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"Trust but verify": herding behavior in OECD stock markets

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Abstract:

This paper unveils new evidence of herding behaviors in global equity markets, exploring the role of trustworthiness and confidence on dampening and stimulating herding or reverse herding. Analyzing data from 35 OECD countries spanning November 3, 2003, to July 29, 2018, we investigate the role of trustworthiness and confidence as moderators. Our findings highlight trust's dual impact—diminishing herding in some nations' "bright side" while amplifying it in others' "dark side". Thus, low confidence generates deeply thoughtful decisions and high trust results in easy stereotype behavior. This nuanced understanding contributes valuable insights into the dynamics of global financial markets.

Keywords: trustworthiness and confidence, herding, reverse herding.

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1. Introduction:

Market sentiment has been the subject of extensive research in financial studies, with a particular focus on understanding the behavioral nuances that shape investor decision-making (Mallek et al., 2022; Júnior et al., 2020; Kabir and Shakur, 2018; Bekiros et al., 2017). Among the myriad of behavioral biases, herding behavior has emerged as a significant area of investigation. This phenomenon, characterized by investors following the actions of their peers, has been found to play a crucial role in market dynamics, especially during times of uncertainty and financial distress (Hasan et al., 2023; Mallek et al., 2021). While the literature on herding has made substantial progress in elucidating its various facets, several gaps persist, warranting a more nuanced exploration.

Investors' propensity to herd challenges the traditional notion that market prices are solely determined by rational assessments of fundamental information. The irrationality observed during periods of turmoil suggests that market frictions and irregularities cannot be exclusively explained by fundamental factors (Indārs et al., 2019). This sets the stage for investigating the intricate factors that contribute to the emergence and persistence of herding behavior, and importantly, how it influences asset valuation. In recent investigations, scholars have delved into understanding the intricate factors that either amplify or mitigate intentional herding behavior (Chang and Lin, 2015; Blasco et al., 2017). Chang and Li (2015) specifically identify internal behavioral pitfalls, including overconfidence, excessive optimism, and the disposition effect, as well as external factors tied to national culture, such as power distance, individualism, and masculinity, reshaping investors' herding tendencies. Expanding beyond cultural aspects, Blasco et al. (2017) reveal that environmental and organizational factors, encompassing uncertainty avoidance, business style, the maturity of financial markets, and educational practices, wield influence over herding behavior. Moreover, variables associated with governance structures and technological innovation are identified as additional catalysts for herding activities.

In recent years, the role of trust as a component of social capital has gained prominence in financial studies. Trust has been associated with reduced information asymmetry, increased public confidence in financial markets, and enhanced efficiency. According to Kenneth Arrow, the Nobel Prize winner in economic studies, trust has real and practical value. It enhances the efficiency of economic systems by serving as a key lubricant in social relationships (Arrow, 1974). Recently, numerous studies have empirically confirmed Arrow's theoretical statement. Specifically, the finance literature shows that trust influences financial market development (Cline and Williamson, 2016), willingness to participate in stock markets (Guiso et al., 2008; Mallek et al., 2021), banking system stability (Jackowicz et al. 2024; Albaity et al., 2021), the scale of public debt issuance (Mazumder and Rao, 2023), corporate risk-taking (Shen et al., 2022), the distribution of cash holdings (Dudley and Zhang, 2016), investors' trading frequencies (Beracha et al., 2014), and the phenomenon of financial exclusion (Koomson et al., 2023).

However, the impact of trust on herding behavior remains an underexplored aspect of financial research. This paper seeks to address this gap by examining how trust may act as a potential corrective force, mitigating intentional herding behavior among investors and influencing the spillover effects of herding and reverse herding in financial markets.

The Global Financial Crisis (GFC) serves as a critical backdrop for this study. Financial crises, such as the GFC, have been identified as triggers for herding behavior, spreading from the country of origin to neighboring nations. The paper aims to investigate how the amplitude of herding or reverse herding behavior changes during and after crises, recognizing that these phenomena may be unavoidable due to heightened uncertainty.

As financial markets continue to evolve and adapt to changing global dynamics, understanding the intricacies of herding behavior becomes increasingly crucial. The motivations behind this research lie in the conviction that a deeper understanding of herding, especially its relationship with trust, can offer valuable insights into investor behavior, financial market

stability, and the broader economic landscape. Through a comprehensive exploration of these dynamics, this study aims to contribute to the ongoing discourse in financial studies and provide practical implications for market participants, policymakers, and researchers alike.

2. Literature Review: Understanding the Role of Trust in Herding Behavior

Herding behavior, a powerful group bias in financial markets, has been extensively studied for its influence on price discovery and asset valuation. It arises as investors deviate from rational decision-making, following their peers rather than relying on their information (Nofsinger and Sias, 1999; Chiang and Zheng, 2010). This behavior, often described through trade correlation and observed clustering among market participants (Baur, 2006; Chiang and Zheng, 2010), reduces the efficacy of diversification channels in mitigating risk exposure. Diverse motives underlie herding, prompting investors to trade in the same direction intentionally or spuriously. Intentional herding involves following market consensus to benefit from favorable externalities (Bikchandani and Sharma, 2001), while spurious herding results from information cascade phenomena and psychological biases (Barberis et al. 1998; Devenow and Welch, 1996). Recent studies have investigated various factors influencing intentional herding, such as internal behavioral pitfalls, cultural features, and environmental and organizational elements (Chang and Lin, 2015; Blasco et al., 2017).

Herding extends beyond mere clustering around market consensus, impacting the valuation of all assets and triggering synchronized returns (Christie and Huang, 1995; Chang et al., 2000). Return-based measures of herding have revealed scenarios supporting or rejecting its presence, with implications for market efficiency and rational pricing models. Financial crises have been identified as significant triggers for herding, amplifying its occurrence during periods of heightened uncertainty (Chiang and Zheng, 2010; Bekiros et al., 2017).

Despite the extensive research on herding, the literature remains unclear on factors exacerbating or mitigating its spillover effects. This study addresses this gap by investigating the potential restraint of intentional herding or its reverse component. Perception, organizational aspects, and environmental conditions are identified as potential moderators, with trust emerging as a crucial facet of social capital shaping financial market behavior.

Trust, reflecting confidence in institutions, plays a pivotal role in reducing information asymmetry, increasing public confidence, and enhancing financial system efficiency (Mallek et al., 2021; Hilary & Huang, 2015; Ng et al., 2016). However, the impact of trust on herding behavior remains understudied, with few works providing evidence in trust's role in mitigating herding. Investigating trust as a corrective force, this study contributes to the literature in several ways.

Expanding the sample size to include 35 OECD countries from 2003 to 2018, this study explores both herding and reverse herding behaviors in an international context. Focusing on the periods pre- and post- the Global Financial Crisis (GFC), the study aims to understand how this significant event influenced herding behavior. Additionally, the study tests trust as a moderator variable in each country, considering the heterogeneity of cultural, environmental, regulatory, and institutional factors. Incorporating findings from prior studies on trust, the paper further investigates how trust influences herding behavior and its spillover effects. Previous research suggests that institutional development and investor trust decrease herding behavior (Blasco et al., 2017). Trust in institutions is linked to confidence and support, implying institutions' responsibility, competence, and transparency (Devos et al., 2002). The absence of trust in institutions, observed during global financial crises, can significantly impact the economy.

Moreover, trust in financial institutions influences investor behavior, with lower trust levels associated with a reluctance to purchase stock (Guiso et al., 2008). Trust in institutions can complement formal institutions, particularly in societies with weak formal structures (Calderón et al., 2001;

Law and Ibrahim, 2013). Countries with high levels of trust experience lower stock market volatility (Engelhardt et al., 2021) and reduced risk of stock price crashes for listed firms in China (Xiaorong et al., 2017; Cao et al., 2016). Trust can act as a deterrent to information hoarding and stock price crashes.

However, trust is not universally beneficial; it can lead to negative outcomes such as unearned institutional trust and potential damage in a business context (Shockley & Shepherd, 2016; Zahra et al., 2006). This nuanced understanding of trust sets the stage for our study, contributing to the existing literature by examining the impact of trust and uncertainty, and their interaction effects, on herding behavior in OECD markets. We aim to investigate whether trust acts as a mitigating factor in influencing herding behavior within a cross-country context.

