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Analysis of Herding Behaviour using Quantile Regression: A Study of S&P BSE 500 Stocks

Vijay Kumar Shrotryia

Department of Commerce, Faculty of Commerce and Business, Delhi School of Economics, University of Delhi, India

Himanshi Kalra*

Department of Commerce, Faculty of Commerce and Business, Delhi School of Economics, University of Delhi, India

Abstract

The current study empirically investigates herding in S&P BSE 500 stocks over 8 years spanning from 2010 to 2018. Drawing upon the cross-sectional absolute deviation (CSAD) approach, the study tests for the presence of a non-linear relationship between dispersion and market returns. Ordinary least squares and Quantile Regression approaches are employed to examine whether herding behaviour is inferred under both normal and extreme market conditions. Further, to examine the impact of distribution tails, the study considers sub-periods such as the global financial crisis, the European debt crisis, the Chinese crash of 2015, the Indian demonetization of 2016, and the Trump election of 2016. The findings may be a matter of concern for investors as they reflect the inefficient nature of the S&P BSE 500 and the herding behaviour exhibited by investors. Therefore, the regulatory bodies have to make efforts to maintain the optimal distance between various classes of investors and to promote transparent and honest practices so as to make investors dispel any fear of herding behaviour. Finally, the investors may adopt investment strategies that are in accordance with what market warrants.

Key words: Herding; Dispersion; Quantile Regression; Stock Market; Indian

JEL classification: C3; C31; G1; G4; G41

1. Introduction

Financial literature posited that the balanced sta sophisticated market participants would drive the efficient that facilitated unhampered transmis

*Corresponding author.
E-mail addresses: kalra123.hk@gmail.com.
Address: Department of Commerce, Faculty of Commerce and Business, University of Delhi, New Delhi- 110007, India.

homogeneity in expectations of financial market speculators always show an arbitrary futuristic attitude towards premiums, if any would be compensated for in the financial system (Shrotryia and Kalra, 2019). In the markets restored an equilibrium (Shrotryia and Kalra, 2020). Such a utopian state would ultimately ignore the participating agents as rational (Shrotryia and Kalra, 2018). All these traditional arguments are challenged by the emerging behavioral finance, which has triggered eccentric movements in the financial markets (Shrotryia and Kalra, 2018). Economists have come to realize that the restricted rational approach to the investment decision-making in other disciplines especially psychology (Gopalan, 2015) and has also challenged the quantitative techniques used in decision making and brought about an interdisciplinary approach to decision making. With the help of behavioral finance, tremendously exemplifying the concepts of other social sciences, constructs of realistic view whereby investors are not always rational or optimistically but precisely. Also, to the extent that values do not always align with the following conventional manifests that rationality is assumed in the financial markets.

The literature on behavioral finance is full of examples in the areas of private sector, which deals with certain psychological biases in financial decision making (Gervais, 2006), existence anomalous market waves and other. The present study tends to unravel the behavioral aspect accepts the proposition of investors in the capital markets. These subjective feature, namely, apprehension, optimism, pessimism, extent to stimuli. Such idiosyncrasies also contribute to external environs which make investors to take cognitive refuge (or bias) (Kahneman, 2012). One such interesting and crucial bias is herd behavioral mindset to walk in sync with the group to synergistic economic moves so that the participants markets (Gao, 2010). In a highly unpredictable financial an escape is often seen as a tool to may not certainly assess the efficiency plausible cause to offer the investors a relief. Such emotional imbalances drive the investors to correlate their forthcoming to act against Further, in particular class of the asset may help to emerging market like India (Mittal, 2011).

Therefore, this study seeks to observe the trading behaviour in the Indian context using a recently developed Quantile Regression approach. Unlike earlier econometric techniques, this approach examines the dynamics of herding in the tails of daily stock returns distribution for the Indian stock markets.

This research paper is organized as follows: Section 2 provides a review of literature. Section 3 provides details about the data and methodology. Section 4 presents the empirical results and Section 5 concludes this empirical study.

