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Stock Market Volatility Analysis During the Global Financial Crisis: Literature Review

Gilberth Sontanan Biu[1]✉, Prambudi Katon Kusuma[2]
[1,2]Interdisciplinary School of Management and Technology, Institut Teknologi Sepuluh November, Surabaya, Indonesia
Correspondence Author: 6032231102@student.its.ac.id✉

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Abstrak: Penelitian ini menyajikan sebuah tinjauan literatur tentang analisis volatilitas pasar saham selama krisis keuangan global. Krisis keuangan global pada tahun 2008 adalah salah satu peristiwa paling signifikan dalam sejarah keuangan modern yang memiliki dampak besar pada pasar saham di seluruh dunia. Tujuan utama penelitian ini adalah untuk merangkum penemuan utama dalam literatur terkait volatilitas pasar saham selama krisis keuangan global, serta untuk menyajikan pemahaman yang lebih dalam tentang faktor-faktor yang memengaruhi volatilitas pasar saham dalam konteks krisis keuangan. Dalam analisis literatur ini, kami menjelajahi berbagai teori dan model yang digunakan untuk memahami volatilitas pasar saham, termasuk model ARCH/GARCH, efisiensi pasar, teori perilaku keuangan, dan teori ekonomi perilaku. Kami juga menggali literatur yang mengkaji dampak faktor makroekonomi, kebijakan moneter, sentimen investor, dan faktor-faktor lainnya terhadap volatilitas pasar saham selama krisis keuangan global. Hasil penelitian menunjukkan bahwa krisis keuangan global memiliki dampak signifikan pada volatilitas pasar saham, dengan lonjakan volatilitas yang signifikan selama periode tersebut. Faktor-faktor seperti ketidakpastian ekonomi, perubahan dalam kebijakan moneter, dan sentimen negatif investor semuanya berkontribusi pada peningkatan volatilitas pasar saham. Selain itu, penelitian juga menyoroti pentingnya interaksi antara faktor-faktor mikro dan makroekonomi dalam membentuk volatilitas pasar saham selama krisis keuangan global. Penelitian ini memberikan wawasan yang berharga tentang kompleksitas volatilitas pasar saham selama krisis keuangan global dan memberikan landasan untuk penelitian lebih lanjut dalam memahami dinamika pasar selama periode krisis keuangan yang serupa di masa depan. Dengan pemahaman yang lebih baik tentang faktor-faktor yang memengaruhi volatilitas pasar saham, para investor dan pengambil kebijakan dapat mengambil langkah-langkah yang lebih baik dalam mengelola risiko dan menjaga stabilitas pasar keuangan.

Abstract: This study presents a literature review on the analysis of stock market volatility during the global financial crisis. The global financial crisis in 2008 was one of the most significant events in modern financial history that had a major impact on stock markets around the world. The main objective of this study is to summarize the main findings in the literature related to stock market volatility during the global financial crisis, as well as to present a deeper understanding of the factors that influence stock market volatility in the context of financial crises. In this literature analysis, we explore various theories and models used to understand stock market volatility, including ARCH/GARCH models, market efficiency, behavioral finance theory, and behavioral economics theory. We also explore literature that examines the impact of macroeconomic factors, monetary policy, investor sentiment, and other factors on stock market volatility during the global financial crisis. The results show that the global financial crisis had a significant impact on stock market volatility, with significant spikes in volatility during the period. Factors such as economic uncertainty, changes in monetary

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policy, and negative investor sentiment all contributed to the increase in stock market volatility. In addition, the research also highlights the importance of the interaction between micro and macroeconomic factors in shaping stock market volatility during the global financial crisis. This research provides valuable insights into the complexity of stock market volatility during the global financial crisis and provides a foundation for further research in understanding market dynamics during similar periods of financial crisis in the future. With a better understanding of the factors that influence stock market volatility, investors and policymakers can take better measures in managing risk and maintaining financial market stability .

