30 Years of Herd Behavior in Financial Markets: A Bibliometric Analysis

Abstract

Bibliometric studies have proven useful in helping researchers to better explore research currents within a particular field of study. In this sense, this study analyzes the academic research developed over 30 years on herd behavior in financial markets. The article uses the Web of Science database in order to collect the bibliographic material and provide a range of bibliometric indicators including the number of citations, publications and authors, among others. The study also uses software for the visualization of similarities by using bibliometric techniques. The results show the significant growth of research in this area, especially after the subprime crisis. In addition, it highlights the emergence of sub areas of interest to researchers which have arisen in a natural fashion and without a previously defined orientation. Finally, there is still no consensus in the literature regarding the causes of this phenomenon and new questions and edges emerge to expand research on herd behavior.

Keywords: Herding Behavior; Financial Markets; Bibliometrics; Web of Science.

JEL Classifications Code: G15; G14

1. Introduction

Herding behavior is the conduct of individuals in group acting collectively without a centralized direction and may occur in animals as well as in humans in several contexts. In the area of finance, herding is the tendency of individuals (or organizations) to imitate the actions of others following the interactive observation of each other's practices (Hirshleifer and Teoh, 2003). According to Erdenetsogt and Kallinterakis (2016) the practice of herding assumes that individuals follow the behavior of others with disregard for their own private signals or prevailing market fundamentals.

Since Scharfstein and Stein's (1990) seminal article on herd behavior, research in this area has included different periods, countries, financial crises, financial markets, and types of investors. In turn, various methods and models have been used in order to offer reasons or causes that can explain this behavior. In the advancement of knowledge about this phenomenon, important reviews of the literature have been presented for the first decade of its existence in Hirshleifer and Teoh (2003) and the second decade in Spyrou (2013).

A turning point in the research carried out on herd behavior was the so-called subprime crisis. Indeed, between 1990 and 2007, 35 articles with 1,125 citations were published. In the subsequent five years (2008-2012), 57 articles with 1,542 citations were published and in the last 6 years (2014-2019), 126 articles with 5,590 citations have been published, more than 116 articles with 3,215 citations published in the previous 24 years (1990-2013). The increased interest in this topic of research and subsequent publications have allowed research to be carried out naturally in certain sub-areas and therefore it has been necessary to obtain an updated and general vision of herd behavior in financial markets. To achieve this goal, in this article we employ a bibliometric analysis that covers 30 years of research on herd behavior in financial markets, as a result, a detailed and systematic source of information about the scientific production of a discipline is obtained (Merigó et al., 2015), which serves as a reference for researchers and also allows for the assessment of scientific activity, impact of publications and sources to direct new research (Moreno and Rosselli, 2012).

The results show the significant growth of research in this area, which has generated the advancement of sub areas of interest for researchers, which make up five well-defined research groups. The first focused on extending the evidence of the existence of herd

behavior in different periods, countries (mainly developed) and types of financial crises. In turn, this cluster is characterized by the various methods and models that the authors employ. The second group is centered on evidencing the existence of behavioral herd in a number of financial markets and offering evidence of the reasons or causes that may explain this behavior. In the third group, the investigations are oriented, on the one hand, to evidencing and investigating herding behavior of institutional and individual investors and, on the other hand, to investigate behavior in the opposite direction to herd behavior, that is, contrary behavior. In the fourth group, research targets Chinese stock market and more specifically examining herd behavior in mutual funds. The last group mainly contains studies developed in the last decade and basically oriented on extending the evidence on herding behavior in developing countries and markets.

The literature review shows that there is still no consensus regarding the causes of this phenomenon and new questions and edges arise that justify continuing with the research on herd behavior. The remainder of the paper is organized as follow. Section 2 describes the methodology. Section 3 presents the results. Section 4 describes the future research lines on herd behavior in financial markets. Section 5 presents conclusions of the paper.

2. Methodology

Over the last decade, bibliometric studies with systematic literature reviews have proven useful in helping scholars better explore research trends within a specific field of study, and identify future research lines in areas such as business models (Coombes and Nicholson, 2013), economics (Bonilla et al., 2015), entrepreneurship (López-Fernández et al., 2016), political economy (Amiguet et al., 2017), operations research and management science (Merigó and Jian-Bo, 2017), international business (Rialp et al., 2019), and industrial marketing (Valenzuela et al., 2019), among others.

Despite the wide variety of bibliometric methods for bibliographic data analysis (Ding et al., 2014), this article focuses on the total number of documents and citations, since these indicators are useful in measuring productivity and its influence (Merigó et al., 2017).

For the systematic literature review, the Web of Science Core Collection database was used, which is considered, in general, as one of the main databases for classifying academic research. Web of Science includes more than 15,000 journals and 50 million documents.

We employed the procedure proposed by Smart et al. (2003), which has been widely applied in similar studies (Fernández et al., 2015; Mura et al., 2018), following a four-step process.

First, an exploratory review of articles on "*Herding"* in "*capital markets"* was conducted to obtain an updated overview of the topic under study, create a list of keywords and gather a set of terms. After several iterations a series of terms was collected that allowed us to retrieve articles related to the topic in a more effective way. The final search query is the following: (("herd*" OR "herding*" OR "herding behavior*" OR "herd behavior*" OR "herding effect*" OR "herd effect*") AND ("stock market*" OR "capital market*" OR "capital markets*" OR "financial markets*")).

This query was applied using the "TS" field tag in Web of Science, which conducts searches on titles, abstracts and keywords. The query was limited to "articles" within the field of "Economics", "Business Finance", "Business", "Management", "Mathematics Interdisciplinary Applications" and "Social Sciences Mathematical Methods", including only documents evaluated through double blind peer review (Delgado García et al., 2015).

Our data set from Web of Sciences was retrieved on January 14, 2020 and resulted in an initial data set composed of 298 articles.

The second step consisted in cleaning the set of articles obtained. Keywords were assigned to the 36 articles missing keywords or descriptive words for subsequent reading and analysis. Keywords with identical meanings and interpretations in the articles were also standardized, for example, the terms "herd behavior", "Herd behavior", "Herd behavioral", "Herding behavior", "Herding behavior" were grouped under a single keyword.

The third step was the longest to complete and it implied the review of each article to ensure that its research topic was "Herd behavior" in "Capital markets"[1]. On this step, 55 articles were deleted from the database. In this way, our final sample consisted of 243 articles for the 1990-2019 period. We classified the keywords of each study and generated a second set of keywords in addition to those from Web of Science.

The fourth and last step was grouping the articles with related topics into clusters based on the two categories above. To provide a graphic description of the bibliographic results, the visualization software VOS viewer (Van Eck and Waltman, 2010) was applied. This

[1] To broaden the sample, we decided to include the "Herd behavior" in "Financial Markets" review.

software compiles bibliographical data and displays results in a wide variety of maps and tables. VOS viewer applies several bibliometric techniques that include bibliographic coupling, citation and co-occurrence of author's keywords. Bibliographic coupling (Kessler, 1963) takes place when two documents cite the same third document. We used this software to observe the coincidence of the most frequent keywords in these documents.

3. Results

The first part of the results analysis focuses on publication structure and citations, identifying the most cited articles and the evolution of a publication. The second part analyzes the authors and institutions that produce the majority of literature on this research topic.

3.1. Publication and citation of Herd behavior

Figure 1 shows the evolution of the number of articles and citations on herd behavior in financial markets over the last 30 years. The first article considered in our sample was published in 1990 (Scharfstein and Stein, 1990). The authors, taking into account Keynes' (1936) suggestion that professional managers will "follow the herd" if they are concerned about others' assessment on their ability to make sound judgments, investigate some of the forces that may lead to herd behavior, finding that, under certain circumstances, managers simply imitate the investment decisions made by other managers and will ignore substantial private information. Despite the new literature published during the first few years of the nineties and the following decade, it was not before the subprime crisis that researchers adopted the concept of herd behavior as their research focus. In fact, between 1990 and 2007, only 35 articles on this topic with 1,125 citations were published. In the five following years (2008-2012) this number increased to 57 articles and 1,542 citations, that is to say, publications rose by 63% compared to the previous 18 years. In turn, citations witnessed an increase of 37% during the same period. Since then, the interest in understanding and explaining herd behavior in financial markets has increased significantly. Over the last six years (2014-2019) 126 articles with 5,590 citations were published, which accounts for more than the 116 articles and 3,215 citations issued in the

previous 24 years (1990-2013). The evidence above shows that the topic of herd behavior in financial markets has become of increasing interest to researchers.

"Insert Figure 1"

3.2. Journals with the highest number of articles and citations

Table 1 reports the 30 journals out of 105 journals that have published most articles on herd behavior in financial markets (Column A) and the most cited journals (Column B). The Journal of Behavioral Finance has the most articles published (15), accounting for 14.3% of total production. consecutively, the five journals that have more publications on herd behavior in financial markets (Journal of Behavioral Finance, Emerging Markets Finance and Trade, Journal of Banking & Finance, International Review of Financial Analysis, Journal of Economic Behavior & Organization) has accumulated 52.3% of the total articles on the subject. Only the Journal of Banking & Finance is among the most cited journals with 816 citations, which represents 9.2% of total citations (8,835).