2. Literature Review

In financial terminology, herding refers to a behaviour where every single participant ecto ppiaerst itchiepaanctt i(oShhsr ootfr and Kalra, 2020). In other words, herding is said to occur when agents with the dynamics of buying and selling activities in the markets base their investment decisions on the actions of others rather than relying on their own identical information set or arrive at decisions independently. In the herding literature, the inferences from the behaviour of investors are drawn by observing the actions of others in order to avoid any substantial loss (Banerjee, 1992; Bikhchandani et al., 1992; Welch, 1996), such skeptic behaviour can be explained by the presence of a web of cascades and spiral of events leading to irrational choices (Cipriani and Guarino, 2014; Clements et al., 2017) can have adverse effects on one's goodwill among peers that may lead to severe consequences (Devenow and Welch, 1996). Such skeptic behaviour can be explained by the presence of distortions and illusions. The Summary statistics of the descriptive statistics of skewed trading patterns and excess kurtosis. The asymmetry implications have been quantified using dispersion measures by academicians which are mainly categorized into two. The former considers the quantum of assets getting traded in coordinated financial crises (Lakonishok et al., 1992; Sias, 2004; Wermers, among others) whereas the second principle of asset returns (Christie and Huang, 1995, among other techniques (Chang et al., 2000; Hwang and Salmon, 2004; Christie and Huang, 1995, among others). The aforesaid methods have been subsequently, Vieito et al. (2011) employed the technique to study herding propensity among stocks of companies that are more popular among participants. Using similar methodology, Hwang and Salmon (2004) moved in tandem with each other at both market and industry level in fragmented markets. Tan et al. (2008) and Chiang and Zheng (2010) applied Chang et al. (2000) and Sias (2009) empirical methodologies to examine herding in the markets. The revealed returns dispersion measures the sale of financial assets.

Similarly, the other set of measures are based on cross sectional dispersion to examine dispersion between market clients that may lead to herding. These asset specific methods were proposed by Christie and Huang (1995) and Chang et al. (2000) which are based on the cross sectional standard deviation of returns (CSSD) and cross sectional absolute deviation of returns (CSAD) (Chiang and Zheng, 2010; Hassan, 2015; Yao, 2014, among others). These methods

extended to examine emotional biases in the Indian stock market (Gupta-Mukherjee, 2014; Kumar and Wohar, 2013; Litimi, 2017). However, the literature on herding is relatively thin as compared to the popular with advanced stock markets such as the US and the UK. Moreover, the Indian stock market is relatively illiquid as compared to the developed markets in terms of liquidity to the participants. Further, these methods are heavily dependent on the availability of sufficient number of buy and sell) of the fund managers or institutional investors in the market more.

Moving ahead, there are a few empirical studies that have delved into the behavioral aspects of the investors in India but owing to various reasons. For instance, the author's estimates are sensitive. Such studies may overemphasize emotional factors while relevant variables. Therefore, the existing literature on herding mentality in various quantile levels of stock returns is biased distortion by outliers. Also, several studies have observations than separate bull and bear markets. Such crucial findings in the conventional literature may lead to For instance, Chiang et al. (2010) investigated economic actions for Chinese and Japanese stock markets herding is demonstrated for Chinese stock markets estimates using conventional OLS. Economic models detect herd hunch for daily stock returns in greater degree of uncertainty (Chiang et al., 2010). Further, nonexistent market herding in the emerging economies of the Middle East.

Further, the Indian literature pulls out investigating financial behavior for the Indian market (Balasubramanian et al., 2014). For investigate the herding activity of the BSE 500 blue Lakshman et al. (2013) highlighted the importance of herding level in domestic and international markets of S&P BSE Sensex and concluded that no herding lack of empirical examination provides the motivation of the current study. Also, the findings of the study reveal herd (or anti-herd) behavior. Therefore, this study proposes to use both QR technique to study herding for BSE 500 stocks

3. Motivation and Objectives

Herding has long been accused of not only deviating from the consistent and systematic way of thinking. Besides providing temporary boosts, herding is a vicious loop of upsurges and declines, and empirical investigation into the phenomenon is

help market regulators to take timely measures to maintain market stability. Considering this, the current research

To gauge sectoral herding in the Indian stock market during the study period;

To gauge sectoral herding in the Indian stock market during the study period;

To examine the sectoral herding in the Indian stock market during the oil crash and the Chinese stock market crash of 2015.