3. Methodology

In detecting the presence of herding behavior, we rely on return-based measure for herding established by Christie and Huang (1995) and Chang et al. (2000). This methodology is based on the cross-sectional behavior of return around the overall stock market return. The model has been applied by a wide array of studies such as Zhou and Lai (2009), Chiang and Zheng (2010), Bekiros et al. (2017), Stavroyiannis et al. (2019), and more recently, Hasan et al (2023). Our study uses the second methodology to test the presence of herding or reverse herding. Accordingly, Christie and Huang (1995, hence after CH) calculated the dispersion of asset return using cross-sectional standard deviation (CSSD) expressed as:

$$CSSD_t = \sqrt{\frac{\sum_{i=1}^{N}\left(R_{i,t} - R_{m,t}\right)^2}{(N-1)}} \quad (1)$$

Where Rit is the return of the company i at date t, Rm,t is the stock market index return, and N is the number of companies in the market. Yet, the CH model exhibits some weaknesses mainly its sensitivity to return outliers. Thus, being aware of these drawbacks, Chang et al. (2000, hence

after CKK) proposed an alternative measure: the cross-sectional absolute deviation (CSAD) expressed as:

$$CSAD_t = \frac{1}{N}\sum_{i=1}^{N}\left|R_{i,t} - R_{m,t}\right| \quad (2)$$

The CKK proposition is inspired from the Capital Asset Pricing Model (CAPM), which suggests that the linear relationship between individual stock returns and market returns is no longer maintained in the presence of herding. Therefore, if herding manifests, then, investors will herd and trade in the same way making stocks return to cluster around the market consensus. To identify herding behavior, CKK proposed the following quadratic equation:

$$CSAD_t = \gamma_0 + \gamma_1\left|R_{m,t}\right| + \gamma_2 {R_{m,t}}^2 + \varepsilon_t \quad (3)$$

Accordingly, the coefficient γ2 captures the presence of herding. Hence, negative and significant coefficient implies that when stock market returns increase, the deviation between individual stock returns and market returns shrinks. Investors demonstrate a tendency to trade toward market unanimity. However, a positive and significant γ2 reveals an opposite phenomenon commonly known as negative or reverse herding. Consequently, market participants mistrust market unanimity and discard information cascades represented in market directions. Thus, they trade excessively based on their own asset valuations in contrary to large market movements (Gleason et al., 2004; Hwang and Salmon, 2004; Klein, 2013). Especially, this behavior is mostly amplified during market turmoil periods.

Other studies shed light on the asymmetric aspect of herding and showed that the crowd is more rampant during extreme market periods (Chang et al., 2000; Demirer et al., 2010; Philippas et al., 2013; Bekiros et al., 2017). Thus, the return dispersion varies between upturns and downturns market movements with an intensified herd during market losses. To capture the asymmetric effect of herding, we use a dummy variable methodology in the following specification:

$$CSAD_t = \gamma_0 + \gamma_{1,\tau}(1-D)\left|R_{m,t}\right| + \gamma_{2,\tau}D\left|R_{m,t}\right| + \gamma_{3,\tau}(1-D){R_{m,t}}^2 + \gamma_{4,\tau}D{R_{m,t}}^2 + \varepsilon_t \quad (4)$$

Where D is a dummy that equals to 1 when market returns are negative and 0 otherwise.

The GFC role in disrupting the market is of crucial importance. A wide array of studies looked at the effect of the GFC on herding behavior such as Authors (2010) and Bekiros et al. (2017) among others. To this end, we reformulate Eq. (3) by including a dummy variable to detect herding patterns during three sub- periods: before, during, and after the crisis.

$$CSAD_t = \gamma_0 + \gamma_1\left|R_{m,t}\right| + \gamma_2{R_{m,t}}^2 + \gamma_2 D^{Crisis}{R_{m,t}}^2 + \varepsilon_t \quad (5)$$

Where D^{Crisis} the three stages and equates -1 before the crisis, 0 during the crisis, and 1 after the crisis. As breakpoints for the GCF, we follow Bekiros et al. (2017) and Philippas et al. (2013) among others by defining July 2007 as the start of the flame and mid-2009 as the borderline.

Once the presence of herding or reverse herding has been detected in a stock market, it is motivating to test whether some other variables may play a role in either dampening or compounding its intensity. The notion of "better finance, more growth" become an increasable researchable theme in light of the erosion of ethics and trust in the aftermath of the GFC. Trust is found to be one of the most relevant components of social capital that influences the financial system and economic development (Mallek et al., 2021; Meng and Yin, 2019). The impact of trust is closely associated with the institutional quality that represent one of the pillars of a propitious investment (Ng et al. 2016). Many of studies discuss trust either implicitly while explaining herding behavior (Mallek et al., 2021; Bekiros et al., 2017) or within an aggregate sample without considering the unique characteristics of each country (Blasco et al., 2017). Therefore, the moderator effect of trust is added to Eq.3 as follow:

$$CSAD_t = \gamma_0 + \gamma_1\left|R_{m,t}\right| + \gamma_2{R_{m,t}}^2 + \gamma_3 Trust + \gamma_4{R_{m,t}}^2 * Trust + \varepsilon_t \quad (6)$$

Where Trust is the trustworthiness and confidence index as reported in the Global Competitiveness Report 2017-2018. The index is a scale ranging from the worst with a value of 1 to the best taking the value of 7. Trust represents three components namely the soundness of banks, the regulation of securities exchanges, and the legal rights index. The survey questions that denote the three components of the trust are respectively as follows:

- "In your country, how do you assess the soundness of banks?" the answers range from 1 to 7 meaning from extremely low where banks may necessitate recapitalization to extremely high for healthy banks.
- "In your country, to what extent do regulators ensure the stability of the financial market?" the answers to this question range from 1 (not at all) to 7 (to a great extent).
- "Degree of legal protection of borrowers' and lenders' rights" with a scale of 0–10 (best).

4. Empirical results

4.1 Data collection

In this study, we used the dataset of individual stocks and stock market indexes in 35 OECD countries over the period from November 3, 2003 to July 29, 2018. Our data span includes 15 years with 3825 daily return observations. In our study, the use of daily return allows us to trace the time variation in herding. The Data has been downloaded from DataStream Thomson Reuters. For each market, we calculated the herding using the cross-sectional absolute deviation. To explore the impact of trust on investors' herding trend, we adopt the trustworthiness and confidence index downloaded from The Global Competitiveness Report 2017-2018 which includes 12 categories (pillars). The trust index is the second components of the eighth pillar, which epitomize the financial market development. To control the impact of the global financial crisis 2007-2009 (thereafter GFC), we included a dummy variable to distinguish the different three sub-

periods: before, during, and after the crisis. Hence, our study scrutinizes the herding patterns during serene periods versus increased volatility phases. To test the existence of herding behavior outside panic, we integrate a dummy variable depending on the onset and endset point of the GFC pursuant to Bekiros et al. (2017) and Philippas et al. (2013) among others. Accordingly, we defined July 2007 as the start of the flame and mid-2009 as the borderline. The dataset includes 955 observations before the GFC, 522 observations during the crisis, and 2348 thereafter.

4.2 Descriptive statistics

Tables 1 and 2 present the descriptive statistics for herding measure CSAD and stock market return indices for the full sample period. The values of the skewness and kurtosis of both measures confirm the non-normality of the distribution. For the herding measure, Canada and Germany exhibit the highest value and Australia, New Zealand, and Poland show the lowest values. However, the non-normality of the stock market indices is more prominent in Slovenia and Iceland. Australia, Finland, Hungary, New Zealand, Poland, and the UK reveal low values. We use the Augmented Dickey-Fuller test to check the stationarity of the series. The result indicates a significant value for both variables in all markets signifying the absence of unit root problem and that all series are stationary.