INTRODUCTION

The stock market has a central role in the global economy as one of the main indicators of a country's economic health. In this context, stock market volatility becomes an important issue, as stock price fluctuations can have a significant impact on investments, individual wealth and overall economic stability. The stock market plays a very important central role in the global economy, and is often considered one of the main indicators of a country's economic health. This is due to the stock market's role as a reflection of company performance and broader economic activity. As a place where investors trade company shares, share price fluctuations in the stock market can have a significant impact on various aspects of the economy. Stock market volatility is a very important issue in this context. Assessing volatility is very important because a sudden and significant increase in volatility can lead to a financial crisis (Uddin, Chowdhury, Anderson, & Chaudhuri, 2020). Volatility refers to the degree of fluctuation or change in stock prices over a certain period of time. High levels of volatility can create great uncertainty in the stock market. Sharp and unexpected price fluctuations can result in major losses for investors, reducing the value of their portfolio significantly in a short period of time. investment and money markets experienced their worst post-1900s events and were more common than the global financial crisis in the context of the size of the economy affected by the contagion (L. Chang, Ali, Berk, Hyder, & Dilanchiev, 2020).

The global financial crisis in 2008 was one of the most historic events in the world of modern finance that led to dramatic changes in the dynamics of stock markets around the world. Before the global financial crisis of 2008, gold and some currencies (especially the US dollar and Swiss franc) were conventionally used as hedging and safe-haven assets during financial crises (Hasan, Hassan, Rashid, & Alhenawi, 2020). This event stemmed from a number of complex factors converging simultaneously, triggering a dramatic impact on stock market dynamics around the world. The crisis was triggered by the bursting of the US housing bubble, which had previously created a spike in property prices in the country. When property prices began to decline, various financial products associated with high-risk mortgages, such as mortgage-backed securities, became highly volatile. Major banks around the world that had invested in these products suffered huge losses, triggering panic in global financial markets. The crisis also exposed problems in the highly interconnected global banking sector, where losses at one institution can quickly spread to others. The impact was not only felt in the financial sector, but also created a global recession that affected employment, fiscal policy and overall economic stability. The crisis has also triggered changes in financial regulation and supervision, with efforts to prevent a repeat of similar events in the future. The most famous example is the subprime mortgage crisis in the United States that began in early 2007, which then led to the Global Financial Crisis (GFC) in 2007–2009 (C.-L. Chang, McAleer, & Wang, 2020).

This global financial crisis began with the collapse of the US housing market and expanded into a global financial crisis that rocked the global economy. In this context, the analysis of stock market volatility during the global financial crisis becomes a very relevant research topic. Understanding changes in stock market volatility during this crisis period is important because it can provide valuable insights for investors, policy makers and academics in dealing with similar financial crises in the future. Several studies show how developing countries have been hit by various crises, such as the dot-com bubble crisis from 2000 to 2001, the global financial crisis from 2007 to 2008, and the European debt crisis from 2010 to 2011 (Morema & Bonga-bonga, 2020). Previous findings show that Indian financial markets experienced sharp volatility due to global market disruptions. Due to the fall in global financial markets, the Indian stock market also experienced sharp volatility (Bora & Basistha, 2021). Stock market volatility is said to be 'time-varying' because it fluctuates over time, and 'volatility clustering' occurs when periods of high volatility follow periods of low volatility and vice versa (Ibrahim, 2020).

This research aims to present a comprehensive literature review on stock market volatility analysis during the global financial crisis. In this literature review, we will explore the theories and models used to understand stock market volatility, as well as the factors influencing that volatility in the context of the global financial crisis. By analyzing various existing studies and approaches, this study aims to summarize the main findings in the literature and identify recent developments in the understanding of stock market volatility during the global financial crisis. By better understanding the factors that influenced stock market volatility during the global financial crisis, it is hoped that this research will make a significant contribution to efforts to manage risk and maintain financial market stability in the future. The conclusions and recommendations from this research can be useful for investors, policy makers and other stakeholders in facing uncertain economic challenges.

METHOD

In research on "Stock Market Volatility Analysis During the Global Financial Crisis: Literature Review," the research method used is descriptive research method. Descriptive research methods were used in this research because this research did not involve collecting primary data, but instead relied on analysis of existing literature. The main objective is to provide a comprehensive overview of the chosen topic, namely stock market volatility during the global financial crisis, by integrating findings from relevant literature.