On the basis of the aforementioned objectives, the following hypotheses are framed to be tested. The hypotheses are as follows:

Null Hypothesis 1: "There is no significant sector-wise herding in the Indian stock market for whole observation period."

Null Hypothesis 2: "There is no significant sector-wise herding in the Indian stock market during the low market scenario (or asymmetries)."

Null Hypothesis 3: "There is no significant sector-wise herding in the Indian stock market during the oil crash."

Null Hypothesis 4: "There is no significant sector-wise herding in the Indian stock market during the Chinese stock market crash of 2015."

4. Data, Market Description and Methodology

4.1 Data Description

The dataset entails daily and monthly peak to peak stock prices from October 2001 to August 2018. The daily data is extracted from Prowess database maintained by Centre for Monitoring Indian Economy (CMIE). For Monitoring Indian Economy (CMIE). For Monitoring Initially the sample had 342 companies without any missing observations in the period. These companies were accordingly categorized as per the Industry Classification. The decision to drop the companies with less than 10 stocks and combined data of some of the companies with less than 10 stocks under each head. Table 1 gives the sample companies selected and their classification into 8 sectors. Using natural logarithm of daily stock returns are calculated as the difference between the log of price at time t and the log of price at time $t-1$.

4.2 Indian Stock Market

Indian stock market is one of the fastest growing markets in the Asian region, offering reasonable level of liquidity and ease of financial transaction. It operates via two major stock exchanges namely Bombay Stock Exchange (BSE; 1875) and National Stock Exchange (NSE; 1992). The present study by focused on BSE and NSE indices namely BSE 500 to study the herd bias in the Indian stock market. BSE is established in the year 1875 with the name of BSE 500 and

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4.3 Methodology

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as:

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where, dummy (d) assumes unity when the marke[t] [illegible] when the market [illegible] The negative and significant [illegible] suggest herd instinct during rising and fallin[g] [illegible]

It is often argued that herding is excessive in times of intense volatility (Christie and Huang, 1995). Therefore, [illegible] presence and extent of herding behavior during two major crises namely the oil crisis of 2014 and the Chinese [illegible] to examine as the first [illegible] impacting the [illegible] and imports of crude oil, whereas the Chinese [illegible] lost more than half of their market [illegible] investments (Shrotryia and Kalra, 2020).

Equation (4) represent the dummy regression [illegible] herding behavior in the turbulent periods or cr[ises] [illegible]

[illegible equation] (4)

A separate dummy regression is run for both [illegible] dummy (assumes one during the [illegible] period, spanning [illegible] 2015 and zero otherwise [illegible] the period spa[nning] [illegible] 2015 till August, 2016 and zero otherwise (Shrotryia and Kalra, 2020). The negative and significant [illegible] during each crisis.

Equations (2), (3) and (4) are [illegible] OLS regr[ession] [illegible] market and [illegible] However, [illegible] fails to capture the behavior [illegible] distribution [illegible] the unidentified market [illegible] variable, if any. Equation (2) is reframed as:

[illegible equation] (5)

where [illegible] signifies the vector of regressors [illegible] the aforementioned [illegible] sector. A significant and negative [illegible] behavior for [illegible] Similarly, equation (3) is reformula[ted] [illegible]

[illegible equation] (6)

where, and are the quantile specific sectoral
and down phases, respectively, and (4) is reformu

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where is the quantile specific sectoral herd
period consultation with Chiang et al. (2010)
quantiles are determined at 10%, 25%, 50%, 75%
modeling has been done using E-views 9.