American Economic Review is the journal with the most citations (1,395) and the five most cited journals (American Economic Review, Journal of Banking & Finance, Journal of Finance, Macroeconomic Dynamics, Economic Journal) contained 44.3% of the citations.

"Insert Table 1"

3.3. Most cited articles

American Economic Review published the most cited article (see Table 2). The Scharfstein and Stein's article (1990) "Herd behavior and investment" has been cited 1,057 times, which corresponds to 12% of citations. Twelve of the most cited articles were published in the 1990-2000 decade, 11 between 2001-2010, and 7 during 2011-2019. The main currents followed by these journals are Economics (69 articles), Business, Finance; and Economics (63 articles), Business, Finance (50 articles), which represent 75.2% of published articles. Nevertheless, categories such as Sociology, Management, Operations Research & Management Science, Mathematics, Applied Mathematics, Interdisciplinary Applications and Physics, among others, are also found in these journals.

“Insert Table 2”

3.4. Most cited Authors with the majority of publications

Table 3 shows the most cited authors who have published the majority of the articles . In total, 454 researchers wrote on herd behavior in financial markets. Riza Demirer from the Southern Illinois University Edwardsville (USA) and Frank Westerhoff from Otto-Friedrich-Universität Bamberg (Germany) are the authors with the most publications (7). In 4 out of 7 publications by Riza Demirer, he shares authorship with Mehmet Balcilar from the Eastern Mediterranean University (Cyprus). On his part, Frank Westerhoff has co-authored articles with Noemi Schmitt (University of Bamberg, Germany) four times and with Reiner Franke (University of Kiel, Germany) three times. In general, the trend is to research herd behavior in financial markets together. Only 33 authors (7.3% of the total) have published articles individually. As mentioned above, David Scharfstein and Jeremy Stein, both from Harvard University, are the most cited authors.

“Insert Table 3”

3.5. Researched topics related to herd behavior in financial markets

Figure 2 shows the results of the VOS viewer software used on the database obtained directly from Web of Science. The unit of analysis was “all keywords”, with the “full counting” method using a minimum offive keyword occurrences. The authors encountered obstacles in classifying the clusters. On the one hand, some terms such as g15 and g14 belong to the Journal of Economic Literature (JEL) category, specifically to the International Financial Markets and Information and Market Efficiency, respectively. On the other hand, some different terms correspond to the same meaning (for example, herd behavior, herding, herding behavior; stock markets, stock-market; market, and markets; among others). Additionally, 36 articles were missing their keywords. Despite these difficulties, the co-occurrence analysis reports five well-defined clusters; however, no decisive conclusions were obtained. Therefore, each article was revised and classified based on our categories, considering the articles’ keywords, research objective and authors’ conclusions. Additionally, keywords with identical meaning and interpretation were

standardized and converted into one single keyword. Figure 3 shows the results obtained using the VOS viewer visualization software on the clean database. We found that five well-defined data clusters remained in the database. The classification of each article permited a deeper analysis of each of these clusters. Table 4 presents the main keywords for each cluster.

"Insert Figure 2"

"Insert Figure 3"

3.5.1. Cluster 1 (red): Emergence.

This cluster comprises of 98 articles. Research includes different periods and types of crisis. First, some articles deal with currency crises, for example, Mezghani and Boujelbene (2018) analyzed three channels through which currency crises are transmitted between countries—contagion based on unsustainable economic fundamentals, contagion resulting from herding behavior in financial markets and contagion induced by close trade integration—,and found that the most important contagion channels were based on close financial and trade integration rather than on the weakness of macroeconomic fundamentals. The second type of crisis research is economic recessions. Authors like Mueller and Brettel (2012) report an excess of trust in German CEOs during economic recessions and suggest a reciprocal relationship between macroeconomic aspects and microeconomic decision-making, which can help explain herding and financial crisis. area third type of articlesis related with the subprime crisis, such as the work of Andrikopoulos et al. (2017), in which the authors delve into intraday herding on the Euronext and conclude that intraday herding is found to be significant before, during and after the 2007-09 financial crisis period, with its presence appearing at its weakest during the crisis. Fourth type corresponds to studies on the Asian crisis; for example, the one by Omay and Iren (2019) reveals that foreign investors exhibited herding behavior during the Asian Crisis.

The cluster is characterized by used several methods and models used by the authors, among which are smooth-transition autoregressive (STAR-STGARCH) family of models and generalized impulse response function (GIRF) analysis (Omay and Iren, 2019), vector AR-DCC-FIAPARCH model (Karanasos et al., 2016), Dynamic Conditional Correlation - Mixed Data Sampling model (Nitoi and Pochea, 2019), causality tests (Blasco et al., 2012),

filter of Kalma (Mezghani and Boujelbene, 2018), ARIMA models (Diks et al., 2005), and method of simulated moments (Franke and Westerhoff, 2012), among others.

The countries analyzed in this category are mainly developed countries, out of which the USA (Nicolis and Sumpter, 2011), Central and East European (Pochea et al., 2017), Germany (Mueller and Brettel, 2012; Kurz and Kurz-Kim, 2013), and Spain (Blasco et al., 2011) stand out. Other studies also considered 18 countries at the global level (Chiang and Zheng, 2010), and 24 European Union stock markets (Nitoi and Pochea, 2019).

The above has been mainly employed to examine herding behavior in global markets, testing for time-variations in herd behavior in stock markets, research the transmission of shock between market and transmission mechanisms, analyze whether investments based on herd behavior can outperform the market, evaluate the response to crisis of foreign investors versus domestic investors, and explain relationships between asset prices and herd behavior. In synthesis, the main current of studies on herd behavior in financial markets focuses on seeking out herd behavior in different markets and countries through a wide variety of methods and models to achieve better understanding of their nature and relationships.

3.5.2. Cluster 2 (green): Extend.

This cluster is composed of 52 articles. The two main characteristics of its articles are: first, they indicate the existence of herd behavior in several markets, among which the following markets stand out: stock market and oil market (BenMabrouk and Litimi, 2018), gold market (Boako et al., 2019), stock markets (Economou et al., 2011; Kaminsky and Schmukler, 1999; Brandenburger and Polak, 1996), hedge fund (Ennis and Sebastian, 2003), stock, bond and housing markets (Dieci et al., 2018), livestock, grain and stock markets (Tse and Hackard, 2003), T-bond and stock returns (Li and Zou, 2008), bank markets (Waheed and Mathur, 1993) and the wine market (Aytac et al., 2018).

Second, a substantial part of the articles in this cluster offer evidence on the motives or causes in explaining herd behavior, for example, the leaders' opinions within a market (Wang and Wang, 2018), the effect of local and outside news that influence investors' behavior (Kaminsky and Schmukler, 1999), the concern and care about professional reputation of some investors who influence other investors (Roider and Voskort, 2016), the

ambiguity of the reported trades in terms of price behavior (Ford et al., 2013), the transfer of investors' enthusiasm from one speculative market to another (Dieci et al., 2018), the national culture (Chang and Lin, 2015) and variables associated with organizational and environmental issues such as governance, technology, education and training, business style and conditions, and the development of equity and non-equity markets (Blasco et al., 2017). The explanations for herd behavior are more related to the investors' individual behavior and how they influence other investors' behavior. In this way, social aspects become the focus for researchers when explaining herd behavior. In this vein, this behavior would occur when strong enough social interactions are present in individual investors (Chang, 2014), that is to say, linked to the social context of the firm assessed in terms of the pervasiveness of an activity (Brauer and Wiersema, 2012), informational social influence (Andersson et al., 2014) and the social influence on financial decisions such as "social learning" and "social utility" (Bursztyn et al., 2014). An interesting aspect of this cluster is the production of experimental studies within the area (Andersson et al., 2014; Bursztyn et al., 2014; Drehmann et al., 2007; Roider and Voskort, 2016; Yamamoto, 2011).

3.5.3. Cluster 3 (blue): Investors.

Thirty-four articles were classified into this cluster. Research categorized here is oriented to explore the herding behavior of institutional and individual investors (Hsieh, 2013). Regarding institutional investors, several authors (Fang et al., 2017; Choi and Skiba, 2015; Poon, 2013; Guo and Qiu, 2016; Gavriilidis et al., 2013; Chang et al., 2012; Nofsinger and Sias, 1999) have studied how some characteristics specific to this type of investor—such as investor types, habit investing, industry herding, portfolio allocation and momentum trading—cause, explain or are related to herd behaviors. This category of articles also includes institutional investor such as pension funds (Raddatz and Schmukler, 2013) and non-bank institutional investors (Balagyozyan and Cakav, 2016). As for individual investors, some authors demonstrate the presence of herd behavior (Chung and Wang, 2016; Barber, 2009) and provide some of the investors' demographic characteristics such as age, gender, education level and experience (Metawa et al., 2019) and their relationship with herd behavior.

Conversely, in the last decade, a significant quantity of articles investigate herd behavior following the opposite direction, that is to say, centering on contrarian behavior (Park and Sabourian, 2011; Souleles and Hansen, 2019; Testa, 2019; Cipriani et al., 2012; Cipriani et al., 2009; Park and Sgroi, 2012; Chen et al., 2018).

