International Journal of Social Science Research and Review

http://ijssrr.com
editor@ijssrr.com
Volume 9, Issue 5
May, 2026
Pages: 166-184

From GARCH to Artificial Intelligence: Bibliometric and Thematic Review (1995-2025)

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http://dx.doi.org/10.47814/ijssrr.v9i5.3384

Abstract

This bibliometric study focuses on the changing nature of factors affecting the stock market volatility between the year 1995-2025. Using a data source of 89 reviewed research articles in Scopus and analyzed using VOSviewer through visualizations. The analysis also reveals the main clusters of influence, which include the macroeconomic indicators, political stability, and oil-price shocks, as well as behavioural drivers, including investor sentiment. The results show that the previous papers focused on the GARCH-based modeling and seasonality, whereas recent literature predicts the incorporation of artificial intelligence, deep learning methods, and ESG-associated volatility spill-overs. Bibliographic coupling highlights the fact that network theory is becoming more and more relevant to understand spatial correlations and dynamics of regional contagion. The study reveals that volatility is no longer necessarily understood as an economic variable but instead as a dynamic of complicated world systems. These results serve vital information to policy makers who are working hard to reduce systemic risk as well as retail investors who deal with information asymmetry or imbalance. Future studies should address the gap of methodological fragmentation by combining explainable artificial intelligence with theory-consistent financial models.

Keywords: *Stock Market Volatility; Bibliometric Analysis; Investor Sentiment; GARCH Modeling, Financial Integration; Artificial Intelligence; VosViewer*

Introduction

The financial markets landscape has witnessed a radical change in the last three decades, it has transformed into a chain of the local trading centers into the highly networked global system. Stock market volatility is used to measure the pace at which the price of a security or a market index changes with time is crucial in this development. The traditional study of volatility has however been conducted through a comparatively small prism with the initial research giving attention to internal market mechanisms like day of the week effects or crude transnational relationships that can affect the return variances (Alexakis and Xanthakis, 1995; Hassan, 2003). It is clear that by around 2027 the factors of market instability no longer depend on the usual economic indicators like interest rates or company profits. Rather, a vast variety of unconventional drivers, including the psychological effect of the music sentiment to the blazing-fast impact of trade algorithms, now coordinate the world-based finance markets (Edmans et al., 2021; Alim et al., 2024).

Regardless of the enormous amount of incoming information and the complexity of the modern analytical instruments, there is still an issue of methodological fragmentation. The existing academic resources often lack in their connectivity as traditional econometric models are run on an independent basis without any reference to the latest, AI-based forecasting tools. Such a disjunction creates a gap in knowledge, especially in the case of structural disruptions related to global shocks like the COVID -19 pandemic or geopolitical trade frictions (Gao et al., 2022; Li et al., 2020). There is an immediate need, then, to bring these divergent threads of investigation together, in a unifying array of thought that will not only explain how the market moves, but also why, the interplay of behavioral, political and environmental factors.

The core research question investigates the possibility of how the key drivers of market risk have changed over the years and whether non-financial sentiments have actually become important predictors of market stability. Furthermore, key factors affecting stock market volatility include rising inflation, economic policy uncertainty, GDP growth, and interest rate changes. These elements significantly influence market stability, particularly during economic downturns and events like the COVID-19 pandemic, highlighting the need for adaptive policy frameworks (Kumar et al., 2024). Also, microeconomic factors affecting stock market volatility include company financial conditions, industry characteristics, macroeconomic factors, and government policies. These elements significantly influence market fluctuations, guiding investors in risk evaluation and strategy formulation, while aiding practitioners in enhancing risk management tools (Xu, 2024). Policy factors significantly affect stock market volatility, particularly in the Chinese stock markets. They explain more changes in volatility during bull markets than bear markets and have a greater impact on downward volatility compared to upward volatility (Wang et al).

Having operationalised the main concepts of investor sentiment and bibliometric mapping as applied to the market dispersion in question, this research outlines the limits of the modern financial risk. It only focuses on peer reviewed and English language literature thus providing a ground based view on the development of volatility as a single economic variable to a dynamic manifestation of global informational interdependency.

Importance of the Study

The importance of the present research has to do with its ability to synthesize three decades of fragmented financial analysis into a coherent story that reflects the existing reality of the world market. With financial systems in a transitional phase where production and consumption adopt a high-frequency and artificial intelligence approach, the multi-factor inference of volatility is not just an academic pursuit anymore, but a necessity to economic function. This study provides an essential state-of-the-union of the field of financial risk by mapping the transition between simplistic econometric methods, to behavioural and algorithmic models which are mutually dependent on each other. It acts as a bridge between traditional finance and modern data science, which is an unusual chance to understand how qualitative variables (i.e. political stability in Pakistan or music sentiment on an international level) have been measured to predict market behaviour.

Further, the research has a huge implication in terms of democratizing the financial information. Over the past years there has been an increase in retail trading of younger and, necessarily, less experienced traders in the market, who are especially susceptible to the information asymmetry and behavioural overreactions. This study explains the structural shocks and regime transformations such investors have to deal with, and it highlights the fact that volatility is a manifestation of socio-political interdependencies as much as economic ones. The study is also in line with global initiatives to invest responsibly as it seeks to determine the growing impact of ESG-related volatility and sustainability measures. The findings are not only crucial to asset managers who are trying to protect portfolios, but also to regulators who are trying to model social support systems and financial literacy programmes that can withstand the impending market changes.