Table 1: Descriptive Statistics: Herding measure (CSAD)

Country	Obs.	Max	Min	Mean	SD	Skewness	Kurtosis
Austria	3825	0.0944	0.0000	0.0141	0.0088	2.5064	15.0616
Australia	3825	0.0816	0.0000	0.0199	0.0081	0.8416	8.5084
Belgium	3825	0.087	0.0000	0.0133	0.0072	2.3926	15.1965
Canada	3825	0.5575	0.0000	0.0267	0.0212	13.5822	286.9766
Switzerland	3825	0.0898	0.0000	0.0114	0.006	2.7127	21.0433
Chile	3825	0.081	0.0000	0.0081	0.005	2.9927	25.7882
Czech Republic	3825	0.0938	0.0000	0.0113	0.0086	3.3439	23.0889
Germany	3825	1.0847	0.0000	0.0212	0.0309	20.1824	527.9927
Denmark	3825	0.0775	0.0000	0.0155	0.0075	1.5545	10.4143
Estonia	3825	0.0743	0.0000	0.0117	0.0078	1.7904	8.9157
Spain	3825	0.0869	0.0000	0.0122	0.0075	2.4182	15.7733
Finland	3825	0.0735	0.0000	0.0136	0.0068	2.0086	12.5404
France	3825	0.093	0.0000	0.0144	0.0074	3.0123	22.5029
Greece	3825	0.1311	0.0000	0.0234	0.0114	1.8156	13.9504
Hungry	3825	0.1386	0.0000	0.0176	0.0103	2.3193	17.5386
Ireland	3825	0.089	0.0012	0.0126	0.0072	2.1589	16.0414
Israel	3825	0.087	0.0000	0.0156	0.0071	1.9019	14.7222
Iceland	3825	0.065	0.0000	0.0077	0.0065	2.2683	12.0851
Italy	3825	0.0686	0.0000	0.0135	0.0073	1.7652	9.5733
Japan	3824	0.0865	0.0000	0.0147	0.0073	2.0907	16.5557
Korea	3825	0.0757	0.0000	0.0158	0.0069	1.3515	11.5731
Luxemburg	3825	0.0974	0.0000	0.0112	0.0107	2.6295	13.0098

Latvia	3825	0.2222	0.0000	0.0166	0.0151	3.8656	33.4622
Mexico	3825	0.1015	0.0000	0.0108	0.0073	3.2949	24.6878
Netherland	3825	0.0848	0.0000	0.0135	0.0073	3.3715	23.8643
Norway	3825	0.0879	0.0000	0.0152	0.0087	2.1323	13.1529
Newzeland	3825	0.0543	0.0000	0.0106	0.0049	1.0852	7.5953
Poland	3825	0.067	0.0000	0.0178	0.0091	0.2274	3.5435
Portugal	3825	0.1898	0.0000	0.0164	0.012	5.1689	55.6413
Sweden	3825	0.0848	0.0073	0.0152	0.0049	1.5683	14.7032
Slovenia	3825	0.3376	0.0000	0.0124	0.0156	9.4463	149.3764
Slovakia	3825	0.1427	0.0000	0.0085	0.0108	3.7751	31.1898
Turkey	3825	0.0767	0.0000	0.0161	0.0065	1.4142	11.6714
United Kingdom	3825	0.093	0.0000	0.0143	0.0073	2.3242	18.2446
United States	3825	1.6631	0.0000	0.0519	0.1011	9.5218	117.3993

Table 2: Descriptive statistics: stock market return (R_m)

Country	Obs.	Max	Min	Mean	SD	Skewness	Kurtosis
Austria	3825	0.1277	-0.0974	0.0003	0.0148	-0.138	10.1040
Australia	3825	0.0573	-0.0833	0.0002	0.0101	-0.3757	8.5300
Belgium	3825	0.0966	-0.0798	0.0002	0.0117	-0.075	10.3950
Canada	3825	0.0982	-0.0932	0.0002	0.0104	-0.5146	15.2060
Switzerland	3825	0.1139	-0.0867	0.0002	0.0106	-0.077	12.5760
Chile	3825	0.0948	-0.058	0.0004	0.0078	0.0769	15.7422
Czech Republic	3825	0.1316	-0.1494	0.0002	0.0133	-0.218	19.5067
Germany	3825	0.114	-0.0716	0.0004	0.013	0.1187	10.2008
Denmark	3825	0.0996	-0.1106	0.0004	0.0123	-0.1364	9.8350
Estonia	3825	0.1286	-0.068	0.0005	0.0102	0.3773	16.5960
Spain	3825	0.1443	-0.1235	0.0002	0.0141	0.077	11.8590
Finland	3825	0.0925	-0.0882	0.0002	0.0131	-0.0704	8.2495
France	3825	0.1118	-0.0904	0.0002	0.0133	0.1371	10.6866
Greece	3825	0.1437	-0.1623	-0.0001	0.0188	-0.1494	9.7030
Hungry	3825	0.1409	-0.1188	0.0005	0.0149	0.0985	10.7531
Ireland	3825	0.1022	-0.1303	0.0002	0.0139	-0.4758	11.7393
Israel	3825	0.1028	-0.072	0.0003	0.0107	-0.2554	9.9459
Iceland	3825	0.0527	-0.6658	0.0001	0.0154	-23.7442	968.1235
Italy	3825	0.1149	-0.1248	0.0001	0.015	-0.071	9.2370
Japan	3824	0.1415	-0.1141	0.0003	0.0144	-0.3026	11.6897
Korea	3825	0.1195	-0.1057	0.0004	0.0122	-0.3931	11.7604
Luxemburg	3825	0.394	-0.2596	0.0002	0.0177	2.0038	81.2080

Latvia	3825	0.123	-0.0779	0.0004	0.0121	0.6961	14.9803
Mexico	3825	0.1101	-0.0701	0.0005	0.0117	0.2281	10.7789
Netherland	3825	0.1055	-0.0914	0.0002	0.0125	-0.0059	12.5175
Norway	3825	0.0962	-0.0925	0.0006	0.0138	-0.4443	9.8660
Newzeland	3825	0.0599	-0.0482	0.0002	0.0065	-0.3844	8.6459
Poland	3825	0.0627	-0.0795	0.0003	0.0117	-0.3915	7.1055
Portugal	3825	0.1073	-0.0986	0.0000	0.0119	-0.1032	10.4369
Sweden	3825	0.1037	-0.0842	0.0003	0.0132	0.0896	8.7846
Slovenia	3825	0.4989	-0.3321	0.0001	0.0138	8.618	541.3669
Slovakia	3825	0.1261	-0.1377	0.0002	0.011	-0.6994	22.7153
Turkey	3825	0.1289	-0.1047	0.0006	0.0164	-0.1074	6.8983
United Kingdom	3825	0.0775	-0.0719	0.0004	0.0106	-0.3562	8.2926
United States	3825	0.1158	-0.0903	0.0003	0.0113	-0.1273	16.1470

Table 3 reports the summary statistics of the trust variable. Australia and New Zealand have the highest means and the lowest standard deviations showing strong institutional quality and market development. However, the United Kingdom reached the maximum of 6.92 but it is associated with a higher standard deviation showing relative instability in their market development. Yet, Greece followed by Italy have revealed the lowest means of 3.67 and 3.84, respectively.