5 Results

5.1 Descriptive Statistics

Table 1 gives a snapshot of the main variables,
namely, and CSAD for daily and weekly data
respectively. The results of the Dickey-Fuller
root in and the CSAD. Also, the main variables
distributed as per Jarque-Bera statistics. The
mentioned for brevity. Sectoral returns show
mean market, whereas services sector shows
both data frequencies. For the data, the
higher than that of daily data observations

Table 1. Descriptive statistics of

Sectors	No. of firms	Variables	Daily (A)			Weekly (B)		
			ADF	Mean	SD	ADF	Mean	SD
A&E	44		-36.410	0.001*	0.003	-10.802	0.002	0.003
			-12.880	0.001	0.001*	-9.370	0	0.001
C&M	50		-36.620	0.001**	0.003	-10.917	0.003	0.003
			-9.37	0.002	0.001*	-7.372	0	0.001
C&R	33		-36.990	0.001**	0.003	-10.702	0.002	0.003
			-13.060	0.002	0.001**	-10.536	0.001	0.001
C&FMCG	43		-36.030	0.001**	0.002	-10.708	0.002	0.002
			-12.500	0.001	0.001*	-9.039	0	0.001
Energy	26		-38.420	0.001**	0.003	-10.904	0.006	0.003
			-15.380	0.001	0.001**	-10.634	0.001	0.001
Financial	59		-38.270	0.001**	0.003	-10.803	0.007	0.003
			-17.260	0.001	0.001**	-10.533	0.001	0.001
Healthcare	28		-36.530	0.001**	0.002	-10.809	0.007	0.002
			-11.070	0.001	0.001**	-10.035	0.003	0.001
Services	49		-37.550	0.001**	0.003	-10.802	0.005	0.003
			-14.300	0.002	0.001**	-10.540	0.003	0.008

Note: ADF and SD denote Augmented Daily Data Set (1997-2019) and Standard Deviation, respectively. *, ** denote statistical significance at 1% and 5% respectively. Source: Authors' creation.

5.2 Herding Results

Table 2 shows the regression (5), (6) and (7) using OLS and QR estimates. The table presents the panel (A) for Eq 2&5; panel (B) for Eq (3)&7 (oil focus) and panel (C) (Chinese crisis) for Eqn 3&6(D). The purpose of brevity reports coefficient estimates. Equation (2) estimates reveal that herding is absent in the sectors and is insignificant in maximum cases. This implies the presence of herd behavior (Bekiros, 2014; Chiang & Zheng, 2010; Economou, 2017). Such deviation from a group behavior stems as market investors apply their judgement. While making ahead, the highest value of financial (-0.278) and weekly observations (-0.375) in the sector of finance. The results of anti-herding are obtained in the QR daily data, the reverse herding is (τ = 10% and 25%) than median (τ = 50%) and high returns (τ = 90%) like auto and engineering, chemicals, healthcare. The of observations discover sectors in the (lower, middle and upper). These, estimations, earned healthcare with insignificant. The herding for the whole sample of observations throughout

decision, which is also manifested by the wider (c_2, a_2) as a result, the first subphase of the crisis. Panel (D) represents the downward and upward market scenarios using OLS and QR.

