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Does Uncertainty Drive Herding Behavior in Indonesia Stock Exchange

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Abstract

Herding behavior increases along with market risk, corporate uncertainty aggregate uncertainty. This research aims to investigate herding behavior in the Indonesian capital market by considering conditions of uncertainty. There are two uncertainty indicators used in this research, namely stock market volatility and COVID-19. By using daily data from companies listed on the LQ45 index, the research found that herding behavior was not detected when using the basic herding model, but when entering transaction volume variables and lagged dependent variables, we found that there was herding behavior during the 2017-2023 period. Furthermore, by including uncertainty variables, our research found an asymmetry of herding behavior: investors tend to herd when the market experiences high volatility and during the COVID-19 pandemic. Outside of these two periods, we found no empirical evidence of herding behavior in Indonesia. These results strengthen the theoretical framework that high uncertainty triggers herding behavior.

Keywords: herding behavior, market efficiency, uncertainty, COVID-19

1. Introduction

Economic actors not only move because they are driven by economic motives and rational behavior but also irrational behavior such as animal spirits (Keynes, 1936): animal spirits animate crowds. One manifestation of animal spirit is herding behavior. Investors behave in herding behavior when they imitate the actions of other investors. In some cases, herding behavior causes asset prices to deviate from their efficient values (Huang, Lin, and Yang 2015) resulting in mispricing of assets which on a large scale can lead to financial instability (Ionescu, 2012).

Herding behavior conceptually became popular in the 1990s, driven by Banerjee (1992) and Bikhchandani, Hirshleifer, and Welch (1992). Furthermore, research on herding behavior is developing rapidly in various countries. Most researchers suspect that herding behavior occurs more frequently in developing capital markets because of high information asymmetry and low information quality. Several empirical research aims to test the existence of herding behavior in capital markets (eg Grinblatt, Titman, and Wermers 1995; Wermers 1999; Choe, Kho, and Stulz 1999; Henker, Henker, and Mitsios 2006; Economou, Kostakis, and Philippas 2011; Chattopadhyay, Garg, and Mitra 2018). However, empirical research on herding behavior carried out by investors shows inconsistent results (see Komalasari et al., 2022).

Several studies have also examined herding behavior during COVID-19 using individual stock data in both developed markets, emerging markets and frontier markets. Several studies found

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herding behavior during COVID-19 (e.g. Alexakis et al., 2023; Ghorbel et al., 2022; Nguyen and Vo, 2023; Nouri-Goushki and Hojaji, 2023), while Huynh et al. (2023) found the phenomenon of herding behavior in Australia in the first three waves of COVID-19 but reverse herding occurred in the fourth wave of COVID-19. Loang and Ahmad (2023) examined herding behavior in several countries and found no herding in France, Hong Kong, Indonesia, Japan, Malaysia, Poland, England and the United States during the pandemic.

The inconsistencies in herding behavior in the capital market motivated us to examine herding behavior in the Indonesian capital market by considering aspects of uncertainty. The urgency of this research is the need to identify when herding behavior occurs so that efforts can be made to minimize this phenomenon and policy makers can anticipate its impact on capital market stability.

2. Literature Review

The efficient market hypothesis states that stock prices fully reflect all information available in the market. However, this hypothesis seems to have received a lot of criticism and challenges from analysts, academics and market players. Wood (1995) states that the financial market is a real game containing greed and fear, so it is very possible that prices are not always rational, and efficiency may be a textbook hoax. This argument is supported empirically by the discovery of various forms of market anomalies that undermine the accuracy of the efficient market hypothesis (see Pompian 2006, 12). Studies on behavioral finance are starting to emerge to answer market anomalies that cannot be explained by the efficient market hypothesis (eg French 1980; De Bondt and Thaler 1985).