3.5.4. Cluster 4 (Yellow): China and Mutual funds.

Thirty-four articles were assigned to this cluster. They focus on the Chinese stock market and specifically examine herd behavior in mutual funds. In the last decade, the peculiarities of the Chinese stock market have attracted the interest of different researchers focused on herd behavior. Following this line, a number of works tested herd behavior in China (Yao et al., 2014; Xie et al., 2015; Luo and Schinckus, 2015; Mahmud and Tinic, 2018), its level of herd behavior (Li et al., 2019), the influence of the US market on the herd behavior in the Chinese financial market (Luo and Schinckus, 2015; Li et al., 2018) and the relative importance of information and its role in herding among investors (Alhaj-Yaseen and Rao, 2019).

Research on herd behavior in capital markets, as mentioned above, has extended to other markets. Nevertheless, special attention has been paid to the mutual fund market. In this context, herd behavior has been studied on mutual funds from South Korea (Hong and Yi, 2006), Germany (Frey et al., 2014), the USA (Fang et al., 2017), China (Yang and Yang, 2014), Australia (Watson and Wickramanayake, 2012), Taiwan (Hung et al., 2010) and the UK (Lu et al., 2017), among others. Such studies have explored the characteristics of herd behavior, the inflow determinants, the performance of mutual funds, reputational herd behavior and portfolio management.

3.5.5. Cluster 5 (purple): Emerging markets.

This cluster comprises of 33 articles. These are studies preferably conducted during the last decade and are basically focused on providing more data on herding behavior in countries and markets such as South Africa (Guney et al., 2017), South Korea (Choe et al., 1999), the Islamic Gulf Cooperation Council stock markets Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and the United Arab Emirates (Chaffai and Medhioub, 2018), Chile (Lavin and Magner, 2014), Malaysia (Pitluck, 2014), South Korea (Chung et al., 2016), Pakistan

(Chaudhry and Sam, 2018), the Gulf Arab stock markets Abu Dhabi, Dubai, Kuwait, Qatar and Saudi Arabia (Balcilar et al., 2013; Balcilar et al., 2014), Poland (Voronkova and Bohl, 2005), the Asian and Latin American markets China, India, Malaysia, Singapore, Argentina and Brazil (Kabir and Shakur, 2018), Israel (Andronikidi and Kallinterakis, 2010), Kazakhstan (Kobayashi et al., 2007), Russia (Indars et al., 2019), Southeast Asian Indonesia, Malaysia, Philippines, Vietnam (Bui et al., 2015), Vietnam (Vo and Phan, 2019) and Greek (Economou et al., 2016), using different techniques and incorporating some specific characteristics of these markers such as agency, information, efficiency, behavioral problems, expansionary monetary policy, increases in foreign portfolio investment and contagion factors in financial markets, among others, for explaining herding behavior.

To a lesser extent, the second study cluster researches the relationship and interrelationships between herding behavior and the volatility of the stock markets, mainly in developing countries. This group consists of the works of BenSaida (2017), Dhaene et al. (2012), Economou et al. (2018), Bekiros et al. (2018), Zheng et al. (2017) and Alfarano and Lux (2007).

4. Future research lines on herd behavior in financial markets

Although research on herding behavior began in the nineties, interest in this topic increased significantly since the subprime crisis, during the first decade of this century. The literature review shows that herding behavior has been researched focusing on different financial and economic crises and using a variety of methods and models, expanding on the evidence of this behavior to other countries and markets. Through these studies, the different motives or causes that may explain herd behavior have been reported, for example, contagion factors between financial markets, information factors between the agents involved in such markets, as well as cultural and structural factors from each different country and/or market studied. Nevertheless, there are still some uncharted points that would lead us to a more comprehensive knowledge of this behavior. For example, the corporate government of companies, as entities from the same economic group could share investment strategies and thereby heighten herding behavior. This could be more pronounced in companies with high property concentration and in institutions with a pyramidal structure. In this context,

companies from the same socioeconomic group would adopt herding behaviors to transfer wealth from minority shareholders to the controller.

Another area for further research is the fusion or integration of financial markets. This phenomenon generates more financial assets to which investors can access, which increases their possibilities of diversifying their investment portfolio and, consequently, reduces risk. For companies, this increases their funding sources, and in turn reduces funding costs. In both cases, the fusion or integration of financial markets would bring benefits to its participants. In this sense, herding behavior could suffer alterations. On the one hand, it could be intensified since local companies, when becoming part of an integrated market, could simply follow the actions of leader companies due to their lack of knowledge about the new markets. On the other hand, herding could be reduced because companies would be more cautions when investing. Therefore, companies could also specialize their investment strategies and make individual decisions.

5. Conclusions

Herding behavior is the action of individuals in a group performing collectively without centralized direction and may occur in animals as well as in humans in several situations. In Financial Markets, since the seminal article by Scharfstein and Stein (1990), investigations have covered different periods, countries, financial crises, financial markets and types of investors, using various methods and models to offer reasons or causes that can explain this behavior.

Although important literature reviews have been carried out in this area (Hirshleifer and Teoh, 2003; Spyrou, 2013) these have included research for the first and second decade of studies mainly. Now, if we consider the significant increase in publications and citations after the subprime crisis and especially during the last decade, it is necessary to have today an updated vision of research on herd behavior. In this sense, we use a bibliometric analysis that covers research over 30 years on herd behavior in financial markets.

As a result, a detailed and systematic source of information about the scientific production of a discipline is obtained (Merigó et al., 2015), which serves as a reference for researchers and allows for the assessment of scientific activity, impact of publications and sources to direct new research (Moreno and Rosselli, 2012). Over the last decade, bibliometric studies

have proven useful in helping scholars better explore research trends within a specific field of study, and identify future research lines in different areas. However, it should be mentioned that the bibliometric analysis is subject to certain limitations that are generally derived from data selection and the analytical method used. An adequate selection of the criteria is key to obtaining a database that contains most of the articles on the topic under analysis. Otherwise, the results would not be valid. To prevent this situation, the search was conducted following the instructions detailed in the methodology section.

The results show the significant growth of research in this area after the subprime crisis. This increase in publications and citations has allowed the development of sub areas of interest for researchers which make up five well-defined groups where spreading the evidence of the existence of herd behavior and finding some explanation of its existence continues to be the main focus of interest. These research subgroups have emerged naturally and without a previously defined orientation. Finally, despite the progress in research on herd behavior, there is still no consensus in the literature regarding the causes of this phenomenon and new questions and edges emerge to expand the research.

References

Alfarano, S., & Lux, T. (2007). A noise trader model as a generator of apparent financial power laws and long memory. *Macroeconomic Dynamics,* 11, 80-101.

Alhaj-Yaseen, Y. S., & Rao, X. (2019). Does Asymmetric Information Drive Herding? An Empirical Analysis. *Journal of Behavioral Finance,* 20 (4), 451-470.

Amiguet, L., Gil-Lafuente, A. M., Kydland, F. E., & Merigó, J. M. (2017). One hundred and twenty-five years of the Journal of Political Economy: a bibliometric overview. *J. Political Econ.* 125 (6), 105–110.

Andersson, M., Hedesstrom, M., & Garling, T. (2014). A Social-Psychological Perspective on Herding in Stock Markets. *Journal of Behavioral Finance,* 15 (3), 226-234.

Andrikopoulos, P., Kallinterakis, V. Ferreira, M. P., & Verousis, T. (2017). Intraday herding on a cross-border exchange. *International Review of Financial Analysis*, 53, 25-36.

Andronikidi, A., & Kallinterakis, V. (2010). Thin trading and its impact upon herding: the case of Israel. *Applied Economics Letters,* 17 (18), 1805-1810.

Aytac, B., Coqueret, G., & Mandou, C. (2018). Herding behavior among wine investors. *Economic Modelling*, 68, 318-328.

Balagyozyan, A., & Cakan, E. (2016). Did large institutional investors flock into the technology herd? An empirical investigation using a vector Markov-switching model. *Applied Economics,* 48 (58), 5731-5747.

Balcilar, M., & Demirer, R. (2015). Effect of Global Shocks and Volatility on Herd Behavior in an Emerging Market: Evidence from Borsa Istanbul. *Emerging Markets Finance and Trade*, 51 (1), 140-159.

Balcilar, M., Demirer, R., & Hammoudeh, S. (2013). Investor herds and regime-switching: Evidence from Gulf Arab stock markets. *Journal of International Financial Markets Institutions & Money,* 23, 295-321.

Balcilar, M., Demirer, R., & Hammoudeh, S. (2014). What drives herding in oil-rich, developing stock markets? Relative roles of own volatility and global factors. *North American Journal of Economics and Finance,* 29, 418-440.

Balcilar, M., Demirer, R., & Ulussever, T. (2017). Does speculation in the oil market drive investor herding in emerging stock markets?. *Energy Economics,* 65, 50-63.

Barber, B.M., Odean, T., & Zhu, N. (2009). Do Retail Trades Move Markets ?. *Review of Financial Studies,* 22 (1),151-186.