Finally, this paper is a paradigm shift, as the idea of volatility is no longer a random walk but one that is predictable and complex, but can be dealt with by integrating the approaches and taking action in terms of policy creation and management.

Methodology

This study employed a bibliometric research design to investigate the factors affecting stock market volatility. The research papers were extracted form scopus database and the analysis was conducted in VosViewer. The articles had been searched in the Scopus database using the query (TITLE-ABS-KEY) "Factors affecting stock market volatility" from 1995 to 2025 applying filters for language (English). A total of 16 different subject areas were taken including computer science, economics, mathematics, etc. Before the filter, there were 118 documents and after the filters, a total of 89 documents appeared following this query, on which the analysis was conducted. After the bibliometric analysis, content analysis had been conducted for the top most authors, organizations, countries, keywords, etc.

Analysis

Co-authorship and author

On the basis of co-authorship and authors, with the minimum number of citations set to 40 and minimum number documents of author was 1, out of 245 authors, 32 met the threshold.

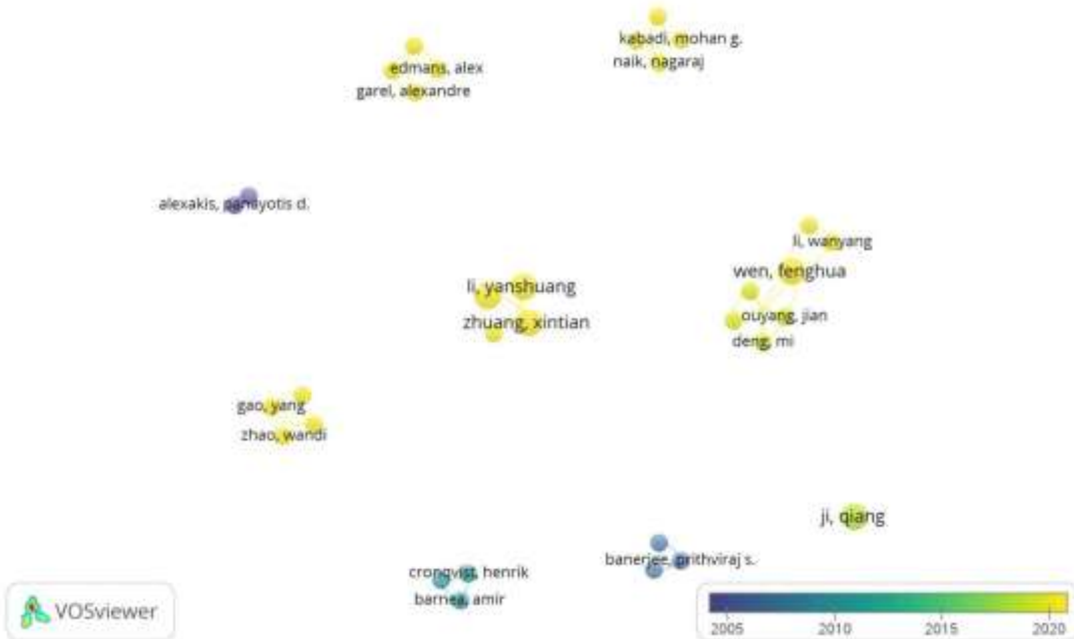
Table 1

Co-authorship and authors

Author	Documents	Citations	Total Link Strength
Barnea, A.	1	149	2
Cronqvist, H.	1	149	2
Wen, F.	2	149	2
Banerjee, P. S.	1	129	2
Edmans, A.	1	129	3
Wang, J.	2	129	5
Zhuang, X.	2	96	5
Fernández-Pérez, A.	1	78	3
Gao, Y.	1	78	3
Indriawan, I.	1	78	3
Ji, Q.	2	78	0
Alexakis, P. D.	1	68	1

Figure 1

Co-authorship and authors



Cluster 1 revealed that before the crisis, the USD was identified as the dominant factor influencing oil prices. After the crisis, speculation in the crude oil futures market emerged as the strongest factor affecting oil prices. Gold and the S&P 500 index were found to have lesser effects on crude oil prices compared to the USD and speculation (Wen et al., 2019). Cluster 2 showed that music sentiment is positively correlated with same-week equity market returns and negatively correlated with next-week returns, indicating temporary mispricing. It also predicts net mutual fund flows and is associated with increased stock market volatility and lower government bond returns (Edmans et al., 2021). Cluster 3 explains that investor sentiment significantly impacts stock volatility in China's green markets, with both Internet and trading sentiments positively affecting realized, continuous, and jump volatilities. The study highlights trading sentiment as the primary influence, especially post-COVID-19 pandemic (Gao et al., 2022). In cluster 4, the paper investigates the spatial linkage of volatility spillovers among China's interregional stock markets using the GARCH–BEKK model, highlighting the interconnectedness and dynamics of volatility across different regions, thereby enhancing understanding of market behavior and risk transmission (Li et al., 2021). Cluster 5 showed that the results indicate that sectoral risk spillovers in China's stock market vary across phases of Sino–US trade friction, with cyclical rotation effects. Trade frictions and shocks to heavily weighted stocks weaken market stability, especially during high-intensity periods. Key drivers of abnormal fluctuations include market network structure, global stock indices, international commodity prices, and domestic macroeconomic factors, offering insights for macroprudential regulation and risk control (Li et al., 2020). Cluster 6 reveals that, the paper proposes a hybrid stock prediction model using the prediction rule ensembles (PRE) technique and deep neural network (DNN) to improve prediction accuracy (Srivinay et al., 2022). On the basis of cluster 7, it shows that implied volatility, particularly measured by the VIX, has strong predictive ability for future portfolio returns. The study finds that current implied volatility levels and innovations positively relate to future returns, while higher future implied volatility levels negatively impact returns (Banerjee et al., 2007).