RESULTS AND DISCUSSION

The following are several journals that will be studied as a literature review, namely:

Table 1 . Literature Review

No	Writer	Title	Objective	Results
1.	Kyohun Joo, Jong Hwan Suh, Daeyong Lee, and Kwangwon Ahn (2020)	Impact of the global financial crisis on the crude oil market	This research examines the influence of the 2008 global financial crisis on the crude oil market.	Researchers found that this crisis changed the scale-invariant nature of the oil market, and also negatively impacted the nature of the market in terms of efficiency and long-term equilibrium.
2.	Nils Engelhardt, Miguel Krause, Daniel Neukirchen,	Trust and stock market volatility	We investigate whether trust influences global	We find that stock market volatility is much lower in high-trust countries (in

	and Peter N. Posch (2020)	during the COVID-19 crisis	stock market volatility during the COVID-19 pandemic.	reaction to the announcement of COVID-19 cases). Trust in fellow citizens and also in the government of a country is very important.
3.	Anupam Dutta, Elie Bouri, and Tareq Saeed (2021)	News-based Equity Market Uncertainty and Crude Oil Volatility Anupam	In this paper, we use a recently introduced news-based equity market volatility (EMV) tracker to examine its impact on crude oil volatility across states and its ability to predict oil volatility relative to the VIX.	The results show a significant impact of the EMV tracker on oil market volatility during periods of high oil volatility, while the impact is largely insignificant when the oil market is less volatile, indicating the presence of asymmetry.
4.	Rashmi Chaudhary, Priti Bakhshi, and Hemendra Gupta (2020)	Volatility in International Stock Markets: An Empirical Study during COVID-19	Examining the daily returns of market indices from January 2019 to June 2020 was taken into consideration.	The results show negative daily average returns for all market indices during the COVID period (January 2020 to June 2020). Although the second quarter of the COVID period reflected the revival of all market indices with changing strength, volatility remained higher compared to the normal period, indicating a bearish trend in the market.
5.	Stefan Cristian Gherghina, Daniel Stefan Armeanu, and Camelia	COVID-19 Pandemic and Romanian Stock Market Volatility: A GARCH Approach	This article investigates the volatility of daily returns on the Romanian stock	The findings show that the conditional volatility for the daily return series shows clear evidence of shifting volatility over the period

	Catalina Joldes (2021)		market between January 2020 and April 2021.	explored. In the first quarter of 2020, Romanian equity market volatility increased to levels very close to levels recorded during the global financial crisis of 2007–2009.
6.	Umaid A. Sheikh, Muzaffar Asad, Zahid Ahmed, and Umer Mukhtar (2020)	Asymmetrical relationship between oil prices, gold prices, exchange rate, and stock prices during global financial crisis 2008: Evidence from Pakistan	This study investigates whether the relationship between macroeconomic fluctuations and stock indices is symmetric or asymmetric.	The findings show that in the long term and before the global financial crisis, investors reacted differently to gold prices and oil prices. In the long term and after the crisis, investors show different reactions to all macroeconomic fluctuations
7.	Saqib Gulzar, Ghulam Mujtaba Kayani, Hui Xiaofeng, Usman Ayub & Amir Rafique (2019)	Financial cointegration and spillover effects of global financial crisis: a study of emerging Asian financial markets	This paper examines financial cointegration and the spillover impact of the global financial crisis on the financial markets of developing countries in Asia (India, China, Pakistan, Malaysia, Russia and Korea).	We find long-term cointegration between US markets and emerging market stock markets, and the degree of cointegration increases after the crisis period. The VECM and impulse response functions show that shocks in US financial markets have a short-term impact on emerging market financial market returns. Past shocks and volatility have a greater influence on selected stock markets over time periods. The Korea Composite Stock Price Index and the Bombay Stock Exchange (BSE) are the only stock markets that have

				cross-market news and volatility spillover effects during the crisis period.
8.	Emon Kalyan Chowdhury, Bablu Kumar Dhar, and Alessandro Stasi (2022)	Volatility of the US stock market and business strategy during COVID-19	This paper aims to measure the impact of COVID-19 and changes in economic policy uncertainty (EPU) on US stock market volatility using Event Study, Stepwise Regression, and Vector Autoregression (VAR) models.	This study finds negative cumulative abnormal returns of the market in response to the announcement of new cases and death records while the market reacts positively to the announcement of financial bailouts. The negative and significant impact of reported deaths and cases on stock index volatility suggests that the US stock market is highly sensitive to COVID-19. EPU has a significant and positive impact on US stock market volatility. The COVID-19, EPU and volatility variables are cointegrated and move in the same direction.
9.	Ngo Thai Hung (2019)	Return and volatility spillover across equity markets between China and Southeast Asian countries	This study aims to study the effect of daily returns and the impact of volatility on common stock prices between China and four countries in Southeast Asia (Vietnam, Thailand, Singapore, and Malaysia).	The main empirical result is that China's market volatility has a significant impact on other markets in the data sample. In terms of stock returns, the relationship between China and other markets seems extraordinary during and after the Global Financial Crisis. These findings also suggest that the

