MAPPING THE WAVES: A BIBLIOMETRIC ANALYSIS OF STOCK MARKET VOLATILITY

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ABSTRACT

Purpose: The main Objective of the study is to identify the trends of stock market volatility based on previous research from 2012 to 2022 by performing a bibliometric analysis.

Theoretical framework: The study aims to identify the key authors, countries, institutions, and top-cited journals in the specific area. The study reveals a considerable increase in the number of publications on stock market volatility which depicts the growing interest of the researcher to study and explore more new trends in this area.

Design/methodology/approach: A bibliometric assessment of 457 papers on the stock market from 2012 to 2022 was undertaken using Scopus. Bibliometrix's R-based online application Biblioshiny was used for this study. The program automatically identified notable publications, models, authors, countries, keywords, and article topics. We have also explored co-citations and thematic mapping in the same area.

Findings: The result identifies the most effective models to measure the volatility in the stock market, the publications, authors, affiliations, and ruling nations in the same area. The statistics suggested an upward trend in publications from the period of 2012 to 2022. The result will be used for the investors who are interested to research in the same area.

Research, Practical & Social implications: The researcher suggests a future research agenda and highlights the contributions which will help scholars, practitioners, and policymakers who want to work with stock market volatility.

Originality/value: The findings show the significant researchers, co-authors, co-citations, and collaboration trends. This will show how stock market volatility specialists collaborate to find new patterns. Interconnected markets may cause volatility in many countries. Cross-country studies on how shocks influence other markets and how they rely on each other may dominate stock market volatility bibliometric study in the future.

Keywords: volatility, stock market, co-citations, thematic analysis, bibliometric analysis.

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MAPEANDO AS ONDAS: UMA ANÁLISE BIBLIOMÉTRICA DA VOLATILIDADE DO MERCADO DE AÇÕES

RESUMO

Objetivo: O principal objetivo do estudo é identificar as tendências da volatilidade do mercado de ações com base em pesquisas anteriores de 2012 a 2022 por meio de uma análise bibliométrica.

Estrutura teórica: O estudo visa a identificar os principais autores, países, instituições e periódicos mais citados na área específica. O estudo revela um aumento considerável no número de publicações sobre a volatilidade do mercado de ações, o que demonstra o crescente interesse do pesquisador em estudar e explorar mais novas tendências nessa área.


Conclusões: O resultado identifica os modelos mais eficazes para medir a volatilidade no mercado de ações, as publicações, os autores, as afiliações e as nações dominantes na mesma área. As estatísticas sugeriram uma tendência de aumento nas publicações no período de 2012 a 2022. O resultado será usado para os investidores interessados em pesquisar na mesma área. Implicações sociais, práticas e de pesquisa: O pesquisador sugere uma agenda de pesquisas futuras e destaca as contribuições que ajudarão acadêmicos, profissionais e formuladores de políticas que queiram trabalhar com a volatilidade do mercado de ações.

Originalidade/valor: Os resultados mostram os pesquisadores significativos, coautores, cocitações e tendências de colaboração. Isso mostrará como os especialistas em volatilidade do mercado de ações colaboraram para encontrar novos padrões. Mercados interconectados podem causar volatilidade em muitos países. Estudos entre países sobre como os choques influenciam outros mercados e como eles dependem uns dos outros podem dominar o estudo bibliométrico da volatilidade do mercado acionário no futuro.

Palavras-chave: volatilidade, mercado de ações, co-citações, análise temática, análise bibliométrica.

1 INTRODUCTION

Stock market volatility plays a major role in managing risk, asset pricing, and portfolio analysis. Thus, modeling or measuring volatility remains a topic of discussion in the area of financial econometrics. Volatility and stock returns are interrelated to each other. The more the volatility, the more the return depends upon the risk associated with the stocks. This study aims to map the research landscape in this field by conducting an extensive bibliometric analysis of research publications on stock market volatility in India. This will be done to map the research landscape. The study aims to identify major research gaps, publishing patterns, influential authors, and emerging trends in the area by methodically analyzing the current body of literature and concluding that analysis. This
study also contributes to the current literature by providing a complete review of the research performed in this area and by emphasizing the trends and patterns that have developed between 2012 and 2022.