Cluster 8 explains that genetic factors account for about one third of the variance in investor behavior, particularly in stock market participation and asset allocation, while family environment influences young individuals temporarily. Frequent contact among twins also leads to similar investment behaviors (Barnea et al., 2010).

Co-authorship and organization

Cluster 1 explains how the political stability positively influences stock market returns and volatility in Pakistan. Using GARCH and EGARCH models, it reveals that negative political shocks create greater volatility than positive shocks, highlighting the need for resolving political instability for stable financial markets (Alim et al., 2024). Cluster 2 reveals that this study examines the limits to stock index arbitrage using S&P 500 futures relative to the SPDR (Standard & Poor's Depository Receipts) ETF (exchange rated funds) and the S&P 500 cash index. It identifies factors such as staleness, trading costs, liquidity, and volatility that affect mispricing and arbitrage opportunities. The findings indicate that mispricings occur regardless of the underlying asset, with more frequent negative mispricings for the SPDR during high-volatility periods, highlighting the SPDR's advantages in pricing accuracy and liquidity compared to the cash index (Richie et al., 2008). Cluster 3 mentions how the paper explores how oil market conditions, specifically oil price returns and volatility, contribute to commonality in liquidity across international equity markets, particularly affecting countries with higher integration with oil markets, and showing pronounced effects for net oil exporters (Alhassan et al., 2021). Cluster 4 investigates the impact of oil price shocks on Pakistan's stock market before and after the 2007 financial crisis, revealing significant long-run associations, asymmetric effects of volatility, and differing responses to shocks in both sub-periods (Jebran et al., 2017). Cluster 5 mentions how music sentiment is positively correlated with same-week equity market returns and negatively correlated with next-week returns, indicating temporary mispricing. It also predicts net mutual fund flows and is associated with increased stock market volatility and lower government bond returns (Edmans et al., 2021). Cluster 6 proposes a hybrid stock prediction model using the prediction rule ensembles (PRE) technique and deep neural network (DNN) to improve prediction accuracy (Srivinay et al., 2022). Cluster 7 explains how the investor sentiment significantly impacts stock volatility in China's green markets, with both Internet and trading sentiments positively affecting realized, continuous, and jump volatilities. The study highlights trading sentiment as the primary influence, especially post-COVID-19 pandemic (Gao et al., 2022). Cluster 8 reveals that using U.S. corporate default data and CDX (Credit Default Swap) index and tranche swap rates, estimates correlated default models under actual and risk-neutral probabilities. The strong differences between actual and risk-neutral default intensities reveal substantial default risk premia in CDX markets. These premia vary across maturities, are closely linked to stock market volatility and credit spreads, and reflect changing market attitudes toward correlated default risk rather than shifts in underlying default fundamentals during 2004–2007 (Azizpour et al., 2011).

Co-authorship and country

On the basis of co-authorship and country and the unit of analysis, minimum number of citations of country being 1 and minimum number of document being 1 as well.