Table 2. Results of Herding (7E) quations (2), (3), (4

S	Model	Eq 2 & 5	Eq 4 & 7	Eq 4 & 7 (Chin Eeqs e3 c&r i6s i(sa)s ymmetric phases)					
		(A)	(oil crisis)	(C)	(B)	(D)			
		D	W	D	W	D	W	D	W
		β	β	β	β	β	β	β	β
A&E	OLS	0.35 ***	2.24	5.44	0.62 **	-1.46	1.92	0.46 **	0.92
	τ = 10%	* 0.73	6.54	1	0.72	0.16 *	-0.98	1.94 *	-21.39
	τ = 25%	* 0.33	6.03	1	0.27	0.02	-0.61	-1.64 ***	-30.00
	τ = 50%	0.20 ***	41	39.14	0.89 **	-2.83	1.92	1.67 **	0.61
	τ = 75%	0.91 ***	42	50.66	0.25 **	-3.14	1.72	3.01	3.74 ***
	τ = 90%	2.07 ***	51	86.93	1.02 ***	-31	4.23	1.50	0.71 **
C&M	OLS	0.921	5.54	0.64	0.41	-0.20 **	-0.15	6.63	1
	τ = 10%	** 1.51	3.10	*** 0.90	8.74	0.28 ***	-0.52	6.20 ***	1.81
	τ = 25%	*** 1.11	8.71	0.76	0.24	-0.45	0.01	-0.70	1.51
	τ = 50%	*** 0.61	5.45	0.12	0.34	-0.36	-0.45	*** 1.13	2.10 1.62 1.46
	τ = 75%	0.15	1.56	0.36	0.22	* 0.02	1.62	1	-.01.40 4 ** 2.22 81
	τ = 90%	0.59	1.46	3.98	1.45	0.80 ***	3	-.09.84 9	2.38 577 0.64
C&R	OLS	2.472	5.98	0.98	-0.68 *	-12	.22	63 ***	3.25 0.48 2.57 3.78
	τ = 10%	* 1.93	5.04	0.37	-0.59 *	-00	.67	42	3.34 * 2.25 84 3.09
	τ = 25%	* 2.02	3.88	2.05	-1.04	-1.28	-0.76	* 2.24	0.42 2.43 3.53
	τ = 50%	2.60 *	22	1.07	-0.95 **	-2.00	8.90	2.54	3.39 *** 22.45 23
	τ = 75%	* 4.62	8.55	2.08	0.57 ***	-31	.19	17	3.72 4.68 2.12 2.87
	τ = 90%	5.45 ***	0	34	9.91	0.42 **	-2	.68	8 4.05 ** 8.51 8.65 3.78
C & FMCG	OLS	1.743	1.17	0.94	*** 1.52	-2	.22	-1.06	*** 7.25 7.41 2.66 3.31
	τ = 10%	* 2.44	0.93	0.28	0.37	-1.03	***	-1	22 27.79 0.65 05 4.83
	τ = 25%	* 1.93	4.91	0.67	0.77	-0.84	***	-1	25 94.45 3.65 7.80 4.75
	τ = 50%	2.10 *	13	.00	85	1.89 ***	-20	.49	69 *** 7.23 4.01 2.07 2.38
	τ = 75%	2.02 ***	13	.74	43	2.30 **	-30	.96	74 * 5.37 4.01 *** 3.43 3.31
	τ = 90%	1.33 ***	53	.65	65	0.80 *	-20	.38	78 5.12 2.04 *** 32.76 36
Financial Energy	OLS	0.951	7.23	-0.67	0.09	-0.12 ***	01	04	49 2.11 5.48
	τ = 10%	*** 1.82	6.50	2.27	-0.59	-0	.11	1	.96 -11.58 06 2.49 2.15
	τ = 25%	*** 1.41	7.97	1.05	-0.51	0.39	***	-01	7.65 1.21 4.07 * 1.93
	τ = 50%	*** 0.91	0.82	3.24	** -0.07	27	6	0.14	0 .15 1 .86 1.42 1.48
	τ = 75%	** 0.51	5.47	2.06	** -1.00	3	.21	1.83	-0.47 *** 21.59 13 1.49
	τ = 90%	0.50 ***	-16	.30	88	-0.61	-2.63	0.96	-1.08 * 2.53 0.53 1.56
	OLS	2.782	1.09	-1.78	0.29	*** -1.50	0.56	*** 7.01	9.76 2.11 2.00
	τ = 10%	*** 1.41	6.68	-0.42	0.34	-0.64	*	0	.37 2.52 00 .87 92 1.76
	τ = 25%	*** 1.02	8.19	-0.58	0.47 ***	0	-.00	.49	2 ** 2.11 5.34 2.41 2.04
	τ = 50%	1.74 ***	02	.61	56	0.14 ***	-10	.54	04 *** 2.15 3.00 1.95 2.41