The forecasting of profits from the stock market led investors to investigate the factors that contributed to the predictability of the market (Gandhmal & Kumar, 2019). It has been determined that a better degree of consistency in the return on the stock market may be achieved by the investor (Al-Smadi et al., 2023). Profits or gains on the stock market are affected by a lot of things. For example, news about a big event is thought to change how the rest of the world works (Insawan et al., 2022). One of the most important aspects of the modern economy is the stock market. Many investors spend time and energy trying to anticipate future stock market developments such as the opening price, high, low, closing, and trading volume of their preferred stocks (Hu et al., 2018). The volatility of the stock market is an important field of research that has gained substantial interest from academics, policymakers, and investors in making the correct decisions (Agurto et al., 2023) owing to the influence that it has on the stability of economic markets and financial markets overall. The investors will improve their quality to predict the stocks and get highly benefitted from the research (Ngoc & Phuong, 2023) owing to the influence that it has on the stability of economic markets and financial markets overall. Therefore, the intensity of the market will change over time, and the nature of any changes that occur over time is likely to be of considerable interest (Diebold & Yilmaz, 2009). To represent the extreme volatility of the price time series, short-term forecasts rely on high-frequency patterns. Patterns with low frequencies, on the other hand, are more conducive to a long-term forecast (Hu et al., 2018). These patterns are often transparent because, in the actual world, they are influenced by a variety of uncertain political-economic elements, including business results, governmental regulations, and even breaking news that spreads across markets (L. Zhang et al., 2017). The network of global financial markets spillover effects has been improved, and the volatility net spillover has swiftly grown in response to matching variations in market conditions (Zhang et al., 2021). It is an essential component of the dynamics of the market and has the potential to have dramatic effects on market participants as well as the overall stability of the market. The global oil market is "one great pool" owing to network improvement. Volatility spillover effects between prices are growing more complicated and ambiguous. The volatility spillover effect, common in financial markets, transmits volatility information between
markets (An et al., 2020). Earlier analysts used to depend on historical data to predict stock prices. Financial markets have distinctive features that make this strategy less successful, including noise, volatility, oddities, and shifting patterns. The Auto-Regressive Moving Average (ARMA), Auto-Regressive Integrated Moving Average (ARIMA), Generalised Auto-Regressive Moving Average (GARMA), Auto-Regressive Conditional Heteroscedasticity (ARCH), and Generalised Auto-Regressive Conditional Heteroscedasticity (GARCH) models are common time series models used by analysts and researchers today (Bollerslev, 1986) (Cheng et al., 2010).

Stock prices all over the world have dropped a lot because of the shock and fear of the Covid-19 pandemic. Due to the leverage effect, when stock prices fall all over the world, the markets become more unpredictable (Uddin et al., 2021) this paper has shown that fear about how bad a global pandemic is affects stock prices around the world. The virus spread has caused a lot of uncertainty because it could lead to a financial collapse. COVID-19 eventually causes the public to focus on stock market volatility. The Covid-19 shock will result in a global recession and a decline of 2.5% which is a growth rate globally and regarded as the most negative effect of the recession the world has seen (Sadiq et al., 2021). It is necessary to have an accurate evaluation of the movement of apprehension sentiment, as Covid – 19 affected the stock market and resulted in a world crisis (Iqbal et al., 2021). This study fills this important gap by describing the intellectual structure of stock market research in the context of knowing the authors, affiliations, countries, and most frequently used keywords by using bibliometric analysis and gives scholars in this field suggestions for future research (Srivastava & Sivaramakrishnan, 2022). The findings will assist relevant researchers in developing a more comprehensive understanding of the stock market’s recent trends and patterns and will give suggestions for them to use while Selecting research areas (Li et al., 2020).