Table 3: Descriptive statistics: Trustworthiness and confidence index

Country	Max	Min	Mean	SD
Austria	5.41	4.29	4.9926	0.3551
Australia	6.54	6.14	6.3175	0.1039
Belgium	5.53	4.29	4.8759	0.3808
Canada	6.07	5.5	5.8241	0.1879
Switzerland	5.79	5.17	5.6050	0.2212
Chile	5.41	4.52	4.9985	0.2654
Czech Republic	5.3	4.94	5.0833	0.1025
Germany	6.11	4.84	5.2252	0.4624
Denmark	6.22	5.25	5.6693	0.3145
Estonia	5.23	4.81	5.1067	0.1351
Spain	5.39	4.14	4.5952	0.4475
Finland	6.18	5.57	5.8375	0.1986
France	5.66	4.59	5.1445	0.3541
Greece	4.58	2.73	3.6778	0.6602
Hungry	5.1	4.21	4.8416	0.2249
Ireland	6.3	3.71	4.7396	0.8791
Israel	6.07	4.95	5.6324	0.3369
Iceland	5.77	3.83	4.6377	0.6609
Italy	4.25	3.03	3.8410	0.4053
Japan	5.47	4.69	5.0126	0.2026
Korea	5.34	3.9	4.5944	0.4167
Luxemburg	6.75	4.87	5.5206	0.5420
Latvia	5.75	4.66	5.1618	0.3386
Mexico	5.4	3.82	4.7101	0.4541
Netherland	5.92	4.34	5.0693	0.5383
Norway	5.82	5.27	5.5826	0.1798
Newzeland	6.52	6.01	6.3441	0.1623

Poland	5.62	4.14	5.0017	0.5312
Portugal	5.13	2.84	4.0262	0.7216
Sweden	5.87	5.17	5.4986	0.2465
Slovenia	5.03	2.96	3.9818	0.7690
Slovakia	6.28	4.9	5.4091	0.3671
Turkey	4.86	3.55	4.2885	0.3871
United Kingdom	6.92	4.91	5.5483	0.6394
United States	5.94	4.85	5.5175	0.3376

The existence or the absence of herding behavior is neither static nor symmetric over time and across the countries. The herding phenomenon reflects investors' tendency to alter their behavior based on social and external forces. Thus, herding is more likely to vary across countries and during critical and smooth periods. Therefore, we first test the existence of herding in 35 OECD countries during fifteen years using high frequency data (daily). Then, we investigate the time-varying aspect of herding during up and down market and before, during, and after the crisis. Our findings are reported in Table 4, 5 and 6. The role of trust as a catalyst or as an inhibitor of herding is presented in Table 7.

The estimation results of the full sample based on Eq. (3) are found in Table 4.

4.3 Evidence on herding/reverse herding

As shown in Table 4, 15 countries (Australia, Austria, Chile, Estonia, Finland, Greece, Iceland, Italy, Korea, Latvia, Luxemburg, New Zealand, Portugal, Slovenia, Spain) of the 35 OECD countries show the negative and significant coefficient of indicating that there is a herding behavior in these countries while only 6 countries (France, Germany, Mexico, Netherland, Norway, Czech) show significant reverse herding behavior. The result shows partial similarity to Chiang and Zheng (2010), Chang and Lin (2015), Blasco et al. (2017) and Danrimi et al. (2018).

Table 4: OLS estimation results of Herding behavior

Country	γ_0	γ_1	γ_2	Adj.R^2
Austria	0.006	0.77	-0.646	0.8317
	(0)***	(0.01)***	(0.17)***	
Australia	0.014	0.878	-1.137	0.5716
	(0)***	(0.023)***	(0.605)*	
Belgium	0.008	0.718	0.02	0.7397
	(0)***	(0.013)***	-0.263	
Canada	0.021	0.859	0.711	0.11
	(0)***	(0.075)***	-1.458	
Switzerland	0.007	0.672	0.576	0.8268
	(0)***	(0.009)***	(0.185)***	
Chile	0.004	0.824	-0.745	0.8604
	(0)***	(0.009)***	(0.213)***	
Czech Republic	0.005	0.696	-0.093	0.6636
	(0)***	(0.014)***	-0.185	
Germany	0.016	0.502	4.317	0.0467
	(0.001)***	(0.093)***	(1.725)**	
Denmark	0.01	0.693	-0.369	0.6488
	(0)***	(0.015)***	-0.297	
Estonia	0.007	0.87	-3.35	0.5748
	(0)***	(0.018)***	(0.342)***	
Spain	0.005	0.787	-1.997	0.8873
	(0)***	(0.007)***	(0.108)***	

Finland	0.008	0.658	-0.483	0.7934
	(0)***	(0.011)***	(0.221)**	
France	0.008	0.655	1.194	0.8784
	(0)***	(0.008)***	(0.143)***	
Greece	0.015	0.664	-0.493	0.5939
	(0)***	(0.016)***	(0.212)**	
Hungry	0.01	0.696	-0.117	0.5203
	(0)***	(0.019)***	-0.298	
Ireland	0.012	0.075	0.262	0.0162
	(0)***	(0.021)***	-0.348	
Israel	0.011	0.717	-0.415	0.6063
	(0)***	(0.017)***	-0.396	
Iceland	0.003	0.734	-1.143	0.6812
	(0)***	(0.008)***	(0.015)***	
Italy	0.006	0.77	-3.353	0.8336
	(0)***	(0.008)***	(0.143)***	
Japan	0.009	0.611	-0.187	0.7634
	(0)***	(0.01)***	-0.151	
Korea	0.011	0.656	-0.651	0.7008
	(0)***	(0.012)***	(0.222)***	
Luxemburg	0.001	0.978	-2.504	0.9047
	(0)***	(0.005)***	(0.026)***	
Latvia	0.009	0.972	-1.661	0.3112
	(0)***	(0.04)***	(0.68)**	

Mexico	0.005	0.74	1.072	0.8571
	(0)***	(0.01)***	(0.191)***	
Netherland	0.008	0.58	1.232	0.6647
	(0)***	(0.014)***	(0.245)***	
Norway	0.008	0.728	0.686	0.7944
	(0)***	(0.013)***	(0.229)***	
Newzeland	0.007	0.814	-1.506	0.5329
	(0)***	(0.021)***	(0.837)*	
Poland	0.012	0.68	-0.143	0.3866
	(0)***	(0.029)***	-0.733	
Portugal	0.01	0.863	-3.184	0.2816
	(0)***	(0.034)***	(0.673)***	
Sweden	0.014	0.116	0.492	0.0724
	(0)***	(0.016)***	-0.311	
Slovenia	0.006	1.009	-1.499	0.2674
	(0)***	(0.03)***	(0.083)***	
Slovakia	0.002	1.06	-0.155	0.7906
	(0)***	(0.014)***	-0.227	
Turkey	0.01	0.486	0.042	0.7353
	(0)***	(0.009)***	-0.164	
United Kingdom	0.009	0.773	-0.434	0.6452
	(0)***	(0.019)***	-0.483	
United States	0.043	1.43	-9.292	0.0076
	(0.002)***	(0.335)***	-5.926	

Notes: the table reports results of the OLS estimation in Eq. 3 over the full sample for 35 OECD countries. Figures in parenthesis are the p-value; Adj. R2 refers to the adjusted coefficient of determination.

***, ** and * denote statistical significance at the 1%. 5% and 10% levels respectively.

4.4 Herding/ reverse herding in up/down markets

To further investigate the direction of the herding behavior we have included a dummy variable to classify markets herding behavior in the up and down markets. The estimates results are reported in Table 5. Consistent with Table 5, Chile, Estonia, Italy, Korea, Latvia, Luxemburg, Portugal, Spain have exhibited herding behavior in both the up and down sides. These results are consistent with Chen (2013) for Italy and Spain. Chiang and Zheng (2010) found that Korea exhibited herd on both the up and down sides while Chile showed adverse herding in the upside. On the other hand, Austria, Greece and New Zealand displayed herding behavior only on one side where Austria is in the upmarket while Greece and New Zealand in the downside. Three of the markets that has shown herding behavior in Table 5 are showing both herding and reverse herding behaviors. Chen (2013) found that Austria exhibited herding in the downside while Greece showed herding in the upside. Only New Zealand was consistent with Chen (2013) results. Finland and Iceland as well as Turkey show reverse herding in the upside while herding behavior on the downside. Like Chen (2013) Turkey shows consistent herding in the downside. Only Slovenia shows herding behavior in the upside and reverse herding in the downside consistent with Chen (2013) in the downside only.

For reverse herding, similar to Table 5, three of the 6 countries France, The Netherland, and Norway show reverse herding in both sides, while Germany and Mexico show reverse herding in the upside. According to Chaing and Zheng (2010) only France and Germany showed herding behavior in both up and down sides opposite to our results. Sweden, which did not significantly appear to have herding or reverse herding behavior

in Table 5, appears to show reverse herding behavior on the upside only. Mexico result is the only consistent results with Chen (2013). On the other hand, Chaing and Zheng (2010) found Mexico not to have significant results in both sides.