Figure 2

Co-authorship and country

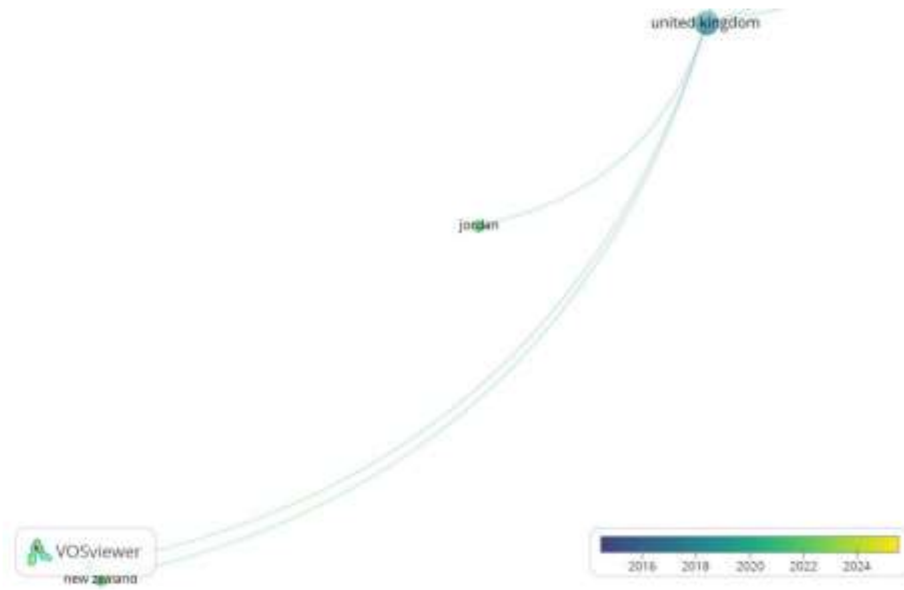


Figure 3

Co-authorship and country

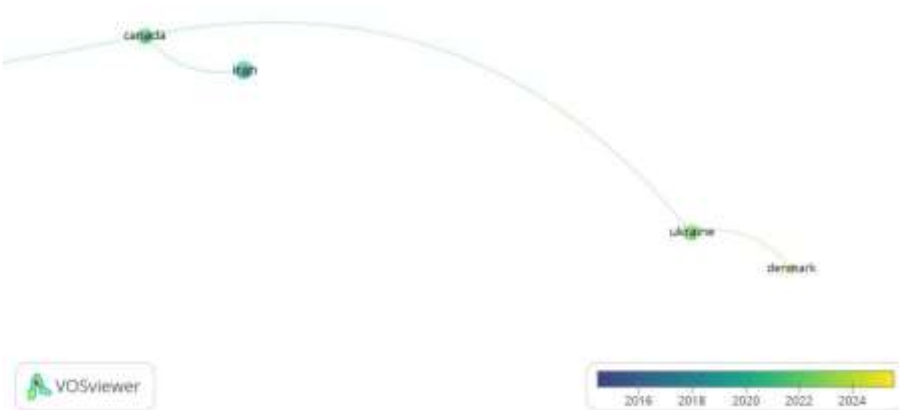


Figure 4

Co-authorship and country

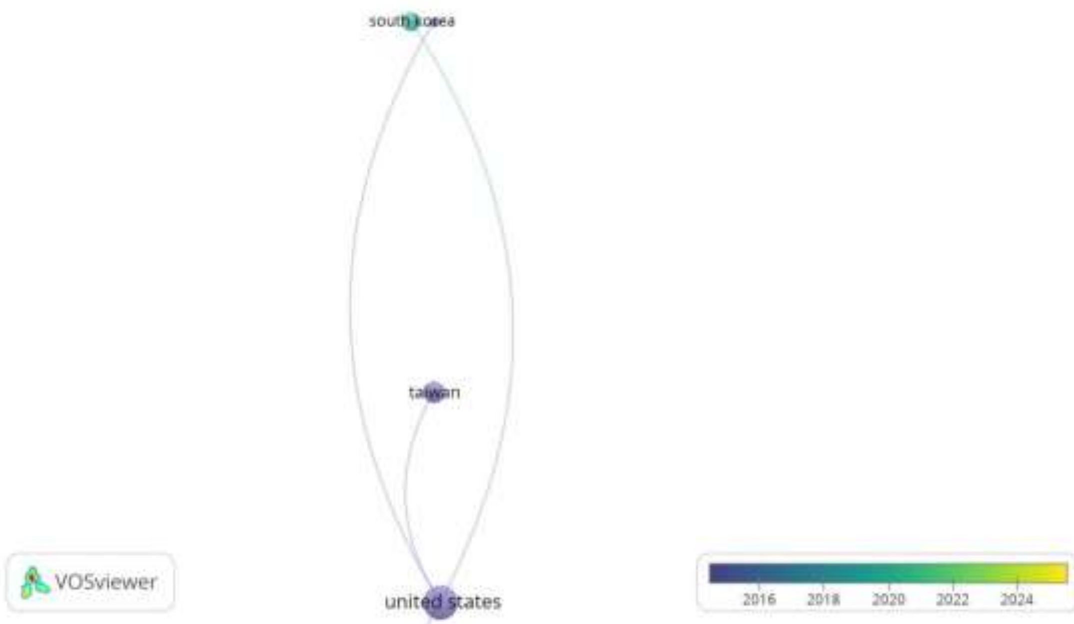


Figure 5

Co-authorship and country

Cluster 1 found that political stability positively influences stock market returns and volatility in Pakistan. Using GARCH and EGARCH models, it reveals that negative political shocks create greater volatility than positive shocks, highlighting the need for resolving political instability for stable financial markets (Alim et al., 2024). Cluster 2 establishes that low information transparency significantly impacts investment decisions and profitability during crises. It highlights that sectors with higher uncertainty, like aviation, attract more risk, while pharmaceutical industries, despite lower returns, exhibit less volatility in long-term investments (Hrytsenko et al., 2023). Cluster 3 explores the share prices of agriculture listed firms on the Zimbabwe Stock Exchange are positively influenced by earnings per share, price earnings ratio, and return on equity. Government intervention to control inflation and promote agricultural growth is also crucial for price stability (Sanderson et al., 2024). Cluster 4 reveals the macroeconomic factors affecting government bond yield in Indonesia, Malaysia, Thailand, and the Philippines include the volatility index, foreign exchange rates, stock market index, inflation rates, and credit default swaps, which influence yields both partially and simultaneously (Tjandrasa et al., 2020). Cluster 5 explores investors' perceptions of the stock market, highlighting factors influencing investment decisions such as risk-return, tax benefits, and safety. It reveals that most investors prioritize returns and prefer stocks over mutual funds and derivatives for investment (Hawaldar & Rahiman, 2019). Cluster 6 examines the link between stock market and macroeconomic integration using a world index model. We find that output betas explain about 20–26% of cross-country variation in stock market betas, while inflation betas, trade openness, and global stock market volatility have limited explanatory power (Ülkü & Baker, 2013).