1.1 RESEARCH GAP

Our study mainly identifies the gap in terms of the elements that are not covered in the existing study on stock market volatility. There are major changes in the stock market which has less attention on emerging ideas or topics that require more exploration and investigation. The study period (2012 – 2022) has limited research done on the specific area which requires more consistent and up-to-date research to have a comprehensive understanding of the stock market volatility.
1.2 RESEARCH QUESTIONS

a) What are the affiliations, authors, journals, and important keywords in the association between volatility and the stock market’’?
b) Which country has done the most study in the same area?
c) What are the emerging areas identified by the thematic analysis?
d) What are the most cited articles that contributed more to the stock market?

1.3 JUSTIFICATION

The purpose of the research is to find out the specific models that are effective in measuring the volatility of the stock and the current trends in the market. In addition to this, there has only been a small number of studies conducted in this specific subject. As a result, it is very necessary to get an understanding of the rapid changes taking place in this sector.

2 OBJECTIVES OF STUDY

a) To find the emerging models in the existing research.
b) To analyze the top influential researchers, institutions, and the major contributor to the literature.

3 THEORETICAL FRAMEWORK AND METHODOLOGY

An efficient method to study the development of research domains, including subjects and authors, based on the social, intellectual, and conceptual structures of the fields is called bibliometric analysis (Donthu, N., Kumar, S., & Pattnaik, D. 2020). COVID-19 has affected companies and asked all the companies around the world to immediately start working in ways that are both more innovative and more resilient. Even though just a few recent bibliometric research has looked at the effects of COVID-19 (Chahrour et al., 2020) (Park et al., 2020). Different prediction and clustering methods are used to categorize the collected articles, and the works are reviewed using predefined datasets and software tools, as well as specific metrics of performance assessment, prediction accuracy, and overall accuracy (Gandhmal & Kumar, 2019). The pandemic has affected the industrial sector along with the stock market (Alrjoub et al., 2023). COVID-19 caused stock returns and inflation to trend positive after the financial crisis (Hoong et al., 2023). The bibliometric review is based on the top-cited analyses done by
the author. The study is to find out the emerging trend in the area of stock market volatility for the period of 2012 – 2022 followed by the evolution and the ongoing factors. The study is done by considering 457 papers and analyzing them through RStudio. The software helped in creating the tables which showed the topmost citation, co-citations, major publications, top authors, and affiliations. The charts taken from RStudio give clarity on the most used keywords and frequent words. The paper is filtered by using keywords which gave a total number of 1,261 papers. Then 1,261 papers were sorted by filtering through the year, subject, and language and bringing it down to a total of 457. By combining the capabilities of RStudio with appropriate bibliometric packages, you can effectively explore and analyze large bibliographic datasets, extract meaningful insights, and visualize the results to support your research objectives. A detailed review of the existing papers, selecting, and scrutinizing will give the best possible result providing accurate results and giving a clear prospect. The Prisma diagram below gives the flow of inclusion and exclusion of the documents for the research.

3.1 PRISMA DIAGRAM

Figure 1: Prisma Flow Diagram

- Identification
- Screening
- Eligibility
- Included

Total number of documents in the area in Scopus database
N = 1,261

Records Excluded
N = 804

Reasons for Exclusion
✓ Language
✓ Subject Area
✓ Year 2012 - 2022

Articles Taken
N = 457

Source: Prepared By Authors
Table 1: Influential Institutions

<table>
<thead>
<tr>
<th>Rank</th>
<th>Institutions</th>
<th>Publications</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>University of Pretoria</td>
<td>17</td>
</tr>
<tr>
<td>2</td>
<td>University of Southampton</td>
<td>9</td>
</tr>
<tr>
<td>3</td>
<td>East China University of Science &amp; Technology</td>
<td>9</td>
</tr>
<tr>
<td>4</td>
<td>Comsats University Islamabad</td>
<td>8</td>
</tr>
<tr>
<td>5</td>
<td>University of Economics Ho Chi Minh City</td>
<td>8</td>
</tr>
</tbody>
</table>