Healthcare	τ = 75%	*	2.424***	3.33	-0.26	-0.31	-1.204***	-1.17	-3.112	2.27	** 1.84
	τ = 90%		6.84***	-32.49	19	-0.20	-1.48	0.28	8***	5.56	3.62	*** 4.02	3.74
	OLS		0.98	0.71	** 2.61	0.38	-0.92		0***	0.18	1***	7.86	-13.41	8	0.96
	τ = 10%	***	1.4	-51.69	* 1.8	1	0	38	-1.32		-1***	3.12***	41	80	0.65	57	-1.76
	τ = 25%	***	1.01	1.61	-0.14		-0.82	0.72	-1.8	0***	5.11	3***	70	0.60	1.86
	τ = 50%		1.07**		12..	5	1	70	1.61	-1.14	*	-0.15	0	4	**	55.15	22***	7
	τ = 75%		0.35	0.86	6.02	1.97	*	-0.5	1	4	0	3	0.17	9	6	7	5	2	3	0	1	0
	τ = 90%		2.72	-1.98	0.49	6.07	-1.65		0***	0.04	2.83	7.86	-1.33		-2.74
	OLS		1***	0.43***	7	5	1.27	0.44**	-1	1***	4	7	9	2.12	*** 1.34	8.26	3***	4	9
	τ = 10%	***	1.92	2***	7	1	1.47	1.14	-0.89		0.65	2.24	***	2.01	-1.81	2.51
	τ = 25%	***	1.31	9.79	1	*	2	1	*	2	3	1	8	2	-1	*	1	9	2	-1	*	1	9	3***	4	0	1	*	6	6	1.58	* 3.27
	τ = 50%	***	0.48	6	1	1	1.03	0.51*	-2	1***	0	8	2	1.45	*** 1.14	7.92	*** 4.17
	τ = 75%		0.94***		15..	9	8	7	-0.58**	-2	1***	3	2	4	4	2***	6	7	1.80	*** 4.75	7***	3	1
	τ = 90%		-0.3	5*	2	3	3	8	0	3.95	-1***	1	4	0.25	-3.49	0.17***	23..	7	4	8	4

Note: S, A&E, C&M, C&R, C&FMCG, & DE magnidn eWersitmagn,d Chnoermi Sceaclts or& S, MeAntsutuosne, r Cbounsatrluecstiaon & Real Estate, FMCG, Daily and We"eaknlye, nrotees pseta ctiveatlhy t1%l 5%gan dli 5S0%ra cesp eAcutiv ely. creation.

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Moving ahead, panels (B) afnodr (tCh)e roeiplreasnedntthteh Chinese crises, respectivehleyr.d Ihnumpcahmeils (fBo)u,ndusfic daily observat(,io=ns-7o.f23t)h(ea,nechne-fr1ig.ny7a8n)cisaelctors. Fo weekly data, QnRoteechonbiquste tsneetdtheset eccotnshterrudcitnigoni and real estaetneegy(τ(=τ=25500%%) aanmdld7e5n%) sectors.

Further, the Chinese crashe chfer2d0i1n5g abopipaesarisn to the Indian st(C)k.matkeits (obsetereovre(dartdhateacbnesstrat sector has algl csoiegfnfiifciiceannatsnchuesQRdnignWbhnetrheaGSL,Sauto and engineering, consumer ducreasbl seecatnodrsFMaCrGe, fi affected in most cases. Howdvehealdthecraireealasreaad few sectors with minimal oemntcesitmepdacutsionfg twheekClhy data, herdingalisdbeusneoteeds fexcept healthca

The overall results revealbeihasvubsstandtuiaihgsec normal and asymmetric periedrs, itmhetherisredsia(bostth oil crisis and the Chineseherdiisnigs)bisausb.jeAclts ot,het

study approves of the supremacy of efficient market hypothesis in the Indian equity market. Similar findings are also reported in the recent study of Mirage *et al.* (2017). For instance, panel (A) shows that the OLS estimate of the coefficient turns positively significant (0.5%) when we consider the 25% quantile as a benchmark to estimate the parameter instead of the mean as in the case of its insignificant OLS estimate. Similarly, panel (B) reports the results for weekly data. Considering weekly data series, most of the sectoral indices in the Indian equity market exhibit a significant anti-herding behavior (at 5% or 10%) in the lower quantiles whereas the relative frequency of choice of the efficient market hypothesis is more in the higher quantiles. Likewise, using weekly data instead of daily data, the evidence of herding is more in the median quantile ($\tau = 50\%$) in comparison to the extreme quantiles of conventional least squares regression.

