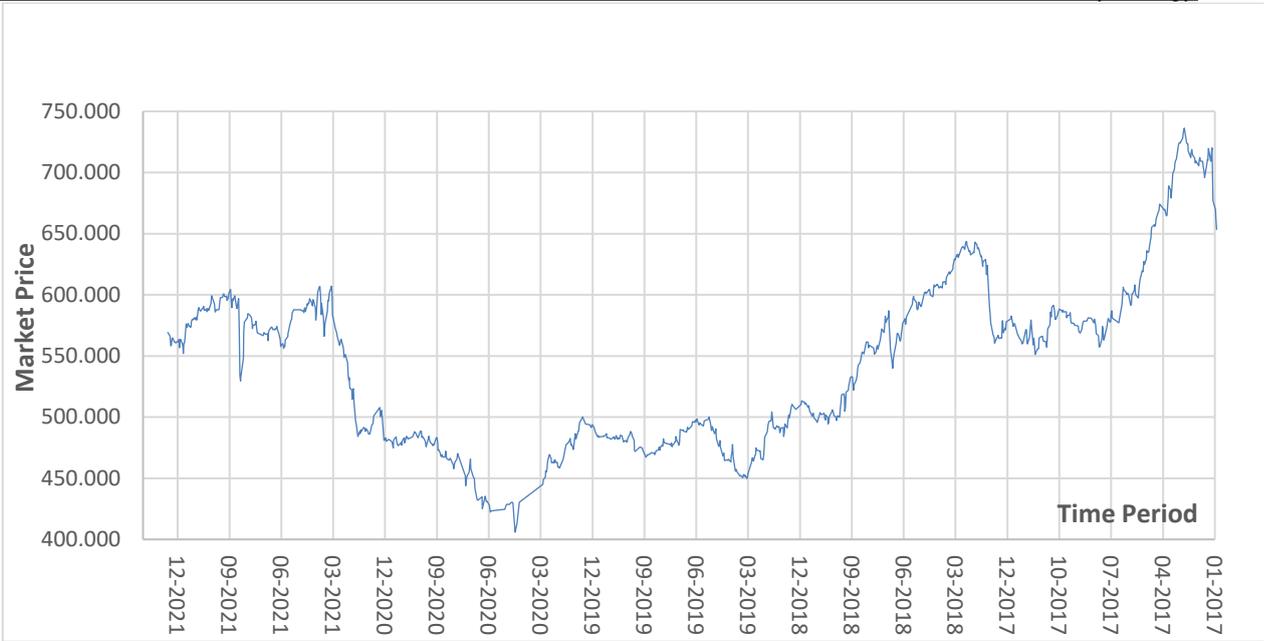
Figure (2): Market Return for the period (2017-2021)
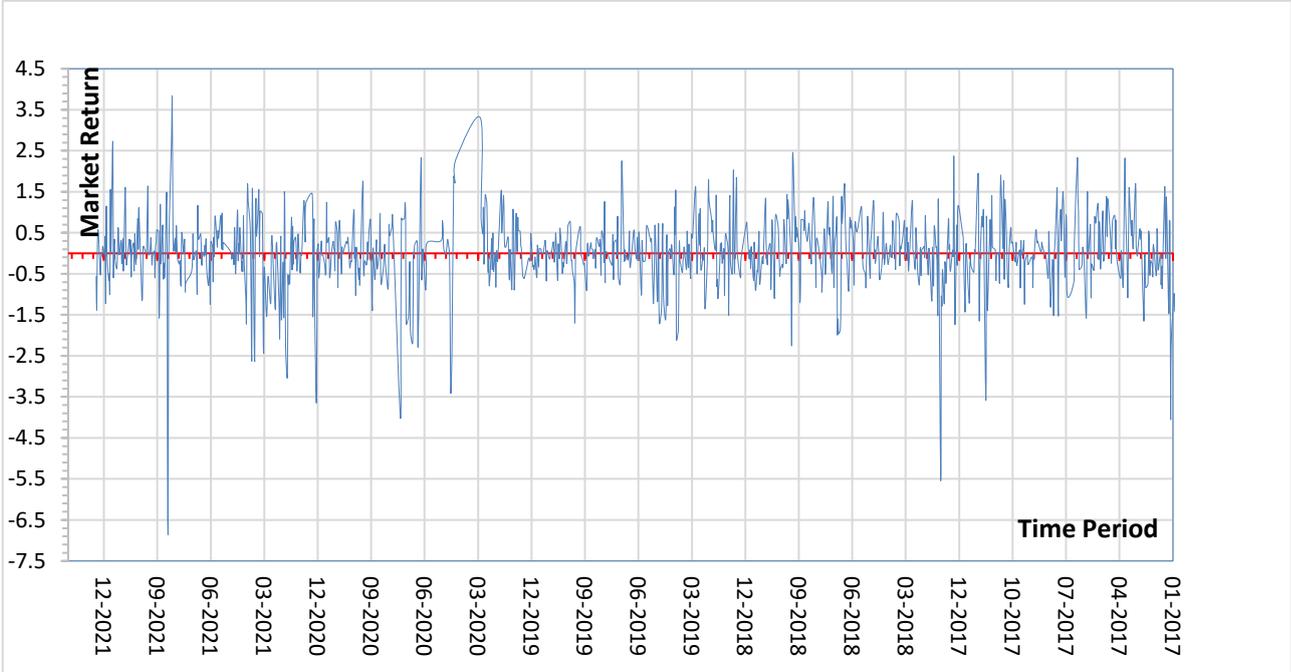
The number of traded shares and the number of transactions have witnessed a decrease in 2019 and 2020, as indicated in Table (3) since banks are worried about trading due to potential loss (the pursuit of risk). It seemed though as if they were better selling shares when their prices dropped rather than waiting for them to reach their lowest level. This explains the effect of behaving in accordance with the herd behavior adopted by the majority of decision-makers during that time period

Table (3): Traded shares and Transactions in the Iraq stock market

The sectors	2017		2018		2019		2020		2021
	Transaction	Traded shares	Transaction	Traded shares	Transaction	Traded shares	Transaction	Traded shares	Traded shares
Banking	46980	598565.6	33346	333579.8	21619	173224.4	17176	229721.5	40856	892811
Insurance	1625	1358.6	297	400.3	2250	1845	263	616.3	162	206.7
Services	9940	4830.2	7563	3731.1	8382	3847.3	8421	3617.9	15103	5011.7
Industrial	19821	21505.4	30742	34296.8	27970	24220.8	28336	17056.9	35574	25037
Hotels & tourism	6215	814.5	5923	785.8	7039	559.2	2747	1153.7	3575	511.7
Agricultural	6700	1225.5	7006	1618	7323	1600.5	5013	1041.9	8125	1137.6
Communications	3712	3120.3	2635	2394.5	3231	5543.6	8989	9703.3	10772	3571
Total	94993	631420.1	87512	376806.3	77814	210840.8	70945	262911.5	114167	928287

Conclusion

Herd behavior generally emerges when the majority of investors abandon their own opinions and beliefs and imitate the behavior of other investors in sales and purchases. It is worth noting that this effect is very common in markets that experience a sharp drop in prices, and this is obvious in the Iraqi stock market when applying the CSAD model to detect the herding bias in the investment decision. The study found that there is a bias in investor decisions resulting from political crises in 2019 and the outbreak of the Corona pandemic in 2020. In this period, investors in the markets surrendered to the increasing uncertainty regarding the economy and the financial system. This, in turn, affected the rationality of investment decisions, leading the investors to imitate the decisions of their peers and follow herd behavior.

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