



**REPUBLIC OF TURKEY
ADANA ALPARSLAN TÜRKEŞ SCIENCE AND TECHNOLOGY
UNIVERSITY**

**GRADUATE SCHOOL OF SOCIAL SCIENCES
DEPARTMENT OF BUSINESS ADMINISTRATION**

**A BIBLIOMETRIC ANALYSIS OF IDIOSYNCRATIC VOLATILITY
LITERATURE IN EMERGING MARKETS**

AHMET YASİR BARAK

MASTER'S THESIS



**REPUBLIC OF TURKEY
ADANA ALPARSLAN TÜRKESİ SCIENCE AND TECHNOLOGY
UNIVERSITY**

**GRADUATE SCHOOL OF SOCIAL SCIENCES
DEPARTMENT OF BUSINESS ADMINISTRATION**

**A BIBLIOMETRIC ANALYSIS OF IDIOSYNCRATIC VOLATILITY
LITERATURE IN EMERGING MARKETS**

AHMET YASİR BARAK

MASTER'S THESIS

**SUPERVISOR
ASST. PROF. DR. ÖMER TUĞSAL DORUK**

ADANA 2022



I hereby declare that all information in this thesis has been obtained and presented in accordance with academic rules and ethical conduct. I also declare that, as required by these rules and conduct, I have fully cited and referenced all information that is not original to this work.

[Signature]

Ahmet Yasir BARAK

ABSTRACT

A BIBLIOMETRIC ANALYSIS OF IDIOSYNCRATIC VOLATILITY LITERATURE IN EMERGING MARKETS

Ahmet Yasir BARAK

Department of Business Administration

Supervisor: Asst. Prof. Dr. Ömer Tuğsal DORUK

September 2022, 70 pages

Idiosyncratic volatility is a volatility component independent of systematic volatility arising from a firm and sector variables. Bibliometric analysis shows the performance of research items and the relationship between these studies by analyzing previous studies on a particular subject with statistical methods. The thesis study aims to present the current status of this literature by making a bibliometric analysis of the idiosyncratic volatility literature in emerging markets. In this thesis, bibliometric analysis was performed for 106 studies on idiosyncratic volatility in emerging markets between January 1, 2006- July 25, 2022. Bibliographic data was obtained from the Web of Science database, and bibliometric analysis and visualization were made using the VOSviewer. Among the bibliometric analysis methods; performance analysis, citation analysis, co-citation analysis, bibliographic coupling, co-occurrence analysis and co-authorship analysis were applied. With the applied bibliometric analysis, the basic statistics of idiosyncratic volatility literature in emerging markets, connections and clusters showing the relationships between the studies were found. Initial ideas that will serve as a guide for future studies are given, and potential gaps in the literature are pointed out.

Keywords: idiosyncratic volatility, emerging markets, bibliometric analysis

ÖZET

YÜKSELEN PİYASALARDA KENDİNE ÖZGÜ VOLATİLİTE LİTERATÜRÜNÜN BİBLİYOMETRİK ANALİZİ

Ahmet Yasir BARAK

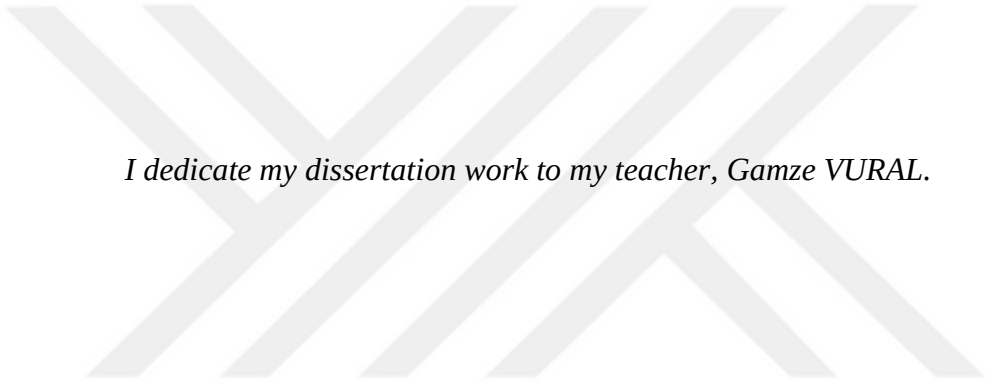
İşletme Anabilim Dalı

Danışman: Dr. Öğr. Üyesi Ömer Tuğsal DORUK

Eylül 2022, 70 sayfa

Kendine özgü volatilitite firma ve sektör değişkenlerinden kaynaklanan sistematik volatiliteden bağımsız bir volatilitite bileşenidir. Bibliyometrik analiz, belirli bir konuda daha önce yapılmış çalışmaları istatistiksel yöntemlerle analiz ederek araştırma ögelerinin performanslarını ve bu çalışmaların birbiriyle olan ilişkisini gösterir. Tez çalışmasının amacı yükselen piyasalarda kendine özgü volatilitite literatürünün bibliyometrik analizini yaparak bu literatürün güncel durumunu ortaya koymaktır. Bu tez çalışmasında 1 Ocak 2006- 25 Temmuz 2022 tarihleri arasında yükselen piyasalardaki kendine özgü volatilitite üzerine yapılmış olan 106 çalışma için bibliyometrik analiz yapılmıştır. Bibliyografik veri Web of Science veri tabanından elde edilmiş olup bibliyometrik analiz ve görselleştirme VOSviewer programından faydalanılarak yapılmıştır. Bibliyometrik analiz yöntemlerinden performans analizi, atıf analizi, ortak-atıf analizi, bibliyografik eşleşme, ortak kelime analizi ve ortak yazar analizi uygulanmıştır. Yapılan bibliyometrik analiz ile yükselen piyasalarda kendine özgü volatilitite literatürünün temel istatistikleri, çalışmalar arasındaki ilişkileri gösteren bağlantı ve kümeler bulunmuştur. Gelecek çalışmalar için rehber niteliği taşıyacak başlangıç ipuçları verilmiş, literatürdeki potansiyel boşluklara dikkat çekilmiştir.

Anahtar Kelimeler: kendine özgü volatilitite, yükselen piyasalar, bibliyometrik analiz



I dedicate my dissertation work to my teacher, Gamze VURAL.

ACKNOWLEDGEMENTS

My sincere gratitude and appreciation to my dear supervisor Asst. Prof. Dr. Ömer Tuğsal DORUK for his valuable patience, enthusiasm and immense knowledge. I could not have undertaken this journey without him and his motivation and support. There are being patient and looking from a more extensive perspective of what he contributed to me during my thesis process.

I would like to thank my esteemed professors Prof. Dr. Yıldırım Beyazıt ÖNAL, Assoc. Prof. Dr. Bahadır ERGÜN and Assoc. Prof. Dr. Gözde TÜRKMEN MÜLDÜR for their contributions and ideas to my thesis. I would like to thank the valuable professors of my institution, Büyükkutlu Faculty of Applied Sciences, where I continued my academic career, for their positive approach and support during my thesis process.

My gratitude to my family, especially my mother for their moral support and sacrifices. Their endless love helped me to succeed and has finally given me the power to finish the thesis. I would be remiss in not mentioning my friends, especially Hamza AKGÜN, Sabahat TOPRAK AKGÜN, Aysima KURMAN and Özgü ÖZGÜR. Their belief in me has kept my spirits and motivation high during this process. I would also like to thank Ali ÇEVİK and Kadir ÇATALDAŞ for all the entertainment and support.

I would like to acknowledge my dear teacher Gamze VURAL who passed away for all supporting and advice. Her always positive attitude toward me added value to my life.

Lastly, I would like to mention I am so thankful for those who supported and helped me during the completion of this thesis study.

TABLE OF CONTENTS

TABLE OF CONTENTS.....	viii
LIST OF FIGURES	ix
LIST OF TABLES	xi
NOMENCLATURE	xii
1. INTRODUCTION.....	1
2. IDIOSYNCRATIC VOLATILITY	4
2.1. Measuring Idiosyncratic Volatility	5
2.2. Determinants of Idiosyncratic Volatility	6
2.3. Emerging Markets.....	7
3. BIBLIOMETRIC ANALYSIS.....	9
3.1. Performance Analysis.....	12
3.2. Science Mapping.....	12
3.3. Techniques to Enrich Bibliometric Analysis Methods.....	13
4. MATERIALS AND METHODS	14
4.1. Research Methods and Questions	14
4.2. Data Collection and Process	15
5. RESULTS AND DISCUSSIONS	16
5.1. Performance Analysis Results	16
5.2. Science Mapping Results.....	18
5.2.1. Citation Analysis Results.....	18
5.2.2. Co-citation Analysis Results.....	26
5.2.3. Bibliographic Coupling Results	31
5.2.4. Co-word (Co-occurrence) Analysis Results	38
5.2.5. Co-authorship Analysis Results.....	41
6. CONCLUSIONS	46
REFERENCES.....	51
CURRICULUM VITAE	Hata! Yer işareti tanımlanmamış.

LIST OF FIGURES

Figure 3.1. Bibliometric analysis studies published between 1999-2022 (Web of Science) ..	10
Figure 5.1. Publication and citation statistics for the years 2006-2022. (WoS).....	16
Figure 5.2. Distribution of publications by Web of Science Categories (5 categories with the most publications)	17
Figure 5.3. Network Visualization of citation analysis results for documents analysis unit (VOSviewer)	19
Figure 5.4. Network Visualization of citation analysis results for sources analysis unit (VOSviewer)	21
Figure 5.5. Network Visualization of citation analysis results for authors analysis unit (VOSviewer).....	22
Figure 5.6. Network Visualization of citation analysis results for organizations analysis unit (VOSviewer)	24
Figure 5.7. Network Visualization of citation analysis results for countries analysis unit (VOSviewer)	25
Figure 5.8. Network Visualization of co-citation analysis results for cited references analysis unit (VOSviewer).....	27
Figure 5.9. Network Visualization of co-citation analysis results for cited sources analysis unit (VOSviewer)	29
Figure 5.10. Network Visualization of co-citation analysis results for cited authors analysis unit (VOSviewer)	31
Figure 5.11. Network Visualization of bibliographic coupling results for documents analysis unit (VOSviewer)	32
Figure 5.12. Network Visualization of bibliographic coupling results for sources analysis unit (VOSviewer)	34
Figure 5.13. Network Visualization of bibliographic coupling results for authors analysis unit (VOSviewer)	35
Figure 5.14. Network Visualization of bibliographic coupling results for organizations analysis unit (VOSviewer)	36

Figure 5.15. Network Visualization of bibliographic coupling results for countries analysis unit (VOSviewer)	38
Figure 5.16. Network Visualization of co-word analysis results for author keywords analysis unit (VOSviewer)	40
Figure 5.17. Overlay Visualization of co-word analysis results for author keywords analysis unit (VOSviewer)	40
Figure 5.18. Network Visualization of co-authorship analysis results for authors analysis unit (VOSviewer)	41
Figure 5.19. Network Visualization of co-authorship analysis results for organizations analysis unit (VOSviewer)	43
Figure 5.20. Network Visualization of co-authorship analysis results for countries analysis unit (VOSviewer)	44

LIST OF TABLES

Table 5.1. The 10 most cited studies in the idiosyncratic volatility literature in emerging markets	17
Table 5.2. Citation analysis results of documents with more than 3 links	19
Table 5.3. Citation analysis results of sources with more than 3 links.....	20
Table 5.4. Citation analysis results of authors with more than 5 links.....	22
Table 5.5. Citation analysis results of organizations	23
Table 5.6. Citation analysis results of countries	24
Table 5.7. Co-citation analysis results of references	26
Table 5.8. Co-citation analysis results of sources	17
Table 5.9. Co-citation analysis results of authors.....	29
Table 5.10. Bibliographic coupling analysis results of documents	31
Table 5.11. Bibliographic coupling analysis results of sources	33
Table 5.12. Bibliographic coupling analysis results of authors.....	34
Table 5.13. Bibliographic coupling analysis results of organizations	36
Table 5.14. Bibliographic coupling analysis results of countries.....	37
Table 5.15. Co-word analysis results of author keywords	38
Table 5.16. Co-authorship analysis results of authors.....	41
Table 5.17. Co-authorship analysis results of organizations	42
Table 5.18. Co-authorship analysis results of countries	43

NOMENCLATURE

ARCH	: Autoregressive Conditional Heteroskedasticity
CAPM	: Capital Asset Pricing Model
EGARCH	: Exponential Generalized Autoregressive Conditional Heteroskedasticity
GARCH	: Generalized Autoregressive Conditional Heteroskedasticity
WoS	: Web of Science



1. INTRODUCTION

The starting point of the science of finance is accepted as the publication of the work named “Portfolio Selection” by Hanry Markowitz in 1952. This study revealed the importance of risks in the choice of securities investments by establishing a relationship between risk and return. Investors create portfolios in which they can obtain the maximum return at a certain level of risk in the financial markets. Modern portfolio theory shows that idiosyncratic volatility can be eliminated through diversification while creating a portfolio. Subsequent studies following the Modern Portfolio Theory also ignored the existence of idiosyncratic volatility.

In the following years, one of the most important models in the finance literature, the Capital Asset Pricing Model, was developed by Sharpe (1964) and Lintner (1965) based on the risk-return relationship. CAPM predicts that the expected return of a financial asset can be calculated through the risk-free interest rate, market return and beta, which represents the systematic risk of the financial asset. CAPM assumes that investors will hold their portfolios when the market is in equilibrium and that idiosyncratic volatility will not occur. Because the hypothetical market portfolio neutralized the idiosyncratic volatility through diversification.

Idiosyncratic volatility ignored by the CAPM assumption cannot be neutralized in real financial markets (Fama & French, 2004). Assumptions of the CAPM, the absence of transaction costs and the homogeneous distribution of information, are assumptions that cannot be realized in real life. Merton (1987) argued that investors could not fully diversify their portfolios in an environment of imperfect information. Myers (1976), Levy (1978) and Merton (1987) included idiosyncratic volatility in financial asset pricing in the models they developed.

Asymmetric information and transaction costs in the markets have revealed the importance of idiosyncratic volatility in the markets over time, and literature has begun to emerge in this field. When the studies in this field were examined, it was seen that no bibliographic study was done. In this respect, there is an important gap in the literature.

Bibliometric analysis has gained high popularity in business literature in recent years. The fact that bibliometric analysis is performed on large volumes of data and the business literature is quite extensive means that this popularity is not a coincidence (Donthu et al., 2021, p.285).

The thesis study aims to present the current status of this literature by making a bibliometric analysis of the idiosyncratic volatility literature in emerging markets. In order to achieve this aim, research questions were formed, and answers were sought for these questions.

There are three reasons for including emerging markets in the thesis. The first is that our country is located in emerging markets. The second is that emerging markets are gaining more and more importance in the finance literature. The third is that idiosyncratic volatility in emerging markets is higher than idiosyncratic volatility in developed markets (Caglayan et al., 2020) and accordingly, it affects emerging markets more.

This thesis study makes three main contributions to the literature. The first contribution is the identification of publication statistics and trends by bibliometric analysis of the idiosyncratic volatility literature. The second contribution is highlighting core points in the idiosyncratic volatility literature by performing bibliometric exploratory analyses. The third contribution is to give an idea for future studies based on the bibliometric analysis results.

In the second part of the thesis, the concept of idiosyncratic volatility is emphasized. Information about the measurement methods of idiosyncratic volatility is given. Then, potential determinants of idiosyncratic volatility are presented with examples from studies in the literature. The section ended by giving information about emerging markets.

The third section is about bibliometric analysis. In this section, the meaning of bibliometric analysis, the statistics of studies conducted with the bibliometric analysis method in recent years, how to conduct bibliometric research, bibliometric analysis methods and enrichment techniques bibliometric analysis are explained.

The fourth chapter is about the materials and methods of the thesis work. After explaining the importance and method of the thesis study, research questions were formed. Finally, there is a data collection and analysis process in the chapter.

The fifth chapter is about the findings of the thesis study. The results of the bibliometric analysis were transferred. Analysis results are presented with tables and figures, and clusters and links are explained in detail.

Finally, the sixth chapter is the conclusion of the thesis work. In this section, the general conclusions reached are shared, and suggestions for future studies are given.



2. IDIOSYNCRATIC VOLATILITY

Volatility can be defined as the measure of deviations of financial assets from expected values. Prices of financial assets do not progress stably in the timeline. Even if financial assets have a certain upward or downward trend, they often have up and down stubs. Volatility is the measure of these deviations (Aggarwal et al., 2016).

Volatility is measured by standard deviation. There are very complex volatility calculations according to the type of financial assets and the type of volatility to be measured. The use of volatility in the same sense as a risk in the literature creates confusion. Volatility and risk are often used interchangeably. In order to distinguish between these two concepts, first of all, the definition of risk must be made.

In general, risk refers to the situation in which the occurrence of any situation depends on probability. When we look financially, the risk is the possibility that the investments will fail and lose. The most basic definition of risk was made by Knight (1921). Knight made a distinction between uncertainty and risk. Accordingly, risk refers to situations where the decision maker can determine the probability of a situation occurring, while uncertainty refers to the situation where the probability of occurrence is unknown (Knight, 1921; p.19).

Unlike risk, volatility is a measure of the price change of financial assets. Volatility represents the risk of a financial asset. In this respect, volatility, which is a measure of risk, is generally used in the same sense as the risk in the finance literature (Tapiero, 2010; p.64). Idiosyncratic volatility is independent of systematic volatility in the market; It is the volatility that varies from company to company, the causes of which are still unknown today. Idiosyncratic volatility is also called specific volatility and unsystematic volatility.

With a simple definition, idiosyncratic volatility is the cause of the risk that can be eliminated by diversification. Because idiosyncratic volatility varies from company to company. Idiosyncratic volatility is the representation of non-systematic risk (Wu et al., 2011: p.3). Idiosyncratic volatility is very important as financial markets are not efficient. The necessity of considering idiosyncratic volatility Campbell et al. (2001) for the following reasons. Investors

have limited opportunity to diversify in accordance with the assumptions of financial theories or institutional policies may restrict diversification. It is possible that portfolios will be affected by idiosyncratic volatility as well as by market volatility. Some investors are trying to diversify their portfolios from 20-30 stocks in accordance with traditional theory. Whether this situation is sufficient or not depends on the idiosyncratic volatility of the stocks in the portfolio. Arbitrageurs who want to take advantage of mispricing in stock prices are faced with idiosyncratic volatility. It is possible for stocks with high idiosyncratic volatility to have a high price error. It is important for studies that examine the determinants of idiosyncratic volatility in stock prices. Option pricing of individual stocks is formed according to the total volatility, including idiosyncratic volatility (Özek, 2012; p.18).