Bekiros, S., Jlassi, M., Naoui, K., & Uddin, G.S. (2018). Risk perception in financial markets: On the flip side. *International Review of Financial Analysis,* 57, 184-206.

BenMabrouk, H., & Litimi, H. (2018). Cross herding between American industries and the oil market. *North American Journal of Economics and Finance,* 45, 196-205.

BenSaida, A. (2017). Herding effect on idiosyncratic volatility in US industries. *Finance Research Letters,* 23, 121-132.

Blasco, N., Corredor, P., & Ferreruela, S. (2012). Does herding affect volatility? Implications for the Spanish stock market. *Quantitative Finance,* 12 (2), 311-327.

Blasco, N., Corredor, P., & Ferreruela, S. (2012). Market sentiment: a key factor of investors' imitative behaviour. *Accounting and Finance,* 52 (3), 663-689.

Blasco, N., Corredor, P., & Ferreruela, S. (2017). Can agents sensitive to cultural, organizational and environmental issues avoid herding?. *Finance Research Letters,* 22, 114-121.

Blaurock, I., Schmitt, N., & Westerhoff, F. (2018). Market entry waves and volatility outbursts in stock markets. *Journal of Economic Behavior & Organization*, 153, 19-37.

Boako, G., Tiwari, A.K., Ibrahim, M., & Ji, Q. (2019). Analysing dynamic dependence between gold and stock returns: Evidence using stochastic and full-range tail dependence copula models. *Finance Research Letters,* 31, 391-397.

Bonilla, C., Merigó, J., & Torres, C. (2015). Economics in Latin America: A Bibliometric Analysis. *Scientometrics*, 105 (2), 1239-1252.

Brandenburger, A., & Polak, B. (1996). When managers cover their posteriors: Making the decisions the market wants to see. *Rand Journal of Economics,* 27 (3), 523-541.

Brauer, M.F., & Wiersema, M.F. (2012). Industry divestiture waves: How a firm's position influences investor returns. *Academy of Management Journal*, 55 (6), 1472-1492.

Bui, N.D., Nguyen, L.T.B., & Nguyen, N.T.T. (2015). Herd behaviour in southeast asian stock markets - an empirical investigation. *Acta Oeconomica,* 65 (3), 413-429.

Bursztyn, L., Ederer, F., Ferman, B., & Yuchtman, N. (2014). Understanding mechanisms underlying peer effects: evidence from a field experiment on financial decisions. *Econometrica,* 82 (4), 1273-1301.

Chaffai, M., & Medhioub, I. (2018). Herding behavior in Islamic GCC stock market: a daily analysis. *International Journal of Islamic and Middle Eastern Finance and Management,* 11 (2), 182-193.

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, C.Y., Chen, H.L., & Jiang, Z.R. (2012). Portfolio Performance in Relation to Herding Behavior in the Taiwan Stock Market. *Emerging Markets Finance and Trade*, 48, 82-104.

Chang, S.K. (2014). Herd behavior, bubbles and social interactions in financial markets. *Studies in Nonlinear Dynamics and Econometrics,* 18 (1), 89-101.

Chaudhry, M.I., & Sam, A.G. (2018). Herding behaviour and the declining value relevance of accounting information: evidence from an emerging stock market. *Applied Economics*, 50 (49), 5335-5353.

Chen, Q.W., Hua, X.P., & Jiang, Y. (2018). Contrarian strategy and herding behaviour in the Chinese stock market. *European Journal of Finance* 24(16), 1552-1568.

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

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.

Choi, N. & Skiba, H. (2015). Institutional herding in international markets. *Journal of Banking & Finance,* 55, 246-259.

Chung, C.Y., Liu, C., & Wang, K.N. (2016). Institutional Investor Trading in a Short Investment Horizon: Evidence from the Korean Stock Market. *Emerging Markets Finance and Trade,* 52 (4), 1002-1012.

Chung, C.Y., & Wang, K.N. (2016). Short-term trading by individual investors in the Korean stock market. *Journal of the Asia Pacific Economy,* 21 (4), 599-611.

Cipriani, M., & Guarino, A. (2009). Herd behavior in financial markets: an experiment with financial market professionals. *Journal of the European Economic Association,* 7 (1), 206-233.

Coombes, P.H., & Nicholson, J.D. (2013). Business models and their relationship with marketing: A systematic literature review. *Industrial Marketing Management*, 42 (5), 656–664.

Delgado García, J.B., De Quevedo Puente, E., & Blanco Mazagatos, V. (2015). How affect relates to entrepreneurship: A systematic review of the literature and research agenda. *International Journal of Management Reviews*, 17 (2), 191–211.

Demirer, R., Kutan, A.M., & Chen, C.D. (2010). Do investors herd in emerging stock markets?: Evidence from the Taiwanese market. *Journal oEconomic Behavior & Organization*, 76 (2), 283-295.

Demirer, R., Lee, H.T., & Lien, D. (2015). Does the stock market drive herd behavior in commodity futures markets?. *International Review of Financial Analysis,* 39, 32-44.

Demirer, R., Lien, D., & Zhang, H.C. (2015). Industry herding and momentum strategies. *Pacific-Basin Finance Journal*, 32, 95-110.

Ding, Y., Rousseau, R., & Wolfram, D. (2014). Measuring scholarly Impact: Methods and Practice. Sringer.

Dhaene, J., Linders, D., Schoutens, W., & Vyncke, D. (2012). The Herd Behavior Index: A new measure for the implied degree of co-movement in stock markets. *Insurance Mathematics & Economics*, 50 (3), 357-370.

Dieci, R., Schmitt, N., & Westerhoff, F. (2018). Interactions between stock, bond and housing markets. *Journal of Economic Dynamics & Control*, 91, 43-70.

Diks, C., & van der Weide, R. (2005). Herding, a-synchronous updating and heterogeneity in memory in a CBS. *Journal of Economic Dynamics & Control,* 29 (4), 741-763.

Drehmann, M., Oechssler, J., & Roider, A. (2007). Herding with and without payoff externalities - an internet experiment. *International Journal of Industrial Organization*, 25 (2), 391-415.

Economou, F., Hassapis, C., & Philippas, N. (2018). Investors' fear and herding in the stock market. *Applied Economics*, 50, 3654-3663.

Economou, F., Katsikas, E., & Vickers, G. (2016). Testing for herding in the Athens Stock Exchange during the crisis period. *Finance Research Letters,* 18, 334-341.

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.

Ennis, R.M., & Sebastian, M.D. (2003). A critical look at the case for hedge funds - Lessons from the bubble. *Journal of Portfolio Management,* 29 (4), 103-+.

Erdenetsogt, A., & Kallinterakis, V. (2016). Investors' Herding in Frontier Markets: Evidence From Mongolia. *In Handbook of Frontier Markets,* (pp. 233-249). Elsevier.

Fang, H., Lu, Y.C., Yau, H.Y., & Lee, Y.H. (2017). Causes and Impacts of Foreign and Domestic Institutional Investors' Herding in the Taiwan Stock Market. *Emerging Markets Finance and Trade,* 53 (4), 727-745.

Fang, H., Shen, C.H., & Lee, Y.H. (2017). The dynamic and asymmetric herding behavior of US equity fund managers in the stock market. *International Review of Economics & Finance,* 49, 353-369.

Fernandez, L., Bedia, A., & Perez, M.P. (2015). Entrepreneurship and Family Firm Research: A Bibliometric Analysis of an Emerging Field. *Journal of Small Business Management,* 10 (1), 1–18.

Ford, J.L., Kelsey, D., & Pang, W. (2013). Information and ambiguity: herd and contrarian behaviour in financial markets. *Theory and Decision,* 75 (1), 1-15.

Franke, R., & Westerhoff, F. (2011). Estimation of a Structural Stochastic Volatility Model of Asset Pricing. *Computational Economics,* 38 (1), 53-83.

Franke, R., & Westerhoff, F. (2012). Structural stochastic volatility in asset pricing dynamics: Estimation and model contest. *Journal of Economic Dynamics & Control,* 36 (8), 1193-1211.

Franke, R., & Westerhoff, F. (2016). Why a simple herding model may generate the stylized facts of daily returns: explanation and estimation. *Journal of Economic Interaction and Coordination,* 11 (1), 1-34.

Frey, S., Herbst, P., & Walter, A. (2014). Measuring mutual fund herding - A structural approach. *Journal of International Financial Markets Institutions & Money,* 32, 219-239.

Gavriilidis, K., Kallinterakis, V., & Ferreira, M.P.L. (2013). Institutional industry herding: Intentional or spurious?. *Journal of International Financial Markets Institutions & Money,* 26, 192-214.

Guney, Y., Kallinterakis, V., & Komba, G. (2017). Herding in frontier markets: Evidence from African stock exchanges. *Journal of International Financial Markets Institutions & Money*, 47, 152-175.

Guo, H., & Qiu, B.H. (2016). A Better Measure of Institutional Informed Trading. *Contemporary Accounting Research*, 33 (2), 815-850.

Hirshleifer, D., & Teoh, S.H. (2003). Limited attention, information disclosure, and financial reporting. *Journal of Accounting and Economics*, 36 (1–3), 337–386.