One of the factors that is thought to cause markets to become inefficient is herding behavior. Christie and Huang (1995) use an irrational perspective of herding behavior and believe that investors imitate when market conditions are stressful. When facing uncertainty, concerns about making wrong decisions and potential losses that will be incurred, interfere with investors' ability to analyze rationally, and ultimately investors tend to follow market consensus to reduce their feelings of discomfort by following the behavior of other investors. Christie and Huang (1995) state that investors tend to follow market consensus in periods of high market volatility. On the other hand, Chang, Cheng, and Khorana (2000) suggest that herding behavior does not only occur when the market is stressed. They show that a degree of herding behavior is evident during normal market conditions which then becomes more significant when the market experiences extreme upward or downward volatility.

Avery and Zemsky (1998) conducted analytical research to examine herding behavior in financial markets. When Avery and Zemsky (1998) considered the information structure in the model, they found herding behavior when there was event uncertainty. With uncertainty, the market becomes doubtful about whether the asset value has changed from the initial expected value. It triggers herding behavior among investors. Herding behavior can occur over long periods when uncertainty reaches extreme points. In this condition it is said that an informational cascade has occurred: the market does not learn whether the asset value is high or low when all informed traders buy or sell the security.

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Increased market uncertainty causes uninformed investors to fear making wrong decisions and thus incurring potential losses. This fear interferes with their ability to analyze rationally, and ultimately investors tend to follow market consensus to alleviate the perceived discomfort by imitating the behavior of other investors. Thus, herding behavior occurs in response to uncertainty and individuals' perceptions of their ignorance: people may follow the crowd because they think that people in the crowd have better information (Keynes, 1936). Lin (2018) finds that in addition to market risk and corporate uncertainty, herding behavior increases with aggregate uncertainty. Investors behave in herding when they imitate the actions of other investors, regardless of whether the imitating actions conflict with their private signals.

One of the events that increased market uncertainty was the COVID-19 pandemic which triggered a crisis throughout the world. Not only a health crisis, but also a social crisis to the economy and financial sector. During the COVID-19 pandemic, investors faced uncertainty in information sources and market conditions which caused investors to panic about their portfolio performance. During the COVID-19 period, equity market values in most stock indices fell as people avoided risk and started selling their financial assets (Akhtaruzzaman et al., 2021; Ashraf, 2020; Bai et al., 2021) and, as a result, the market finances become very unpredictable.

The COVID-19 pandemic that has occurred since 2019 has resulted in uncertainty in every aspect of life and business. The paralysis of the real sector also has an impact on increasing investor pessimism in the capital market. It was recorded that in March 2020 the S&P 500 index experienced a decline of 11.98% which was the worst performance since Black Monday on October 19th 1987. The Dow Jones index, the German DAX index and the Nikkei index fell by 23.2%, 38% and 29% respectively (Coy, 2020). Emerging capital markets have not escaped the systemic impact of COVID-19 (Wasserman, 2020). Based on the OJK report, in 2020 the JCI experienced a correction of –5.09%. Several studies have found that the COVID-19 pandemic has increased financial market volatility and reduced investment returns (Ashraf, 2020; Bai et al., 2021; Lyócsa and Molnár, 2020; Narayan et al., 2022; Ullah, 2023).

Based on this framework, this research hypothesizes that uncertainty triggers investor herding behavior in Indonesia.

3. Research Method

The sample used in this research is the most active shares in the Indonesian capital market, namely 45 companies listed on the LQ45 index. Using daily data obtained from the Bloomberg database, this research examines herding behavior from 2017-2023.

Referring to the basic model of Chang et al. (2000) we tested herding behavior during the study period using the equation:

$$Return\ dispersion_t = \alpha + \gamma_1 |R_{m,t}| + \gamma_2 |R_{m,t}{}^2| + \varepsilon_t \quad \ldots\ldots (1)$$

Return dispersion is measured using cross sectional absolute standard deviation (CSAD) with the following formula:

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$$\mathrm{CSAD_t} = \frac{1}{\mathrm{N_t}} \sum_{\mathrm{i=1}}^{\mathrm{N}} \left| \mathrm{R_{i,t}} - \bar{\mathrm{R}}_{\mathrm{t}} \right|$$

Ri,t is the daily stock return of companies listed in the LQ45 index.