Studies investigating idiosyncratic volatility have tried to determine whether there is a considerable amount of idiosyncratic volatility in the country markets (Kumari, Mahakud, & Hiremath, 2017; Son & Nguyen, 2019). Studies investigating idiosyncratic volatility generally focused on the relationship between idiosyncratic volatility and the expected return of stocks.

Some studies have found that high idiosyncratic volatility stocks have higher returns (Brandt et al., 2009; Fama & French, 1993). In contrast, many other studies put forward that high idiosyncratic volatility causes low returns with strong evidence (Ang, Hodrick, Xing, & Zhang, 2009; Xu & Malkiel, 2003).

Fu (2009) examined the relationship between idiosyncratic volatility and expected returns and tried to determine the direction of this relationship. Fu (2009) as a result of his research; It divided idiosyncratic volatility into two as short-term idiosyncratic volatility and long-term idiosyncratic volatility. There is a negative relationship between short term idiosyncratic volatility's stock returns. There is a positive correlation between long-term idiosyncratic volatility and stock returns.

2.1. Measuring Idiosyncratic Volatility

It cannot be directly observed in asset pricing models such as idiosyncratic volatility, CAPM and Arbitrage pricing theory. There are many perspectives on the measurement of idiosyncratic volatility. Basically, idiosyncratic volatility measurement methods are divided into two. These are direct and indirect methods.

The direct method is to calculate the idiosyncratic volatility over residual variables, which is ignored in CAPM. In some studies, the IVOL was calculated over the margins of error in the CAPM (Bali et al., 2005; Nguyen & Faff 2010; Chen et al., 2010). Some studies, on the other hand, perform idiosyncratic volatility measurements based on the Three Factor model developed by Fama-French (1992). The Fama-French Three Factor Model is a model derived from CAPM (Xu & Malkiel, 2003; Ang et al., 2006). The Fama-French Three Factor Model is established by adding the difference between portfolios with large-small volume and portfolios with high-low value from the market portfolio created to the CAPM equation. Idiosyncratic volatility calculation is performed over the residual values found after the established model.

The indirect method is the variance decomposition model. The variance decomposition model was calculated by researchers in different ways (Campbell et al., 2001; Goyal & Santa-Clara, 2003). This method calculates the total volatility and then decomposes the total volatility into market volatility and idiosyncratic volatility.

As a result of the inconsistencies encountered as a result of the measurements made with these methods, ARCH-GARCH models are suggested in accordance with the variable structure of finance science. Idiosyncratic volatility, which is measured directly and indirectly, remains static due to its structure. With GARCH models, idiosyncratic volatility estimation and models can become dynamic.

The ARCH model was developed by Engel in 1982. Then, the Generalized ARCH (GARCH) was developed by Bollerslev (1986) by completing the deficiencies of ARCH. Taking into account the asymmetric nature of financial assets and the effects of shocks on future variance, the EGARCH model was created by Nelson (1991). The EGARCH model is seen as the most econometrically appropriate model for the estimation of idiosyncratic volatility.

2.2. Determinants of Idiosyncratic Volatility

Due to the importance of idiosyncratic volatility in financial asset pricing, knowing its determinants has been a matter of curiosity for investors and researchers. Studies have identified the determinants of idiosyncratic volatility as firm size, financial leverage, firm's presence in the derivatives market, cash flow, firm's rapid growth trend and liquidity.

Campbell et al. (2001), Bali et al. (2005) and Kumari et al. (2017) suggested in their study that firm size is one of the determining factors of idiosyncratic volatility. Accordingly, there is an inverse relationship between firm size and idiosyncratic volatility. The lack of information on the activities of small companies causes the rise of idiosyncratic volatility.

Black (1976) and Christie (1982) suggested in their studies that financial leverage will have an impact on the firm's idiosyncratic volatility. However, the existence of the firm in derivative markets also affects idiosyncratic volatility as it accelerates the information flow of investors (Grossman, 1988).

Fluctuations and deficiencies in companies' cash flows can be determinants of idiosyncratic volatility (Irvine & Pontiff, 2008; Kumari et al., 2017). Cash flow status is one of the most important indicators for the company. Therefore, cash flow problems can be expected to increase idiosyncratic volatility.

It is possible for companies with a rapid growth trend to increase idiosyncratic volatility (Xu & Malkiel, 2003). Unique projects that require high investment have the potential to affect the financial structure of the company and affect its idiosyncratic volatility due to its high costs.

Kumari et al. (2017) argue that one of the determinants of idiosyncratic volatility is the liquidity situation of the firm. Firms with high liquidity are estimated to have low idiosyncratic volatility.

2.3. Emerging Markets

Financial markets, in their most basic definition, are the environments that enable them to make financial transactions by bringing together the economic units with excess funds and those in need of funds. The effectiveness of financial markets is very important in terms of efficient use of scarce resources of countries.

The fact that financial markets are effective and efficient causes countries to grow economically, while ineffective financial markets cause countries to remain poor (Mishkin & Eakins, 2009). Financial markets can be classified as developed markets, developing markets

and frontier markets according to their development levels. Although financial markets have many different distinctions, these issues will not be addressed in this study.

Emerging markets can be defined as markets that have a much higher volume than before, have high growth, and offer great returns for investors. Emerging markets have 3 main features. These are; high economic growth, high investment and growth opportunities and high volatility. There is a strong positive correlation between successful governance and business performance in emerging markets. In addition, since emerging markets have weaker legal systems than developed markets, the rights of minority shareholders must be protected (Klapper & Love, 2004).

Emerging markets are heavily exposed to capital flow. Although emerging markets have improved compared to the past, they contain more political risks than developed markets. Emerging markets are undertaking important macroeconomic reforms to fully ensure financial liberalization. It tries to make the capital markets more functional. Emerging markets try to attract investors by proposing higher returns than developed markets (Bekaert & Harvey, 2003).

Growth in financial markets and efficient use of capital contribute to the economic growth of countries. An important contribution to this growth is provided by financial intermediaries (Pagano, 1993). Based on this, the structure of financial intermediaries is important for Emerging markets. The protection of the rights of minority shareholders has an important place in emerging markets (Bekaert & Harvey, 2003).

The top 10 emerging markets according to Garten are Argentina, Brazil, China, India, Indonesia, Mexico, Poland, South Africa, South Korea and Turkey (Garten, 1997). There are 26 countries in the emerging market index, classification by Morgan Stanley Capital International. This index is updated every year. The countries in the index as of May 2020 are Argentina, Brazil, Chile, China, Colombia, Czech Republic, Egypt, Greece, Hungary, India, Indonesia, Korea, Malaysia, Mexico, Pakistan, Peru, Philippines, Poland, Qatar, Russia, Saudi Arabia, South Africa, Taiwan, Thailand, Turkey, and United Arab Emirates (MSCI Index, 2020).

3. BIBLIOMETRIC ANALYSIS

The definition of bibliometric analysis covers extensive areas; in short, bibliometric analysis is the analysis of bibliographic data by quantitative methods (Brodaus, 1987). It is also used as statistical bibliometrics in the periods when the literature began to form (Pritchard, 1969).

Bibliometric analysis reveals the performance of research items and the relationship of these studies with each other by analyzing previous studies on a particular subject by statistical methods. This way, the literature field's key points for bibliometric analysis can be determined.

Bibliometric analysis deciphers rooted areas and cumulative information by making sense of voluminous and yet unstructured bibliographic data (Donthu et al., 2021, p.285). According to Kurutkan and Orhan (2018, p.8), the purpose of the bibliometric analysis is to show the most cited areas of studies in a particular field and to provide a visual mapping of cooperation between authors, journals, institutions and countries. More precisely, the purpose of the bibliometric analysis is to rank the studies on the related subject in terms of productivity, effectiveness and efficiency and to show the connection between these studies.

While doing academic research, first of all, it is necessary to scan the literature comprehensively. While previous studies show the course of the literature, they also show missing points for future studies. Identifying the missing points will create a starting point for future studies.

Researchers can perform bibliometric analysis to bring out the best of a particular topic in the literature, and to reveal the trend of the literature. This type of bibliometric analysis is the most common type of bibliometric analysis in the literature. Researchers can perform a bibliometric analysis of a particular journal in the literature. Journal bibliometric analysis is done by examining the publications of the relevant journal and by extracting the subject, author and citation profile.

Bibliometric analysis studies have gained increasing popularity in recent years. When "bibliometric analysis" is searched in the Web of Science database, 11562 results are reached.

6201 of the studies carried out were studies conducted in the last three years. When the same search was done on Scopus, another important database, 12900 results were found. In addition, 5496 studies have been indexed in the Scopus database in the last three years.

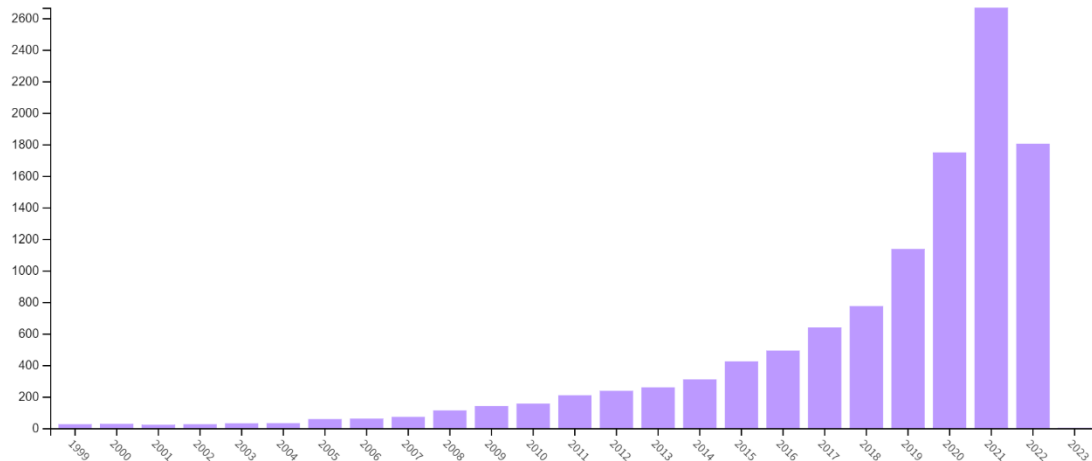


Figure 3.1. Bibliometric analysis studies published between 1999-2022 (Web of Science)

When the bibliometric analysis studies shown in Figure 3.1 are examined, it is seen that the studies conducted in this field are in an increasing trend in recent years. Bibliometric analysis studies have increased at a high rate since 2018 and reached the highest number in 2021.

Bibliometric analysis studies are progressing as a process. Donthu et al. (2021) stated that bibliometric analysis should be done in 4 steps. The bibliometric analysis process starts with the determination of the purpose and scope of the research and ends with the interpretation and reporting of the findings. Bibliometric analysis steps:

“Step 1: Define the aims and scope of the bibliometric study”

In the first step of bibliometric analysis, the objectives and scope of the analysis need to be defined. At this stage, the researcher should decide on which subject to research and determine the main objectives of the analysis. These purposes may belong to the bibliometric analysis of the subject as a whole, or the answer to a specific research question may be sought. In other words, the researcher may want to reveal only the most prominent studies on the subject to be analyzed.

Bibliometric analysis should be performed in areas with a large number of studies. In this respect, the research subject should have a sufficient number of studies. At the same time, the researcher can restrict the subject to only the studies done in certain years.

“Step 2: Choose the techniques for bibliometric analysis”

In this step, the researcher should choose the research method suitable for the purposes he has determined. While the researcher can apply all the methods as a whole in his selection, he can choose a specific analysis method and apply only that method. At this step, it should be ensured that the analysis method suitable for the research objectives and scope is selected.

“Step 3: Collect the data for bibliometric analysis”

This step involves obtaining data in accordance with the chosen analysis method. While collecting the data, it is important to collect the correct data in accordance with the needs of the method. The selection of the data source, the application of the constraints, and the preparation of the raw data for analysis by making the necessary arrangements are among the things that need to be done at this stage.

“Step 4: Run the bibliometric analysis and report the findings”

This step includes reporting the results obtained by analyzing the collected and optimized data. The researcher should make sure that the results do not contain any errors and meet the purpose of the research. The results obtained should be presented in an understandable way with enrichment techniques such as clustering and visualization.

Bibliometric analysis is divided into two in business studies (Donthu et al., 2021, p.286). These are Performance Analysis and Science Mapping. Science mapping can be divided into five main headings under itself. These are citation analysis, co-citation analysis, bibliographic coupling, co-occurrence analysis and co-authorship analysis. There are also techniques that enrich in bibliometric analysis.

3.1. Performance Analysis

Performance analysis reveals the contributions of researchers, journals or countries to the literature field through descriptive statistics (Donthu et al., 2021, p.286). This analysis method, which is relatively easy according to Science Mapping, is essential in terms of drawing the framework of the literature field. Performance analysis techniques are numerous and do not require a package program for analysis.

It can be collected under three headings as publication-related metrics, citation and publication-related metrics and citation-related metrics.

3.2. Science Mapping

Science mapping techniques reveal the interaction and connections between scientific research and show the relationship between them. Unlike performance analysis, it enables the identification of important gaps and trends in the literature field.

Science mapping can be divided into five main headings under itself. These are citation analysis, co-citation analysis, bibliographic coupling, co-occurrence analysis and co-authorship analysis.

Citation analysis is a technique that involves identifying the most influential studies in the field of research and showing the links between these studies. In citation analysis, effectiveness is related to the number of citations that studies receive. This analysis can be carried out through documents, sources, authors, organizations and countries units.

Co-citation analysis examines the links that would occur if two studies were cited together from a third study. Citing two studies together may indicate the thematic similarity between these studies. Co-citation analysis can be performed with references, sources and authors units.

Bibliographic coupling determines the common references of the two studies and creates the connection strengths over the common references. Bibliographic coupling shows thematic clusters with strong connections detected. This analysis can be carried out through documents, sources, authors, organizations and countries units.

Co-occurrence analysis identifies the most frequently used publications in that field by comparing the titles, keywords, abstracts or full texts of the studies related to the research area. In addition, when this analysis is interpreted based on time, it also helps to determine which key concepts the literature trend is headed for.

Co-authorship analysis reveals the interaction and cooperation between the authors who have published in the field of research. The coexistence of the authors is evaluated positively in terms of enriching the ideas. This analysis can be carried out through research, journal and author units.

3.3. Techniques to Enrich Bibliometric Analysis Methods

In order to effectively evaluate and interpret the findings obtained by bibliometric analysis techniques, bibliometric analysis enrichment techniques are used. These are network metrics, clustering, and visualization.

4. MATERIALS AND METHODS

4.1. Research Methods and Questions

Below are the research questions for the bibliometric analysis of idiosyncratic volatility literature in emerging markets.

Question Set 1: What are the main statistics of the idiosyncratic volatility in emerging markets literature? What is the intensity of the work done in this field in recent years? In which sub-categories do the studies categorically show intensity? What are the most cited studies in this field? What is the most successful study in terms of citations average per year?

Question Set 2: What are the results of citation analysis of the idiosyncratic volatility in emerging markets literature? Who are the most cited authors? Which Sources, Organizations and Countries are the most successful in terms of citation count?

Question Set 3: Which studies in idiosyncratic volatility in emerging markets literature did they cite as common? What connections exist between commonly cited studies? What are the prominent authors and sources in terms of co-citation? What kind of relationships exists between them?

Question Set 4: Which studies are bibliographic coupling high among studies on idiosyncratic volatility in emerging markets? What does bibliographic coupling look like for authors, sources, organizations, and countries?

Question Set 5: Which key concepts have the studies on idiosyncratic volatility in emerging markets focused on? What are the connections between concepts that are often used together? Which key concepts has the literature focused on in recent years?

Question Set 6: Are there collaborations between authors, organizations and countries in idiosyncratic volatility in emerging markets literature? Among which units are the cooperation concentrated?

To reach the answers to the above questions, performance analysis, citation analysis, co-citation analysis, bibliographic coupling, co-occurrence analysis and co-authorship analysis, which are among the bibliometric analysis techniques, will be used. The results obtained will be visualized and interpreted.

4.2. Data Collection and Process

The most frequently used databases in scientific research are Web of Science, Scopus and Google Scholar. In this study, WoS database was chosen because of its renowned and extensive research network.

"Advanced search" function was used in WoS database to create bibliographic data. The search was made using the formula " "idiosyncratic volatility" OR "idiosyncratic risk" AND emerging markets". This formula is written to list studies that include idiosyncratic volatility or idiosyncratic risk and emerging markets concepts. The reason why idiosyncratic volatility and idiosyncratic risk concepts were screened together is that the words volatility and risk are used synonymously in some of the studies. In addition, "topic" was selected as the searched part. Topic includes the title, author and abstract of the studies.

As a result of the search, 106 results were found between January 1, 2006- July 25, 2022. All records and citations of the studies related to the "export" command on the result page have been downloaded in accordance with the VOSviewer program.

All the words "idiosyncratic" have been changed to "idiosyncratic" using the "change" function on the data file. Likewise, the words "emerging market" have been changed to "emerging markets". In such problems that emerged during the analysis, necessary corrections and extractions were made on the basic text file of the database.

There are several programs used for bibliometric analysis. These can be listed as Bibliometrix, SciMat, Histcite, BibExcel and VOSviewer. Programs such as Microsoft Excel, Pajek, Gephi, and VOSviewer are used to visualize bibliometric analysis results. In this study, VOSviewer (version 1.6.18) package program (Van Eck & Waltman, 2010) was used for bibliometric analysis and visualization of the results.

5. RESULTS AND DISCUSSIONS

Bibliometric analysis was performed for 106 studies obtained from the WoS database. For performance analysis, the data obtained were categorized and turned into tables and graphics using the WoS database Analyze Results and Citation Report features. Science Mapping analyzes were analyzed with VOSviewer. All operations have been carried out step by step, and all cluster and threshold values will be presented with the analysis results.

5.1. Performance Analysis Results

The performance analysis results of 106 studies obtained from the WoS database are presented below.