Hong, G., & Yi, K. (2006). On the herding behavior of fund managers in the Korean stock market. *Asia-Pacific Journal of Financial Studies*, 35 (4), 1-38.

Hsieh, S.F. (2013). Individual and institutional herding and the impact on stock returns: Evidence from Taiwan stock market. *International Review of Financial Analysis*, 29, 175-188.

Hung, W.F., Lu, C.C., & Lee, C.F. (2010). Mutual fund herding its impact on stock returns: Evidence from the Taiwan stock market. *Pacific-Basin Finance Journal*, 18 (5), 477-493.

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

Kabir, M.H., & Shakur, S. (2018). Regime-dependent herding behavior in Asian and Latin American stock markets. *Pacific-Basin Finance Journal*, 47, 60-78.

Kaminsky, G.L., & Schmukler, S.L. (1999). What triggers market jitters? A chronicle of the Asian crisis. *Journal of International Money And Finance*, 18 (4), 537-560.

Karanasos, M., Yfanti, S., & Karoglou, M. (2016). Multivariate FIAPARCH modelling of financial markets with dynamic correlations in times of crisis. *International Review of Financial Analysis*, 45, 332-349.

Kessler, M.M. (1963). Bibliographic coupling between scientific papers. *American Documentation*, 14 (1), 10–25.

Keynes, J.M., (1936). The General Theory of Employment, Interest and Money. *New York: Harcourt and Brace*.

Kobayashi, M., Howitt, R.E., Jarvis, L.S., & Laca, E.A. (2007). Stochastic rangeland use under capital constraints. *American Journal of Agricultural Economics*, 89 (3), 805-817.

Kurz, C., & Kurz-Kim, J.R. (2013). What determines the dynamics of absolute excess returns on stock markets?. *Economics Letters*, 118 (2), 342-346.

Lavin, J.F., & Magner, N.S. (2014). Herding in the mutual fund industry: evidence from Chile. *Academia-Revista Latinoamericana de Administracion*, 27 (1), 10-29.

Li, C., Hu, Z,Y., & Tang, L.W. (2019). Re-examining the Chinese A-share herding behaviour with a Fama-French augmented seven-factor model. *Applied Economics*, 51 (5), 488-508.

Li, H.Q., Liu, Y., & Park, S.Y. (2018). Time-Varying Investor Herding in Chinese Stock Markets. *International Review of Finance*, 18 (4), 717-726.

Li, X.M., & Zou, L.P. (2008). How do policy and information shocks impact co-movements of China's T-bond and stock markets?. *Journal of Banking & Finance*, 32 (3), 347-359.

López-Fernández, M.C., Serrano-Bedia, A. & Pérez-Pérez, M. (2016). Entrepreneurship and Family Firm Research: A Bibliometric Analysis of an Emerging Field. *Journal Of Small Business Management*, 54 (2), 622-639.

Lu, Y.C., Fang, H., & Lee, Y.H. (2017). The Informational and Non-Informational Compositions of UK Fund Managers' Dynamic Herding in the Stock Market. *Panoeconomicus*, 64 (5), 571-592.

Luo, Z.Y., & Schinckus, C. (2015). The influence of the US market on herding behaviour in China. *Applied Economics Letters*, 22 (13), 1055-1058.

Mahmud, S.F., & Tinic, M. (2018). Herding in Chinese stock markets: a nonparametric approach. *Empirical Economics*, 55 (2), 679-711.

Metawa, N., Hassan, M.K., Metawa, S., & Safa, M.F. (2019). Impact of behavioral factors on investors' financial decisions: case of the Egyptian stock market. *International Journal of Islamic and Middle Eastern Finance and Management*, 12 (1), 30-55.

Merigó, J., Mas-Tur, A., Tierno-Roig, N., & and Ribeiro-Soriano, D. (2015). A bibliometric overview of the Journal of Business Research between 1973 and 2014. *Journal of Business Research*, 68 (12), 2645-2653.

Merigó, J.M., & Jian-Bo, T. (2017). A bibliometric analysis of operations research and management science. *Omega-International Journal of Management Science*, 73, 37-48.

Merigó, J., & Yang, J. (2017). Accounting research: A bibliometric analysis. *Australian Accounting Review*, 27 (1), 71-100.

Mezghani, T., & Boujelbene, M. (2018). The contagion effect between the oil market, and the Islamic and conventional stock markets of the GCC country Behavioral explanation. *International Journal of Islamic and Middle Eastern Finance and Management,* 11 (2), 157-181.

Moreno, M., & Rosselli, D. (2012). Bibliometric analysis of economic topics in oncology. MedUnab, 14 (3),160-166.

Mueller, A., & Brettel, M. (2012). Impact of Biased Pecking Order Preferences on Firm Success in Real Business Cycles. *Journal of Behavioral Finance*, 13(3), 199-213.

Mura, M., Longo, M., Micheli, P., & Bolzani, D. (2018). The Evolution of Sustainability Measurement Research. *International Journal of Management Reviews,* 20 (3), 661–695.

Nicolis, S.C., & Sumpter, D.J.T. (2011). A DYNAMICAL APPROACH TO STOCK MARKET FLUCTUATIONS. *International Journal of Bifurcation and Chaos,* 21 (12), 3557-3564.

Nitoi, M., & Pochea, M.M. (2019). What drives European Union stock market co-movements?. *Journal of International Money and Finance,* 97, 57-69.

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

Omay, T., & Iren, P. (2019). Behavior of foreign investors in the Malaysian stock market in times of crisis: A nonlinear approach. *Journal of Asian Economics,* 60, 85-100.

Park, A., & Sabourian, H. (2011). Herding and contrarian behavior in financial markets. *Econometrica,* 79 (4), 973-1026.

Park, A. & Sgroi, D. (2012). Herding, contrarianism and delay in financial market trading. *European Economic Review,* 56 (6), 1020-1037.

Pitluck, A.Z. (2014). Watching foreigners: how counterparties enable herds, crowds, and generate liquidity in financial markets. *Socio-Economic Review,* 12 (1), 5-31.

Pochea, M.M., Filip, A.M., & Pece, A.M. (2017). Herding Behavior in CEE Stock Markets Under Asymmetric Conditions: A Quantile Regression Analysis. *Journal of Behavioral Finance,* 18 (4), 400-416.

Poon, S.H., Rockinger, M., & Stathopoulos, K. (2013). Market liquidity and institutional trading during the 2007-8 financial crisis. *International Review of Financial Analysis,* 30, 86-97.

Raddatz, C., & Schmukler, S.L. (2013). Deconstructing Herding: Evidence from Pension Fund Investment Behavior. *Journal of Financial Services Research,* 43 (1), 99-126.

Rialp, A., Merigó, J.M., Cancino, C.A. & Urbano, D. (2019). Twenty-five years (1992-2016) of the International Business Review: A bibliometric overview. *International Business Review*, 28 (6).

Roider, A. & Voskort, A. (2016). Reputational Herding in Financial Markets: A Laboratory Experiment. *Journal of Behavioral Finance,* 17 (3), 244-266.

Scharfstein, D., & Stein, J. (1990). Herd Behavior and Investment. *Amercian Economic Review,* 80, 465-479.

Schmitt, N., & Westerhoff, F. (2014). Speculative behavior and the dynamics of interacting stock markets. *Journal of Economic Dynamics & Control,* 45, 262-288.

Schmitt, N., & Westerhoff, F. (2017). Herding behaviour and volatility clustering in financial markets. *Quantitative Finance,* 17 (8), 1187-1203.

Smart, P., Tranfield, D., & Denyer, D. (2003). Towards a methodology for developing evidenceinformed management knowledge by means of systematic review. *British Journal of Management*, 14 (3), 207–222.

Souleles, D., & Hansen, K.B. (2019). Can they all be 'Shit-heads'?: learning to be a contrarian investor. *Journal of Cultural Economy*, 12 (6), 491-507.

Spyrou, S. (2013) Herding in financial markets: a review of the literature. *Review of Behavioral Finance,* 5 (2), 175-194.

Testa, A. (2019). Path-dependent behavior and information leakage in financial markets. *Economic Theory*, 67 (4), 909-949.

Tse, Y., & Hackard, J.C. (2006). Holy mad cow! Facts or (mis) perceptions: A clinical study. *Journal of Futures Markets,* 26 (4), 315-341.

Valenzuela L., Nicolas, C., Merigó, J., & Arroyo, X. (2019). Industrial marketing research: a bibliometric analysis (1990-2015). *Journal of Business & Industrial Marketing*, 34, 550-560.

Van Eck, N.J., & Waltman, L. (2010). Software survey: VOSviewer, a computer program for bibliometric mapping. *Scientometrics*, 84 (2), 523–538.

Vo, X.V., & Phan, D.B.A. (2019). Herd behavior and idiosyncratic volatility in a frontier market. *Pacific-Basin Finance Journal,* 53, 321-330.

Voronkova, S., & Bohl, M.T. (2005). Institutional traders' behavior in an emerging stock market: Empirical evidence on Polish pension fund investors. *Journal of Business Finance & Accounting,* 32, 1537-1560.