Note: (Sorted by Publications)
Source: Prepared By Authors

Table 1, shows a ranking of authors based on the number of publications they have. The University of Pretoria University leads with 17 publications. Southampton University ranks second with 9 publications. East China Science and Technology University ranks 3 and having 9 articles places East China University of Science & Technology in second. Academic literature has benefited from the institution's researchers. Islamabad Comsats University ranks fourth in the list with 8 publications placing Comsats University Islamabad fourth. Ho Chi Minh City Economics University with 5th rank and 8 publications place the University of Economics Ho Chi Minh City fourth. Researchers actively publish their work, indicating that the university has made significant scientific contributions. The table ranks institutions by publications. The University of Pretoria, Southampton, and East China University of Science & Technology are the top three research institutes. The rankings demonstrate these universities' research production and activity, demonstrating their academic accomplishments.

Table 2: Influential Journals

<table>
<thead>
<tr>
<th>Rank</th>
<th>Journal Name</th>
<th>Citations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>International Review of Financial Analysis</td>
<td>1301</td>
</tr>
<tr>
<td>2</td>
<td>Energy Economics</td>
<td>814</td>
</tr>
<tr>
<td>3</td>
<td>Quarterly Journal of Economics</td>
<td>665</td>
</tr>
<tr>
<td>4</td>
<td>Economic Modelling</td>
<td>608</td>
</tr>
<tr>
<td>5</td>
<td>Journal of Monetary Economics</td>
<td>497</td>
</tr>
<tr>
<td>6</td>
<td>Journal of Finance</td>
<td>301</td>
</tr>
<tr>
<td>7</td>
<td>Journal of Finance &amp; Data Science</td>
<td>136</td>
</tr>
</tbody>
</table>

Note: (Sorted by Citations)
Source: Prepared By Authors

As shown in the table International Review of Financial Analysis grabs the first place with the highest number of citations (1,301). Energy Economics has the 2nd highest number of citations in the table which drops to 814. Quarterly Journal of Economics ranks 3rd in the list of the highest citation which shows 665 followed by Economic Modelling which has 608 citations in this area. The Journal of Monetary Economics, Journal of Finance, and Journal of Finance & Data Science are three end journals that have a citation...
of 497, 301, and 136 in the list which depicts the lowest in the table. All the authors and their publications have significant contributions in the area from the highest to the lowest and each article has something to develop through their study.

Table 3: Influential Countries

<table>
<thead>
<tr>
<th>Rank</th>
<th>Countries</th>
<th>Publications</th>
<th>Citations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>United Kingdom</td>
<td>42</td>
<td>1118</td>
</tr>
<tr>
<td>2</td>
<td>USA</td>
<td>41</td>
<td>1400</td>
</tr>
<tr>
<td>3</td>
<td>China</td>
<td>39</td>
<td>390</td>
</tr>
<tr>
<td>4</td>
<td>Australia</td>
<td>18</td>
<td>411</td>
</tr>
<tr>
<td>5</td>
<td>France</td>
<td>17</td>
<td>264</td>
</tr>
<tr>
<td>6</td>
<td>India</td>
<td>14</td>
<td>83</td>
</tr>
<tr>
<td>7</td>
<td>Germany</td>
<td>13</td>
<td>303</td>
</tr>
<tr>
<td>8</td>
<td>Turkey</td>
<td>8</td>
<td>30</td>
</tr>
</tbody>
</table>

Note: (Sorted by Publications)
Source: Prepared By Authors

The table above indicates a ranking of countries based on the number of publications and citations that each country has. The United Kingdom (UK) seems to have the most citations and publications, with 42 total and 1118 respectively. With 41 publications and 1400 citations, the United States of America (USA) holds the second place. China is in third place with 39 publications and 390 citations. With 18 publications and 411 citations, Australia holds the fourth position on this list. With 17 publications and 264 citations, France comes in at number five on the list. India is in sixth place with a total of 83 citations and 14 publications. Germany is in seventh place with a total of 303 citations and 13 publications. Turkey is in eighth place with a total of 30 citations and 8 articles. According to this data, the United Kingdom has the greatest number of publications out of all of the nations that have been included, closely followed by the United States of America and China. However, the United States of America is at the top of the list with the biggest number of citations, followed by the United Kingdom. This shows that the United States of America’s study has gained more attention and citations from other scholars, even though the United Kingdom has produced more publications.