				stock market was more integrated into the crisis
10.	Ricardo Laborda and Jose Olmo (2019)	Measuring volatility spillovers between economic sectors for predicting financial crises	This study measures the impact of volatility between sectors of economic activity using a measure of network connectivity.	The study finds that Banking & Insurance, Energy, Technology and Biotechnology are the main channels that propagate shocks throughout the economy. Banking & Insurance was very relevant during the 2007-2009 global financial crisis, while the Energy and Technology sector was very relevant during the COVID-19 crisis. We also show that the volatility spillover effect exhibits the ability to predict episodes of high volatility in the S&P 500 index and is useful as an early indicator of financial crises.

The global financial crisis in 2007-2009 is a clear example of a systemic event (Laborda, Universitario, & Defensa, 2019). The global financial crisis of 2008 has been an important milestone in stock market history, and analysis of volatility during this period has profound implications for the understanding of financial markets. The global financial crisis of 2008 had a significant impact on the crude oil market. In particular, falling house prices in the US caused a ripple effect from the global financial crisis to the collapse of commodity markets (Joo, Suh, Lee, & Ahn, 2020). One of the most striking things about this crisis is the extent to which market volatility has increased dramatically. Volatility is a key risk indicator and unfailing prediction of stock market volatility is essential (Chaudhary, Bakhshi, & Gupta, 2020). Volatility is a measure of price fluctuations, and during this crisis, we are seeing huge price changes in a short period of time. This reflects the extraordinary level of uncertainty and investor concern about the health of the global economy. This volatility analysis has helped experts and policy makers to better understand market behavior during crisis conditions, as well as its impact on investment, financial planning and economic stability. In addition, the global financial crisis of 2008 has also shaken beliefs in various financial theories and risk models. Financial markets periodically reflect major events that are retrospectively categorized as endogenous shocks or exogenous shocks. The most recent are the Global Financial Crisis of 2008 and the Covid-19 pandemic (Izzeldin, Murado˘glu, Pappas, & Sivaprasad, 2020). A number of basic assumptions about portfolio diversification, risk assessment and financial institution performance have proven to be invalid during this crisis. This prompted a rethink in terms of risk management and investment strategies.

This literature review reveals that during the global financial crisis, stock markets experienced significant spikes in volatility. This is in line with the findings of a number of studies which show increased volatility during periods of economic crisis. The impact of volatility spikes on the market is greater than the impact of returns (Hung, 2019). One of the main reasons behind the increase in volatility during the crisis is the uncertainty that has hit the markets. Forecasting stock market volatility has always been a challenge (Li et al., 2022). Financial crises are often accompanied by high economic uncertainty, concerns about the sustainability of growth, and structural problems in the financial sector. All of these factors can trigger an overreaction from investors, which in turn results in sharp price fluctuations. In addition, interactions between various external and internal factors, such as government policies, economic news, and global market dynamics, can also influence volatility. During a crisis, changes in economic policy and stimulus from governments can be significant factors in determining the direction of the stock market. Furthermore, the important role of investor psychology should not be ignored. During a crisis, investors tend to be more susceptible to emotions and impulsive investment decisions, which can increase market volatility. Panic and uncertainty can be the main drivers of rapid price fluctuations. The International Monetary Fund, in its April 2020 report, projected a global growth rate of −3% in 2020 (The lowest global growth rate during the 2007–2009 global financial crisis was recorded at −1.7% in 2009) (Erdem, 2020).