By considering the potential for autocorrelation as a result of using daily data, this research adds an independent variable in the form of return dispersion in the previous period as suggested by (Arjoon & Shekhar, 2017; Yao et al., 2014). We use CSAD lag t-1, t-2, and t-3, so that equation (1) is elaborated into equation (2) as follows:

$$Return\ dispersion_t = \alpha + \gamma_1 \left| R_{m,t} \right| + \gamma_2 \left| {R_{m,t}}^2 \right| + \gamma_3 CSAD_{t-i} + \varepsilon_t \quad \ldots\ldots (2)$$

Next, we also added a control variable for transaction volume as suggested by (BenSaïda, 2017; Litimi et al., 2016) as seen in equation (3). $\mathrm{Vol_{m,t}}$ is the natural logarithm of transaction volume, and $\Delta \mathrm{Vol_{m,t}}$ is the change in trading volume.

$$Return\ dispersion_t = \alpha + \gamma_1 \left| R_{m,t} \right| + \gamma_2 \left| {R_{m,t}}^2 \right| + \gamma_3 CSAD_{t-i} + \gamma_4 Vol_{m,t} + \gamma_5 \Delta Vol_{m,t} + \varepsilon_t \quad \ldots (3)$$

Herding behavior is detected from the coefficient value Υ_2, if the value is negative and significant then it is said that there is herding behavior.

To test the possibility of herding asymmetry in different market conditions, we use a single model dummy variable. Equation (4) is intended to capture the asymmetric herding effect when the market "up" and "down". $\mathrm{D^{up}}$ is a dummy variable that has a value of 1 if market return volatility is in quartile 3, and 0 otherwise.

$$Return\ dispersion_t = \alpha + \gamma_1 D^{up} \left| R_{m,t} \right| + \gamma_2 (1 - D^{up}) \left| R_{m,t} \right| + \gamma_3 D^{up} \left| {R_{m,t}}^2 \right| + \gamma_4 (1 - D^{up}) \left| {R_{m,t}}^2 \right| + \gamma_5 CSAD_{t-i} + \gamma_6 Vol_{m,t} + \gamma_7 \Delta Vol_{m,t} \varepsilon_t \quad \ldots\ldots (4)$$

Sensitivity analysis was carried out to test herding behavior before and during the Covid-19 period as seen in equation (5).

$$Return\ dispersion_t = \alpha + \gamma_1 D_{cov}^{up} \left| R_{m,t} \right| + \gamma_2 \left(1 - D_{cov}^{up}\right) \left| R_{m,t} \right| + \gamma_3 D_{cov}^{up} \left| {R_{m,t}}^2 \right| + \gamma_4 \left(1 - D_{cov}^{up}\right) \left| {R_{m,t}}^2 \right| + \gamma_5 CSAD_{t-i} + \gamma_6 Vol_{m,t} + \gamma_7 \Delta Vol_{m,t} \varepsilon_t \quad \ldots\ldots (5)$$

D_{cov}^{up} is a dummy variable that takes the value 1 for days in the COVID-19 period, and 0 otherwise. We use two alternatif COVID-19 period: the first is the period 1st March 2020 to 31st August 2022[1], and the second is the period 1st March 2020 to 21st June 2023[2].

Based on equations (4) and (5), if the coefficient Υ_3 is negative and significant then it is said

[1] In mid-2022, economic activity in Indonesia will begin, marked by the lifting of the lockdown policy.

[2] On June 21st, 2023, the Indonesian Government officially revoked the status of the COVID-19 pandemic in Indonesia.

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that there is herding behavior during periods of high volatility and COVID-19, and if the coefficient Υ_4 is negative and significant it indicates that there is herding behavior when market volatility is low and not there is COVID-19.