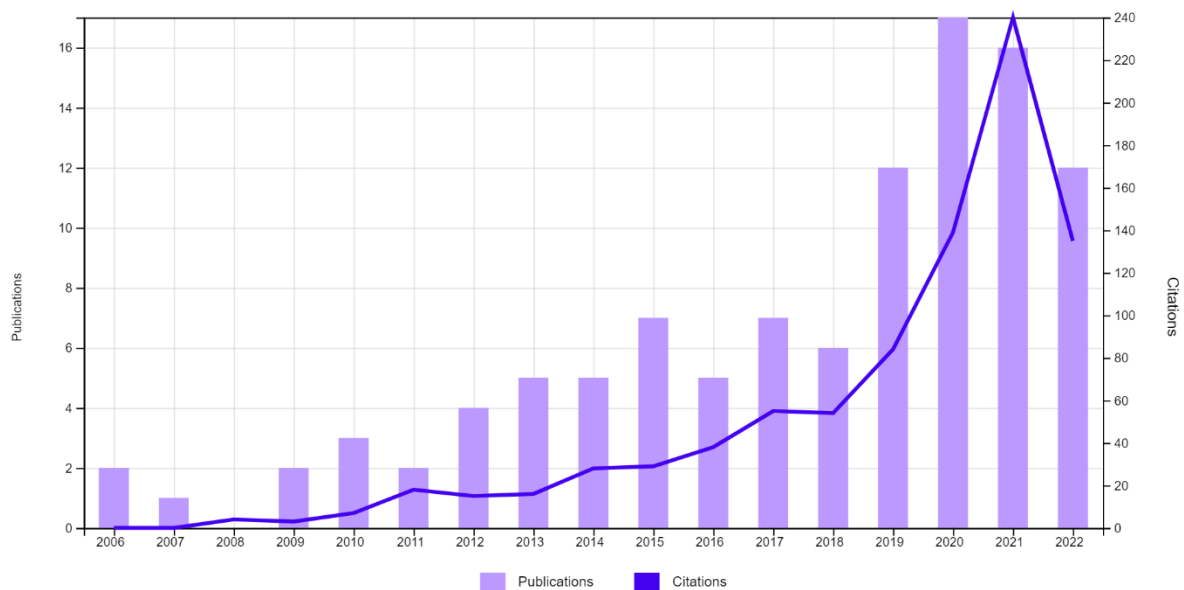


Figure 5.1. Publication and citation statistics for the years 2006-2022 (WoS)

It is seen that the studies carried out reached the highest level in 2020. The highest date in the number of citations is 2021. It is seen that the studies carried out have almost doubled as of 2019.

The first research included in the analysis is "Dynamic monitoring of financial intermediaries with subordinated debt" by Gonzalez-Rivera & Nickerson in 2006. The last research included in the scope is "Oil beta uncertainty and global stock returns" by Chen & Demirer in August

2022. Sum of the times cited of 106 studies analyzed was 865, the average citations per item were 8.16, and the h index value was 16.

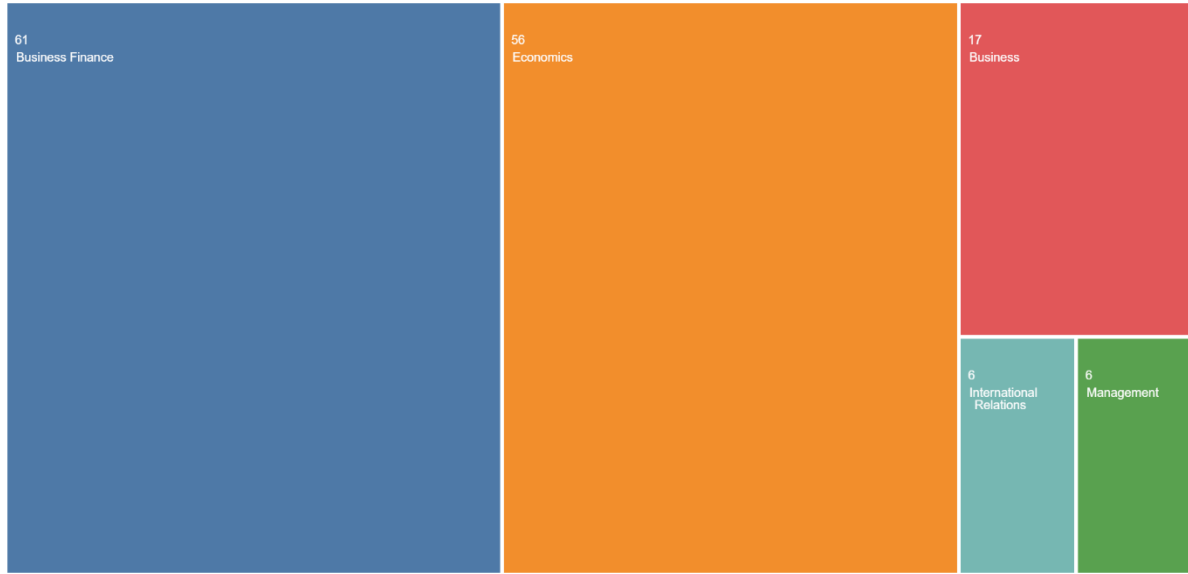


Figure 5.2. Distribution of publications by Web of Science Categories (5 categories with the most publications)

When the distribution of publications is examined, it is seen that 61 publications, which constitute 57.55% of the total publications, are included in the "Business Finance" category. In the second place, 56 publications with 52.83% of the total publications are in the "Economics" category. Other prominent categories, respectively, are "Business" with 17 publications with a rate of 16%, "International Relations" with 6 publications with a rate of 5.66%, and "Management" with 6 publications with a rate of 5.66%. Since a publication can belong to more than one category, the total rate is over one hundred.

Table 5.1. The 10 most cited studies in the idiosyncratic volatility literature in emerging markets

Authors	Publication Year	Total Citations	Average per Year	2021	2022
Umutlu, Mehmet; Akdeniz, Levent; Altay-Salih, Aslihan	2010	69	5,31	9	2
Nartea, Gilbert V.; Kong, Dongmin; Wu, Ji	2017	60	10	25	12
Kelly, Patrick J.	2014	55	6,11	13	5

Burger, John D.; Warnock, Francis E.	2007	55	3,44	9	3
Jacobs, Heiko	2016	42	6	15	3
Chen, Yunsen; Chen, Deqiu; Wang, Weimin; Zheng, Dengjin	2018	41	8,2	12	15
Nartea, Gilbert V.; Ward, Bert D.; Yao, Lee J.	2011	31	2,58	2	1
Koutmos, Dimitrios	2020	29	9,67	12	8
Xuan Vinh Vo; Dang Bao Anh Phan	2019	26	6,5	8	8
Nartea, Gilbert V.; Wu, Ji; Liu, Zhentao	2013	23	2,3	5	1

The ten most cited studies from the Web of Science database are listed in the table. The study with the highest number of citations is Umutlu et al. (2010) has 69 total citations. In second place, Nartea et al. (2017) has 60 citations. This study is also the study with the highest number of citations, with 10 in terms of the average per year number of citations. In third place, the study by Kelly (2014) has 55 citations. The study of Koutmos (2020), which is in the 8th row of the table, entered the list even though it has been only two years since it was published and ranks second with 9.67 citations in terms of the average per year number of citations.

5.2. Science Mapping Results

Science mapping methods were performed separately for each analysis unit. During the analysis, the threshold selection was chosen in such a way that the bibliometric analysis results would be most efficient. The threshold value of the analysis for each unit is given in the sections.

Network Visualization was used to highlight the links and clusters between the analysis results during the visualization, Overlay Visualization was used to highlight the trend over the years, and Density Visualization was used to highlight the density of the result sets.

Below are the results of the analysis applied to all units separately under each title.

5.2.1. Citation Analysis Results

Citation analysis results reveal the most influential units in the field. Units of analysis are documents, sources, authors, organizations, and countries.

In the citation analysis for documents analysis unit, the threshold value of 2 was selected, and 68 results were presented and visualized. 68 documents that received more than 2 citations were included in the analysis.

Table 5.2. Citation analysis results of documents with more than 3 links

Document	Citations	Links
Nartea (2013a)	23	7
Nartea (2011)	31	5
Nartea (2017)	60	5
Fang (2017)	6	4
Nartea (2013b)	15	3

Documents with more than 3 links table 5.2. is also shown. Accordingly, Nartea (2013a) has the highest number of links with 7 links. Other studies of the same author are also included in the table with high link numbers. Fang (2017) is included in the table with the number of 4 links.

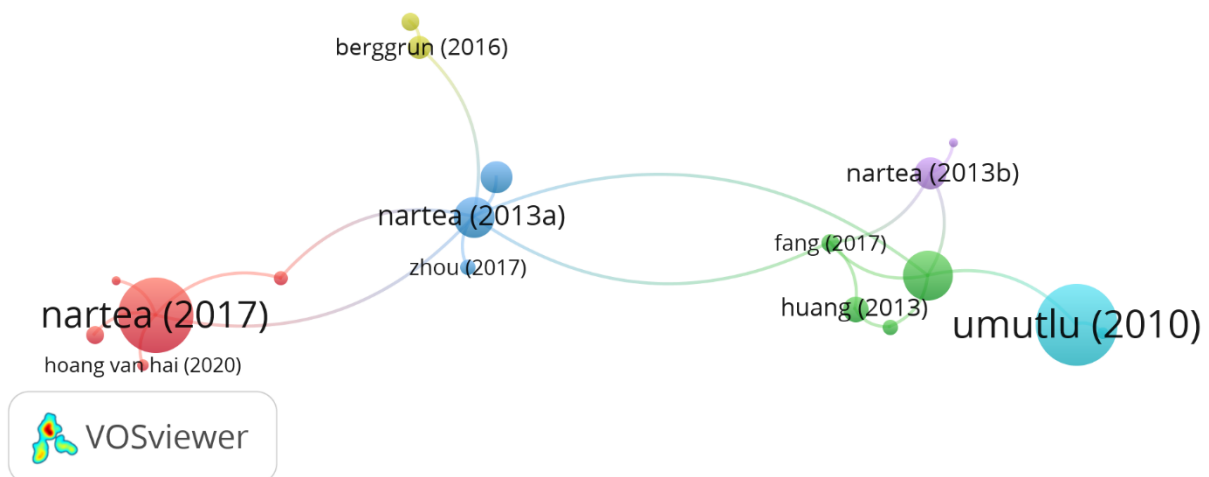


Figure 5.3. Network Visualization of citation analysis results for documents analysis unit (VOSviewer)

Figure 5.3. It shows the citation analysis results for the Documents analysis unit via network visualization. As 18 of the 68 publications obtained as a result of the citation analysis were related to each other, 18 of them were shown by the VOSviewer.

Figure 5.3. When examined, it is seen that Red, Dark Blue, Yellow, Green, Purple and Blue clusters are formed. Red cluster Hoang Van Hai et al. (2020), Lai Trung Hoang et al. (2020), Nartea et al. (2017), Yao et al. (2021) and Yin et. al. (2020) publications. Green cluster Fang et al. (2017), Huang et al. (2013), Nartea et al. (2011) and Zhu et al. (2014) publications. Dark blue cluster Angelidis (2010), Nartea et al. (2013a) and Zhou et al. (2017) includes publications. Yellow cluster Berggun et al. (2016) and Kumari et al. (2017) includes publications. The purple cluster includes publications Aziz & Ansari (2018) and Nartea & Wu (2013b). Finally, the blue cluster Umutlu et al. (2010) and Abdelsalem et al. (2021) publications.

In the citation analysis for sources analysis unit, the threshold value of 2 was selected, and 17 results were presented and visualized. 17 sources that received more than 2 citations were included in the analysis.

Table 5.3. Citation analysis results of sources with more than 3 links

Source	Documents	Citations	Total link strength
Journal of banking & finance	3	143	7
Accounting and finance	2	31	6
Cogent economics & finance	3	5	5
Emerging markets finance and trade	6	29	4
Emerging markets review	5	35	4
Pacific-basin finance journal	4	45	3

Sources with more than 3 links table 5.3. is also shown. Accordingly, Journal of Banking & Finance has the highest number of links with 7 links. Other highly linked sources are Accounting and Finance with 6 links, Cogent Economics & Finance with 5 links, Emerging Markets Finance and Trade with 4 links, Emerging Markets Review with 4 links and Pacific-

Basin Finance Journal with 3 links, respectively. The source with the highest number of citations is the Journal of Banking & Finance, which has 143 citations.

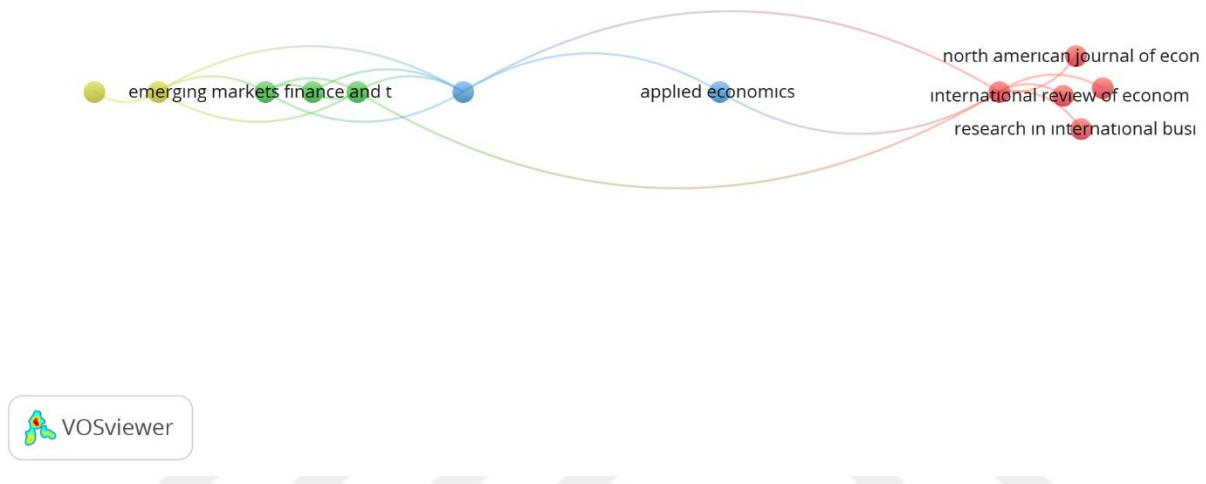


Figure 5.4. Network Visualization of citation analysis results for sources analysis unit (VOSviewer)

Figure 5.4. It shows the citation analysis results for the sources analysis unit via network visualization. As 12 of the 17 sources obtained as a result of the citation analysis were related to each other, 12 of them were shown by the VOSviewer.

Figure 5.4. When examined, it is seen that there are 4 clusters of yellow, green, blue and red. The yellow cluster contains the Emerging Markets Review and Journal of Financial Stability sources. The green cluster includes sources from Cogent Economics & Finance, Emerging Markets Finance, and Pacific-Basin Finance Journal. The blue cluster includes Account and Finance and Applied Economics sources. Finally, the red cluster includes International Review of Economics & Finance, Journal of Banking & Finance, Journal of Corporate Finance, North American Journal of Economics and Finance and Research in International business and finance sources.

In the citation analysis for authors analysis unit, the threshold value of 20 was selected, and 27 results were presented and visualized. 27 authors that received more than 20 citations were included in the analysis.

Table 5.4. Citation analysis results of authors with more than 5 links

Author	Documents	Citations	Total link strength
Nartea, Gilbert V.	6	132	26
Wu, Ji	5	105	25
Ward, Bert D.	2	33	11
Yao, Lee J.	1	31	11
Liu, Zhentao	1	23	9
Kong, Dongmin	1	60	5

Authors with more than 5 links table 5.3. is also shown. Accordingly, Gilbert Nartea has the highest number of links with 26 links. Other highly linked authors are Ji Wu with 25 links, Bert D. Ward with 11 links, Lee J. Yao with 11 links, Zhentao Liu with 9 links and Dongmin Kong with 5 links, respectively. The author with the highest number of citations is Gilbert Nartea, which has 132 citations.

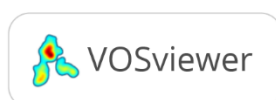
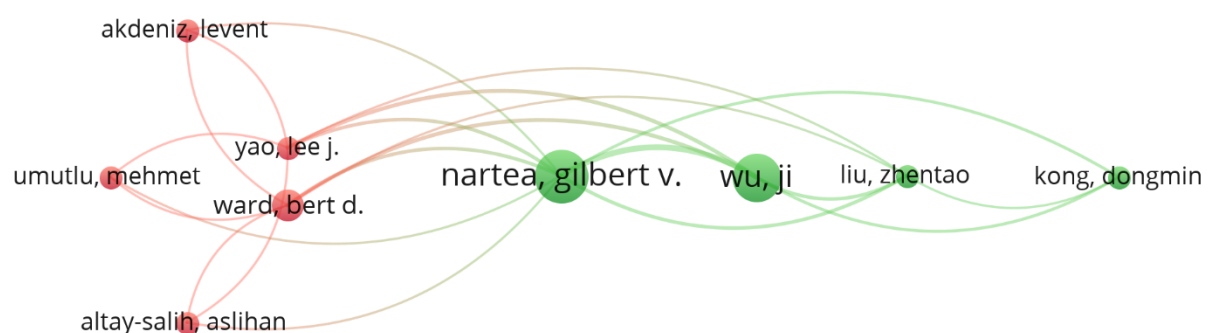


Figure 5.5. Network Visualization of citation analysis results for authors analysis unit (VOSviewer)

Figure 5.5. It shows the citation analysis results for the authors analysis unit via network visualization. As 9 of the 27 authors obtained as a result of the citation analysis were related to each other, 9 of them were shown by the VOSviewer.

Figure 5.5. When examined, it is seen that there are 2 clusters of green and red. The green cluster includes the authors of Nartea, Liu, Kong, and Wu. The red cluster includes the authors Yao, Ward, Umutlu, Akdeniz and Altay Salih.

In the citation analysis for organizations analysis unit, the threshold value of 3 was selected, and 6 results were presented and visualized.

Table 5.5. Citation analysis results of organizations

Organization	Documents	Citations	Total link strength
Lincoln University	5	77	12
Xiamen University	4	45	12
Massey University	3	81	4
University Econ Ho Chi Minh City	3	34	4
Florida International University	3	5	0
University Sao Paulo	3	12	0

Lincoln University has the highest number of links and citations with 26 links and 77 citations. Other highly linked organizations are Xiamen University with 12 links and 45 citations, Massey University with 4 links but 81 citations. Despite the fact that there is not any links for Florida International University and University Sao Paulo, they have 5 and 12 citations, respectively.