Table 4: Influential Authors

<table>
<thead>
<tr>
<th>Rank</th>
<th>Authors</th>
<th>Publications</th>
<th>Citations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Arshian Sharif</td>
<td>1</td>
<td>728</td>
</tr>
<tr>
<td>2</td>
<td>Barunak J</td>
<td>4</td>
<td>490</td>
</tr>
<tr>
<td>3</td>
<td>Bakeart G</td>
<td>2</td>
<td>469</td>
</tr>
<tr>
<td>4</td>
<td>Bakeart G</td>
<td>4</td>
<td>347</td>
</tr>
<tr>
<td>5</td>
<td>Mensi W</td>
<td>1</td>
<td>332</td>
</tr>
</tbody>
</table>

Note: (Sorted by Citations)
Source: Prepared By Authors
As the table shows that Arshian Sharif, who has the No. 1 spot, has 1 Publication, and the first place goes to a total of 728 citations. They have published only one paper but have received a significant number of citations (728). Barunak J ranks second on the list. They have authored four publications, which indicates a higher level of productivity compared to Arshian Sharif. Bakeart G occupies the third position. Bakeart G is positioned fourth on the schedule. While the number of publications indicates productivity, the number of citations provides insight into the significance and academic community's recognition of the researcher's work. Like Barunak J, they have published four articles. However, their citation count (347) is lower than both Bakeart G and Maensi W occupies the fifth spot on the ranking. However, their citation count (332) is lower than that of Arshian Sharif, indicating that their research has received comparatively fewer citations.

Figure 2: Most Relevant Authors

Figure 2, shows that Gupta R is the highest among the authors to publish 15 papers on the particular topic over the period of 10 years. The number drastically falls to 7 articles published by Demirer R holding the next place in the chart. Guesmi K and Liu Y are the next authors who published 5 papers each over a period. Filis G, Teulon F, Tiwari Ak, Watcher Ja, Zhang Y are the authors who have published 4 papers each in the area,
and lastly, Aboura S, Angelidis T, Bakshi P, Balcilar M, Caporale GM, and Degiannakis Sare the authors who come last at the list with several 3 publications each over the study period. The number gradually decreased from a higher number of journal publications to a lower one.

Figure 3: Co-occurrence Network

Clusters assign a cluster number to each node. Of the 4 clusters, the red cluster is the larger one with the highest co-occurrence network. The stock market and financial market are the two most researched words that are seeking the interest of researchers from the past. Commerce and investment in the blue cluster are the 2nd most researched topic among the researchers to flourish in the stock market. The spillover effect and price dynamics are the 3rd clusters that are the most researched in the network. Implied volatility and economics in the 4th cluster have less exploration in the same area according to Fig 3.
A co-citation network is a concept in bibliometrics and network analysis that represents the relationships between scholarly articles based on their co-citation patterns. To explain a co-citation network, we need to understand two key terms: co-citation and network. Here, the graph shows an increasing trend from the beginning of the study to the end of the study period. The co-citation network has increased over the years with the trending keywords and the most frequent words used to research in the same area.
Figure 5, shows the 50 most relevant keywords that have come out of the area frequently. The keyword Volatility comes out as the most important and the major keyword out of all the 50. The words like the stock market, covid-19, and volatility spill, are the relevant keywords. In addition, economic policy uncertainty, risk, garch, stock returns, and asset pricing are also important keywords found in the study. Word clouds help to know how many similar keywords are used to study our area of research. The word cloud also shows other emerging keywords like systematic risk, risk management, realized volatility, and investor sentiment.