4. Finding and Discussion

The result of the descriptive statistics aims to explain the data characteristics of the sample for all the variables studied. Table 1 summarizes the descriptive statistics for the entire study period (i.e. 2017-2023) and sub-period based on the uncertainty indicators.

Based on Table 1, the average value and standard deviation of market returns in the high volatility period are higher than in the low volatility period and all periods. The same thing also happens to the average value $|R_{m,t}|$ and $R^2_{m,t}$. Meanwhile, return dispersion (CSAD) in the low volatility period is greater than in the high volatility period and all periods. This indicates that in low volatility conditions, investors tend to make decisions independently and do not follow the investment decisions of other investors. In conditions of low uncertainty, the number of trading transactions on the stock exchange also increases compared to high uncertainty and all periods. Table 1 also shows that the value of return volatility in periods of uncertainty is on average higher than in all periods.

Table 1. Descriptive Statistics for all period and high (low) volatility

	R_m	$\|R_{m,t}\|$	$R^2_{m,t}$	CSAD	Volm	Volatility
Panel A. All period (2017—2023)						
Min	–0.082600	0.000000	0.000000	0.004600	8.7873	0.002700
Max	0.149200	0.149200	0.022300	0.075700	10.6999	0.067400
Mean	0.000130	0.008487	0.000158	0.015959	9.36269	0.010671
Standard Deviation	0.012573	0.009275	0.000671	0.004932	0.24577	0.006717
N	1697	1697	1697	1697	1697	1697
Panel B. High Volatility Period						
Min	-0.082611	0.000003	0.000000	0.004628	8.825905	0.012034
Max	0.149211	0.149211	0.022264	0.075712	10.141713	0.067351
Mean	0.000553	0.014546	0.000420	0.018586	9.344019	0.018499
Standard Deviation	0.020495	0.014448	0.001291	0.006911	0.210800	0.009181
N	425	425	425	425	425	425
Panel C. Low Volatility Period						
Min	-0.03241	0.00000	0.00000	0.00984	8.78727	0.00265
Max	0.03075	0.03241	0.00105	0.06048	10.69993	0.01203
Mean	-0.00001	0.00646	0.00007	0.02108	9.36893	0.00806
Standard Deviation	0.00839	0.00535	0.00012	0.00595	0.25593	0.00216
N	1272	1272	1272	1272	1272	1272

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Table 2 shows that the average market return value in the COVID-19 period is higher than in the non-COVID-19 period. Likewise with the standard deviation value. This condition indicates that share price fluctuations during the COVID-19 period were quite high because of speculative and irrational behavior from investors. However, the CSAD value in the COVID-19 period is greater than the non-COVID-19 period. This indicates that herding behavior is not too strong during COVID-19.

Transaction volume in the period 1st March 2020 to 31st August 2022 was lower than the non-COVID-19 period, but when the COVID-19 period was extended to 2023 the average value of trading volume during the COVID-19 period was higher than the conCOVID-19 period. The COVID-19 period also showed a high level of volatility. This shows that investors felt high uncertainty during the COVID-19 pandemic due to uncertainty in economic, social and political activity.