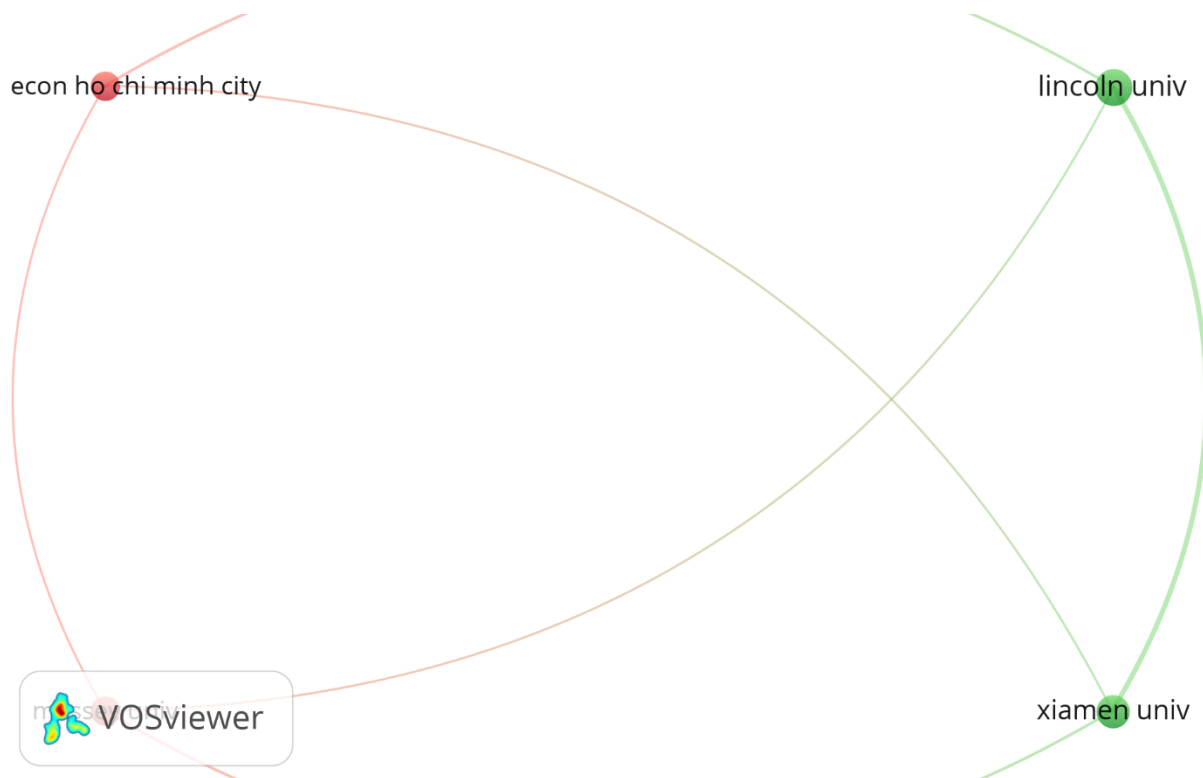


Figure 5.6. Network Visualization of citation analysis results for organizations analysis unit (VOSviewer)

Figure 5.6. It shows the citation analysis results for the organizations analysis unit via network visualization. As 4 of the 6 authors obtained as a result of the citation analysis were related to each other, 4 of them were shown by the VOSviewer.

Figure 5.6. When examined, it is seen that there are 2 clusters of green and red. The green cluster includes the organizations of Xiamen University and Lincoln University. The red cluster includes the organizations Econ Ho Chi Minh City and Massey University.

In the citation analysis for countries analysis unit, the threshold value of 3 was selected, and 15 results were presented and visualized.

Table 5.6. Citation analysis results of countries

Country	Documents	Citations	Total link strength
USA	28	330	28
Peoples r China	24	200	49
New Zealand	10	161	48
Turkey	5	77	4

Vietnam	6	44	12
Spain	4	39	1
England	5	26	1
India	10	23	4
Colombia	3	19	7
Brazil	5	18	4
Canada	4	15	6
South Korea	4	13	2
Australia	4	9	4
Taiwan	4	8	8
Indonesia	4	5	18

Countries with more than 5 documents table 5.6. is also shown. In the table, while the most cited country is The USA with 330 citations, Indonesia is the country which have the least cited with 5 citations. After The USA, China, New Zealand and Turkey are three countries which have the most cited documents. When the table is examined, it is concluded that the most linked documents are from China and New Zealand with 49 and 48 total link strength respectively. In this field, especially Indonesia and Vietnam have strong link capacities.

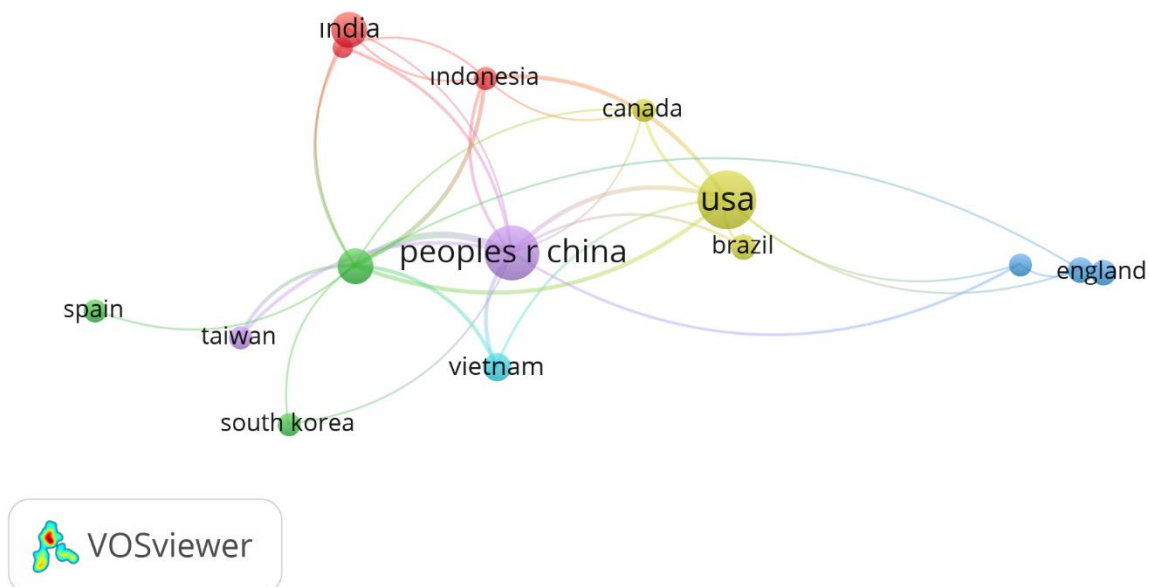


Figure 5.7. Network Visualization of citation analysis results for countries analysis unit (VOSviewer)

Figure 5.7. It shows the citation analysis results for the countries analysis unit via network visualization. 12 countries can be seen on the visual. There are 5 different color categories. The green cluster includes Spain and South Korea. The red cluster includes India and Indonesia. The yellow cluster includes Canada, The USA and Brazil. The purple cluster includes China and Taiwan. Last, the blue cluster includes Vietnam and England.

5.2.2. Co-citation Analysis Results

In the co-citation analysis for cited references analysis unit, the threshold value of 20 was selected, and 15 results were presented and visualized.

Table 5.7. Co-citation analysis results of references

Cited reference	Citations	Total link strength
Fama ef, 1993, j financ econ, v33, p3, doi 10.1016/0304-405x(93)90023-5	49	239
Ang a, 2006, j financ, v61, p259, doi 10.1111/j.1540-6261.2006.00836.x	40	235
Ang a, 2009, j financ econ, v91, p1, doi 10.1016/j.jfineco.2007.12.005	32	203
Fama ef, 1973, j polit econ, v81, p607, doi 10.1086/260061	31	167
Moreck r, 2000, j financ econ, v58, p215, doi 10.1016/s0304-405x(00)00071-4	30	97
Fu fj, 2009, j financ econ, v91, p24, doi 10.1016/j.jfineco.2008.02.003	28	177
Merton rc, 1987, j financ, v42, p483, doi 10.2307/2328367	27	175
Campbell jy, 2001, j financ, v56, p1, doi 10.1111/0022-1082.00318	26	130
Jegadeesh n, 1993, j financ, v48, p65, doi 10.1111/j.1540-6261.1993.tb04702.x	25	138
Sharpe wf, 1964, j financ, v19, p425, doi 10.2307/2977928	25	132
Amihud y, 2002, j financ mark, v5, p31, doi 10.1016/s1386-4181(01)00024-6	24	128
Goyal a, 2003, j financ, v58, p975, doi 10.1111/1540-6261.00555	21	103
Carhart mm, 1997, j financ, v52, p57, doi 10.2307/2329556	20	117
Fama ef, 1992, j financ, v47, p427, doi 10.2307/2329112	20	117

Authors with more than 90 links has been shown in the table 5.7. Accordingly, Fama E.F. has the highest number of links with 239 links. Other highly linked authors are Ang A. with 235

links for one document and 203 links for another document, Fama E. F. with 167 links, Morck R. with 97 links, Fu F.J. with 177 links and Merton R.C. with 175 links. The author with the highest number of citations is Fama E.F., which has 49 citations.

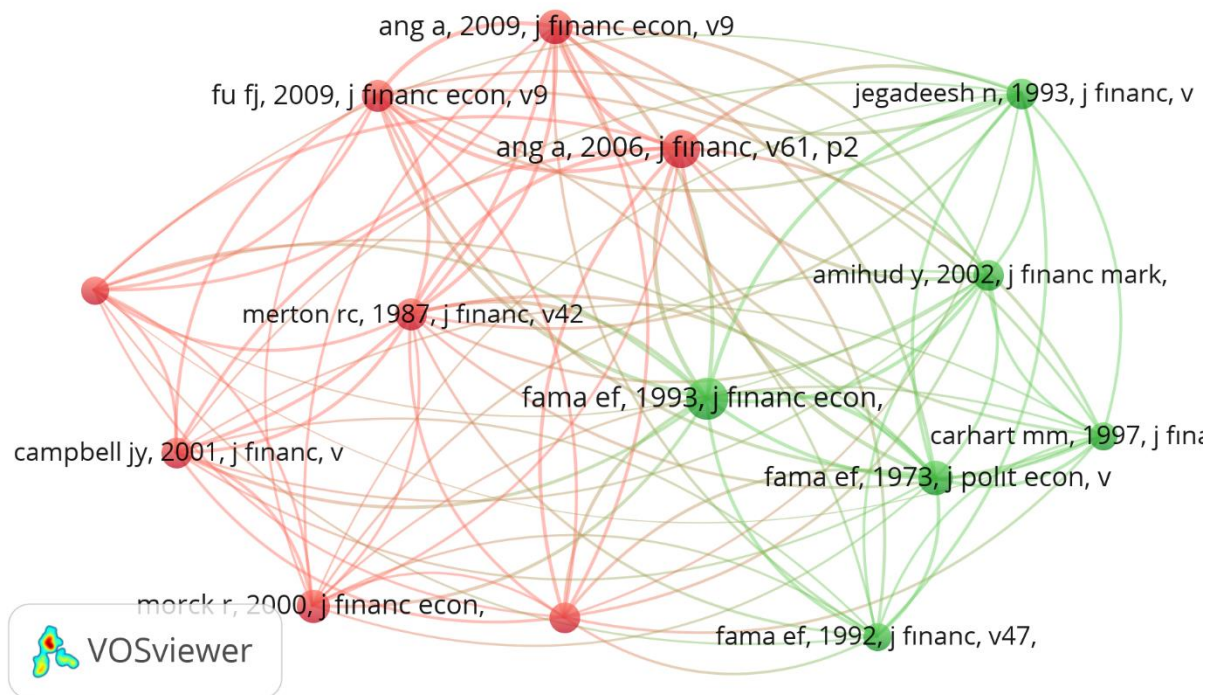


Figure 5.8. Network Visualization of co-citation analysis results for cited references analysis unit (VOSviewer)

Figure 5.8. It shows the co-citation analysis results for the Documents analysis unit via network visualization. When the visualization has been examined, it is seen that red, and green clusters are formed. Red cluster Ang A. (2009), Fu F.J. (2009), Ang A. (2006), Merton R.C. (1987), Morck R. (2000) and Campbell (2001) publications. Green cluster Jegadeesh N. (1993), Amihud (2002), Fama E.F. (1993), Carhart M.M. (1997), Fama E.F. (1993) and Fama E.F. (1973) publications.

In the co-citation analysis for cited sources analysis unit, the threshold value of 50 was selected, and 16 results were presented and visualized.

Table 5.8. Co-citation analysis results of sources

Source	Citations	Total link strength
Journal of Finance	743	16532
Journal of Financial Economics	609	15400
Review of Financial Studies	266	7773
Journal of Banking & Finance	178	4527
Journal of Financial and Quantitative Analysis	135	4169
Econometrica	110	3057
Journal of Accounting and Economics	90	2866
Journal of Political Economy	82	2437
American Economic Review	73	2077
Working paper	69	2104
Emerging Markets Review	61	2089
Journal of Business	59	1572
Journal of Corporate Finance	58	2119
Accounting Review	57	1862
Pacific-Basin Finance Journal	52	1629
International Review of Financial Analysis	50	1183

Sources with more than 50 citations table 5.8. is also shown. Accordingly, Journal of Finance has the highest number of links with 16532 links. Other highly linked sources are Journal of Financial Economics with 15400 links, Review of Financial Studies with 7773 links, Journal of Banking & Finance with 4527 links, Journal of Financial and Quantitative Analysis with 4169 links. The source with the highest number of citations is Journal of Finance, which has 743 citations.

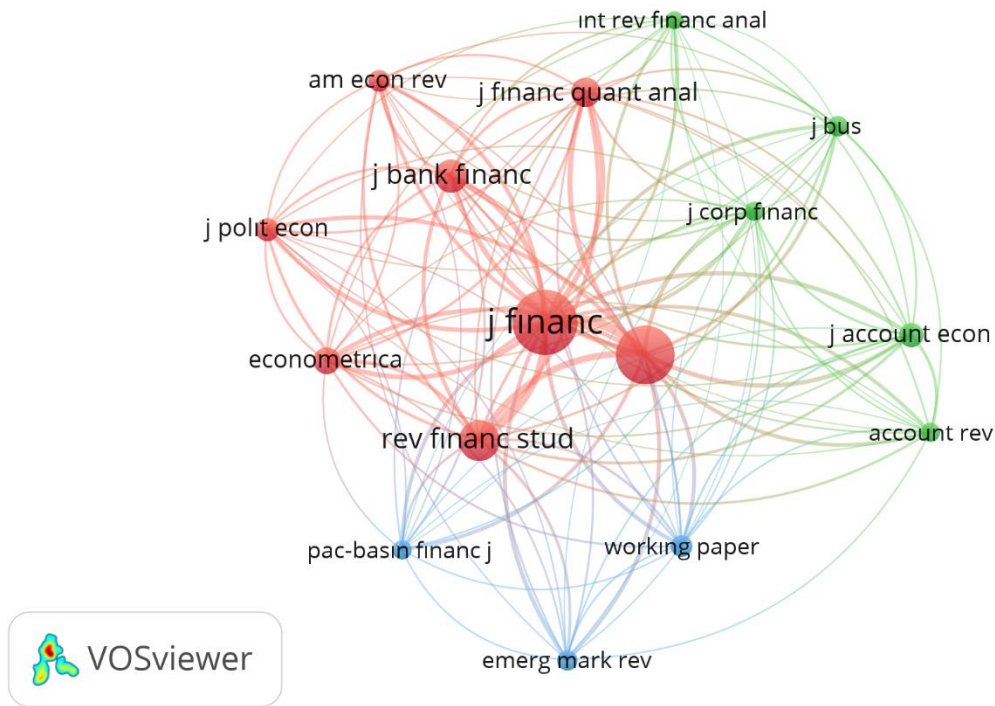


Figure 5.9. Network Visualization of co-citation analysis results for cited sources analysis unit (VOSviewer)

In the network visualization, there can be seen 3 different color clusters as blue, red and green. The blue cluster includes sources Pacific-Basin Finance Journal, Working Paper and Emerging Market Reviews. The green cluster includes International Review Financial Analysis, Journal of Business, Journal of Corporate Finance, Journal of Accounting Economics and Accounting Reviews. The red cluster includes Journal of Finance, Review of Financial Studies, Econometrica, Journal of Political Economics, Journal of Banking Finance and Journal of Financial Quantitative Analytics.

In the co-citation analysis for cited authors analysis unit, the threshold value of 20 was selected, and 22 results were presented and visualized.

Table 5.9. Co-citation analysis results of authors

Author	Citations	Total link strength
Fama, E.F.	170	1437
Ang, A.	80	932

Bali, T.G.	61	676
Bekaert, G.	49	477
Campbell, J.Y.	41	377
Morck, R.	40	273
Jegadeesh, N.	38	416
Merton, R.C.	34	381
Nartea, G.Y.	30	356
Fu, F.J.	29	365
Amihud, Y.	28	278
Guo, H.	28	363
Sharpe, W.F.	26	292
Goyal, A.	23	270
Harvey, C.R.	23	271
Lintner, J.	22	262
Pastor, L.	21	165
Baker, M.	20	191
Black, F.	20	199
Carhart, M.M.	20	235
Newey, W.K.	20	234
Roll, R.	20	200

Authors with more than 160 links table 5.9. is also shown. Firstly, Fama ef has the highest number of links with 1437 links. Other highly linked authors are Ang, A. with 932 links, Bali, T.G, with 676 links, Bekaert, G. with 477 links, Campbell, J.Y. with 377 links and Morck, R. with 273 links, respectively. The author with the highest number of citations is Fama E.F., which has 170 citations.

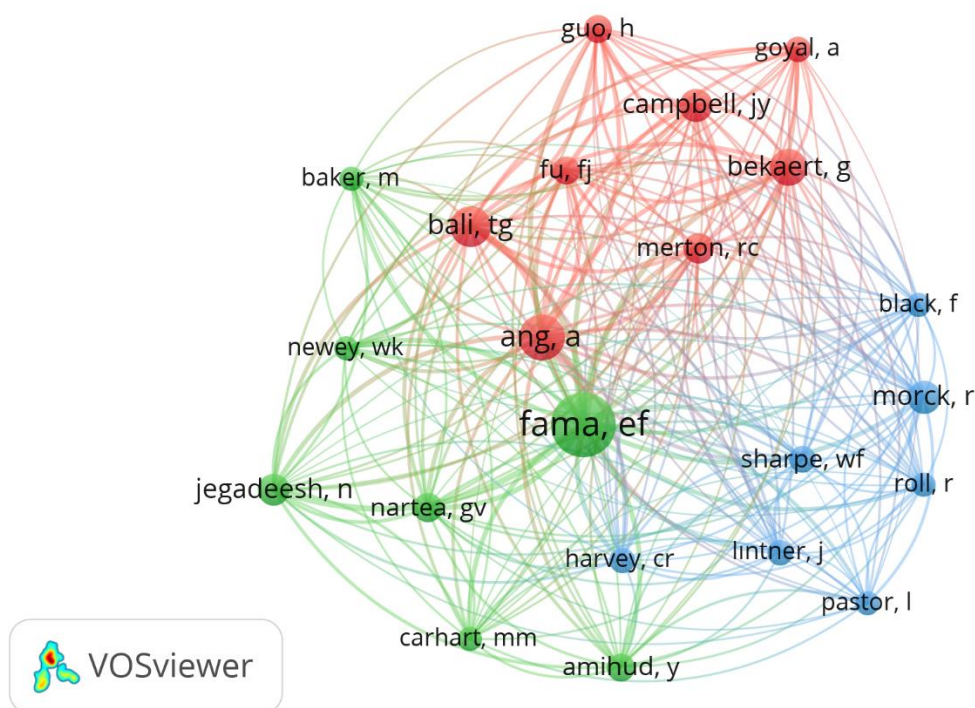


Figure 5.10. Network Visualization of co-citation analysis results for cited authors analysis unit (VOSviewer)

Figure 5.10. It shows the co-citation analysis results for the documents analysis unit via network visualization. When the network has been examined, it is seen that red, green and blue clusters are formed. Red cluster includes Guo H., Goyal, A., Campbell J.Y., Bekaert G., Fu F.J., Bali T.G., Ang A., and Merton R.C. Green cluster includes Baker M., Newey, W.K., Jegadeesh N., Nartea G.V., Fama E.F., Carhart M.M. and Amihud Y. Blue cluster includes Black F., Morck, R., Sharpe W.F., Roll R., Lintner J., Pastor L., Harvey C.R.