In thematic mapping, in Figure 6, motor themes are the highly developed themes that connect the other themes in the first quadrant. Motor themes are the most significant themes. Stock market enabled by stock returns and other financial terms are the highly developed themes. Financial market investments and equity and the interest rate have also become highly emerged themes. The stock market is a popular term that enables investors to invest while stock returns depend upon the risk of the stock. The motor theme here is known to be the most developed theme as it is central and well-connected to all the other major themes. The role of stock returns and the interest rate are emerging ideas that are evolving into the motor theme from the niche theme. The basic theme is the fourth
quadrant which has higher relatability with the entire body of research. Economics and finance followed by the implied volatility are the important themes and closely related to all the other themes. The niche theme is placed at the upper left side and has the most highly developed and specialized topics that are only somewhat relevant and have weak links to several other topics. Stochastic systems and stochastic models have emerged in this area of forecasting stock prices. Here, the emerging theme is developing over a peperiod of higher volatility, market transition, and great risk aversion. The regression analysis and market transition are to be taken into consideration for comparative study. On the other hand, high volatility and preparing a business cycle will help with risk aversion. Lastly, the theoretical study of the stock market currency model can be performed to get a better result and can help in emerging as a new trend.

Table 5: Top 15 Global Cited Documents and Their Findings

<table>
<thead>
<tr>
<th>Authors</th>
<th>Article Name</th>
<th>Citation</th>
<th>Citations Per Year</th>
<th>Models Used</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Sharif et al., 2020)</td>
<td>COVID-19 pandemic, oil prices, stock market, geopolitical risk and policy uncertainty nexus in the US economy: Fresh evidence from the wavelet-based approach</td>
<td>728</td>
<td>182.00</td>
<td>Wavelet-Based Approach</td>
<td>In the current COVID-19 epidemic, we discovered that there is a positive time-varying dependency between the returns on oil and the returns on stocks. The breakpoints mostly corresponded with the beginning of an oil price war and a worldwide stock market collapse. This finding suggests that oil prices and stock market crashes are related.</td>
</tr>
<tr>
<td>(Barunik &amp; Křehlík, 2018)</td>
<td>Measuring the Frequency Dynamics of Financial Connectedness and Systemic Risk</td>
<td>490</td>
<td>81.67</td>
<td>Frequency Dynamics of Volatility Connectedness</td>
<td>Interconnection has been shown to have a positive association with a variety of bank-level systemic risk indicators, including SRISK, DIP, and CoVaR. The primary reason for such a positive correlation is that interconnectivity tends to have a more pronounced impact on systemic risk when economic downturns are occurring.</td>
</tr>
<tr>
<td>Citation</td>
<td>Title</td>
<td>Year</td>
<td>Score</td>
<td>Type of Analysis</td>
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<tr>
<td>Basher &amp; Sadorsky, 2016</td>
<td>Hedging emerging market stock prices with oil, gold, VIX, and bonds: A comparison between DCC, ADCC, and GO-GARCH</td>
<td>316</td>
<td>39.50</td>
<td>DCC-GARCH, ADCC - GARCH</td>
<td></td>
</tr>
<tr>
<td>Gabaix, 2012</td>
<td>Variable Rare Disasters: An Exactly Solved Framework for Ten Puzzles in Macro-Finance</td>
<td>2012</td>
<td>299</td>
<td>Equity Premium Puzzle, Risk-Free Rate Puzzle, Excess Volatility Puzzle</td>
<td></td>
</tr>
<tr>
<td>Hassan et al., 2019</td>
<td>Variable Rare Disasters: An Exactly Solved Framework for Ten Puzzles in Macro-Finance</td>
<td>2019</td>
<td>193</td>
<td>Textual Analysis</td>
<td></td>
</tr>
<tr>
<td>Bakeart G, 2013</td>
<td>Hedging emerging market stock prices with oil, gold, VIX, and bonds: A comparison between DCC, ADCC, and GO-GARCH</td>
<td>2013</td>
<td>469</td>
<td>Sector Vector Autoregressive Framework</td>
<td></td>
</tr>
<tr>
<td></td>
<td>The results of this study have important implications for investors: (i) the equity market has inverted dynamics, and the volatility index shows that diversification is a good idea; (ii) of the hedging assets, gold seems to be the best hedge for the US equity market because it works better than oil and bonds over time; and (iii) despite these significant results, a better hedge may be found in portfolios based on firm size and profitability.</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Risk is having a positive impact on the economy. Following positive economic or stock news, resistance will increase.</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td>The firm's activities and stock market volatility strongly indicate political risk. Firms that spend more time addressing political issues are likely to rise.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The monetary policy makes people less afraid of taking risks and less uncertain. The effect on risk aversion is bigger than the effect on doubt. The writers also find that when there is a lot of doubt, the government loosens monetary policy.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Title</td>
<td>Year</td>
<td>Pages</td>
<td>CiteScore</td>
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<td>-------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>The VIX, the variance premium, and stock market volatility</td>
<td>Bakeart G, 2014</td>
<td>347</td>
<td>34.70</td>
<td>Sentiment Indices</td>
<td></td>
</tr>
<tr>
<td>Correlations and volatility spillovers across commodity and stock markets: Linking energies, food, and gold</td>
<td>Mensi et al., 2013</td>
<td>332</td>
<td>30.18</td>
<td>Vector Autoregressive, (VAR) Generalized Autoregressive Conditional Heteroskedasticity (GARCH)</td>
<td></td>
</tr>
<tr>
<td>World gold prices and stock returns in China: Insights for hedging and diversification strategies</td>
<td>El Hedi Arouri et al., 2015</td>
<td>190</td>
<td>21.11</td>
<td>CCC-GARCH, DCC - GARCH Scalar BEKK – GARCH, diagonal BEKK GARCH, full BEKK GARCH</td>
<td></td>
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<tr>
<td>Rare Disasters and Exchange Rates</td>
<td>Farhi &amp; Gabaix, 2016</td>
<td>155</td>
<td>19.38</td>
<td>Model formed on Exchange Rate</td>
<td></td>
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</tbody>
</table>