Waheed, A., & Mathur, I. (1993). The effects of announcements of bank lending agreements on the market values of united-states banks. *Financial Management,* 22 (1), 119-127.

Wang, G.C., & Wang, Y.Y. (2018). Herding, social network and volatility. *Economic Modelling,* 68, 74-81.

Watson, J., & Wickramanayake, J. (2012). The relationship between aggregate managed fund flows and share market returns in Australia. *Journal of International Financial Markets Institutions & Money,* 22 (3), 451-472.

Xie, T., Xu, Y., & Zhang, X.S. (2015). A new method of measuring herding in stock market and its empirical results in Chinese A-share market. *International Review of Economics & Finance,* 37, 324-339.

Yamamoto, R. (2011). Volatility clustering and herding agents: does it matter what they observe?. *Journal of Economic Interaction and Coordination,* 6 (1), 41-59.

Yang, T.Y.;, & Yang, Y.T. (2014). Determinants of Inflow to Mutual Funds: Criterion and Methodology for Their Application to the Mainland China Market. *Journal of Behavioral Finance,* 15 (3), 269-276.

Yao, J., Ma, C.C. & He, W.P. (2014). Investor herding behaviour of Chinese stock market. *International Review of Economics & Finance,* 29, 12-29.

Zheng, D.Z., Li, H.M., & Chiang, T.C. (2017). Herding within industries: Evidence from Asian stock markets. *International Review of Economics & Finance,* 51, 487-509.

Figure 1: Articles and Cites

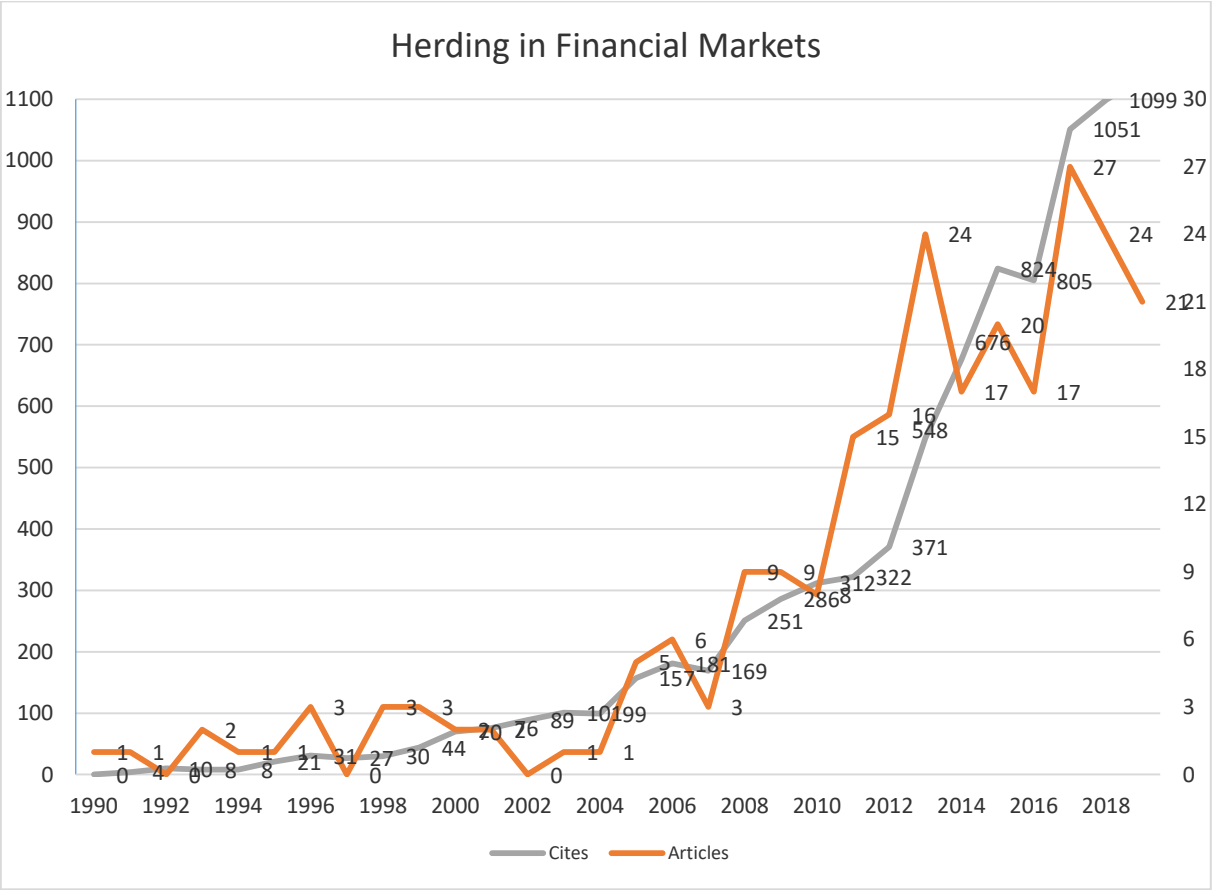

Figure 2: Co-occurrence of Web of Science Keyword about Herd Behavioral in Financial Markets used original date.

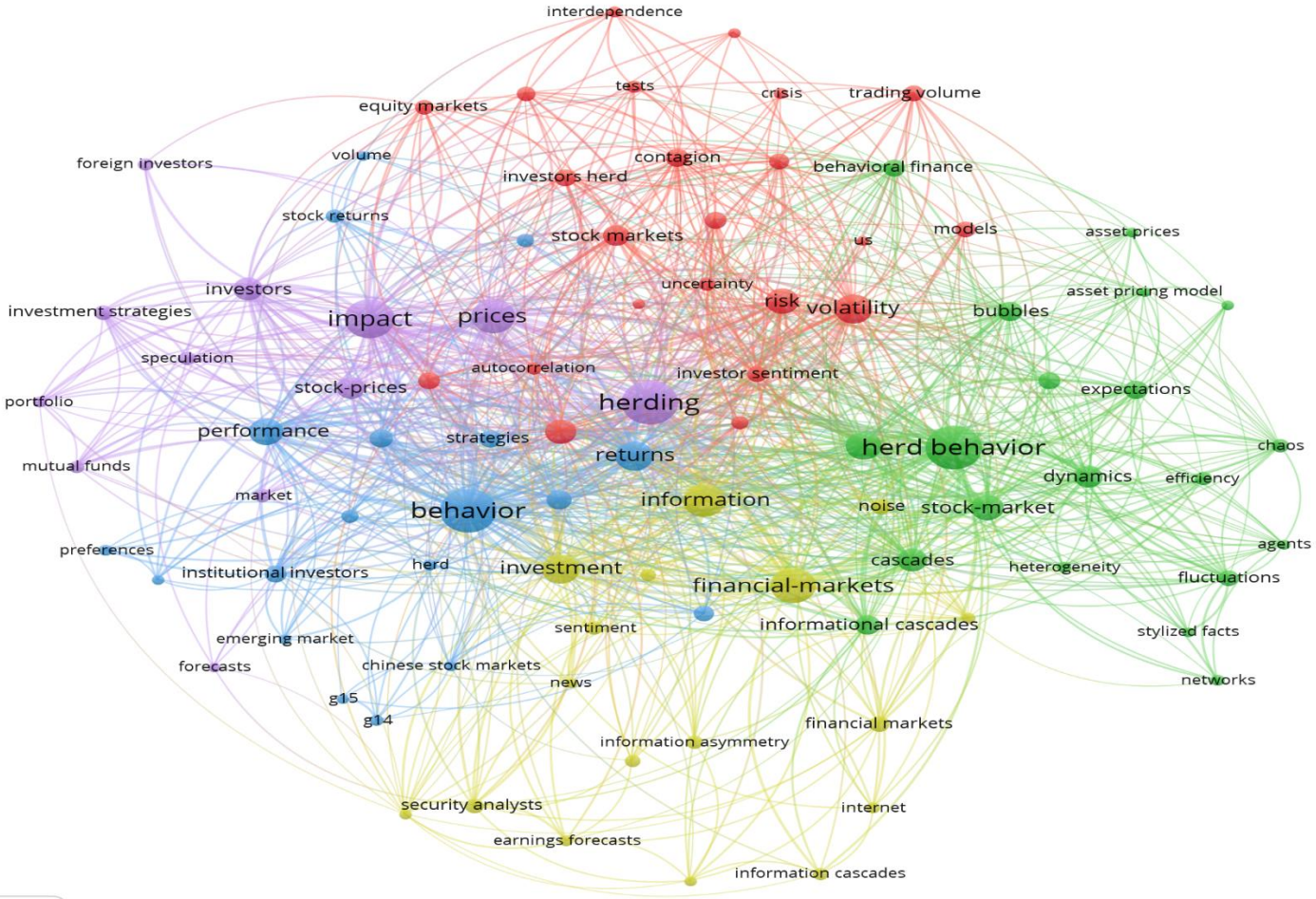

Figure 3: Co-occurrence of Web of Science Keyword about Herd Behavioral in Financial Markets used final classification.