Co-occurence and keywords

On the basis of co-occurence and unit of analysis as keywords, with the minimum number of keywords per document as 3, out of 579 kewboards, 29 met the threshold.

Figure 6

Co-occurence and keywords

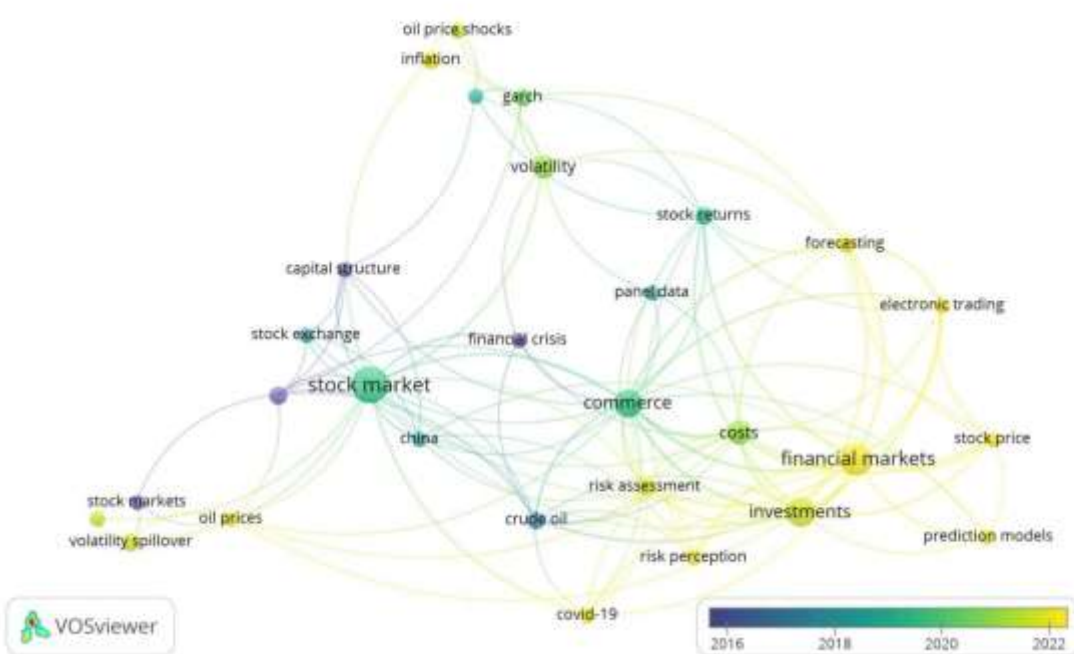


Table 2

Co-occurence and keywords

Keyword	Occurrences	Total Link Strength
Stock market	16	23
Financial markets	12	40
Investments	10	33
Commerce	9	34
Costs	7	21
Volatility	6	10
Crude oil	4	14
Exchange rates	4	9
Forecasting	4	15
GARCH	4	8
Inflation	4	3
Risk assessment	4	17
Stock returns	4	12
Volatility spillover	4	4
Capital structure	3	7

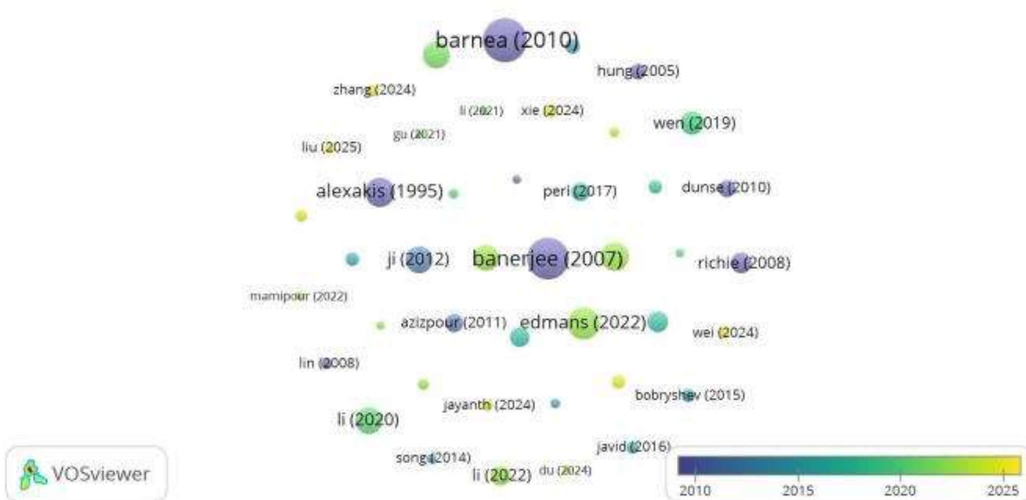
The top most occurring keyword was “Stock Market” with an occurrence of 16. Thereafter is “Financial markets” with a total occurrence of 12. “Investments” had an occurrence of 10 times and “Commerce” occurred 9 different times. The word “Costs” occurred 9 times. In 2022, there was an increase of “Financial market” as well as “Investments”, papers were written on the interaction of the two. While in 2020, the trending keywords were “Stock market”, “commerce”, and “Stock returns”. Between 2016 and 2018, interaction was found between “Crude oil”, “financial crises”, “capital structure”, etc.