Table 2. Descriptive Statistics during COVID-19 and nonCOVID-19 periods

	R_m	$\|R_{m,t}\|$	$R^2_{m,t}$	CSAD	Volm	Volatility
COVID-19 period: 1st March 2020 to 31st August 2022						
Min	-0.082611	0.000003	0.000000	0.004628	9.001632	0.003801
Max	0.149211	0.149211	0.022264	0.075712	9.991535	0.067351
Mean	0.000389	0.011037	0.000281	0.017091	9.349884	0.013903
Standard Deviation	0.016752	0.012609	0.001088	0.006438	0.169982	0.009337
N	606	606	606	606	606	606
NonCOVID-19 period: other than 1st March 2020 to 31st August 2022						
Min	-0.044131	0.000022	0.000000	0.007162	8.787266	0.002654
Max	0.036669	0.044131	0.001948	0.034381	10.699935	0.023527
Mean	-0.000014	0.007070	0.000090	0.015331	9.369802	0.008875
Standard Deviation	0.009477	0.006310	0.000173	0.003701	0.278688	0.003561
N	1091	1091	1091	1091	1091	1091
COVID-19 period: 1st March 2020 to 21st June 2023						
Min	-0.082611	0.000003	0.000000	0.004628	9.001632	0.003150
Max	0.149211	0.149211	0.022264	0.075712	10.699935	0.067351
Mean	0.000215	0.009814	0.000227	0.016671	9.409619	0.012335
Standard Deviation	0.015049	0.011411	0.000951	0.005894	0.214320	0.008634
N	803	803	803	803	803	803
NonCOVID-19 period: other than 1st March 2020 to 21st June 2023						
Min	-0.044131	0.000022	0.000000	0.007162	8.787266	0.002654
Max	0.036669	0.044131	0.001948	0.034381	10.558380	0.023527
Mean	0.000053	0.007295	0.000096	0.015320	9.320536	0.009175
Standard	0.009822	0.006577	0.000185	0.003754	0.263680	0.003729

Deviation						
N	894	894	894	894	894	894

Table 3 reports the test results using the benchmark model proposed by (Chang et al., 2000) by considering the effect of return dispersion in the previous 3 consecutive periods and transaction volume.

Based on Table 3, using the basic model (Chang et al., 2000), we did not find herding behavior in Indonesia. However, when considering the impact of return dispersion in the previous 3 days, it was found that herding behavior was indicated by the coefficient γ_2 being negative and significant at an alpha of 10%. The same results are found when considering the control variables transaction volume and change in transaction volume.

Table 3. Herding estimation for the period 2017—2023

Eq.	Constant	$\|R_{m,t}\|$	$R^2_{m,t}$	$CSAD_{t-1}$	$CSAD_{t-2}$	$CSAD_{t-3}$	Vol	ΔVol	R^2adj
1	0.014 (81.698) ***	0.205 (10.584) ***	–0.251 (–0.935)						0.129
2	0.006 (13.366) ***	0.136 (7.557) ***	–0.484 (–1.931) *	0.197 (8.249) ***	0.206 (8.638) ***	0.148 (6.133) ***			0.286
3	–0.019 (–4.819) ***	0.135 (7.578) ***	–0.448 (–1.823) *	0.181 (7.685) ***	0.201 (8.614) ***	0.143 (6.058) ***	0.003 (6.414) ***	–0.003 (–3.706) ***	0.317

Notes: ***, **, and * represent statistical significance at the 1%, 5%, and 10% level, respectively

Lag return dispersion also shows a positive and significant influence on return dispersion for the current period. The R^2 value also increases with the presence of control variables.

Table 4. Herding estimation based on uncertainty condition

Variables	Equation 4		Equation 5 *for period* 1st March 2020 to 31st August 2022		Equation 5 For period 1st March 2020 to 21st June 2023.	
	Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic
Constant	–0.019	–4.781***	–0.019	–4.764***	–0.019	–4.744***
$D^{up}\|R_{m,t}\|$	0.144	7.131***				
$(1 - D^{up})\|R_{m,t}\|$	0.069	1.387				
$D^{up}R^2_{m,t}$	–0.548	–2.119**				
$(1 - D^{up})R^2_{m,t}$	1.779	0.742				