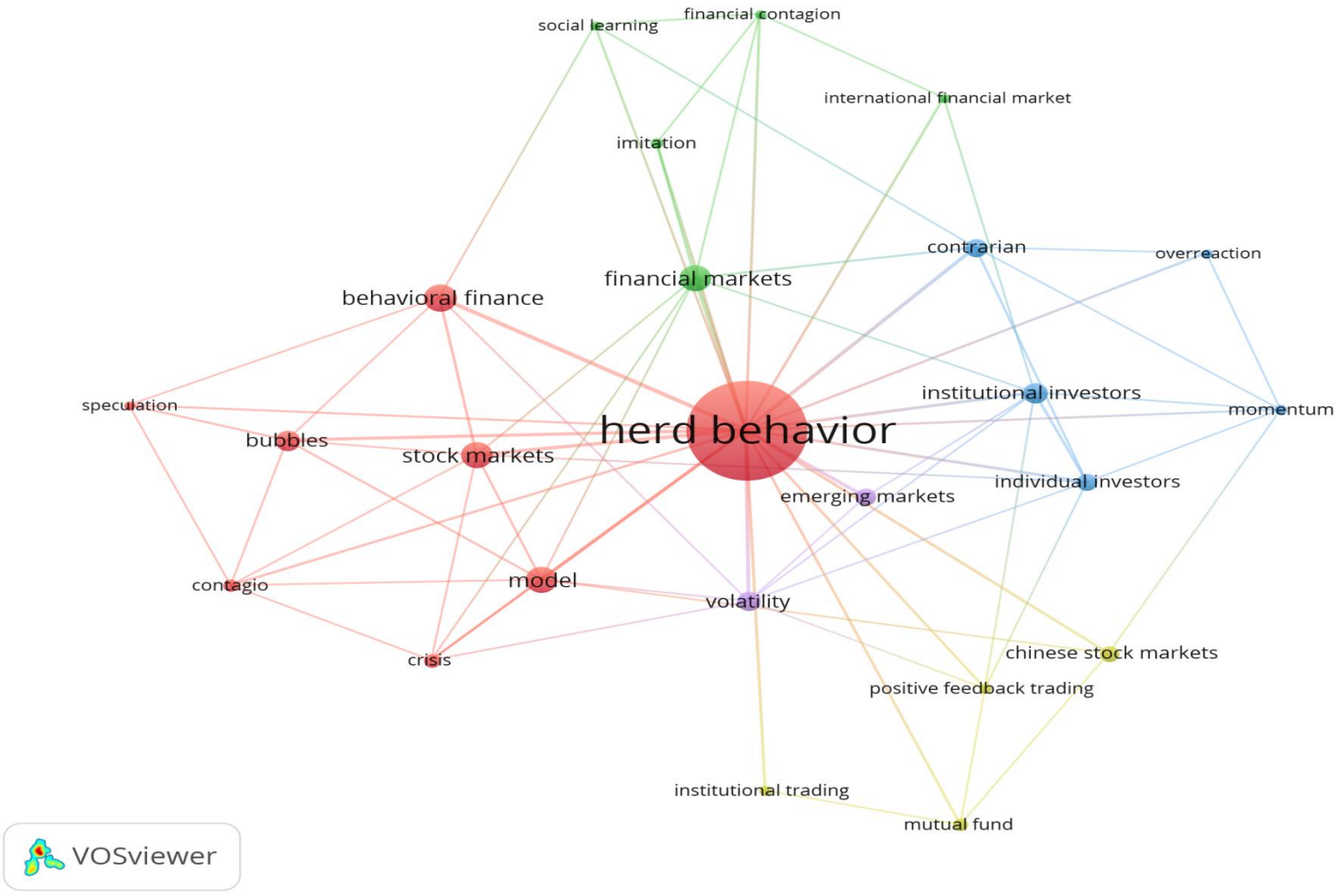

Table 1: The 30 most Journals with articles and cites.

N	Articles	Articles	Cites
1	JOURNAL OF BEHAVIORAL FINANCE	15	113
2	EMERGING MARKETS FINANCE AND TRADE	11	31
3	JOURNAL OF BANKING & FINANCE	10	816
4	INTERNATIONAL REVIEW OF FINANCIAL ANALYSIS	10	154
5	JOURNAL OF ECONOMIC BEHAVIOR & ORGANIZATION	9	294
6	JOURNAL OF INTERNATIONAL FINANCIAL MARKETS INSTITUTIONS & MONEY	8	253
7	PACIFIC-BASIN FINANCE JOURNAL	8	69
8	JOURNAL OF ECONOMIC DYNAMICS & CONTROL	7	245
9	INTERNATIONAL REVIEW OF ECONOMICS & FINANCE	7	153
10	APPLIED ECONOMICS	7	14
11	JOURNAL OF ECONOMIC INTERACTION AND COORDINATION	6	34
12	COMPUTATIONAL ECONOMICS	5	26
13	APPLIED ECONOMICS LETTERS	5	16
14	AMERICAN ECONOMIC REVIEW	4	1395
15	REVIEW OF FINANCIAL STUDIES	4	414
16	ECONOMIC MODELLING	4	47
17	NORTH AMERICAN JOURNAL OF ECONOMICS AND FINANCE	4	35
18	FINANCE RESEARCH LETTERS	4	21
19	EUROPEAN JOURNAL OF FINANCE	4	17
20	ASIA-PACIFIC JOURNAL OF FINANCIAL STUDIES	4	5
21	JOURNAL OF FINANCE	3	757
22	MACROECONOMIC DYNAMICS	3	511
23	JOURNAL OF INTERNATIONAL MONEY AND FINANCE	3	307
24	EUROPEAN FINANCIAL MANAGEMENT	3	112

N	Cites	Articles	Cites
1	AMERICAN ECONOMIC REVIEW	4	1395
2	JOURNAL OF BANKING & FINANCE	10	816
3	JOURNAL OF FINANCE	3	757
4	MACROECONOMIC DYNAMICS	3	511
5	ECONOMIC JOURNAL	1	433
6	REVIEW OF FINANCIAL STUDIES	4	414
7	QUARTERLY JOURNAL OF ECONOMICS	1	381
8	EUROPEAN ECONOMIC REVIEW	2	342
9	JOURNAL OF FINANCIAL ECONOMICS	2	331
10	JOURNAL OF INTERNATIONAL MONEY AND FINANCE	3	307
11	IMF STAFF PAPERS	1	294
12	JOURNAL OF ECONOMIC BEHAVIOR & ORGANIZATION	9	294
13	JOURNAL OF INTERNATIONAL FINANCIAL MARKETS INSTITUTIONS & MONEY	8	253
14	JOURNAL OF ECONOMIC DYNAMICS & CONTROL	7	245
15	JOURNAL OF EMPIRICAL FINANCE	2	216
16	INTERNATIONAL REVIEW OF FINANCIAL ANALYSIS	10	154
17	INTERNATIONAL REVIEW OF ECONOMICS & FINANCE	7	153
18	ECONOMETRICA	2	141
19	JOURNAL OF BEHAVIORAL FINANCE	15	113
20	EUROPEAN FINANCIAL MANAGEMENT	3	112
21	QUANTITATIVE FINANCE	3	80
22	RAND JOURNAL OF ECONOMICS	1	69
23	PACIFIC-BASIN FINANCE JOURNAL	8	69
24	JOURNAL OF BUSINESS FINANCE & ACCOUNTING	1	58

25	QUANTITATIVE FINANCE	3	80
26	INTERNATIONAL JOURNAL OF ISLAMIC AND MIDDLE EASTERN FINANCE AND MANAGEMENT	3	6
27	EMERGING MARKETS REVIEW	3	2
28	EUROPEAN ECONOMIC REVIEW	2	342
29	JOURNAL OF FINANCIAL ECONOMICS	2	331
30	JOURNAL OF EMPIRICAL FINANCE	2	216

25	ECONOMIC MODELLING	4	47
26	B E JOURNAL OF THEORETICAL ECONOMICS	1	39
27	JOURNAL OF ACCOUNTING RESEARCH	1	38
28	NORTH AMERICAN JOURNAL OF ECONOMICS AND FINANCE	4	35
29	JOURNAL OF ECONOMIC INTERACTION AND COORDINATION	6	34
30	JOURNAL OF THE EUROPEAN ECONOMIC ASSOCIATION	1	31

Table 2: The 30 most cited documents.