5.2.3. Bibliographic Coupling Results

In the bibliographic coupling for documents analysis unit, the threshold value of 20 was selected, and 13 results were presented and visualized.

Table 5.10. Bibliographic coupling analysis results of documents

Document	Citations	Total link strength
Nartea (2011)	31	33
Nartea (2013)	23	54

Xuan (2019)	25	11
Bai (2015)	21	15
Jacobs (2016)	42	22
Nartea (2017)	60	27
Burger (2007)	55	1
Bennett (2006)	22	21
Umutlu (2010)	69	17
Chen (2018)	41	17
Kelly (2014)	55	41
Koutmos (2020)	27	4
Geyfman (2009)	23	1

Authors with more than 20 citations table 5.10. is also shown. Nartea (2013) has the highest number of links with 54 links. Other highly linked authors are Nartea (2011) with 33 links, Xuan (2019) with 11 links, Ba (2015) with 15 links, Jacobs (2016) with 22 links. The document with the highest number of citations is Umutlu (2010), which has 69 citations.

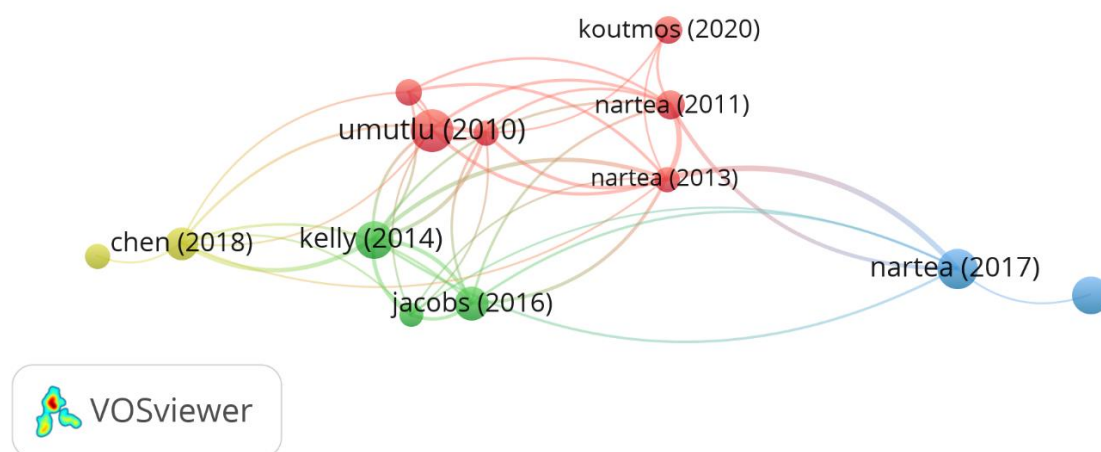


Figure 5.11. Network Visualization of bibliographic coupling results for documents analysis unit (VOSviewer)

When the network is examined, it is realized that Red, Yellow, Green and Blue clusters are formed. Red cluster includes Umutlu (2010), Nartea (2011), Nartea (2013), Koutmos (2020).

Blue cluster includes Nartea (2017). Green cluster includes Kelly (2014) and Jacobs (2016). Finally, the yellow cluster includes Chen (2018).

In the bibliographic coupling for sources analysis unit, the threshold value of 20 (3) was selected, and 6 results were presented and visualized.

Table 5.11. Bibliographic coupling analysis results of sources

Source	Documents	Citations	Total link strength
Emerging markets finance and trade	6	29	353
Emerging markets review	5	35	272
Journal of banking & finance	3	143	122
Pacific-basin finance journal	4	45	235
Research in international business and finance	4	28	244
International review of economics & finance	6	44	226

Sources with more than 100 links table 5.11. is also shown. Firstly, Emerging Markets Finance and trade has the highest number of links with 353 links. Other highly linked sources are Emerging Markets Review with 272 links, Journal of Banking & Finance with 122 links, Pacific-Basin Finance Journal with 235 links, Research in International Business and Finance with 244 links and International Review of Economics & Finance with 226 links, respectively. The source with the highest number of citations is Journal of Banking & Finance, which has 143 citations.



Figure 5.12. Network Visualization of bibliographic coupling results for sources analysis unit (VOSviewer)

Figure 5.12. It shows the citation analysis results for the documents analysis unit via network visualization. Sources in the network visualization has been formed only one red cluster. The red cluster includes Emerging Markets Finance and Trade, Emerging Markets Review, Journal of Banking & Finance, Pacific-Basin Finance Journal, Research in International Business and Finance, International Review of Economics & Finance.

In the bibliographic coupling for authors analysis unit, the threshold value of 20 (2) was selected, and 6 results were presented and visualized.

Table 5.12. Bibliographic coupling analysis results of authors

Author	Documents	Citations	Total link strength
Nartea, Gilbert V.	6	132	769
Wu, Ji	5	105	672
Dang Bao Anh Phan	2	33	117
Ward, Bert D.	2	33	297
Xuan Vinh Vo	2	33	117

Demirer, Rıza	3	20	94
---------------	---	----	----

Authors with more than 94 links table 5.12. is also shown. Gilbert Nartea has the highest number of links with 769 links. Other highly linked authors are Ji Wu with 672 links, Dang Bao with 117 links, Bert D. Ward with 297 links, Xuan Vinh with 117 links and Rıza Demirer with 94 links, respectively. The author with the highest number of citations is Gilbert Nartea, which has 132 citations.

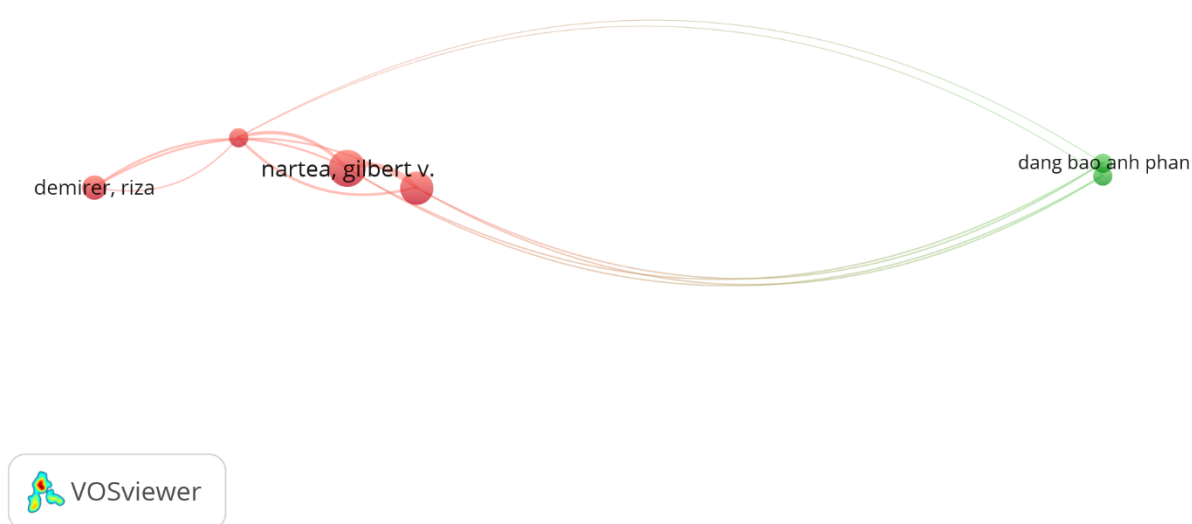


Figure 5.13. Network Visualization of bibliographic coupling results for authors analysis unit (VOSviewer)

Figure 5.13. It shows the citation analysis results for the documents analysis unit via network visualization. There are two different clusters as red and green. The red cluster includes Rıza Demirer, Gilbert Nartea, while the green cluster includes Dang Bao.

In the bibliographic coupling for organizations analysis unit, the threshold value of 20 (2) was selected, and 6 results were presented and visualized.

Table 5.13. Bibliographic coupling analysis results of organizations

Organization	Documents	Citations	Total link strength
Cent University Finance & Econ	2	43	71
Lincoln University	5	77	559
Massey University	3	81	152
University Econ Ho Chi Minh City	3	34	140
Xiamen University	4	45	576
Zhongnan University Econ & Law	2	61	176

Organizations with more than 70 links table 5.13. is also shown. Accordingly, Xiamen University has the highest number of links with 576 links. Other highly linked authors are Lincoln University with 559 links, Zhongnan University econ & law with 176 links. The organization with the highest number of citations is Massey University also, which has 81 citations.

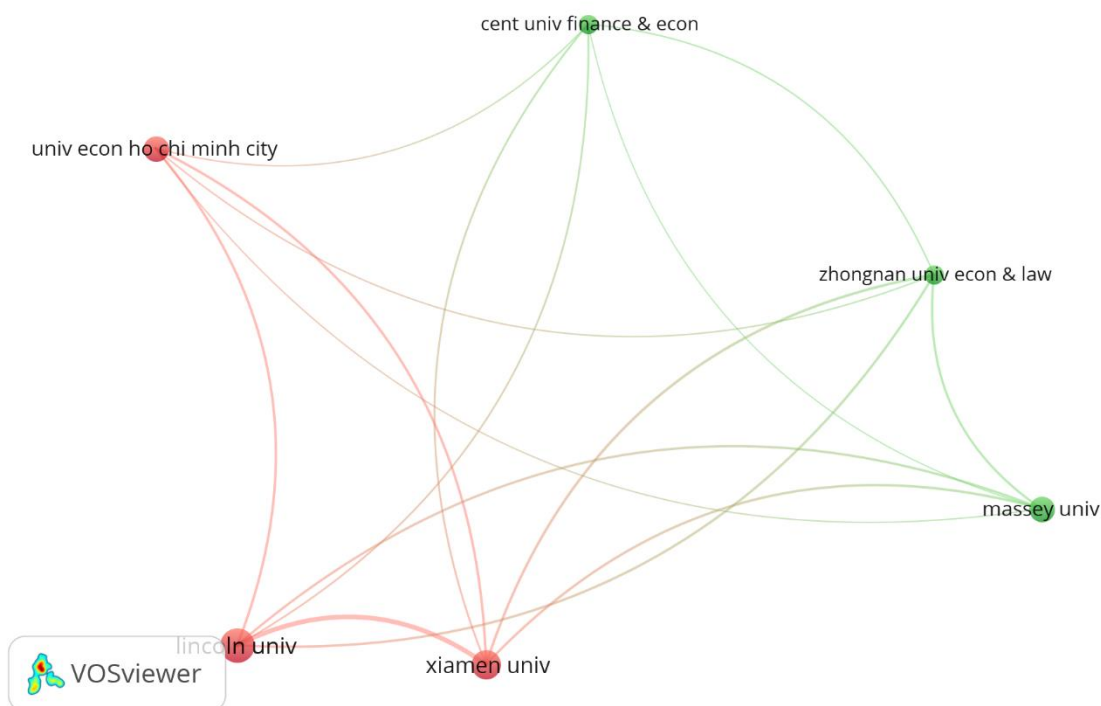


Figure 5.14. Network Visualization of bibliographic coupling results for organizations analysis unit (VOSviewer)

The network visualization shows red and green clusters. The red cluster have organizations Lincoln University, Xiamen University and University Econ Ho Chi Minh City, while the green cluster includes Massey University, Zhongman University Eco & Law and Cent University Finance & Econ.

In the bibliographic coupling for countries analysis unit, the threshold value of 20 (3) was selected, and 8 results were presented and visualized.

Table 5.14. Bibliographic coupling analysis results of countries

Country	Documents	Citations	Total link strength
England	5	26	416
New Zealand	10	161	2400
Peoples r China	24	200	4014
Spain	4	39	509
Turkey	5	77	1115
USA	28	330	2999
Vietnam	6	44	1061
India	10	23	1668

In the table 5.14., it is shown that the countries which have most linked documents. Firstly, documents with the highest number of links are from China with 4014 links. Other highly linked documents are from The USA with 2999 links, New Zealand with 2400 links and India with 1668 links. The USA is also the country which has documents most cited with 330 citations.

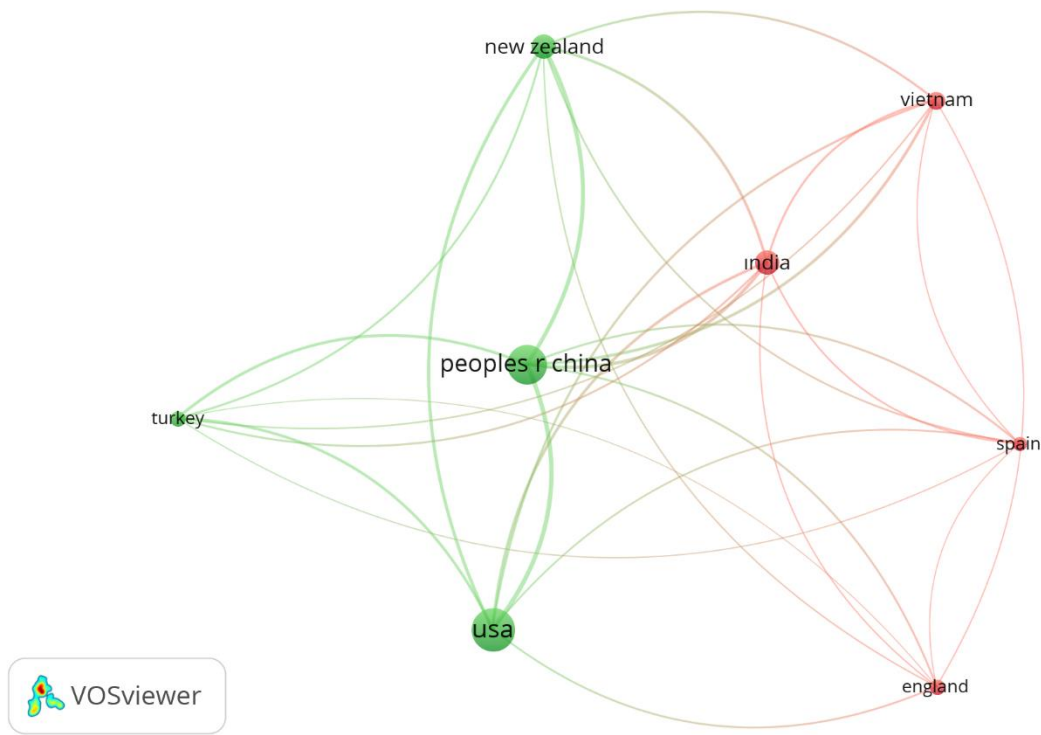


Figure 5.15. Network Visualization of bibliographic coupling results for countries analysis unit (VOSviewer)

When the network has been examined, it is concluded that there are two clusters red and green. The green cluster includes China, Turkey, The USA and New Zealand. The red cluster includes Spain, Vietnam, England and India.

5.2.4. Co-word (Co-Occurance) Analysis Results

In the co-word analysis for keywords analysis unit, the threshold value of 3 was selected, and 18 results were presented and visualized.

Table 5.15. Co-word analysis results of author keywords

Keyword	Occurrences	Total link strength
Idiosyncratic volatility	27	23
Emerging markets	22	21
Idiosyncratic risk	20	16
Asset pricing	14	14
Emerging market	5	6
Corporate governance	4	8

Market efficiency	4	6
Volatility	4	5
China	4	4
Mispricing	4	4
Financial reporting quality	3	7
Anomalies	3	6
Vietnam	3	6
Chinese stock market	3	3
Momentum	3	3
R-2	3	3
Systematic risk	3	3
Liquidity	3	2

Table 5.15. shows co-word analysis with keywords and it has been concluded that there are more than 18 keywords with occurrence number greater than 3. The most repeated keyword is idiosyncratic volatility with 27 occurrences. Highly linked keywords are idiosyncratic volatility with 23 links, emerging markets with 21 links, idiosyncratic risk with 16 links and asset pricing with 14 links.

Figure 5.16. It shows the keyword analysis results via network visualization. When examined, it is seen that Red, Yellow, Green and Blue clusters are formed. The biggest network part has been formed by the red cluster and this cluster includes idiosyncratic volatility, asset pricing, mispricing, market efficiency, r-2 and Chinese stock market.