$D_{cov}^{up}\|R_{m,t}\|$			0.149	7.297***	0.148	7.272***
$(1 - D_{cov}^{up})\|R_{m,t}\|$			0.136	3.354***	0.163	4.356***
$D_{cov}^{up}\|R_{m,t}^{2}\|$			–0.563	–2.175**	–0.545	–2.113**
$(1 - D_{cov}^{up})\|R_{m,t}^{2}\|$			–1.194	–0.745	–2.152	–1.518
$CSAD_{t-1}$	0.175	7.415***	0.178	7.536***	0.178	7.543***
$CSAD_{t-2}$	0.194	8.188***	0.198	8.433***	0.199	8.482***
$CSAD_{t-3}$	0.140	5.895***	0.143	6.034***	0.143	6.060***
Vol	0.003	6.483***	0.003	6.387***	0.003	6.325***
ΔVol	–0.003	–3.725***	–0.003	–3.783***	–0.003	–3.745***
R^2adj	0.317		0.317		0.317	

Notes: ***, **, and * represent statistical significance at the 1%, 5%, and 10% level, respectively

Testing the possibility of herding asymmetry shows that herding behavior is found when the market experiences a high level of volatility (see Table 4 equation 4) and no herding is found when stock volatility is low. The same results were also found when differentiating herding behavior during COVID-19 and normal times. Herding behavior was discovered during the COVID-19 period. This indicates that the herding phenomenon occurs when the market faces uncertainty and no herding behavior is found when market uncertainty is low.

5. Conclusion

This study examines the phenomenon of herding behavior in the Indonesian capital market by considering the uncertainty faced by investors. There are two uncertainty indicators used in this research, namely the high level of market return volatility and the COVID-19 period. When using the basic model from (Chang et al., 2000), this research did not find empirical evidence of herding behavior in the Indonesian capital market, but when adding control variables in the form of lag return dispersion and transaction volume, we found the phenomenon of herding behavior during the test period (2017—2023). The test results on the effect of uncertainty show the existence of herding asymmetry: investors tend to herd when there is quite high market volatility and uncertainty caused by the COVID-19 pandemic. These findings confirm that herding behavior tends to be triggered by investors' feelings of insecurity and worry which occur when market uncertainty increases. Exploration of proxies for uncertainty needs further research attention considering that several academic researchers have developed various uncertainty benchmarks, one of which is economic and political uncertainty (EPU).

References

Akhtaruzzaman, M., Boubaker, S., & Sensoy, A. (2021). Financial contagion during COVID–19 crisis. *Finance Research Letters*, *38*(May 2020), 101604. https://doi.org/10.1016/j.frl.2020.101604

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FMI, Vol 1
23-25 July 2024

Alexakis, C., Chantziaras, A., Economou, F., Eleftheriou, K., & Grose, C. (2023). Animal Behavior in Capital markets: Herding formation dynamics, trading volume, and the role of COVID-19 pandemic. *North American Journal of Economics and Finance*, *67*(May), 101946. https://doi.org/10.1016/j.najef.2023.101946

Arjoon, V., & Shekhar, C. (2017). Dynamic Herding Analysis in a Frontier Market. *Research in International Business and Finance*, *42*, 496–508. https://doi.org/10.1016/j.ribaf.2017.01.006

Ashraf, B. N. (2020). Stock markets' reaction to COVID-19: Cases or fatalities? *Research in International Business and Finance*, *54*(May), 101249. https://doi.org/10.1016/j.ribaf.2020.101249

Avery, C., & Zemsky, P. (1998). Multidimensional Uncertainty and Herd Behavior in Financial Markets. *American Economic Review*, *88*(4), 724–748. https://www.jstor.org/stable/117003

Bai, L., Wei, Y., Wei, G., Li, X., & Zhang, S. (2021). Infectious disease pandemic and permanent volatility of international stock markets: A long-term perspective. *Finance Research Letters*, *40*(May 2020), 101709. https://doi.org/10.1016/j.frl.2020.101709

Banerjee, A. V. (1992). A Simple Model of Herd Behavior. *Quarterly Journal of Economics*, *107*(3), 797–817. https://doi.org/10.1016/j.intfin.2012.09.007

BenSaïda, A. (2017). Herding Effect on Idiosyncratic Volatility in U.S. Industries. *Finance Research Letters*, *23*, 121–132. https://doi.org/10.1016/j.frl.2017.03.001