When the model is estimated using historical data on stock returns and volatility (VIX), it can successfully capture both the premiums and the significant inverse correlation that exists between shocks to volatility and stock prices. This is the case even if the model is based on historical data.

Gold, oil, gas, and rice have no volatility spillover to equities markets, while oil, rice, and gas have. Return spillovers are steadier while volatility spillovers are more prone to crises in the oil, gold, and stock markets.

The volatility of the gold returns affects future stock returns significantly. The Chinese Stock Market is found to be positively correlated to gold returns but the cross-market relationship is found to be weaker.

The study formed a new model based on the hypothesis that extreme risk and heavy disaster will affect the asset market crucially which led to the need for market and imperfect cost-to-price pass-through modeling to account for imperfect risk sharing and pricing defects.
4 RESULTS AND DISCUSSION

RQ 1 - What are the most important aspects of the literature on the "association between volatility and the stock market," such as the affiliations, authors, journals, and keywords?

The study sees “The University of Pretoria” as the top affiliation in the same area with “Arshian Sharif” as the author and “International Review of Financial Analysis” being the journal at the top with their highest citation. “volatility”, “stock market”, and “volatility spillover” seems to be the most used keywords.

RQ 2 - Which country has done the most study in the same area?

“United Kingdom” is the top country with 42 publications in the area of volatility in the stock market.
RQ 3 - What are the emerging areas identified by the thematic analysis?

Thematic analysis shows high volatility is the recent element that is coming to the forefront in a few years with market transition and risk aversion in the area of the stock market.

RQ 4 - What are the most cited articles that contributed more to the stock market?