Citations and documents

On the basis of citations with the unit of analysis as documents, minimum number of documents being 6, with a total of 89 documents, 43 met the threshold.

Figure 7

Citations and documents



Trends across time and regions

The studies on stock market volatility show four main characteristics of volatility factors. Even though some of the research before 2000 lie beyond the scope of this review, they helped to lay down the conceptual foundation for future studies by detailing the behavioral and macro financial processes behind the price movements. Studies (Alexakis & Xanthakis, 1995) explained the indications of market fluctuations with the help of “day of the week effect”, and the international portfolio flows were also mentioned, while (Hassan, 2003) demonstrated the important transnational connections that influence the variance of returns. These models formed analytical basis of following studies that included expectations and macroeconomic shocks in volatility analytic models, on a basic level.

Between 2000 and 2008, the empirical modelling of volatility dynamics became the focus of research, due to the advances in financial econometrics. Banerjee et al. (2007) reported the correlation between implied volatility and future returns of the portfolios showing that volatility is both a risk and predictive factor. This progress was made through a global co-movement system, and it showed the volatility transmission across markets such as between Taiwan and its trading partners (Lin & Cheng, 2008). During the same period, Richie et al. (2008), Barrell et al. (2009) associated volatility causes with cyclical variations and arbitrage restraint which is the deviation from the true value for extended periods, which provided the empirical basis of future studies examining the enhancement of already common volatility drivers in financial integration and markets.

Furthermore, the scholarship grew to include macroeconomic variables and company/firm level structures in volatility behavior explanations between 2009 and 2015. Structural and regulatory changes were significant in Asian equity markets Shih & Fan, (2009), Tanjung et al. (2014), while other research Apergis (2015), has included policy and technological risks in volatility. Ownership and governance variables became central elements to explain these effects through (Xb & Zheng, 2015), while (Ülkü & Baker, 2013) showed an empirical relationship between macroeconomic base and stock market base in international markets. Also, they showed how ownership and governance variables became major explanatory variables. Combined, it was during this period that volatility became a multi layered phenomenon, and both the micro and macro market shocks contributed to this.

Between 2016 and 2020, there was a change in the literature. This change was towards network based and behavioral analysis. Studies such as (Li et al., 2020; Li, Zhuang, Wang, & Zhang, 2020) used the complex network theory to model volatility spillovers across regional and sector stock markets and showed the increase in interdependence due to the trade tensions and policy uncertainty at the time. Wu (2020), Hawaldar & Rahiman (2019) modeled the investor perception and the mechanism of contamination/contagion as mediators between the information asymmetry and the market risk. Meanwhile, Kakoti (2019) presented an econometric analysis of the volatility factors in India and found that the exchange rates, inflation and global market elements jointly influence the short term volatility evolution. It was the time of the unification and combination of volatility forecasting into the multivariate interacting field.

Between 2021 and 2023, the focus of research went more towards high frequency and structural uncertainty influences. Al-Rimawi & Kaddumi, (2021) and Li et al., (2021) empirically mapped volatility linkages between interregional stock markets in the spatial network models, while Mukan et al. (2020) and Ziadat & McMillan (2022) analyzed oil shock volatility spillovers across resource driven economies. The articles that evaluated the effectiveness of the market and the constant persistence of volatility in transitional markets, as well as the role of fiscal interventions in effect during the COVID-19 pandemic as a period of an external factor leading to volatility amplification. According to Daliak et al. (2023) and Sreenu & Pradhan (2022), this evolution saw more and more research realize mixed GARCH-family and "wavelet" based approaches to detect structural changes and the heterogeneity of the persistence in volatility processes (Mamipour et al., 2022).

From 2024 to 2025, the literature changed and varied across analytical and sectoral sectors, showing the "multi-factor inference and AI integration" wave. Studies such as Alim et al. (2024) and Liu & Lee (2025) used GARCH to explain this, and how the Andrey Markov regime switching led to link political stability and risk to volatility in sectors. On the other hand, Daruwala (2025) and Audi et al. (2025) introduced multi-analytical frameworks that assess how cryptocurrencies and oil shocks interact with and affect equity market. Also, deep learning and hybrid computation techniques became dominant through (Y. Liu et al., 2025), and (Chebbah & Mekni, 2025), which involved adversarial networks (GANs) and LSTM (Long Short-Term Memory) algorithms for better volatility forecasting accuracy. Also, Tian et al. (2025) introduced ESG related volatility spillover analysis, making a bridge between sustainability scoring and financial risk assesments. At the same time, Meher & Mishra (2025) mentioned interpretive structural modeling (ISM) to hierarchically rank volatility factors such as inflation, investor sentiment, and policy certainty, showing a conceptual combination of the field's evolution into more of a multidimensional modeling rather than just a simple one.