Bikhchandani, S., Hirshleifer, D., & Welch, I. (1992). A Theory of Fads, Fashion, Custom, and Cultural Change as Informational Cascades. *Journal of Political Economy*, *100*(5), 992–1026. https://doi.org/10.1086/261849

Chang, E. C., Cheng, J. W., & Khorana, A. (2000). An Examination of Herd Behavior in Equity Markets: An International Perspective. *Journal of Banking & Finance*, *24*, 1651–1679. https://doi.org/10.1002/ijc.2910340112

Chattopadhyay, M., Garg, A. K., & Mitra, S. K. (2018). Herding by Foreign Institutional Investors: An Evidential Exploration for Persistence and Predictability. *Journal of Behavioral Finance*, *19*(1), 73–88. https://doi.org/10.1080/15427560.2017.1373282

Chen, T. (2013). Do Investors Herd in Global Stock Markets? *Journal of Behavioral Finance*, *14*(3), 230–239. https://doi.org/10.1080/15427560.2013.819804

Choe, H., Kho, B.-C., & Stulz, R. M. (1999). Do Foreign Investors Destabilize Stock Markets? The Korean Experience in 1997. *Journal of Financial Economics*, *54*(2), 227–264. https://doi.org/10.1016/S0304-405X(99)00037-9

Christie, W. G., & Huang, R. D. (1995). Following the Pied Piper: Do Individual Returns Herd Around the Market? *Financial Analysts Journal*, *51*(4), 31–37. https://doi.org/10.1016/j.jfineco.2008.12.009

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FMI, Vol 1
23-25 July 2024

Coy, P. (2020). *The Great Coronavirus Crash of 2020 Is Different*. Bloomberg Businessweek. https://www.bloomberg.com/news/articles/2020-03-19/the-great-coronavirus-crash-of-2020-is-different

De Bondt, W. F. M., & Thaler, R. (1985). Does the Stock Market Overreact? *The Journal of Finance*, *40*(3), 793–805. https://doi.org/10.1111/j.1540-6261.1985.tb05004.x

Economou, F., Kostakis, A., & Philippas, N. (2011). Cross-country Effects in Herding Behaviour: Evidence from Four South European Markets. *Journal of International Financial Markets, Institutions & Money*, *21*(3), 443–460. https://doi.org/10.1016/j.intfin.2011.01.005

French, K. R. (1980). Stock Returns and the Weekend Effect. *Journal of Financial Economics*, *8*, 55–69.

Ghorbel, A., Snene, Y., & Frikha, W. (2022). Does herding behavior explain the contagion of the COVID-19 crisis? *Review of Behavioral Finance*, *15*(6), 889–915. https://doi.org/10.1108/RBF-12-2021-0263

Grinblatt, M., Titman, S., & Wermers, R. (1995). Momentum Investment Strategies, Portfolio Performance, and Herding: A Study of Mutual Fund Behavior. *The American Economic Review*, *85*(5), 1088–1105. http://www.jstor.org/stable/2950976

Henker, J., Henker, T., & Mitsios, A. (2006). Do Investors Herd Intraday in Australian Equities? *International Journal of Managerial Finance*, *2*(3), 196–219. https://doi.org/10.1108/17439130610676475

Huang, T.-C., Lin, B.-H., & Yang, T.-H. (2015). Herd Behavior and Idiosyncratic Volatility. *Journal of Business Research*, *68*(4), 763–770. https://doi.org/10.1016/j.jbusres.2014.11.025

Huynh, N., Nguyen, D. T., & Tran, Q. T. (2023). Herding in the Australian stock market during the era of COVID-19: the roles of liquidity, government interventions and mood contagion. *Managerial Finance*. https://doi.org/10.1108/mf-02-2023-0138

Ionescu, C. (2012). The Herd Behavior and The Financial Instability. *Annals of the University of Petrosani, Economics*, *12*(1), 129–140.