The top cited 15 articles show that over the years the literature showed that Vector Autoregressive (VAR), Generalised Autoregressive Conditional Heteroskedasticity (GARCH), Markov Switching Model, and Support Vector Machine are the most effective models to predict the stock market. The most cited journals also found out the USA to be more volatile and unpredictable because of its big downward moves. The results of the analysis from the year 2012 – 2022 show 468 documents were published in 64 countries from 546 affiliations using 50 keywords and the most frequent words were around 500. The bibliometric analysis observes an upward trend from the period of 2012 to 2022 in all aspects. It shows an upward trend in terms of authorship, citations, and trending keywords in the stock market. (Al Maani, A., Issa, G., Alghananim, M. A. M., & Aljada, A. M., 2023). The analysis shows countries are more in number to study about this area, the keyword search searches more depending on the trends introduced over the years. The paper has seen a positive attitude and interest of the researchers to study this area to know the new trends in the stock market. The study looked at how often things were published in the field. It showed which papers are the most common places where a study on stock market volatility is shared. These events are important places for experts to share their results, work with their peers, and learn more about stock market volatility as a whole.

5 CONCLUSION AND FUTURE DIRECTION

Since the COVID-19 epidemic has slowed down key economic activity, it presents a different set of difficulties compared to the global financial crisis of 2008. Consumers, traders, suppliers, and investors all face more consumption and investment uncertainty as a result of COVID-19’s global reach (Donthu & Gustafsson, 2020). The stock market from the period of 2012 had a growing trend until Covid – 19 hits the market. Since 2019 the stock market became a trending topic in research as the pandemic changed the pattern and showed a downgrade chart for a longer time. The study in the future has a lot of scope as the market keeps changing and a lot more new things can be explored that is not done before. A bibliometric study is done to analyze the relationship between the top most
author, institutions, and papers in that specific area. In the particular area of stock market volatility, network analysis implementation can be done to identify the key researchers, co-authors, co-citations, and collaborative patterns. This will help to look at how experts who study stock market volatility share information and work together to unveil and discover new trends. (Almshabbak, A. N. S., & Chouaibi, J., 2023). Markets are interdependent, which can affect volatility in several nations and regions. In the future, bibliometric research on stock market volatility may focus more on cross-country studies that look at how shocks affect other markets and how they depend on each other. The comparison by taking different countries and figuring out the most valuable key aspects that played a major role in publishing papers in a similar area. Comparing how volatility is measured, how risk is managed, and how policy is implemented in different countries could give us useful information about how the global market works. The bibliometric study shows an exploring relationship between the existing articles in this area and the new evolving articles in this field of the stock market. The continuous volatility in the market and the emerging trends provide insights into the current situation in the study area. The study above gives the best probable idea on the top cited articles published in this area, the top journals, the most productive authors, and the most used keywords. This information will significantly affect the current situation by giving a clear picture of the stock market volatility. The co-citation network provides several clusters that point to various themes in the market. The mapping of the entire study gives a clear picture and helps the researcher to look into the scope of the study. The co-citation analysis has helped in figuring out the emerging trends in the volatility of the market. After seeing the changes and the rising interest of the researchers, it is easy to find out the evolving trend in the market by predicting the market movements and analyzing the future for better results. Our study has thrown light on the last 10 years (2012 – 2022) articles by offering a comprehensive view of the knowledge environment surrounding stock market volatility. The findings add value to the topic by enabling researchers, investors, and the latest trends and insights in the same field.

LIMITATIONS OF THE STUDY

While performing the bibliometric study few limitations were noticed. The study is purely based and analyzed by taking the document from the Scopus database. The study was
only restricted to the documents which were only connected to the volatility in the stock market. As the stock market is a wider area many other aspects of the area can be taken to do a bibliometric study. The study period was limited to ten years which showed the emerging trends throughout the passing years. The evolution over the years has shown different new keywords, authors’ involvement, and institutional progress in different countries. Thus, conducting a systematic review and content analysis would help to have a deeper understanding of the same domain.
REFERENCES