Table 5: OLS estimation results of Herding in upward and downward market

Country		Upward periods		Downward periods		Adj.R^2
	γ_0	γ_1	γ_3	γ_2	γ_4	
Australia	0.014	0.892	-0.257	0.844	-1.102	0.5732
	(0)***	(0.031)***	(0.993)	(0.026)***	(0.683)	
Austria	0.006	0.791	-0.875	0.745	-0.263	0.8322
	(0)***	(0.012)***	(0.197)***	(0.013)***	(0.261)	
Belgium	0.008	0.726	0.224	0.724	-0.499	0.7401
	(0)***	(0.015)***	(0.304)	(0.017)***	(0.411)	
Canada	0.021	0.859	1.783	0.858	-0.024	0.1098
	(0.001)***	(0.092)***	(2.018)	(0.088)***	(1.834)	
Chile	0.004	0.858	-0.825	0.803	-1.108	0.8627
	(0)***	(0.01)***	(0.231)***	(0.012)***	(0.395)***	
Czech Republic	0.005	0.685	0.36	0.704	-0.491	0.6643
	(0)***	(0.017)***	(0.251)	(0.016)***	(0.237)**	
Denmark	0.01	0.721	-0.25	0.666	-0.443	0.6511
	(0)***	(0.018)***	(0.391)	(0.018)***	(0.387)	
Estonia	0.006	0.876	-3.015	0.92	-5.389	0.5761
	(0)***	(0.02)***	(0.368)***	(0.027)***	(0.711)***	

Finland	0.008	0.652	0.621	0.681	-1.999	0.7987
	(0)***	(0.012)***	(0.269)**	(0.013)***	(0.299)***	
France	0.008	0.679	1.226	0.652	0.684	0.8801
	(0)***	(0.009)***	(0.159)***	(0.011)***	(0.237)***	
Germany	0.016	0.547	4.778	0.556	1.295	0.0469
	(0.001)***	(0.106)***	(1.883)**	(0.133)***	(3.232)	
Greece	0.015	0.711	-1.101	0.631	-0.088	0.5952
	(0)***	(0.02)***	(0.309)***	(0.018)***	(0.256)	
Hungary	0.01	0.709	-0.147	0.684	-0.112	0.5204
	(0)***	(0.022)***	(0.358)	(0.024)***	(0.44)	
Iceland	0.003	0.707	4.545	0.654	-1.017	0.7019
	(0)***	(0.021)***	(0.755)***	(0.009)***	(0.017)***	
Ireland	0.012	0.057	0.634	0.087	0.04	0.016
	(0)***	(0.027)**	(0.533)	(0.024)***	(0.408)	
Israel	0.01	0.75	0.366	0.708	-1.622	0.6121
	(0)***	(0.019)***	(0.468)	(0.022)***	(0.592)***	
Italy	0.006	0.797	-3.58	0.745	-3.122	0.8349
	(0)***	(0.01)***	(0.177)***	(0.01)***	(0.198)***	
Japan	0.009	0.633	-0.395	0.585	0.114	0.7643
	(0)***	(0.011)***	(0.192)**	(0.012)***	(0.207)	
Korea	0.011	0.648	-0.686	0.664	-0.661	0.7008
	(0)***	(0.014)***	(0.294)**	(0.015)***	(0.294)**	
Latvia	0.009	1.03	-1.952	0.944	-2.374	0.3125
	(0)***	(0.046)***	(0.747)***	(0.056)***	(1.309)*	

Luxemburg	0.001	0.985	-2.363	1.038	-3.594	0.9146
	(0)***	(0.006)***	(0.027)***	(0.007)***	(0.058)***	
Mexico	0.005	0.748	1.184	0.756	0.255	0.8574
	(0)***	(0.011)***	(0.207)***	(0.014)***	(0.369)	
Netherland	0.008	0.594	1.395	0.578	0.822	0.6656
	(0)***	(0.016)***	(0.292)***	(0.017)***	(0.36)**	
Newzeland	0.007	0.817	-0.917	0.813	-2.017	0.5329
	(0)***	(0.025)***	(1.079)	(0.026)***	(1.128)*	
Norway	0.008	0.743	0.969	0.706	0.671	0.7957
	(0)***	(0.015)***	(0.309)***	(0.015)***	(0.287)**	
Poland	0.012	0.702	-0.392	0.654	0.253	0.3867
	(0)***	(0.037)***	(1.134)	(0.034)***	(0.852)	
Portugal	0.01	0.9	-2.945	0.854	-3.939	0.2828
	(0)***	(0.039)***	(0.79)***	(0.043)***	(1.042)***	
Slovakia	0.002	1.033	0.429	1.084	-0.583	0.7908
	(0)***	(0.018)***	(0.344)	(0.018)***	(0.285)**	
Slovenia	0.007	0.974	-1.68	0.841	0.311	0.2955
	(0)***	(0.039)***	(0.095)***	(0.038)***	(0.173)*	
Spain	0.005	0.82	-2.812	0.726	-0.463	0.8916
	(0)***	(0.008)***	(0.125)***	(0.009)***	(0.166)***	
Sweden	0.014	0.058	0.731	0.155	0.678	0.0882
	(0)***	(0.018)***	(0.35)**	(0.021)***	(0.499)	
Switzerland	0.006	0.683	0.914	0.68	-0.204	0.8282
	(0)***	(0.01)***	(0.216)***	(0.012)***	(0.285)	

Turkey	0.01	0.489	0.469	0.496	-0.618	0.7378
	(0)***	(0.01)***	(0.195)**	(0.012)***	(0.236)***	
United Kingdom	0.009	0.762	1.016	0.77	-1.228	0.6469
	(0)***	(0.023)***	(0.671)	(0.022)***	(0.591)**	
United States	0.043	1.567	-10.045	1.307	-8.516	0.0072
	(0.002)***	(0.397)***	(7.135)	(0.429)***	(8.823)	

Notes: the table reports the results of the OLS estimation in Eq. 4 over the full sample for 35 OECD countries when the upward periods and downward period are considered. Figures in parenthesis are the p-value; Adj. R2 refers to the adjusted coefficient of determination.

***, ** and * denote statistical significance at the 1%. 5% and 10% levels respectively.

4.5 Herding / reverse herding during GFC

Since the presence of herding has been found we now move into looking at whether other variables that can either increase or decrease herding behavior in the OECD countries.

We start by looking at how herding behavior changed in these countries pre- and post-GFC. We created a dummy variable to define the two periods namely, before GFC and After GFC. The results in Table 6 suggest the following. There was an increase in herding behavior before the crisis for (Australia, Greece, Latvia, Luxemburg, New Zealand, Portugal, Slovenia, Slovakia, the United Kingdom), while Austria, Chile, Estonia, Iceland, Italy, Korea, Spain, Japan, and Turkey have experience increase in herding behavior after the GFC. This is similar to the result in Table 4 where the same countries were found to exhibit herding behavior in the full sample except Slovakia, UK, Japan and Turkey, which appear only to show significant herding behavior either before or after GFC.

On the other hand, reverse or negative herding for France, Mexico, the Netherland, and Switzerland was higher before the GFC while after the GFC only Sweden and Norway exhibited heightened reverse herding behavior. The rest of the countries did not produce significant results (Germany, Czech Republic, Israel, and Finland). Similar to Table 4 the result is consistent where five of the six countries showed reverse herding behavior either before or after GFC except Germany.