Keynes, J. M. (1936). *The General Theory of Employment, Interest, and Money*. Cambridge University Press.

Komalasari, P. T., Asri, M., Purwanto, B. M., & Setiyono, B. (2022). Herding Behaviour in the Capital Market: What Do We Know and What Is Next? In *Management Review Quarterly* (Vol. 72, Issue 3). Springer International Publishing. https://doi.org/10.1007/s11301-021-00212-1

Lin, M. C. (2018). The impact of aggregate uncertainty on herding in analysts' stock recommendations. *International Review of Financial Analysis*, *57*(February), 90–105. https://doi.org/10.1016/j.irfa.2018.02.006

Litimi, H., Bensaïda, A., & Bouraoui, O. (2016). Herding and Excessive Risk in the American Stock Market: A Sectoral Analysis. *Research in International Business and Finance*, *38*, 6–21.

e-ISSN: 3064-6030
FMI, Vol 1
23-25 July 2024

https://doi.org/10.1016/j.ribaf.2016.03.008

Loang, O. K., & Ahmad, Z. (2023). Empirical Analysis of Global Markets Herding on COVID-19 Effect. *Vision*, *0*(0). https://doi.org/https://doi.org/10.1177/09722629221146653

Lyócsa, Š., & Molnár, P. (2020). Stock market oscillations during the corona crash: The role of fear and uncertainty. *Finance Research Letters*, *36*(June), 101707. https://doi.org/10.1016/j.frl.2020.101707

Narayan, P. K., Gong, Q., & Ahmed, H. J. A. (2022). Is there a pattern in how COVID-19 has affected Australia's stock returns? *Applied Economics Letters*, *29*(3), 179–182. https://doi.org/10.1080/13504851.2020.1861190

Nguyen, Y. V. B., & Vo, A. H. K. (2023). Herding behavior before and after COVID-19 pandemic: evidence from the Vietnam stock market. *Journal of Economic Studies*. https://doi.org/10.1108/JES-01-2023-0031

Nouri-Goushki, M., & Hojaji, S. N. (2023). Herding behavior and government policy responses: Evidence from COVID-19 effect. *Heliyon*, *9*(7), e17964. https://doi.org/10.1016/j.heliyon.2023.e17964

Pompian, M. M. (2006). *Behavioral Finance and Wealth Management*. John Wiley & Sons Ltd. https://doi.org/10.1002/9781119202400

Rompotis, G. G. (2018). Herding Behavior among Exchange-Traded Funds. *Journal of Behavioral Finance*, *0*(0), 1–15. https://doi.org/10.1080/15427560.2018.1431886

Ullah, S. (2023). Impact of COVID-19 Pandemic on Financial Markets: a Global Perspective. *Journal of the Knowledge Economy*, *14*(2), 982–1003. https://doi.org/10.1007/s13132-022-00970-7

Wasserman, H. (2020). *SA shares just suffered another big crash – here's where history says the JSE could be in a year*. Business Insider. https://www.news24.com/news24/bi-archive/jse-crashes-2020-3

Wermers, R. (1999). Mutual Fund Herding and the Impact on Stock Prices. *The Journal of Finance*, *54*(2), 581–622. https://doi.org/10.1111/0022-1082.00118

Wood, A. S. (1995). Behavioral Finance and Decision Theory in Investment Management : An Overview. In *Behavioral Finance and Decision Theory in Investment Management* (p. 1). AIMR (CFA Institute).

Yao, J., Ma, C., & He, W. P. (2014). Investor Herding Behaviour of Chinese Stock Market. *International Review of Economics & Finance*, *29*, 12–29. https://doi.org/10.1016/j.iref.2013.03.002

Yavuzaslan, K., & Ozkan, N. (2023). Herding behaviour in Turkish stock market sector indices: the effect of COVID-19 outbreak. *International Journal of Monetary Economics and Finance*, *15*(5), 430–450. https://doi.org/https://doi.org/10.1504/IJMEF.2022.128476

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