As per panel (C), which shows the results for monthly data, most of the sectoral indices exhibit insignificant herding behavior. Similarly, the herding coefficient in the highest quantile ($\tau = 90\%$) is insignificant. Similarly, an unidentified quantile dependent herding ($\tau = 10\%$) appears in the daily observations of automobile and pharmaceuticals sectors. Such quantile dependent herding in two of the defensive sectors (during the extreme conditions) indicates the risk-averse behavior of the retail investors by frequent fluctuations. Finally, in the case of the unidentified lemming like favorable investory phenomenon (IC) in the oil and metals ($\tau = 10\%$ and 25%) and adverse herding ($\tau = 90\%$) in the observations of healthcare sector (at 25% quantile). The quantile of observations to the respective sectors is different in comparison of the other sets of observations in OLS.

6. Discussion and Conclusion

6.1 Discussion

The present study seeks to unearth the impact of the biggest market crash in the history of S&P BSE Sensex from October 2010 till September 2018 on the herding behavior in other Asian markets (Mandaci *et al.*, 2020; Vo and Phan, 2017; Zheng and others). Using OLS, a non-existence of herding is found in the asymmetric scenarios. Investors are believed to rely on their own information rather than the consensus. Such negative herding is found in the intraday data (Ahlgrim and Qiao (2015) dispersion of stock returns during the extreme periods is found to be lesser in the Hong Kong stock market etc. to herding, which is discovered in Chang *et al.* (2000), Chiang and Zheng (2010), Mobarek *et al.* (2014) and the gulf markets (Mobarek and Chaffai (2019) during the crisis. However, a substantial herding is found in the Indian stock market during the 2015 Chinese stock market crash. Similar evidence is found in the case of Indian stock market (Chang *et al.*, 2017) and Shrotryia and Kalia (2020) for the US and Indian stock markets, respectively.

the findings of Shrotryia and Kalra (2019), market is free from herd hunch during crisis period.

Further, the study employs the augmented QR ap Indian context as distributions study the main mar The overall results manifest skewed and tailed act patterns. Further, the presence of herding behavior periods of market stress or not could not be concluded. Simi internationally. For instance, Chiang, Li, Gupta, Tsai, Wu, and Yang (2013) find substantial reverse herd effect in the US, Hong Kong, flock instinct is observed for Chinese markets (Chen et al., 2017). Also, Philippas et al. (2019) find herding behavior for all quantiles in the Polish stock

Since the data observations in the upon a particular trading day, the investors scrutinize distribution tails rather than the center. Therefore, the QR model gives a negative herding coefficient engineering (daily data) and Indian (weekly data) bearish phases, respectively. Therefore, the explanatory power by exploring the correlations' quantile so that their impact is not the overall distribution.

6.2 Conclusion

This empirical study adds to the existing Firstly, it determines the presence of herding 8 sectors that cover whole of the market. The contribution of this research paper is twofold and unconventional regression (QR) to investment decision making. The results claims of coordinated trading in the market normal and skewed periods. However, the Chinese crash of 2015 may be the reason be a matter of concern for the policymakers nature of the S&P BSE 500 and the Therefore, the regulatory bodies have to distance between various companies corporate houses is that the investors that investors can make informed decisions resort to active trading and wealth maximization.

An extension of this research could be homogenous sets based on sectors, market current evidences there may be the presence collinearity between variables. Therefore, future to eradicate the such herding (Yao et al., 2014).

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