Altogether, the 2000-2025 research trend of stock-market volatility has shifted, as simplistic econometric abstractions to elaborate, interconnected, behavioral, macroeconomic, and algorithmic models. The initial research formed the methodological foundation, the intermediate stage of research incorporated risks and sentiment, and the latest generation added artificial intelligence and metrics associated with sustainability to the analysis of volatility. The frameworks which resulted are all testimonies to the fact that stock-market volatility is not just an economic variable, but a constantly changing expression of financial, political, and information interdependencies.

Bibliographic coupling and documents

On the basis of bibliographic coupling, minimum number of citations is 1, where 71 out of 89 meet the threshold.

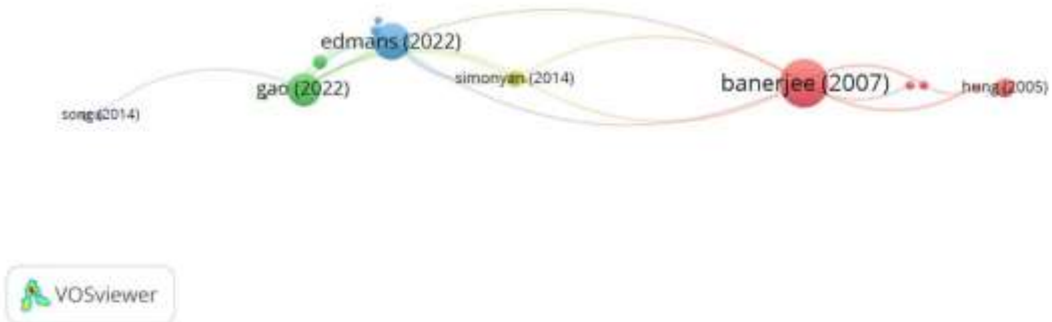
Table 3

Bibliographic coupling and documents

Author (Year)	Citations	Total Link Strength
barnea (2010)	149	1
banerjee (2007)	129	3
edmans (2022)	78	6
alexakis (1995)	68	0
gao (2022)	62	6
tian (2021)	54	0
li (2020)	54	1
ji (2012)	54	0
srivinay (2022)	50	0
wen (2019)	42	1
zhao(2017)	35	0
richie (2008)	35	0
jebran (2017)	29	0
li (2022)	28	0
peri (2017)	27	0

Figure 8

Bibliographic coupling and documents



In cluster 2, Investor sentiment significantly impacts stock volatility in China's green markets, with both Internet and trading sentiments positively affecting realized, continuous, and jump volatilities (Gao et al., 2022). The paper uncovers the interrelationships between factors using multifactoral hierarchy approach and provide a clearer understanding of their role in shaping market dynamics, with practical implications for investors and policymakers (Sharma & Bodla, 2010). While Chang et al. (2008) describes the relationship between weather conditions and investor sentiment in the Korean equity market. According to the paper, weather factors significantly affect market turnover, volatility, and illiquidity, especially when they alter sentiment dynamics. All together, the papers show that different sentiments such as weather influence factors to the volatility and market dyanmics.

In cluster 3, Music sentiment is positively correlated with same-week equity market returns and negatively correlated with next-week returns, indicating temporary mispricing (Edmans et al., 2021). Financial news sentiment lexicon and an auxiliary lexicon applicable to the financial field were constructed to see their effect (Gu et al., n.d.). Migration policy uncertainty significantly affects stock market investor sentiment in the USA, where it transmits volatility to stock markets (Ordu-Akkaya, 2018). All three studies show that non-financial information significantly impact investor sentiment and leads to short-term stock market mispricing or affects on volatility.

In cluster 4, the study concludes that investors that investor sentiment, as measured by technical analysis indicators, significantly impacts stock returns in the Vietnamese stock market. Also, they mention that sentiment has a stronger explanatory power for excess stock returns compared to trading behavior (Mai Phuong & Nhung, n.d.). Takeover premia rise during pessimistic, undervalued, and high-volatility markets and fall during optimistic, overvalued periods. This shows takeover pricing moves with market volatility and sentiment (Simonyan, n.d.). The merger of the Jakarta Stock Exchange (JSX) and Surabaya Stock Exchange (SSX) into the Indonesia Stock Exchange (ISX) had implications on the factors influencing the Jakarta Composite Index (JCI) such as gold price, SBI, inflation, and GDP, ultimately affecting the market (Tanjung et al., 2014). All in all, the studies show that stock market outcomes are strongly driven by sentiment and macro/structural factors, whether through investor psychology, takeover pricing under volatility, or major institutional and economic changes.

Implications for researchers

The review shows that the study on volatility of the stock market has gone beyond a one factor econometric model to a multi-factor, multi-method, and cross-asset model and sectors, which have a huge implication for future research.

Firstly, there is “methodological fragmentation” meaning breakdown into different and incomparable analytical frameworks. Traditional GARCH-type models (Alim et al., 2024) are present along with regime switches and quantile approaches (Liu & Lee, 2025), network spillover models (Tian et al., 2025), structural modeling (Meher & Mishra, 2025), and AI based forecasting systems (Y. Liu et al., 2025; Chebbah & Mekni, 2025). The methods are mostly implemented singly. It is therefore recommended that the future research aims at methodological integration and systematic model comparison in investigating whether different approaches can make inferences about volatility drivers and not just emphasize on simple predictive accuracy.