N	Cites	AU	TI	SO	PY	VL	IS	BP	EP
1	1057	Scharfstein, DS; Stein, JC	Herd behavior and investment	AMERICAN ECONOMIC REVIEW	1990	80	3	465	479
2	468	Cont, R; Bouchaud, JP	Herd behavior and aggregate fluctuations in financial markets	MACROECONOMIC DYNAMICS	2000	4	2	170	196
3	461	Nofsinger, JR; Sias, RW	Herding and feedback trading by institutional and individual investors	JOURNAL OF FINANCE	1999	54	6	2263	2295
4	433	Lux, T	Herd behavior, bubbles and crashes	ECONOMIC JOURNAL	1995	105	431	881	896
5	381	Kirman, A	Ants, rationality, and recruitment	QUARTERLY JOURNAL OF ECONOMICS	1993	108	1	137	156
6	336	Devenow, A; Welch, I	Rational herding in financial economics	EUROPEAN ECONOMIC REVIEW	1996	40	3 - 5	603	615
7	331	Choe, H; Kho, BC; Stulz, RM	Do foreign investors destabilize stock markets? The Korean experience in 1997	JOURNAL OF FINANCIAL ECONOMICS	1999	54	2	227	264
8	294	Bikhchandani, S; Sharma, S	Herd behavior in financial markets	IMF STAFF PAPERS	2001	47	3	279	310
9	281	Chang, EC; Cheng, JW; Khorana, A	An examination of herd behavior in equity markets: An international perspective	JOURNAL OF BANKING & FINANCE	2000	24	10	1651	1679
10	243	Hirshleifer, D; Subrahmanyam, A; Titman, S	Security analysis and trading patterns when some investors receive information before others	JOURNAL OF FINANCE	1994	49	5	1665	1698
11	240	Barber, BM; Odean, T; Zhu, N	Do Retail Trades Move Markets ?	REVIEW OF FINANCIAL STUDIES	2009	22	1	151	186
12	239	Avery, C; Zemsky, P	Multidimensional uncertainty and herd behavior in financial markets	AMERICAN ECONOMIC REVIEW	1998	88	4	724	748
13	216	Schmeling, M	Investor sentiment and stock returns: Some international evidence	JOURNAL OF EMPIRICAL FINANCE	2009	16	3	394	408
14	205	Chiang, TC; Zheng, DZ	An empirical analysis of herd behavior in global stock markets	JOURNAL OF BANKING & FINANCE	2010	34	8	1911	1921
15	170	Beirne, J; Fratzscher, M	The pricing of sovereign risk and contagion during the European sovereign debt crisis	JOURNAL OF INTERNATIONAL MONEY AND FINANCE	2013	34		60	82
16	165	Martynova, M; Renneboog, L	A century of corporate takeovers: What have we learned and where do we stand?	JOURNAL OF BANKING & FINANCE	2008	32	10	2148	2177
17	137	Kaminsky, GL; Schmukler, SL	What triggers market jitters? A chronicle of the Asian crisis	JOURNAL OF INTERNATIONAL MONEY AND FINANCE	1999	18	4	537	560
18	103	Jiang, ZQ; Zhou, WX; Sornette, D; Woodard, R; Bastiaensen, K; Cauwels, P	Bubble diagnosis and prediction of the 2005-2007 and 2008-2009 Chinese stock market bubbles	JOURNAL OF ECONOMIC BEHAVIOR & ORGANIZATION	2010	74	3	149	162

19	91	Bouwman, CHS; Fuller, K; Nain, AS	Market Valuation and Acquisition Quality: Empirical Evidence	REVIEW OF FINANCIAL STUDIES	2009	22	2	633	679
20	87	Yao, J; Ma, CC; He, WP	Investor herding behaviour of Chinese stock market	INTERNATIONAL REVIEW OF ECONOMICS & FINANCE	2014	29		12	29
21	83	Drehmann, M; Oechssler, J; Roider, A	Herding and contrarian behavior in financial markets: An Internet experiment	AMERICAN ECONOMIC REVIEW	2005	95	5	1403	1426
22	82	Bursztyn, L; Ederer, F; Ferman, B; Yuchtman, N	Understanding mechanisms underlying peer effects: evidence from a field experiment on financial decisions	ECONOMETRICA	2014	82	4	1273	1301
23	78	Demirer, R; Kutan, AM; Chen, CD	Do investors herd in emerging stock markets?: Evidence from the Taiwanese market	JOURNAL OF ECONOMIC BEHAVIOR & ORGANIZATION	2010	76	2	283	295
24	73	Alfarano, S; Lux, T; Wagner, F	Time variation of higher moments in a financial market with heterogeneous agents: An analytical approach	JOURNAL OF ECONOMIC DYNAMICS & CONTROL	2008	32	1	101	136
25	72	Economou, F; Kostakis, A; Philippas, N	Cross-country effects in herding behaviour: Evidence from four south European markets	JOURNAL OF INTERNATIONAL FINANCIAL MARKETS INSTITUTIONS & MONEY	2011	21	3	443	460
26	69	Brandenburger, A; Polak, B	When managers cover their posteriors: Making the decisions the market wants to see	RAND JOURNAL OF ECONOMICS	1996	27	3	523	541
27	64	Franke, R; Westerhoff, F	Structural stochastic volatility in asset pricing dynamics: Estimation and model contest	JOURNAL OF ECONOMIC DYNAMICS & CONTROL	2012	36	8	1193	1211
28	63	Walter, A; Weber, FM	Herding in the German mutual fund industry	EUROPEAN FINANCIAL MANAGEMENT	2006	12	3	375	406
29	59	Park, A; Sgroi, D	Herding, contrarianism and delay in financial market trading	EUROPEAN ECONOMIC REVIEW	2012	56	6	1020	1037
30	58	Dasgupta, A; Prat, A; Verardo, M	The Price Impact of Institutional Herding	REVIEW OF FINANCIAL STUDIES	2011	24	3	892	925

Table 3: The 50 most cited authors.

N	Author	Articles	Cites
1	Demirer, Riza	7	211
2	Westerhoff, Frank	7	132
3	Kallinterakis, Vasileios	6	94
4	Fang, Hao	6	9
5	Lux, Thomas	5	545
6	Blasco de las Heras, Natividad	5	92
7	Ferreruela Garces, Sandra	5	92
8	Lee, Yen-Hsien	5	6
9	Alfarano, Simone	4	151
10	Economou, Fotini	4	124
11	Balcilar, Mehmet	4	97
12	Cipriani, Marco	4	94
13	Guarino, Antonio	4	94
14	Corredor Casado, Pilar	4	66
15	Schmitt, Noemi	4	27
16	Lu, Yang-Cheng	4	6
17	Sornette, Didier	3	143
18	Philippas, Nikolaos	3	117
19	Roider, Andreas	3	113
20	Franke, Reiner	3	105
21	Bohl, Martin T.	3	70
22	Milakovic, Mishael	3	51
23	Yau, Hwey-Yun	3	6
24	Leite Ferreira, MP	3	71
25	Hirshleifer, David	2	243
26	Schmeling, Maik	2	216
27	Chiang, Thomas C.	2	212
28	Zheng, Dazhi	2	212
29	Fratzscher, M	2	185
30	Schmukler, Sergio L.	2	153

N	Author	Articles	Cites
1	Scharfstein, D.	1	1057
2	Stein, JC.	1	1057
3	Lux, Thomas	5	545
4	Bouchaud, JP	1	468
5	Cont, R	1	468
6	Nofsinger, JR	1	461
7	Sias, RW	1	461
8	Kirman, A	1	381
9	Devenow, A	1	336
10	Welch, I	1	336
11	Kho, BC	2	331
12	Choe, H	1	331
13	Stulz, RM	1	331
14	Bikhchandani, S	1	294
15	Sharma, S	1	294
16	Chang, EC	1	281
17	Cheng, JW	1	281
18	Khorana, A	1	281
19	Hirshleifer, David	2	243
20	Subrahmanyam, A	1	243
21	Titman, S	1	243
22	Barber, Brad M.	1	240
23	Odean, Terrance	1	240
24	Zhu, Ning	1	240
25	Avery, C	1	239
26	Zemsky, P	1	239
27	Schmeling, Maik	2	216
28	Chiang, Thomas C.	2	212
29	Zheng, Dazhi	2	212
30	Demirer, Riza	7	211

Table 4: Clusters

Cluster 1: Emergence	Cluster 2: Extend	Cluster 3: Investors	Cluster 4: China and Mutual funds	Cluster 5: Emerging markets
crisis	financial markets	individual investors	mutual fund	emerging markets
bubbles	international financial markets	institutional investors	positive feedback trading	volatility
contagio	financial contagion	momentum	institutional trading	asian stock markets
model	social learning	overreaction	chinese stock markets	gulf arab stock markets
behavioral finance	imitation	contrarian	fund flows	athens stock exchange
speculation	world stock markets	investor types	mutual fund performance	east asian crisis
stock markets	international finance	habit investing	closed-end funds	islamic stock market
crash	futures market	industry herding	fund manager	latin american stock markets
speculative bubbles and crashes	gold market	institutional traders	managed funds	polish stock market
2008 global financial crisis	global stock market	institutional holdings	portfolio management	taiwan stock market
subprime and oil crises	bond markets	institutional herding	performance	israeli market
dynamic conditional correlation	bank markets	investor performance	price-to-book ratio effect	tokyo stock exchangen
garch	currency crises	investor sentiment	feedback trading	stochastic volatility
heterogeneity	culture	portfolio allocation	investment strategies	implied volatility
method of simulated moments	social influence	investment patterns	trend chasing	implied volatility index
arima	social networks	momentum strategy	inflow determinants	idiosyncratic volatility
stochastic processes	national culture	momentum trading	influence of the us market	financial volatility
capital markets	informational cascades	overreaction hypothesis	market efficiency	conditional volatility
stock characteristics	irrational herd behavior	underreaction	agency problem	diffusion processes
technical and fundamental analysis	collective decision making	experimental financial market	asimetry	garch model