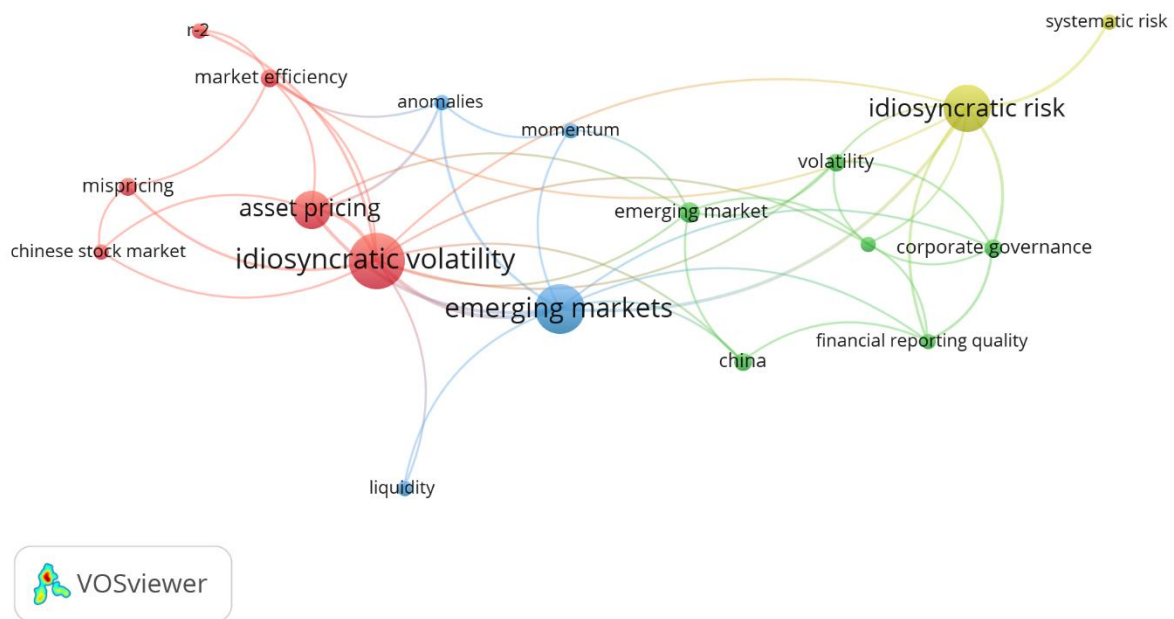


Figure 5.16. Network Visualization of co-word analysis results for author keywords analysis unit (VOSviewer)

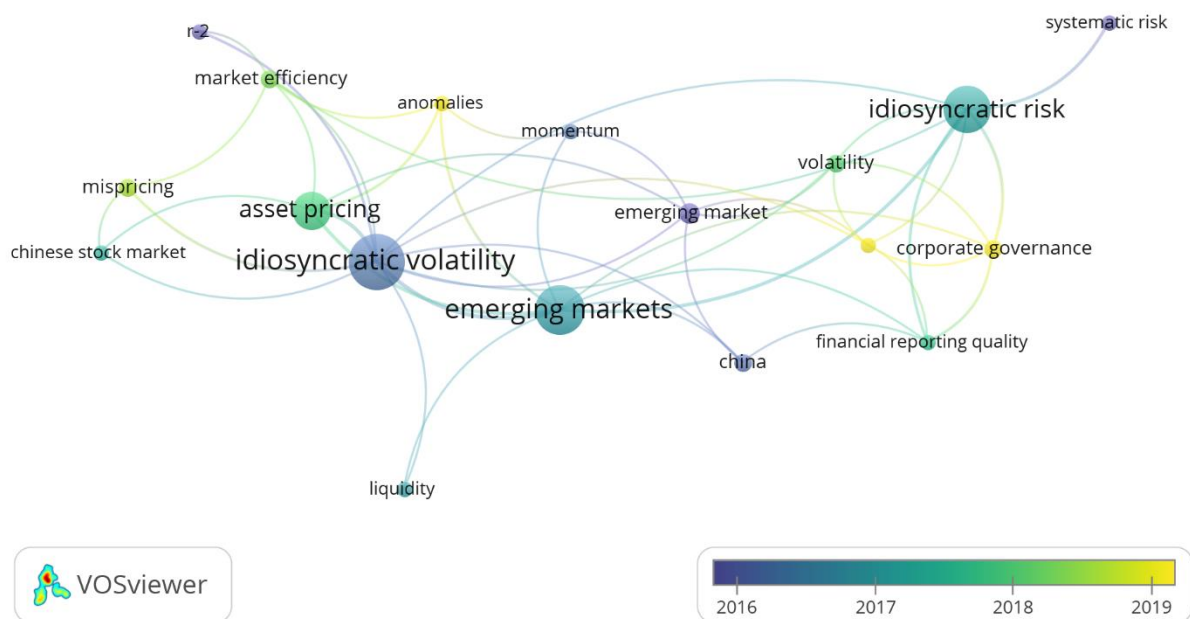


Figure 5.17. Overlay Visualization of co-word analysis results for author keywords analysis unit (VOSviewer)

5.2.5. Co-authorship Analysis Results

In the co-authorship analysis for authors analysis unit, the threshold value of 3 was selected, and 3 results were presented and visualized.

Table 5.16. Co-authorship analysis results of authors

Author	Documents	Citations	Total link strength
Nartea, Gilbert V.	6	132	4
Wu, Ji	5	105	4
Demirer, Rıza	3	20	0

Authors with more than 20 citations table 5.16. is also shown. Accordingly, Gilbert Nartea has the highest number of links with 4 links. Other highly linked author is Ji Wu with 4 links. Also, there is an author named Rıza Demirer with no link but 20 citations.



Figure 5.18. Network Visualization of co-authorship analysis results for authors analysis unit (VOSviewer)

In the network visualization, it is seen that there are two independent clusters. The red cluster includes Gilbert Nartea and Ji Wu. The green cluster is formed by Rıza Demirer.

In the co-authorship analysis for organizations analysis unit, the threshold value of 3 was selected, and 6 results were presented and visualized.

Table 5.17. Co-authorship analysis results of organizations

Organization	Documents	Citations	Total link strength
Florida International University	3	5	0
Lincoln University	5	77	3
Massey University	3	81	0
University Econ Ho Chi Minh City	3	34	0
University Sao Paulo	3	12	0
Xiamen University	4	45	3

Organizations with documents which have more than 5 citations table 5.17. has been shown. Firstly, Lincoln University and Xiamen University have the highest number of links with 3 links each. Other organization's documents have no linked but have citations. Highly linked organizations are Massey University with 81 links, Lincoln University with 77 links, University Econ Ho Chi Minh City with 34 links.

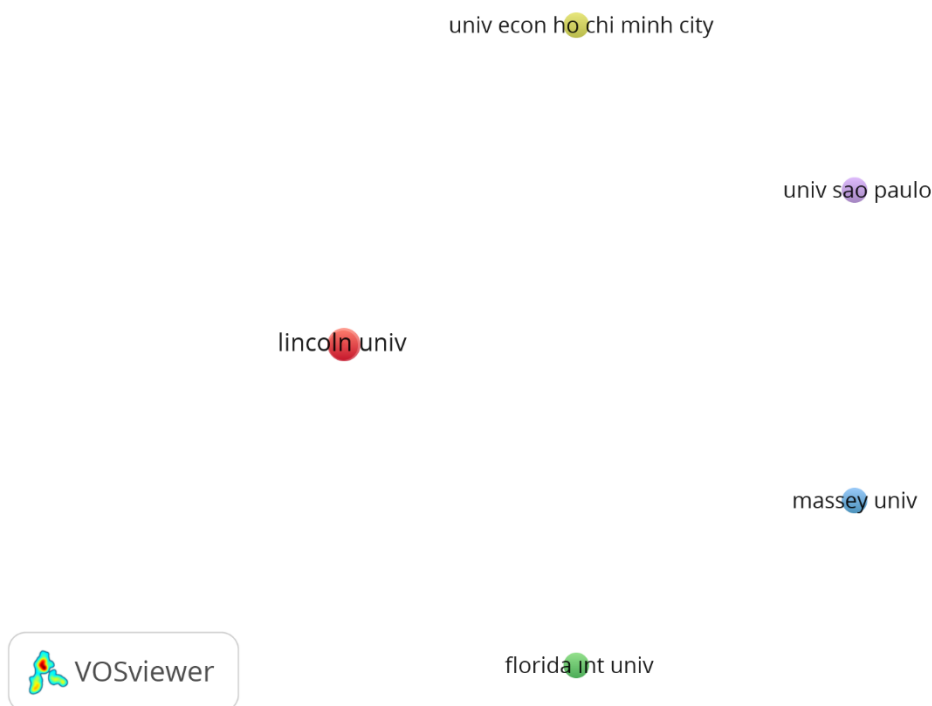


Figure 5.19. Network Visualization of co-authorship analysis results for organizations analysis unit (VOSviewer)

When the network visualization is examined, there are 5 independent cluster with one organization each. The red colored cluster has Lincoln University, the purple cluster has University Sao Paulo, the blue cluster has Massy University, the green cluster has Florida University and finally, the yellow cluster has University Econ Ho Chi Minh City. There is no connection between the clusters.

In the co-authorship analysis for countries analysis unit, the threshold value of 4 was selected, and 10 results were presented and visualized.

Table 5.18. Co-authorship analysis results of countries

Country	Documents	Citations	Total link strength
Peoples r China	24	200	17
USA	28	330	14
New Zealand	10	161	7

Canada	4	15	5
Taiwan	4	8	5
England	5	26	3
Vietnam	6	44	3
Australia	4	9	2
South Korea	4	13	2
Turkey	5	77	2

Countries with documents which have more than 5 citations table 5.18. is shown. Accordingly, China has the highest number of linked documents with 17 links. Other highly linked documents are from The USA with 14 links, New Zealand with 7 links, Canada with 5 links, Taiwan with 5 links. The country with the highest number of cited documents is The USA, which has 330 citations.

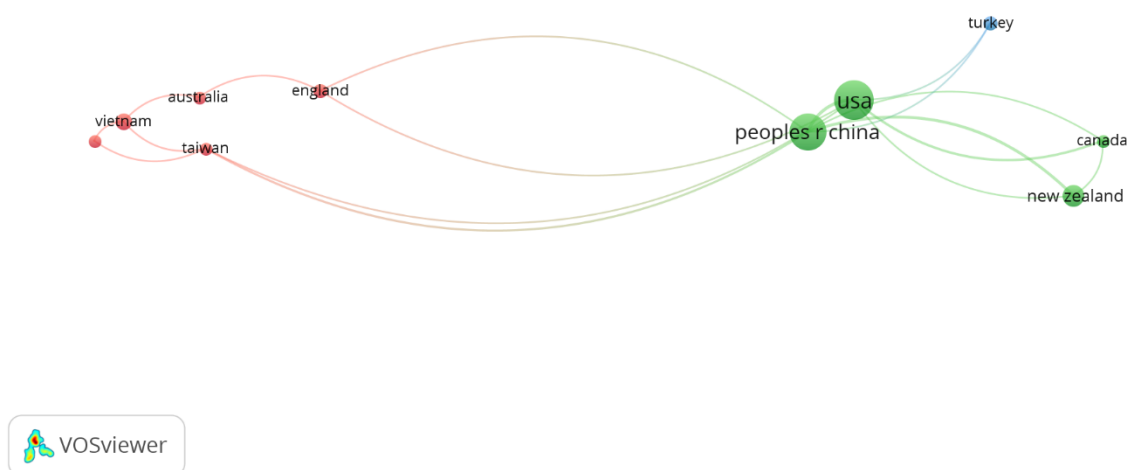


Figure 5.20. Network Visualization of co-authorship analysis results for countries analysis unit (VOSviewer)

In the visualization, there are 3 cluster colored with red, green and blue. The red cluster includes England, Australia, Vietnam and Taiwan. The green cluster includes China, The USA, Canada

and New Zealand. The blue cluster includes Turkey. Moreover, while the green cluster is linked with both other clusters, the red and the blue clusters are not linked with each other.



6. CONCLUSIONS

Idiosyncratic volatility is independent of systematic volatility in the market. Idiosyncratic volatility is the volatility that is out of the systematic risk, originating from the company itself or the sector. Although idiosyncratic volatility can theoretically be eliminated by diversification, it is a type of volatility that cannot be ignored due to financial frictions in real life. For this reason, idiosyncratic volatility has become increasingly important in the finance literature over time.

The thesis study aims to define the basic statistics of idiosyncratic volatility in emerging markets literature and to explore the bibliometric connections of the studies in this literature. To achieve this aim, a bibliometric analysis of idiosyncratic volatility in emerging markets literature was conducted. In order to reach the answers to the research questions, performance analysis, citation analysis, co-citation analysis, bibliographic coupling, co-occurrence analysis and co-authorship analysis, which are bibliometric analysis techniques, were performed. The results of the analysis provided answers to the research questions. Below are comprehensive answers to the research questions.

Question Set 1: What are the main statistics of the idiosyncratic volatility in emerging markets literature? What is the intensity of the work done in this field in recent years? In which sub-categories do the studies categorically show intensity? What are the most cited studies in this field? What is the most successful study in terms of citations average per year?

The total number of citations of 106 studies in the field of idiosyncratic volatility in emerging markets is 865, the average citations per item are 8.16, and the h index value is 16. Studies have shown a significant increase as of 2019. The number of studies in the literature reached the highest in 2020 and maintained its high level with 16 studies conducted in 2021. It can be seen that the interest in idiosyncratic volatility in emerging markets literature has increased significantly in recent years. When the sub-categories of the studies are examined, it is seen that they are concentrated in the Business Finance and Economics categories.

The most cited study in this literature is Umutlu et al. (2010) "The degree of financial liberalization and aggregated stock-return volatility in emerging markets" with 69 citations. Nartea et al. (2017) and Kelly (2014) with 55 citations. Lastly, although it was published in 2020, Koutmos (2020), which received 29 citations and an average of 9.67 citations per year, is the work that stands out.

Question Set 2: What are the results of citation analysis of the idiosyncratic volatility in emerging markets literature? Who are the most cited authors? Which Sources, Organizations and Countries are the most successful in terms of citation count?

The citation numbers and links of the units were reached by the citation analysis performed separately for Documents, Authors, Sources, Organizations and Countries. Among the studies, Nartea & Wu (2013a) stands out with its high connection strength. This study has 7 link strengths. Gilbert Nartea's work as an author has come to the fore in citation analysis. Nartea is the author with the most work in this field with 6 studies. In terms of countries, China stands out with 49 connections and New Zealand with 48 connections.

Question Set 3: Which studies in idiosyncratic volatility in emerging markets literature did they cite as common? What connections exist between commonly cited studies? What are the prominent authors and sources in terms of co-citation? What kind of relationships exists between them?

When the co-citation analysis of the idiosyncratic volatility in emerging markets literature is examined, it is seen that the basic studies of the science of finance and the prominent studies related to idiosyncratic volatility receive many common references. Fama & French (1993) "Common risk factors in the returns on stocks and bonds" and Merton (1987) "A Simple Model of Capital Market Equilibrium with Incomplete Information", which are important studies of Business Finance, are the most commonly cited studies. Ang et al. (2006) "The Cross-Section of Volatility and Expected Returns", Ang et al. (2009) "High idiosyncratic volatility and low returns: International and further U.S. evidence", Fu (2009) "Idiosyncratic risk and the cross-section of expected stock returns" have high common attribution. When common citation clusters are examined, it is seen that IVOL studies and Traditional finance studies diverge. In

terms of source, the Journal of Finance and Journal of Financial Economics have strong links in terms of co-citation.

Question Set 4: Which studies are bibliographic coupling high among studies on idiosyncratic volatility in emerging markets? What does bibliographic coupling look like for authors, sources, organizations, and countries?

Studies that stand out in the idiosyncratic volatility in emerging markets literature in terms of bibliographic couplings Nartea & Wu (2013) “Is there a volatility effect in the Hong Kong stock market?” and Kelly (2014) “Information Efficiency and Firm-Specific Return Variation” studies. As the bibliographic coupling analysis focuses on the connections of the studies within the scope of the literature, the sources of "Emerging markets finance and Trade" and "Emerging Markets Review" came to the fore in terms of link strength. Gilbert Nartea and Ji Wu, the authors of the study with the highest bibliographic coupling, stand out among the authors. Countries While China and the USA stand out in terms of link strength, Turkey is in 5th place with 1115 link strength.

Question Set 5: Which key concepts have the studies on idiosyncratic volatility in emerging markets focused on? What are the connections between concepts that are often used together? Which key concepts has the literature focused on in recent years?

When the co-word analysis results of the idiosyncratic volatility in emerging markets literature are examined, it is seen that the keywords "idiosyncratic volatility" and "emerging markets", which are the subject itself, have the highest number of occurrences and link strength. In addition, the concept of “idiosyncratic risk”, which is used synonymously with volatility, has a high link strength. It can be said that the literature has focused on keywords such as "corporate governance" and "anomalies" in recent years.

Question Set 6: Are there collaborations between authors, organizations and countries in idiosyncratic volatility in emerging markets literature? Among which units are the cooperation concentrated?

High links and relationships have not emerged in idiosyncratic volatility in emerging markets literature on cooperation between authors and organizations. In terms of countries, two clusters were formed, a cluster consisting of the USA, China, New Zealand, Canada and Turkey, and a cluster consisting of Vietnam, South Korea, Australia, Taiwan and England. However, since the number of cluster connections is quite low, it is not possible to make a clear interpretation.

The thesis study makes three important contributions to the literature. The first is the performance analysis of idiosyncratic volatility in emerging markets literature and the revealing of the basic statistics of this literature. The second contribution is to reveal the relationships in the literature with science mapping analyzes. The third contribution is to express potential gaps in the literature that may serve as a guide for future studies.

This thesis work has several limitations. First, only studies found in the WoS database were included in the analysis. In this respect, studies in other databases have been ignored. Secondly, despite the systematic review of the literature before and after the analysis, the results of the bibliometric analysis may contain subjective interpretations. In the process of interpreting the results, an objective approach was shown as much as possible. Third, it is possible that risk and volatility, which are often used interchangeably in the literature, may affect the results of the analysis.

The information obtained as a result of the bibliometric analysis is a guide for giving ideas for future studies. In addition to the results explained and interpreted, some suggestions for future studies are as follows. The most cited studies on idiosyncratic volatility in emerging markets Umutlu et al. (2010), Nartea et al. (2017) and Kelly et al. (2014) should be addressed as a priority. In addition, Koutmos (2020) research should not be overlooked because it has a high citation trend. The researches of Gilbert Nartea, who extensively researched in this field, should be reviewed chronologically due to the many connections. Basic studies for the IVOL literature, Campbell et al. (2001), Ang et al. (2006) and Fu (2009) studies should be carefully examined.

As a result of the co-word analysis, it is seen that the concepts of anomaly and corporate governance have been trending in the idiosyncratic volatility in emerging market literature in recent years. Literature gaps between this field and other fields such as corporate governance and behavioral finance can provide insight for research. Finally, there is a significant lack of

collaboration between authors in this literature. Through the necessary collaborations, studies that affect and contribute to the literature can be produced.