Factors that influence stock market volatility during a crisis include high economic uncertainty, volatile monetary policy, and negative sentiment from investors. In this context, behavioral finance theory and behavioral economic theory become relevant because they help explain irrational actions and overreactions that can amplify market volatility. In addition, this research also highlights the importance of interacting micro and macroeconomic factors in shaping stock market volatility during the global financial crisis. Stock market indices react very quickly to new events (Chowdhury, Dhar, & Stasi, 2022). Behavioral finance theory reveals that investors do not always act rationally, especially in economic stress situations such as financial crises. Investors tend to be influenced by emotions, such as fear and greed, which can trigger irrational actions, such as selling heavily or impulsively buying. Another interesting aspect is that after the global financial crisis, investors only reacted to positive shocks to gold prices, interest rates, and exchange rates in the long term (Sheikh, Asad, Ahmed, & Mukhtar, 2020). This can increase market volatility because stock price movements become sharper and more unpredictable. Behavioral economic theory also highlights the importance of investor sentiment and perception in shaping market volatility. Widespread negative sentiment among investors can trigger a wave of panic selling, exacerbating market volatility. The reason behind public trust and confidence in a country's government is that it significantly reduces uncertainty among investors and therefore influences stock market volatility (Engelhardt, Krause, Neukirchen, & Posch, 2020). Previous findings show that COVID-19 significantly harmed US and Japanese market profits. Additionally, COVID-19 affected the US, German, and Italian stock market variants more than the Global Financial Crisis (Shehzad, Xiaoxing, & Kazouz, 2020).

Apart from behavioral factors, micro and macroeconomic factors also play a role in shaping stock market volatility during the crisis. Microeconomic factors such as company financial reports and industry performance can influence individual stock and sector movements. On the other hand, macroeconomic factors such as national economic growth, inflation, and interest rates also have a significant impact on overall market volatility. Previous research results show a significant impact of EMV trackers on oil market volatility during periods of high oil volatility (Dutta, Bouri, & Saeed, 2021). It is important to remember that market volatility during a financial crisis is the result of a complex interaction between these various factors. Market watchers and investors must understand that uncertainty and volatility are a natural part of the stock market, especially in crisis situations. Therefore, sound risk management and wise investment strategies are essential to deal with high and unpredictable market volatility during difficult times such as the global financial crisis. Moreover, it proves that culture significantly influences market instability because countries with lower individualism and greater uncertainty avoidance respond worse and have greater instability than countries with high individualism and weak uncertainty avoidance (Gherghina , Armeanu, & Joldeș, 2021). Previous findings show that after the crisis, the impact of positive news on the BSE and the Russian Trading System and a negative impact on the Kuala Lumpur Stock Exchange and Shanghai Stock Exchange (Gulzar, Mujtaba Kayani, Xiaofeng, Ayub, & Rafique, 2019).

The results of this research provide a better understanding of the complexity of stock market volatility during periods of financial crises, which can help investors and policy makers take appropriate actions to manage risks and maintain financial market stability in the future. Thus, this research makes an important contribution to the field of financial and economic analysis. This research enriches our understanding of the complexities of stock market volatility during a crucial financial crisis period. In this period of extreme uncertainty and fluctuation, investors and policy makers need solid guidance to manage risks wisely and maintain financial market stability in the future. The results of this research provide in-depth insight into how factors such as market sentiment, economic policy, and company fundamentals can interact with each other and contribute to the level of stock market volatility. It is important to recognize that financial markets are complex and dynamic ecosystems, where any action or event can trigger complex chain reactions. Careful analysis of historical data during periods of financial crisis allows us to identify patterns of market behavior that may occur in the future, allowing investors to make smarter decisions. In addition, this research also provides a basis for developing better investment strategies and formulating more effective policies to overcome market instability. This could potentially lead to systemic improvements that could help prevent similar crises in the future, or at least minimize their impact. Therefore, this research is not only useful for the academic world, but also has significant practical implications in the world of global finance.

CONCLUSION

The global financial crisis in 2008 was an important turning point in understanding stock market volatility. In this literature review, we have seen how these events affect the stock market in depth and the various factors that play a key role in increasing volatility. The research results show that stock market volatility during the global financial crisis was strongly influenced by economic uncertainty, changes in monetary policy, and negative investor sentiment. In addition, complex interactions between micro and macroeconomic factors also play a role in shaping market volatility. Understanding these dynamics is key to taking better steps to manage risk and maintain financial market stability during similar periods of financial crisis in the future. Thus, this research provides valuable insights to investors, analysts and policy makers in facing complex challenges in the global financial world.

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