Table 6: Herding Results and Crisis

Country	γ_0	γ_1	γ_2	γ_3	Adj.R^2
Panel A: Herd					
Herding more before the crisis					
Australia	0.014	0.82	-0.589	5.061	0.5772
	(0)***	(0.024)***	(0.606)	(0.707)***	
Greece	0.015	0.715	-5.01	4.551	0.6212
	(0)***	(0.016)***	(0.34)***	(0.273)***	
Latvia	0.009	0.995	-2.832	1.461	0.3123
	(0)***	(0.041)***	(0.808)***	(0.547)***	
Luxemburg	0.002	0.864	-0.627	1.596	0.9106
	(0)***	(0.009)***	(0.12)***	(0.1)***	
Newzeland	0.007	0.805	-1.558	2.605	0.5337
	(0)***	(0.022)***	(0.836)*	(0.921)***	
Portugal	0.01	0.838	-3.935	2.475	0.2837
	(0)***	(0.034)***	(0.706)***	(0.713)***	
Slovenia	0.006	1.186	-8.107	6.24	0.2776
	(0)***	(0.038)***	(0.898)***	(0.844)***	

Slovakia	0.002	1.071	-0.996	1.186	0.7919
	(0)***	(0.014)***	(0.28)***	(0.235)***	
United Kingdom	0.009	0.772	-0.615	0.723	0.6454
	(0)***	(0.019)***	(0.492)	(0.379)*	
Herding more after the crisis					
Austria	0.006	0.792	-0.726	-1.471	0.8346
	(0)***	(0.011)***	(0.169)***	(0.178)***	
Chile	0.004	0.826	-0.52	-0.859	0.8608
	(0)***	(0.009)***	(0.221)**	(0.232)***	
Estonia	0.007	0.853	-2.489	-1.089	0.5764
	(0)***	(0.018)***	(0.407)***	(0.28)***	
Iceland	0.003	0.735	-1.146	-1.07	0.6818
	(0)***	(0.008)***	(0.015)***	(0.355)***	
Italy	0.006	0.779	-2.769	-1.31	0.8374
	(0)***	(0.008)***	(0.154)***	(0.138)***	
Korea	0.011	0.658	-0.653	-0.718	0.7013
	(0)***	(0.012)***	(0.222)***	(0.259)***	
Spain	0.005	0.778	-0.87	-1.698	0.8935
	(0)***	(0.007)***	(0.13)***	(0.114)***	
Japan	0.009	0.629	0.059	-1.916	0.7717
	(0)***	(0.01)***	(0.15)	(0.162)***	
Turkey	0.01	0.49	0.092	-1.459	0.7478
	(0)***	(0.009)***	(0.16)	(0.106)***	
Insignificant impact of the crisis					

Czech Republic	0.005	0.691	-0.061	0.468	0.6637
	(0)***	(0.014)***	(0.186)	(0.298)	
Israel	0.011	0.716	-0.433	0.318	0.6062
	(0)***	(0.017)***	(0.397)	(0.398)	
Finland	0.008	0.658	-0.484	-0.016	0.7934
	(0)***	(0.011)***	(0.221)**	(0.163)	
Panel B: Anti-Herd					
Anti-herd before the Crisis					
France	0.008	0.667	1.273	-0.884	0.8794
	(0)***	(0.008)***	(0.143)***	(0.152)***	
Mexico	0.005	0.742	1.02	-0.564	0.8573
	(0)***	(0.01)***	(0.192)***	(0.205)***	
Netherland	0.008	0.605	1.068	-1.581	0.6665
	(0)***	(0.015)***	(0.247)***	(0.337)***	
Switzerland	0.006	0.677	0.652	-0.654	0.8272
	(0)***	(0.009)***	(0.186)***	(0.214)***	
Anti-herd after the Crisis					
Sweden	0.014	0.081	0.173	4.276	0.1292
	(0)***	(0.015)***	(0.302)	(0.27)***	
Norway	0.008	0.708	0.943	1.589	0.7969
	(0)***	(0.013)***	(0.231)***	(0.228)***	
Insignificant impact of the crisis					
Germany	0.016	0.473	4.404	1.755	0.0466
	(0.001)***	(0.099)***	(1.728)**	(2.057)	

Notes: the table reports results of the OLS estimation in Eq. 5 over the full sample for countries that exhibited herding or reverse herding in table 4 and 5 when GFC considered. Crisis is equal to -1 before the crisis, 0 during the crisis and 1 after the crisis .Figures in parenthesis are the p-value; Adj. R^2 refers to the adjusted coefficient of determination.

***, ** and * denote statistical significance at the 1%. 5% and 10% levels respectively.

4.6 Does trust stimulates or dampens herding/reverse herding?

The second variable that we want to see whether it weaken or strengthen the herding behavior is trustworthiness and confidence of the financial system. Table 7 shows that trustworthiness and confidence weaken herding behavior for Australia, Chile, Iceland, Italy, Korea, Australia, Estonia, Spain, Japan, and UK while trustworthiness appear to strengthen the herding behavior for Greece, Finland, Luxemburg, Slovenia, New Zealand, Slovakia, and Turkey. In other words, as the level of trustworthiness and confidence increases, the positive (negative) link between and CSAD becomes weaker (stronger). Therefore, the positive sign of the coefficient of indicates that the effect of trustworthiness on herding is corrective where it decreases herding behavior while the negative sign suggests it makes herding behavior worse.

On the other hand, trustworthiness and confidence appear to strengthen the reverse herding behavior for 5 (Germany, Norway, France, the Netherland, Chile) of the six countries exhibiting reverse herding in Table 4 while only in Mexico the trustworthiness weaken the reverse herding behavior. This means that trustworthiness reinforces the reverse herding behavior in those countries except for Mexico where it decreases it.

Table 7: OLS estimation results with Trust and its multiple

Country	γ_0	γ_1	γ_2	γ_3	γ_4	Adj.R^2
Panel A: Herd sample						
Trust weaken herding						
Australia	0.092	0.811	-146.386	-0.012	22.894	0.6400
	(0.006)***	(0.023)***	(25.298)***	(0.001)***	(3.934)***	
Chile	0.006	0.814	-10.493	-0	1.94	0.8905
	(0.001)***	(0.009)***	(2.654)***	(0)***	(0.512)***	
Iceland	0.006	0.755	-11.001	-0.001	1.73	0.6650
	(0)***	(0.011)***	(1.121)***	(0)***	(0.196)***	
Italy	0.016	0.749	-14.634	-0.002	2.922	0.8606
	(0.001)***	(0.008)***	(0.688)***	(0)***	(0.172)***	
Korea	0.026	0.738	-35.687	-0.003	6.906	0.7450
	(0.001)***	(0.013)***	(3.665)***	(0)***	(0.727)***	
Austria	0.002	0.78	-20.182	0.001	3.666	0.8411
	(0.001)**	(0.012)***	(2.691)***	(0)***	(0.5)***	
Estonia	-0.001	0.859	-26.567	0.002	4.535	0.5597
	(0.004)	(0.02)***	(10.59)**	(0.001)**	(2.08)**	
Spain	0.014	0.767	-13.148	-0.002	2.371	0.9162
	(0)***	(0.006)***	(0.567)***	(0)***	(0.116)***	
Japan	0.008	0.598	-8.51	0	1.695	0.7685
	(0.002)***	(0.011)***	(4.173)**	(0)	(0.838)**	
United Kingdom	0.024	0.733	-12.247	-0.003	2.168	0.7040
	(0.001)***	(0.018)***	(2.075)***	(0)***	(0.346)***	

Trust strengthen herding						
Greece	0.028	0.696	6.702	-0.003	-2.251	0.6561
	(0.001)***	(0.017)***	(0.656)***	(0)***	(0.195)***	
Finland	0.001	0.64	52.844	0.001	-9.188	0.8184
	(0.002)	(0.012)***	(6.139)***	(0)***	(1.083)***	
Luxemburg	0	0.883	17.448	0	-3.165	0.9118
	(0.001)	(0.008)***	(1.266)***	(0)**	(0.201)***	
Slovenia	0.017	0.993	8.835	-0.002	-2.535	0.2441
	(0.001)***	(0.038)***	(3.702)**	(0)***	(0.92)***	
Newzeland	-0.019	0.822	143.009	0.004	-23.019	0.5571
	(0.003)***	(0.023)***	(33.819)***	(0)***	(5.388)***	
Slovakia	0.003	1.078	10.203	-0	-1.945	0.7993
	(0.001)**	(0.016)***	(3.226)***	(0)	(0.595)***	
Turkey	0.014	0.475	7.06	-0.001	-1.709	0.7372
	(0.001)***	(0.01)***	(1.049)***	(0)***	(0.25)***	
Insignificant impact of herd						
Czech Republic	-0.014	0.696	-8.133	0.004	1.573	0.6694
	(0.005)***	(0.015)***	(22.154)	(0.001)***	(4.352)	
Israel	0.015	0.726	2.832	-0.001	-0.591	0.6154
	(0.001)***	(0.019)***	(6.741)	(0)***	(1.173)	
Latvia	0.039	0.96	-2.902	-0.006	0.232	0.3160
	(0.004)***	(0.044)***	(6.816)	(0.001)***	(1.324)	
Portugal	0.024	0.793	-5.85	-0.003	0.796	0.2872
	(0.001)***	(0.039)***	(3.25)*	(0)***	(0.663)	
Panel B: Anti-Herd Sample						