REFERENCES

- Abdelsalam, O., Chantziaras, A., Batten, J. A., & Aysan, A. F. (2021). Major shareholders' trust and market risk: Substituting weak institutions with trust. *Journal of Corporate Finance*, 66. <https://doi.org/10.1016/j.jcorpfin.2020.101784>
- Abu-Ghunmi, D., Bino, A., & Tayeh, M. (2015). Idiosyncratic Risk and Corporate Governance: Evidence from Jordan. *Emerging Markets Finance and Trade*, 51, S40–S50. <https://doi.org/10.1080/1540496X.2015.1026717>
- Aggarwal, R., Inclan, C., & Leal, R. (2016). Volatility in Emerging Stock Markets. *The Journal of Financial and Quantitative Analysis*, Vol . 34 , No .1, 33–55.
- Ahmad, S., Akbar, S., Halari, A., & Shah, S. Z. (2021). Organizational non-compliance with principles-based governance provisions and corporate risk-taking. *International Review of Financial Analysis*, 78. <https://doi.org/10.1016/j.irfa.2021.101884>
- Alhomaiddi, A., Hassan, M. K., Hippier, W. J., & Mamun, A. (2019). The impact of religious certification on market segmentation and investor recognition. *Journal of Corporate Finance*, 55, 28–48. <https://doi.org/10.1016/j.jcorpfin.2018.08.012>
- Aman, H., & Moriyasu, H. (2017). Volatility and public information flows: Evidence from disclosure and media coverage in the Japanese stock market. *International Review of Economics & Finance*, 51, 660–676. <https://doi.org/10.1016/j.iref.2017.07.029>
- Ammer, J., Cai, F., & Scotti, C. (2011). Has international financial co-movement changed? Emerging markets in the 2007-2009 financial crisis. In J. A. Batten & P. G. Szilagyi (Eds.), *Impact of the global financial crisis on emerging financial markets* (Vol. 93, pp. 231–253). [https://doi.org/10.1108/S1569-3759\(2011\)0000093009](https://doi.org/10.1108/S1569-3759(2011)0000093009)
- Andries, A. M., Nistor, S., & Sprincean, N. (2020). The impact of central bank transparency on systemic risk-Evidence from Central and Eastern Europe. *Research in International Business*

and Finance, 51(19th International-Network-for-Economic-Research (INFER) Annual Conference). <https://doi.org/10.1016/j.ribaf.2018.06.002>

Ang, A., Hodrick, R. J., Xing, Y., & Zhang, X. (2006). The Cross-Section of Volatility and Expected Returns. *The Journal of Finance*, 61(1), 259–299. <https://doi.org/10.1111/j.1540-6261.2006.00836.x>

Ang, A., Hodrick, R. J., Xing, Y., & Zhang, X. (2009). High idiosyncratic volatility and low returns: International and further U.S. evidence. *Journal of Financial Economics*, 91(1), 1–23. <https://doi.org/https://doi.org/10.1016/j.jfineco.2007.12.005>

Angelidis, T. (2010). Idiosyncratic Risk in Emerging Markets. *Financial Review*, 45(4), 1053–1078. <https://doi.org/10.1111/j.1540-6288.2010.00285.x>

Arenas, L., & Gil-Lafuente, A. M. (2021). Regime Switching in High-Tech ETFs: Idiosyncratic Volatility and Return. *Mathematics*, 9(7). <https://doi.org/10.3390/math9070742>

Atilgan, Y., Demirtas, K. O., & Gunaydin, A. D. (2021). Predicting Equity Returns in Emerging Markets. *Emerging Markets Finance and Trade*, 57(13), 3721–3738. <https://doi.org/10.1080/1540496X.2020.1822808>

Aziz, T., & Ansari, V. A. (2018a). Are extreme negative returns priced in the Indian stock market? *Borsa İstanbul Review*, 18(1), 76–90. <https://doi.org/10.1016/j.bir.2017.09.002>

Aziz, T., & Ansari, V. A. (2018b). Idiosyncratic volatility and stock returns: Indian evidence. *Cogent Economics & Finance*, 5(1). <https://doi.org/10.1080/23322039.2017.1420998>

Bai, M., & Qin, Y. F. (2015). Commonality in liquidity in emerging markets: Another supply-side explanation. *International Review of Economics & Finance*, 39, 90–106. <https://doi.org/10.1016/j.iref.2015.06.005>

Bali, T., & Cakici, N. (2008). Idiosyncratic Volatility and the Cross Section of Expected Returns. *The Journal of Financial and Quantitative Analysis*, 43(1), 29-58. Retrieved June 24, 2020, from www.jstor.org/stable/27647339

Bali, T. G., Cakici, N., Yan, X. S., Zhang, Z. (2005). Does idiosyncratic risk really matter?. *The Journal of Finance*, 60(2), 905-929.

Barber, B. M., & Lyon, J. D. (1997). Firm Size, Book-to-Market Ratio, and Security Returns: A Holdout Sample of Financial Firms. *The Journal of Finance*, 52(2), 875–883. <https://doi.org/10.1111/j.1540-6261.1997.tb04826.x>

Bekaert, G., & Harvey, C. R. (2003). Emerging markets finance. *Journal of Empirical Finance*, 10(1–2), 3–55. [https://doi.org/10.1016/S0927-5398\(02\)00054-3](https://doi.org/10.1016/S0927-5398(02)00054-3)

Bennett, J. A., & Sias, R. W. (2006). Why company-specific risk changes over time. *Financial Analysts Journal*, 62(5), 89–100. <https://doi.org/10.2469/faj.v62.n5.4285>

Berggrun, L., Cardona, E., & Lizarzaburu, E. (2019). Extreme daily returns and the cross-section of expected returns: Evidence from Brazil. *Journal of Business Research*, 102(Annual Conference of Business Association for Latin American Studies (BALAS)-From Starting Up to Sustained Growth-Challenges and Opportunities for Latin American Entrepreneurs), 201–211. <https://doi.org/10.1016/j.jbusres.2017.07.005>

Berggrun, L., Lizarzaburu, E., & Cardona, E. (2016). Idiosyncratic volatility and stock returns: Evidence from the MILA. *Research in International Business and Finance*, 37, 422–434. <https://doi.org/10.1016/j.ribaf.2016.01.011>

Black, F., (1976). Studies of stock price volatility changes. Proceedings of the 1976 Meetings of the Business and Economic Statistics Section, 177–181, *American Statistical Association*.

Bollerslev, T. (1986). Generalized autoregressive conditional heteroskedasticity. *Journal of Econometrics*, 31(3), 307-327.

Bouri, E., Demirer, R., Gupta, R., & Sun, X. J. (2020). The predictability of stock market volatility in emerging economies: Relative roles of local, regional, and global business cycles. *Journal of Forecasting*, 39(6), 957–965. <https://doi.org/10.1002/for.2672>

Bradfield, J. (2007). Introduction to the Economics of Financial Markets.

Brandt, M. W., Brav, A., Graham, J. R., & Kumar, A. (2009). The Idiosyncratic Volatility Puzzle: Time Trend or Speculative Episodes? *The Review of Financial Studies*, 23(2), 863–899. <https://doi.org/10.1093/rfs/hhp087>

Buccheri, G., Bormetti, G., Corsi, F., & Lillo, F. (2021). A Score-Driven Conditional Correlation Model for Noisy and Asynchronous Data: An Application to High-Frequency Covariance Dynamics. *Journal of Business & Economic Statistics*, 39(4), 920–936. <https://doi.org/10.1080/07350015.2020.1739530>

Burger, J. D., & Warnock, F. E. (2007). Foreign participation in local currency bond markets. *Review of Financial Economics*, 16(3), 291–304. <https://doi.org/10.1016/j.rfe.2006.09.001>

Bustamante, C., & Hamann, F. (2015). Countercyclical reserve requirements in a heterogeneous-agent and incomplete financial markets economy. *Journal of Macroeconomics*, 46, 55–70. <https://doi.org/10.1016/j.jmacro.2015.08.002>

Campbell, J. Y., Lettau, M., Malkiel, B. G., Xu, Y. (2001). Have individual stocks become more volatile? An empirical exploration of idiosyncratic risk. *The Journal of Finance*, 56(1), 1-43.

Caglayan, M. O., Xue, W. J., & Zhang, L. W. (2020). Global investigation on the country-level idiosyncratic volatility and its determinants. *Journal of Empirical Finance*, 55, 143–160. <https://doi.org/10.1016/j.jempfin.2019.11.006>

Cai, J. H., & Xia, L. (2014). When R-2 meets the short-sales constraints. *Economics Letters*, 125(3), 336–339. <https://doi.org/10.1016/j.econlet.2014.09.033>

Caixe, D. F., Kalatzis, A. E. G., & de Castro, L. R. K. (2019). Controlling shareholders and investment-risk sensitivity in an emerging economy. *Emerging Markets Review*, 39, 133–153. <https://doi.org/10.1016/j.ememar.2019.04.002>

Cakici, N., & Topyan, K. (2013). Return Predictability of Turkish Stocks: An Empirical Investigation. *Emerging Markets Finance and Trade*, 49(5), 99–119. <https://doi.org/10.2753/REE1540-496X490506>

Cardoso, G., Carr, D. D., & Rogers, P. (2019). Does corporate governance matter for stock returns volatility in the Brazilian context? *Corporate Governance-The International Journal of Business in Society*, 19(6), 1236–1252. <https://doi.org/10.1108/CG-03-2019-0083>

Chang, X. (2022). Impact of risks on forced CEO turnover. *Quantitative Finance and Economics*, 6(2), 177–205. <https://doi.org/10.3934/QFE.2022008>

Chen, C. D., & Demirer, R. (2022). Oil beta uncertainty and global stock returns. *Energy Economics*, 112. <https://doi.org/10.1016/j.eneco.2022.106150>

Chen, C. D., Demirer, R., & Jategaonkar, S. P. (2015). Risk and return in the Chinese stock market: Does equity return dispersion proxy risk? *Pacific-Basin Finance Journal*, 33, 23–37. <https://doi.org/10.1016/j.pacfin.2015.03.005>

Chen, T. Y., Chao, C. H., & Wu, Z. X. (2021). Does the turnover effect matter in emerging markets? Evidence from China. *Pacific-Basin Finance Journal*, 67. <https://doi.org/10.1016/j.pacfin.2021.101551>

Chen, Y. S., Chen, D. Q., Wang, W. M., & Zheng, D. J. (2018). Political uncertainty and firms' information environment: Evidence from China. *Journal of Accounting and Public Policy*, 37(1), 39–64. <https://doi.org/10.1016/j.jaccpubpol.2018.01.005>

Choi, P. M. S., Choi, J. H., & Chung, C. Y. (2020). Do individual traders undermine firm valuation? *Finance Research Letters*, 36. <https://doi.org/10.1016/j.frl.2020.101567>

Christie, A. A. (1982). The stochastic behavior of common stock variances: Value, leverage and interest rate effects. *Journal of Financial Economics*, 10(4), 407-432.

Dash, S. R., & Mahakud, J. (2015). Market anomalies, asset pricing models, and stock returns: evidence from the Indian stock market. *Journal of Asia Business Studies*, 9(3), 306–328. <https://doi.org/10.1108/JABS-06-2014-0040>

De Salles, A. A. (2021). Similarity evidence between the country risk and the idiosyncratic risk: An empirical study of the Brazilian case. *Economic Journal of Emerging Markets*, 13(1), 66–77. <https://doi.org/10.20885/ejem.vol13.iss1.art6>

Diaz-Ruiz, P., Herrerias, R., & Vasquez, A. (2020). Anomalies in emerging markets: The case of Mexico. *North American Journal of Economics and Finance*, 53. <https://doi.org/10.1016/j.najef.2020.101188>

Dodd, O., Kalimipalli, M., & Chan, W. (2021). Evaluating corporate credit risks in emerging markets. *International Review of Financial Analysis*, 73. <https://doi.org/10.1016/j.irfa.2020.101610>

Donthu, Naveen & Kumar, Satish & Mukherjee, Debmalya & Pandey, Nitesh & Lim, Weng Marc, 2021. How to conduct a bibliometric analysis: An overview and guidelines, *Journal of Business Research*, Elsevier, vol. 133(C), pages 285-296.

Duffee, G. R. (1995). Stock returns and volatility a firm-level analysis. *Journal of Financial Economics*, 37(3), 399–420. [https://doi.org/https://doi.org/10.1016/0304-405X\(94\)00801-7](https://doi.org/10.1016/0304-405X(94)00801-7)

Edeling, A., Srinivasan, S., & Hanssens, D. M. (2021). The marketing-finance interface: A new integrative review of metrics, methods, and findings and an agenda for future research. *International Journal of Research in Marketing*, 38(4), 857–876. <https://doi.org/10.1016/j.ijresmar.2020.09.005>

Egginton, J., & Hur, J. (2018). The robust “maximum daily return effect as demand for lottery” and “idiosyncratic volatility puzzle.” *Journal of Empirical Finance*, 47, 229–245. <https://doi.org/https://doi.org/10.1016/j.jempfin.2018.03.001>

Engle, R. (2001). GARCH 101: The use of ARCH/GARCH models in applied econometrics. *Journal of Economic Perspectives*, 15(4), 157–168. <https://doi.org/10.1257/jep.15.4.157>

Fama, E. F., & French, K. R. (1993). Common risk factors in the returns on stocks and bonds. *Journal of Financial Economics*, 33(1), 3–56. [https://doi.org/https://doi.org/10.1016/0304-405X\(93\)90023-5](https://doi.org/https://doi.org/10.1016/0304-405X(93)90023-5)

Fama, Eugene, F., and Kenneth R. French. 2004. "The Capital Asset Pricing Model: Theory and Evidence." *Journal of Economic Perspectives*, 18 (3): 25-46.

Fang, K. N., Wu, J., & Nguyen, C. (2017). The Risk-Return Trade-Off in a Liberalized Emerging Stock Market: Evidence from Vietnam. *Emerging Markets Finance and Trade*, 53(4), 746–763. <https://doi.org/10.1080/1540496X.2015.1103129>

Fazil, G., & Ipek, A. (2013). Does idiosyncratic volatility matter in the emerging markets? İstanbul stock exchange evidence. *Ekonomika Istrazivanja-Economic Research*, 26(3), 133–150. <https://doi.org/10.1080/1331677X.2013.11517626>

Figlioli, B., & Lima, F. G. (2019). Stock pricing in Latin America: The synchronicity effect. *Emerging Markets Review*, 39, 1–17. <https://doi.org/10.1016/j.ememar.2019.03.002>

French, K. R., Schwert, G. W., & Stambaugh, R. F. (1987). Expected stock returns and variance. *Journal of Financial Economics*, 19, 3–29.

Fu, F. (2009). Idiosyncratic risk and the cross-section of expected stock returns. *Journal of Financial Economics*, 91(1), 24–37. <https://doi.org/https://doi.org/10.1016/j.jfineco.2008.02.003>

Garten, J. E. (1997). The Big Ten.

Gerlach, R., Obaydin, I., & Zurbruegg, R. (2015). The impact of leverage on the idiosyncratic risk and return relationship of REITs around the financial crisis. *International Review of Economics & Finance*, 38, 207–219. <https://doi.org/10.1016/j.iref.2015.02.029>

Geyfman, V., & Yeager, T. J. (2009). On the Riskiness of Universal Banking: Evidence from Banks in the Investment Banking Business Pre- and Post-GLBA. *Journal of Money Credit and Banking*, 41(8), 1649–1669. <https://doi.org/10.1111/j.1538-4616.2009.00266.x>

Ghorbel, A., Snene, Y., & Frikha, W. (n.d.). Does herding behavior explain the contagion of the COVID-19 crisis? *Review of Behavioral Finance*. <https://doi.org/10.1108/RBF-12-2021-0263>

Goel, A., Tripathi, V., & Agarwal, M. (2021). Information asymmetry and stock returns. *Journal of Advances in Management Research*, 18(1), 85–112. <https://doi.org/10.1108/JAMR-05-2020-0084>

Gonzalez-Rivera, G., & Nickerson, D. (2006). Dynamic monitoring of financial intermediaries with subordinated debt. *Journal of Risk Finance*, 7(5), 463–487. <https://doi.org/10.1108/15265940610712641>

Goyal, A., & Santa-Clara, P. (2003). Idiosyncratic risk matters!. *The Journal of Finance*, 58(3), 975–1007.

Grossman, S. J. (1988). An Analysis of the Implications for Stock and Futures Price Volatility of Program Trading and Dynamic Hedging Strategies. *Journal of Business*, 275–298.

Hai, H. v, Park, J. W., Tsai, P. C., & Eom, C. (2020). Lottery mindset, mispricing and idiosyncratic volatility puzzle: Evidence from the Chinese stock market. *North American Journal of Economics and Finance*, 54. <https://doi.org/10.1016/j.najef.2020.101266>

Hillier, D., Grinblatt, M., & Titman, S. (2011). *Financial Markets and Corporate Strategy*.

Hoang, L. T., Phan, T. T., & Ta, L. N. (2020). Nominal Price Anomaly in Emerging Markets: Risk or Mispricing? *Journal of Asian Finance Economics and Business*, 7(9), 125–134. <https://doi.org/10.13106/jafeb.2020.vol7.no9.125>

Hou, K., & Loh, R. K. (2016). Have we solved the idiosyncratic volatility puzzle? *Journal of Financial Economics*, 121(1), 167–194. <https://doi.org/10.1016/j.jfineco.2016.02.013>

Huang, B. Q., Wald, J., & Martell, R. (2013). Financial market liberalization and the pricing of idiosyncratic risk. *Emerging Markets Review*, 17, 44–59. <https://doi.org/10.1016/j.ememar.2013.08.005>

Irvine, P. J., & Pontiff, J. (2008). Idiosyncratic return volatility, cash flows, and product market competition. *The Review of Financial Studies*, 22(3), 1149–1177.

Jacobs, H. (2016). Market maturity and mispricing. *Journal of Financial Economics*, 122(2), 270–287. <https://doi.org/10.1016/j.jfineco.2016.01.030>

Journal of Financial Economic Policy, 10(1), 165–184. <https://doi.org/10.1108/JFEP-06-2017-0055>

Kang, J., Lee, E., & Sim, M. (2014). Retail Investors and the Idiosyncratic Volatility Puzzle: Evidence from the Korean Stock Market. *Asia-Pacific Journal of Financial Studies*, 43(2), 183–222. <https://doi.org/10.1111/ajfs.12044>

Kelly, P. J. (2014). Information Efficiency and Firm-Specific Return Variation. *Quarterly Journal of Finance*, 4(4). <https://doi.org/10.1142/S2010139214500189>

Khurram, M. U., Ali, F., Jiang, Y. X., & Xie, W. W. (2022). Predictability of extreme daily returns and Preference for lottery-like stocks in an emerging market. *Economic Research-Ekonomska Istrazivanja*, 35(1), 1322–1344. <https://doi.org/10.1080/1331677X.2021.1965000>

Kim, H., Kim, W., & Park, K. S. (2012). The Effect of Structural Changes in the Organizational Form of Business Groups: Evidence from Korea. *Asia-Pacific Journal of Financial Studies*, 41(3), 286–312. <https://doi.org/10.1111/j.2041-6156.2012.01074.x>

Klapper, L. F., & Love, I. (2004). Corporate governance, investor protection, and performance in emerging markets. *Journal of Corporate Finance*, 10(5), 703–728. [https://doi.org/10.1016/S0929-1199\(03\)00046-4](https://doi.org/10.1016/S0929-1199(03)00046-4)

Koutmos, D. (2020). Market risk and Bitcoin returns. *Annals of Operations Research*, 294(1–2), 453–477. <https://doi.org/10.1007/s10479-019-03255-6>

Kumar, G., & Misra, A. K. (2019). Liquidity-adjusted CAPM - An empirical analysis on Indian stock market. *Cogent Economics & Finance*, 7(1). <https://doi.org/10.1080/23322039.2019.1573471>

Kumari, J., Mahakud, J., & Hiremath, G. S. (2017). Determinants of idiosyncratic volatility: Evidence from the Indian stock market. *Research in International Business and Finance*, 41, 172–184. <https://doi.org/10.1016/j.ribaf.2017.04.022>

Lai, S., Teo, M., Lai, S., & Teo, M. (2018). Home-Biased Analysts in Emerging Markets Published by : Cambridge University Press on behalf of the University of Washington School of Business Administration Stable URL : <http://www.jstor.org/stable/27647367> Home-Biased Analysts in Emerging Markets. *The Journal of Financial and Quantitative Analysis*, 43(3), 685–716.