Second, the determinants of volatility have become more multi-layered, such as by including macroeconomic shocks, political stability, oil prices, ESG factors, governance structures, investor sentiment, and technological variables, all of which appear germane, and under consideration (Audi et al., 2025; Daruwala, 2025; Tian et al., 2025; Meher and Mishra, 2025). However, numerous researches single out one group of drivers. The future research should therefore consider coming up with multi-factor models that would explore the interaction between the macroeconomic variables, behavioral variables, structural variables and sustainability related variables under a single empirical model. This would be benificial to get a better, all rounded, and big picture of the financial sector.

Thirdly, regime dependence is relevant as structural breaks like financial crises, geopolitical tension, and the COVID-19 shock highlight. According to the evidence, provided by regime switching models, especially the ones with extreme low or high distrubution (Liu and Lee, 2025), the volatility dynamics have not remained the same with time. Researchers should therefore prioritize time varying specifications, which would help them in structural tests, estimations, and higher frequency data to predict and capture shock amplification.

Fourth, the expansion into AI and deep learning has significantly improved forecasting performance (Y. Liu et al., 2025; Li et al., 2025). However, the theoretical knowledge is narrow. The focus of future research must be on explainable and theory-consistent AI where the results of an algorithm are connected to known macro-financial mechanisms and not to other models.

Fifth, cross-market and cross-asset interdependence has become increasingly dominant (Audi et al., 2025; Daruwala, 2025; Tian et al., 2025). But the data is still geographically centralized and mostly short run. With the help of this, researchers should construct longitudinal and cross regional panel datasets to test whether volatility probability would persist across different institutional and other sectors.

Altogether, integrative, multidisciplinary, and theoretically based research designs are now required in the field. Volatility needs to be conceptualized as a dynamic system that develops due to interacting forces (macroeconomic, political, behavioral, technological and sustainability). The research in future should focus on integration, comparability, and structural interpretation instead of individual modeling progress.

Social Support Implications

The analyzed evidence above suggests that investors and the market participants who are more vulnerable to risks, especially retail investors and younger traders, regularly have to deal with incomplete information space, increased exposure to behavioral, decision-based market volatility, and limited loss

(Wu, 2020; Hawaldar and Rahiman, 2019). Uncertainty effects are also present through periodic structural shocks and regime change (Liu and Lee, 2025). Therefore, the evidence can serve as useful for such people.

The policy measures that can be taken by the public institutions to overcome these obstacles include strengthening financial literacy programmes, especially to adolescents and first time investors, and also by promoting transparent disclosure standards to reduce lack of information (Meher & Mishra, 2025). Regulators can also support macroprudential, monitoring financial systems, control during high volatility regimes to reduce systemic changes in different assets and sectors (Tian et al., 2025).

On the market level, such efforts can be achieved by exchanges and financial intermediaries such as banks and investment firms, which can engage in investor related education programs and risk awareness instruments, particularly in such innovative sectors including cryptocurrencies and ESG-based assets (Audi et al., 2025; Daruwala, 2025). Furthermore, this can be achieved through collaborative governance of such social support systems. With financial institutions and educational institutions coordinating their efforts and restrain behavioral overreactions when crisis periods occur. All together, these factors would help to make sure that trading financial markets is a way of wealth opposing the exposure to less knowledgeable or structurally exposed investors.

Practical Implications

The varied nature of the evidence on the volatility of stock-markets has direct implications on the stakeholders. The regulators and policy makers put in place dynamic structures that forecast cross market and cross asset spillovers, so that liquidity buffers and specific intervention mechanisms can be used during a crisis (Liu and Lee, 2025; Tian et al., 2025).

By improving asymmetric information, transparent disclosure laws and consistent ESG reporting can help stabilise the markets (Tian et al., 2025). Institutional investors and fund managers should use multi-asset trading, scenario analysis, and stress evaluation including dynamic risk-management techniques to manage multi-factor, regime-dependent volatility (Alim et al., 2024; Meher and Mishra, 2025).

The young and first-time traders who are now retail investors enjoy easy access to financial education and diversification and risk awareness tools (Y. Liu et al., 2025). Companies need to apply the principles of governance, sustainability and risk communication to their financial policies because external shocks and volatility are directly linked to the ESG and can directly impact the stock prices (Tian et al., 2025). All in all, effective solutions in real life situations to volatility would require regulatory vigilance, proactive approaches to investments and empowerment of investors to effectively deal with its real life implications.

Conclusion

The research examined factors affecting stock market volatility. By analyzing the literature, the study sought to understand key authors, organization, countries, key-words, citation in the particular domain. The findings reveals that volatility is no longer necessarily understood as an economic variable but instead as a dynamic of complicated world systems. Additionally, the study shows that the previous papers focused on the GARCH-based modeling and seasonality, whereas recent literature predicts the incorporation of artificial intelligence, deep learning methods, and ESG-associated volatility spill-overs The study contributes to the field of management by theoretical contribution and offers practical insights for stakeholders. These findings may inform policy decisions, future research, or industry applications.

Despite its contributions, the study is limited by years, language, and subject area. Future research may explore cross regional comparitive frameworks to capture structural uncertainity. In conclusion, policy makers should focus on multi-dimensional nature of financial strategies for reducing systemic risk.

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