Trust weaken anti-herding						
Mexico	0	0.75	6.643	0.001	-1.253	0.8772
	(0.001)	(0.01)***	(1.888)***	(0)***	(0.414)***	
Trust strengthen anti-herding						
Germany	0.048	0.554	-20.086	-0.006	4.194	0.0695
	(0.006)***	(0.106)***	(14.074)	(0.001)***	(2.336)*	
Norway	0.066	0.766	-59.711	-0.01	10.572	0.8557
	(0.002)***	(0.012)***	(7.241)***	(0)***	(1.269)***	
France	0.011	0.676	-14.882	-0.001	2.853	0.8911
	(0.001)***	(0.009)***	(1.686)***	(0)***	(0.295)***	
Netherland	0.011	0.644	-13.476	-0	2.418	0.7201
	(0.001)***	(0.017)***	(1.988)***	(0)***	(0.325)***	
Chile	0.009	0.657	-24.727	-0	4.528	0.8393
	(0.001)***	(0.01)***	(3.073)***	(0)	(0.547)***	
Insignificant impact of anti-herd						
Sweden	0.055	0.089	0.591	-0.007	0.072	0.2590
	0.2590	0.2590	0.2590	0.2590	0.2590	

Notes: the table reports results of the OLS estimation in Eq. 6 over the full sample for countries that exhibited herding or reverse herding in table 4 and 5 when trustworthiness and confidence were included as moderators. Figures in parenthesis are the p-value; Adj. R2 refers to the adjusted coefficient of determination.

***, ** and * denote statistical significance at the 1%. 5% and 10% levels respectively.

5. Discussion

This study aims to investigate herding behavior beyond the exploration of its evidence. Combining the output of Tables 4 and 5, we ended up with countries that show either herding or reverse herding. Thereafter, we explored the impact of trustworthiness and confidence on herding behavior. Based on our results, one cannot ascertain the impact of trust as a social capital on dampening or stimulating herding as they raise more questions given the multidimensional disparity between these countries.

In fifteen countries, trust appears to either weaken herding or strengthen reverse herding. This result is evidence of the role played by the trust as an impetus, which lessens information asymmetry and reinforces public confidence on financial market (Dudly and Zhang, 2016; Hasan, et al., 2017). Thus, trust is seen as one of the essential elements of an efficient financial system, which is intended for both a serene period and a turmoil phase (Fungácová et al., 2017). Since trust encompasses the soundness of banks, the regulation of securities exchanges, and the legal rights index, regulators and government policy makers are highly very heedful when restructuring or launching any initiative. The overriding of government on financial markets might include the components of trust that need to be protected. Consequently, the authorities conduct different policy measures during turmoil phases including among others public bailouts, and liquidity support to struggling banks in order to protect and restore public trust and financial stability. Accordingly, enhanced market efficiency within a trustworthy environment has an effect on productivity growth, which promotes economic growth (Ng et al., 2016). However, Mallek et al. (2021) found that trustworthiness can either exacerbate or attenuate the herding behavior in 32 OECD markets.

Thus, the empirical effect of trust on herding is mixed when assessing different markets. The mainstream of trust research has focused on the "bright" side of trust on individual actors, institutions, and organizations. In our study, trust evidence to either strengthen herding or weaken reverse herding in eight countries. This represents 35% of our sample. The results

have multidimensional explanations. The "dark side of trust" view takes place in our reasoning when a low level of trustworthiness can lead to deeply thoughtful decisions. Investors will be cautious and more vigilant when authorities rely more on formal institutions than informal ones like the trust. Thus, low trust will be associated with low herding and vice versa. In addition, when the level of trust is high, investors can rely on quick and careless decisions by following the crowd, especially during turmoil periods coveting the government bailouts. This complicates more the situation and makes the government in the worsened stand. Similarly, Mayo, (2015) and Posten & Mussweiler, (2013) found that when people trust highly, they are more reluctant to think critically, to question assumptions, and more inclined to stereotyping and the "halo effect". Moreover, trust as a single factor might interact with other development, regulations, and institutional quality factors that could flip the relationship and contradict the common role.

Finally, referring to the existence of both influences of trust on amplifying or dampening herding in different countries, we could support the view of a "Goldilocks" system of trust suggested by Neal et al., (2016), where a too-high or a too-low level may result in a critical situation.

6. Conclusion

This paper aimed at examining the impact of the GFC on the herding behavior in OECD as well as investigating the herding behavior in the up and down sides of the market. In addition, the study is aimed at testing the moderating effect of trustworthiness and confidence in the financial system on herding behavior.

Remarkably, the GFC acted as a catalyst for change in certain markets, triggering shifts between herding and reverse herding, while reinforcing or weakening existing tendencies in others. This highlights the diverse market responses to the crisis and emphasizes the need for policymakers to monitor market behavior and implement policies that uphold fairness and information symmetry.

With regards to the up and down-market results, we found that most of the markets show persistent results of either herding in both up and downsides and vice versa. Other markets exhibited a shift from one behavior to the other when switching from up to down or the other way around. Only very few countries that did not show herding in the full sample of the market showed either or both behaviors when control for the up and down sides of the market.

Additionally, the study explores the moderating effect of trust and confidence, revealing their potential to strengthen or weaken herding depending on the market context. These findings offer valuable insights for policymakers, suggesting interventions like monitoring competition, ensuring timely information disclosure, regulating risk-taking, and implementing transparent deposit insurance schemes to foster a more trustworthy financial environment and potentially mitigate the adverse effects of herding and reverse herding.

References

Albaity, M., Noman, A. H. M., & Mallek, R. S. (2021). Trustworthiness, good governance and risk taking in MENA countries. Borsa Istanbul Review, 21(4), 359-374.

Arrow, K. J. (1972). Gifts and exchanges. Philosophy & Public Affairs, 343-362.

Authers, J. (2010). The fearful rise of markets: Global bubbles, synchronized meltdowns, and how to prevent them in the future. United States of America: FT Press Financial Times.

Barberis, N., Shleifer, A., & Vishny, R. (1998). A model of investor sentiment. Journal of financial economics, 49(3), 307-343.

Baur, D. (2006). Multivariate market association and its extremes. Journal of International Financial Markets, Institutions and Money, 16(4), 355-369.

Bekiros, S., Jlassi, M., Lucey, B., Naoui, K., & Uddin, G. S. (2017). Herding behavior, market sentiment and volatility: Will the bubble resume?. The North American journal of economics and finance, 42, 107-131.

Bikchandani, S. Sharma, S. (2001). Herd behaviour in financial markets. IMF Staff. Pap., 47 (3), 279-310.

Blasco, N., Corredor, P., & Ferreruela, S. (2017). Herding, Volatility, and Market Stress in the Spanish Stock Market. In Handbook of Investors' Behavior During Financial Crises (pp. 151-168). Academic Press.

Calderón, C., Chong, A., & Galindo, A. (2001). Structure and development of financial institutions and links with trust: cross-country evidence (Vol. 4251). Inter-American Development Bank.

Calderon, C., Chong, A., & Galindo, A. (2002). Development and efficiency of the financial sector and links with trust: Cross-country evidence. Economic Development and Cultural Change, 51(1), 189-204.

Chiang, T. C., & Zheng, D. (2010). An empirical analysis of herd behavior in global stock markets. Journal of Banking & Finance, 34(8), 1911–1921.