Lee, D. W., & Liu, M. H. (2011). Does more information in stock price lead to greater or smaller idiosyncratic return volatility? *Journal of Banking & Finance*, 35(6), 1563–1580. <https://doi.org/https://doi.org/10.1016/j.jbankfin.2010.11.002>

Levy, H. (1978). Equilibrium in an Imperfect Market: A Constraint on the Number of Securities in the Portfolio. *The American Economic Review*, 68(4), 643–658.

Lintner, J. (1965). Security prices, risk, and maximal gains from diversification. *The Journal of Finance*, 20(4), 587-615.

Li, M. S., Liu, D. S., Peng, H. F., & Zhang, L. X. (2020). Does low synchronicity mean more or less informative prices? Evidence from an emerging market. *Journal of Financial Stability*, 51. <https://doi.org/10.1016/j.jfs.2020.100817>

Li, S. Y., Zhang, T., & Li, Y. X. (2019). Flight-to-liquidity: Evidence from China's stock market. *Emerging Markets Review*, 38, 159–181. <https://doi.org/10.1016/j.ememar.2019.01.001>

Li, X., Hou, K., & Zhang, C. (2019). Intangible factor and idiosyncratic volatility puzzles. *Finance Research Letters*, 101403. <https://doi.org/https://doi.org/10.1016/j.frl.2019.101403>

Malagon, J., Moreno, D., & Rodríguez, R. (2018). Idiosyncratic volatility, conditional liquidity and stock returns. *International Review of Economics & Finance*, 53, 118–132. <https://doi.org/https://doi.org/10.1016/j.iref.2017.10.011>

Malkiel, B. G. and Xu, Y. (2004). Idiosyncratic Risk and Security Returns, AFA 2001 New Orleans Meetings.

Markowitz, H. (1952). Portfolio Selection. *The Journal of Finance*, 7(1), 77–91. <https://doi.org/10.2307/2975974>

Mehmood, Y., Bagram, M. M. M., & Malik, I. A. (2021). Empirical Analysis of Investors Sentiments of KSE Stocks; the role of volatility in the investor sentiments in the Stock Market: A Case of Karachi Stock Exchange. *Pacific Business Review International*, 13(10), 89–102.

Merton, R. C. (1987). A simple model of capital market equilibrium with incomplete information. *The Journal of Finance*, 42(3), 483-510.

Mishkin, F. S., & Eakins, S. G. (2009). Financial Markets & Institutions.

Monga, R., Aggrawal, D., & Singh, J. (2022). Smart Beta Investing: An Alternative Investment Paradigm in Emerging Indian Equity Market. *Organizations and Markets in Emerging Economies*, 13(1), 209–237. <https://doi.org/10.15388/omee.2022.13.77>

Mori, M., Ong, S. E., & Ooi, J. T. L. (n.d.). The Revival of Business Groups' Risk Sharing: Evidence from Japanese Real Estate Investment Trust Market. *Journal of Real Estate Finance and Economics*. <https://doi.org/10.1007/s11146-021-09874-w>

MSCI Market Accessibility Review. (2013). MSCI Market Classification Framework. *MSCI Market Accessibility Review*, (June), 1–4.

Nam, K., Khaksari, S., & Kang, M. (2017). Trend in aggregate idiosyncratic volatility. *Review of Financial Economics*, 35, 11–28. <https://doi.org/https://doi.org/10.1016/j.rfe.2016.11.001>

Nartea, G. v, & Ward, B. D. (2009). Does Idiosyncratic Risk Matter? Evidence from the Philippine Stock Market. *Asian Journal of Business and Accounting*, 2(1–2), 47–67.

Nartea, G. v, & Wu, J. (2013). Is there a volatility effect in the Hong Kong stock market? *Pacific-Basin Finance Journal*, 25, 119–135. <https://doi.org/10.1016/j.pacfin.2013.07.004>

Nartea, G. v, Kong, D. M., & Wu, J. (2017). Do extreme returns matter in emerging markets? Evidence from the Chinese stock market. *Journal of Banking & Finance*, 76, 189–197. <https://doi.org/10.1016/j.jbankfin.2016.12.008>

Nartea, G. v, Ward, B. D., & Yao, L. J. (2011). Idiosyncratic volatility and cross-sectional stock returns in Southeast Asian stock markets. *Accounting and Finance*, 51(4), 1031–1054. <https://doi.org/10.1111/j.1467-629X.2010.00384.x>

Nartea, G. v, Wu, J., & Liu, Z. T. (2013). Does idiosyncratic volatility matter in emerging markets? Evidence from China. *Journal of International Financial Markets Institutions & Money*, 27, 137–160. <https://doi.org/10.1016/j.intfin.2013.09.002>

Nejad, A. E., & Hoseinzade, S. (2021). Idiosyncratic return volatility and the role of firm fundamentals: A cross-country analysis. *Global Finance Journal*, 50. <https://doi.org/10.1016/j.gfj.2021.100667>

Nelson, D. B. (1991). Conditional heteroskedasticity in asset returns: A new approach. *Econometrica: Journal of the Econometric Society*, 347-370.

Nguyen, L. T. M., Le, D., Tran, T., & Dang, T. (2021). Financial Reporting Quality, Corporate Governance, and Idiosyncratic Risk: Evidence from a Frontier Market. *Australasian Accounting Business and Finance Journal*, 15(4), 28–46. <https://doi.org/10.14453/aabfj.v15i4.3>

Ni, X. M., Qian, L., Zhao, H. M., & Liu, J. (2021). Expected stock returns, common idiosyncratic volatility and average idiosyncratic correlation. *International Review of Financial Analysis*, 76. <https://doi.org/10.1016/j.irfa.2021.10179228>

Noor, A., Farooq, M., & Tahir, Z. (2022). Nexus between audit committee and corporate risk: evidence from Pakistan. *Corporate Governance-The International Journal of Business in Society*, 22(6), 1327–1344. <https://doi.org/10.1108/CG-11-2021-0418>

Noviayanti, P., & Husodo, Z. (2018). Exposure to common idiosyncratic volatility on stock returns in asean stock markets. *International Journal of Business and Society*, 19, 499–516.

Omar, A., & Prasanna, P. K. (2022). In search of default risk predictors in emerging Asia. *Applied Economics*, 1–15. <https://doi.org/10.1080/00036846.2022.2102572>

Owen, K., Cross, D. M., Derzi, M., Horsley, E., & Stavros, F. L. (2012). An overview of the preclinical toxicity and potential carcinogenicity of sitaxentan (Thelin (R)), a potent endothelin receptor antagonist developed for pulmonary arterial hypertension. *Regulatory Toxicology and Pharmacology*, 64(1), 95–103. <https://doi.org/10.1016/j.yrtph.2012.05.017>

Ozek, P. (2012). Analyzing the Behavior and Causes of Idiosyncratic Volatility, Ph.D. Dissertation, Hacettepe University. Ankara, 2012.

Pagano, M. (1993). Financial Markets and the Macroeconomy Financial markets and growth An overview. *European Economic Review*, 37(2–3), 613–622. Retrieved from <http://ideas.repec.org/p/wpa/wuwpge/0111001.html>

Paule-Vianez, J., Gomez-Martinez, R., & Prado-Roman, C. (2020). A bibliometric analysis of behavioural finance with mapping analysis tools. *European Research on Management and Business Economics*, 26(2), 71–77. <https://doi.org/10.1016/j.iedeen.2020.01.001>

Pereiro, L. E. (2002). Valuation of companies in emerging markets: a practical approach. In *Acta Polytechnica, Czech Technical University in Prague* (Vol. 47).

Pimentel, R. C., & de Aguiar, A. B. (2016). The role of earnings persistence in valuation accuracy and the time horizon. *Rae-Revista de Administracao de Empresas*, 56(1), 71–86. <https://doi.org/10.1590/S0034-759020160107>

Pok, W. F., Kabir, M. H., & Young, M. (2022). Investor sentiment and mean-variance relation: Evidence from emerging futures markets. *Finance Research Letters*, 46. <https://doi.org/10.1016/j.frl.2021.102397>

Poon, S.-H., & Granger, C. W. J. (2003). Forecasting Volatility in Financial Markets: A Review . *Journal of Economic Literature*, 41(2), 478–539. <https://doi.org/10.1257/002205103765762743>

Qadan, M., Kliger, D., & Chen, N. (2019). Idiosyncratic volatility, the VIX and stock returns. *The North American Journal of Economics and Finance*, 47, 431–441. <https://doi.org/https://doi.org/10.1016/j.najef.2018.06.003>

Rajverma, A. K., Misra, A. K., Mohapatra, S., & Chandra, A. (2019). Impact of ownership structure and dividend on firm performance and firm risk. *Managerial Finance*, 45(8), 1041–1061. <https://doi.org/10.1108/MF-09-2018-0443>

- Raz, A. F. (2018). Risk and capital in Indonesian large banks. *Journal of Financial Economic Policy*, 10(1), 165–184. <https://doi.org/10.1108/JFEP-06-2017-0055>
- Salvador, E. (2012). The Risk-Return Trade-Off in Emerging Markets. *Emerging Markets Finance and Trade*, 48(6), 106–128. <https://doi.org/10.2753/REE1540-496X480606>
- Schulte, K. M. (2014). Idiosyncratic risk and the cross-section of European real estate equity returns. *Journal of European Real Estate Research*, 7(1), 29–58. <https://doi.org/10.1108/JERER-03-2013-0003>
- Segojane, M., & Ndlovu, G. (2022). An Investigation of the Beta Anomaly in Emerging Markets: A South African Case. *Journal of Risk and Financial Management*, 15(5). <https://doi.org/10.3390/jrfm15050214>
- Sehgal, S., & Garg, V. (2016). Cross sectional moments and portfolio returns: Evidence for select emerging markets. *Iimb Management Review*, 28(3), 147–159. <https://doi.org/10.1016/j.iimb.2016.07.001>
- Semenyuk, V. (2016). Pragmatics of using a modified capm model for estimating cost of equity on emerging markets. *Baltic Journal of Economic Studies*, 2(2), 135–142.
- Senarathne, C. W., & Wei, J. G. (2020). Testing for heteroskedastic mixture of ordinary least squares errors. *Romanian Journal of Economic Forecasting*, 23(2), 73–91.
- Shahzad, F., Ahmad, M., Fareed, Z., & Wang, Z. K. (2022). Innovation decisions through firm life cycle: A new evidence from emerging markets. *International Review of Economics & Finance*, 78, 51–67. <https://doi.org/10.1016/j.iref.2021.11.009>
- Sharpe, W. F. (1964). Capital asset prices: a theory of market equilibrium under conditions of risk. *The Journal of Finance*, 19(3), 425–442.

Shen, D. H., Li, X., Xue, M., & Zhang, W. (2017). Does microblogging convey firm-specific information? Evidence from China. *Physica A-Statistical Mechanics and Its Applications*, 482, 621–626. <https://doi.org/10.1016/j.physa.2017.04.058>

Son, N. T., & Nguyen, N. M. (2019). Prospect theory value and idiosyncratic volatility: Evidence from the Korean stock market. *Journal of Behavioral and Experimental Finance*, 21, 113–122. <https://doi.org/https://doi.org/10.1016/j.jbef.2018.11.006>

Stiglitz, J. E. (1989). Financial markets and development. *Oxford Review of Economic Policy*, 5(4), 55–68. <https://doi.org/10.1093/oxrep/5.4.55>

Su, Z., Shu, T., & Yin, L. (2018). The pricing effect of the common pattern in firm-level idiosyncratic volatility: Evidence from A-Share stocks of China. *Physica A: Statistical Mechanics and Its Applications*, 497, 218–235. <https://doi.org/https://doi.org/10.1016/j.physa.2018.01.004>

Sunel, E. (2018). Welfare Consequences of Gradual Disinflation in Emerging Economies. *Journal of Money Credit and Banking*, 50(4), 705–755. <https://doi.org/10.1111/jmcb.12478>

Talukdar, B., & Parhizgari, A. M. (2020). Market returns and risk factors for the emerging economies. *Applied Economics*, 52(48), 5230–5243. <https://doi.org/10.1080/00036846.2020.1761534>

Tan, P. P., & Galagedera, D. U. A. (2015). Dynamics of Idiosyncratic Volatility and Market Volatility: An Emerging Market Perspective. *Global Economic Review*, 44(1), 74–100. <https://doi.org/10.1080/1226508X.2015.956404>

Tapiero, C. (2010). Risk Finance and Asset Pricing: Value, Measurements, and Markets. *Hoboken, NJ: Wiley*.

Umutlu, M., Akdeniz, L., & Altay-Salih, A. (2010). The degree of financial liberalization and aggregated stock-return volatility in emerging markets. *Journal of Banking & Finance*, 34(3), 509–521. <https://doi.org/10.1016/j.jbankfin.2009.08.010>

Urbanski, S., & Zarzecki, D. (2022). The Fama-French model for estimating the cost of equity capital: The impact of real options of investment projects. *Economic Systems*, 46(1). <https://doi.org/10.1016/j.ecosys.2021.100874>

Van Eck NJ, Nees J, Waltman L (2010) Software survey: VOSviewer, a computer program for bibliometric mapping. *Scientometrics* 84(2):523–538. <https://doi.org/10.1007/s11192-009-0146>

Vo, X. v, & Phan, D. B. A. (2019a). Herd behavior and idiosyncratic volatility in a frontier market. *Pacific-Basin Finance Journal*, 53, 321–330. <https://doi.org/10.1016/j.pacfin.2018.10.005>

Vo, X. v, & Phan, D. B. A. (2019b). Herding and equity market liquidity in emerging market. Evidence from Vietnam. *Journal of Behavioral and Experimental Finance*, 24. <https://doi.org/10.1016/j.jbef.2019.02.002>

Vo, X. v, Vo, V., & Nguyen, T. P. (2020). Abnormal returns and idiosyncratic volatility puzzle: An empirical investigation in Vietnam stock market. *Cogent Economics & Finance*, 8(1). <https://doi.org/10.1080/23322039.2020.1735196>

Wang, Z. J. (2010). Dynamics and causality in industry-specific volatility. *Journal of Banking & Finance*, 34(7), 1688–1699. <https://doi.org/10.1016/j.jbankfin.2010.03.014>

Wilson, T. A. (2010). The Development of Idiosyncratic Volatility : Evidence from the Dutch market. 1–66.

Wu, J., Chimezie, E. P., Nartea, G. v, & Zhang, J. (2019). Extreme returns and the idiosyncratic volatility puzzle: African evidence. *Applied Economics*, 51(58), 6264–6279. <https://doi.org/10.1080/00036846.2019.1631442>

Wu, M. C., Fung, H. G., & Huang, Y. T. (2012). What drives the dating game of executive options exercise? Evidence from Taiwan. *Accounting and Finance*, 52(2), 605–625. <https://doi.org/10.1111/j.1467-629X.2011.00406.x>

Xu, Y., & Malkiel, B. G. (2003). Investigating the Behavior of Idiosyncratic Volatility. *Journal of Business*, 76(4), 613–644. <https://doi.org/10.1086/377033>

Xue, W. J., He, Z. Z., & Hu, Y. (2021). The stabilizing effects of pension funds vs. mutual funds on country-specific market risk. *Journal of Multinational Financial Management*, 60. <https://doi.org/10.1016/j.mulfin.2021.100691>

Yao, S. Y., Wang, C. F., Fang, Z. M., & Chiao, C. S. (2021). MAX is not the max under the interference of daily price limits: Evidence from China*. *International Review of Economics & Finance*, 73, 348–369. <https://doi.org/10.1016/j.iref.2021.01.014>

Yin, L. B., Wei, Y., & Han, L. Y. (2020). Firms' profit instability and the cross-section of stock returns: Evidence from China. *Research in International Business and Finance*, 53. <https://doi.org/10.1016/j.ribaf.2020.101203>

Zaremba, A., Cakici, N., Demir, E., & Long, H. G. (2022). When bad news is good news: Geopolitical risk and the cross-section of emerging market stock returns. *Journal of Financial Stability*, 58. <https://doi.org/10.1016/j.jfs.2021.100964>

Zhang, H., & Li, S. (2010). Forecasting volatility in financial markets. *Key Engineering Materials*, 439–440(June), 679–682. <https://doi.org/10.4028/www.scientific.net/KEM.439-440.679>

Zhao, X. K., Ran, G. H., Shen, B., & Li, X. L. (n.d.). Does ETF activity reduce stock price volatility-Evidence from the A-share market. *Applied Economics*. <https://doi.org/10.1080/00036846.2022.2056129>

Zhong, A. (2018). Idiosyncratic volatility in the Australian equity market. *Pacific-Basin Finance Journal*, 50, 105–125. <https://doi.org/https://doi.org/10.1016/j.pacfin.2017.06.010>

Zhou, T., Xie, J., & Li, X. L. (2017). Financial Reporting Quality and Idiosyncratic Return Volatility: Evidence from China. *Emerging Markets Finance and Trade*, 53(4), 835–847. <https://doi.org/10.1080/1540496X.2016.1142200>

Zhu, L., Chen, Q. Y., Yang, S. Z., & Yi, Z. H. (2021). The role of analysts in negative information production and disclosure: Evidence from short selling deregulation in an emerging market. *International Review of Economics & Finance*, 73, 391–406. <https://doi.org/10.1016/j.iref.2021.01.016>

Zhu, P. C., Jog, V., & Otchere, I. (2014). Idiosyncratic volatility and mergers and acquisitions in emerging markets. *Emerging Markets Review*, 19, 18–48. <https://doi.org/10.1016/j.ememar.2014.04.001>