Chang, C. H., & Lin, S. J. (2015). The effects of national culture and behavioral pitfalls on investors' decision-making: Herding behavior in international stock markets. International Review of Economics & Finance, 37, 380-392.

Chang, E. C., Cheng, J. W., & Khorana, A. (2000). An examination of herd behavior in equity markets: An international perspective. Journal of Banking and Finance, 24(10), 1651–1679.

Chen, T. (2013). Do investors herd in global stock markets?. Journal of Behavioral Finance, 14(3), 230-239.

Chiang, T. C., & Zheng, D. (2010). An empirical analysis of herd behavior in global stock markets. Journal of Banking & Finance, 34(8), 1911-1921.

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.

Danrimi, M. L., Abdullah, M., & Alfan, E. (2018). Investors' herding practice: do IFRS and national economic culture matter?. Managerial Finance.

Demirer, R., & Kutan, A. M. (2006). Does herding behavior exist in Chinese stock markets?. Journal of international Financial markets, institutions and money, 16(2), 123-142.

Devenow, A., & Welch, I. (1996). Rational herding in financial economics. European Economic Review, 40(3-5), 603-615.

Dudley, E., Zhang, N., 2016. Trust and corporate cash holdings. Journal of Corporate Finance, 41, 363–387.

Engelhardt, N., Krause, M., Neukirchen, D., & Posch, P. N. (2021). Trust and stock market volatility during the COVID-19 crisis. Finance Research Letters, 38, 101873.

Fungáčová, Z., Hasan, I., & Weill, L. (2019). Trust in banks. Journal of Economic Behavior & Organization, 157, 452-476.

Gębka, B., & Wohar, M. E. (2013). International herding: Does it differ across sectors?. Journal of International Financial Markets, Institutions and Money, 23, 55-84.

Gleason, K. C., Mathur, I., & Peterson, M. A. (2004). Analysis of intraday herding behavior among the sector ETFs. Journal of empirical Finance, 11(5), 681-694.

Guiso, L., Sapienza, P., & Zingales, L. (2004). The role of social capital in financial

development. American economic review, 94(3), 526-556.

Guiso, L., Sapienza, P., & Zingales, L. (2008). Trusting the stock market. Journal of Finance, 63(6), 2557-2600.

Han, R., & Melecky, M. (2017). Broader use of saving products among people can make deposit funding of the banking system more resilient. Journal of International Financial Markets, Institutions and Money, 47, 89-102.

Hasan, I., Tunaru, R., & Vioto, D. (2023). Herding behavior and systemic risk in global stock markets. Journal of Empirical Finance, 73, 107-133.

Hasan, I., Hoi, C. K., Wu, Q., & Zhang, H. (2017). Social capital and debt contracting: Evidence from bank loans and public bonds. Journal of Financial and Quantitative Analysis, 52(3), 1017-1047.

Helmke, G., & Levitsky, S. (2004). Informal institutions and comparative politics: A research agenda. Perspectives on politics, 2(4), 725-740.

Hilary, G., Huang, S., 2015.Trust and contracting. SSRN Working paper 2604974.

Horváth, R. (2013). Does trust promote growth?. Journal of Comparative economics, 41(3), 777-788.

Hwang, S., & Salmon, M. (2004). Market stress and herding. Journal of Empirical Finance, 11(4), 585-616.

Indārs, E. R., Savin, A., & Lublóy, Á. (2019). Herding behaviour in an emerging market: Evidence from the Moscow Exchange. Emerging Markets Review, 38, 468-487.

Jackowicz, K., Kozłowski, Ł., & Wnuczak, P. (2024). Do local differences in trust affect bank lending activities?. Finance Research Letters, 105004.

Koomson, I., Koomson, P., & Abdul-Mumuni, A. (2023). Trust in banks, financial inclusion and the mediating role of borrower discouragement. International Review of Economics & Finance, 88, 1418-1431.

Klein, A. C. (2013). Time-variations in herding behavior: Evidence from a Markov switching SUR model. Journal of International Financial Markets, Institutions and Money, 26, 291-304.

Mallek, R. S., Albaity, M., & Molyneux, P. (2021). Uncertainty, trust and herding behaviour. Review of Development Finance, 11(2), 94-107.

Mallek, R. S., Albaity, M., & Molyneux, P. (2022). Herding behaviour heterogeneity under economic and political risks: Evidence from GCC. Economic Analysis and Policy, 75, 345-361.

Mabrouk Houda, B., & Mohamed, F. (2013). Herding during market upturns and downturns: international evidence. IUP J. Appl. Finance, 19(2) pp. 5-26.

Mayo, R. (2015). Cognition is a matter of trust: Distrust tunes cognitive processes. European Review of Social Psychology, 26(1), 283-327.

Mazumder, S., & Rao, R. (2023). Social trust and the choice between bank debt and public debt: Evidence from international data. Journal of Multinational Financial Management, 67, 100781.

Meng, Y., & Yin, C. (2019). Trust and the cost of debt financing. Journal of International Financial Markets, Institutions and Money, 59, 58-73.

Neal, T. M., Shockley, E., & Schilke, O. (2016). The "dark side" of institutional trust. In Interdisciplinary perspectives on trust (pp. 177-191). Springer, Cham.

Ng, A., Ibrahim, M. H., & Mirakhor, A. (2016). Does trust contribute to stock market development?. Economic Modelling, 52, 239-250.

Nofsinger, J. R., & Sias, R. W. (1999). Herding and feedback trading by institutional and individual investors. Journal of Finance, 54(6), 2263-2295.

Philippas, N., Economou, F., Babalos, V., & Kostakis, A. (2013). Herding behavior in REITs: Novel tests and the role of financial crisis. International Review of Financial Analysis, 29, 166-174.

Pierdzioch, C., Rülke, J. C., & Stadtmann, G. (2013). Forecasting metal prices: Do forecasters herd?. Journal of Banking & Finance, 37(1), 150-158.

Posten, A. C., & Mussweiler, T. (2013). When distrust frees your mind: The stereotype-reducing effects of distrust. Journal of Personality and Social Psychology, 105(4), 567.

Shen, Z., Sowah, J. S., Dak-Adzaklo, C. S. P., & Li, S. (2023). Competition laws and corporate risk-taking around the world. Pacific-Basin Finance Journal, 102058.

Stavroyiannis, S., & Babalos, V. (2017). Herding, faith-based investments and the global financial crisis: Empirical evidence from static and dynamic models. Journal of Behavioral Finance, 18(4), 478-489.

Stavroyiannis, S., Babalos, V., Bekiros, S., & Lahmiri, S. (2019). Is anti-herding behavior spurious?. Finance Research Letters, 29, 379-383.

Zhou, R. T., & Lai, R. N. (2009). Herding and information based trading. Journal of Empirical Finance, 16(3), 388-393.

"ثِقْ ولكن تحقَّقْ": سلوك القطيع المالي في دول منظمة التعاون الاقتصادي والتنمية

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ملخص البحث:

وفي حين تمت دراسة دور رأس المال الاجتماعي مؤخراً لتفسير العلاقة بين النمو المالي، فإن تأثيره المعتدل على عملية صنع القرار وسلوك السوق لم يُدْرَس دراسة وافية وكاملة. تبحث دراستنا في دور الثقة في تثبيط وتحفيز سلوك القطيع أو السلوك المعاكس القطيع في دول منظمة التعاون الاقتصادي والتنمية. تظهر النتائج التي توصلنا إليها أن الثقة تعمل كما هو متوقع كقوة دافعة لإضعاف سلوك القطيع أو تعزيز سلوك المعاكس للقطيع في جزء من هذه البلدان. وهذا هو «الجانب المشرق» الذي تؤديه الثقة لتقليل عدم تناسق المعلومات وتعزيز ثقة الجمهور في السوق المالية. لكن في بلدان أخرى، نجد التأثير المعاكس ويظهر «الجانب المظلم». الثقة المنخفضة تولد قرارات مدروسة بعمق، والثقة العالية تؤدي إلى سلوك نمطي سهل

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