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Abstract (288 words)

This dissertation investigates the impact of Brexit-related political uncertainty on the volatility of the UK stock market, focusing on the FTSE 100 index between January 2015 and December 2021. Using daily financial data sourced exclusively from Refinitiv Workspace, the research employs a longitudinal design and applies multiple linear regression models to quantify the short-term effects of major Brexit events on market volatility. This methodology draws on established techniques in econometrics and provides theoretical frameworks, especially the Efficient Market Hypothesis, as well as the Behavioral Finance theory. Findings reveal that lagged Brexit events significantly increase short-term volatility, supporting behavioral finance theories of delayed investor response, overreaction, and heightened risk perception. Such outcomes reflect the psychological aspects of the trading behavior when political uncertainty is high. In contrast, exchange rate fluctuations (GBP/USD returns) do not show a statistically significant impact, indicating possible hedging behavior or market decoupling from currency shocks. Additionally, trading activity variables play divergent roles: increased trading volume is associated with heightened volatility, implying market panic and information asymmetry. At the same time, higher turnover is linked to reduced volatility, expressing the duality of liquidity under political stress. These contradictory effects situate the complexity of market microstructure in crisis periods. Robustness checks, including interaction models and alternative specifications, confirm the validity of the core results. The dissertation contributes to the growing literature on political risk and market behavior, offering valuable implications for investors, regulators, and scholars in understanding market dynamics under exogenous shocks such as Brexit. It further emphasizes the need to incorporate behavioral ideas with the traditional financial model in times of structural shock.

Keywords: Brexit, UK stock market, Market volatility, Political uncertainty, FTSE 100, Behavioral finance, Efficient Market Hypothesis (EMH), Investor sentiment, Liquidity, GBP/USD exchange rate.

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Glossary

- **Abnormal Returns** – Returns that deviate from the expected performance based on historical or market models, often used in event studies to isolate the effect of specific events like Brexit.
- **Behavioral Finance** – A field of study that examines how psychological influences and cognitive biases affect financial decision-making and market outcomes, contrasting with traditional rational market theories.
- **Brexit** – A shorthand for “British Exit,” referring to the United Kingdom’s withdrawal from the European Union, formally completed on January 31, 2020.
- **Brexit Event Dummy (brexit_event)** – A binary variable that takes the value 1 on specific dates associated with major Brexit political developments, and 0 otherwise.
- **Brexit Lag Variable (brexit_lag1)** – A lagged version of the Brexit event dummy that captures delayed investor responses to political shocks.
- **Cross-Sectional Study** – A research design that analyzes data at a single point in time.
- **Efficient Market Hypothesis (EMH)** – A theory stating that financial markets fully and immediately reflect all available information, making it impossible to consistently achieve excess returns.
- **FTSE 100** – The Financial Times Stock Exchange 100 Index, representing the 100 largest companies listed on the London Stock Exchange by market capitalization.
- **GBP/USD Return (gbp_usd_ret)** – The daily percentage change in the exchange rate between the British Pound (GBP) and the US Dollar (USD), representing macroeconomic influences on UK markets.
- **Heteroskedasticity** – A condition in regression analysis where the variance of the error terms is not constant, potentially leading to inefficient estimates.
- **Lagged Variable** – A variable whose value is shifted back by one or more time periods to capture delayed effects in time-series analysis.
- **Liquidity** – The ease with which assets can be bought or sold in the market without significantly affecting their prices.
- **Log Turnover (log_turnover)** – The natural logarithm of daily trading turnover (price × volume), used to normalize the data and reduce skewness.
- **Log Volume (log_volume)** – The natural logarithm of daily trading volume of FTSE 100 stocks, serving as a proxy for investor activity.
- **Longitudinal Study** – A research design that observes the same variables over an extended period to identify trends and long-term effects.
- **Multicollinearity** – A statistical phenomenon in which independent variables in a regression model are highly correlated, potentially distorting coefficient estimates.
- **Ordinary Least Squares (OLS)** – A linear regression technique that estimates the relationship between dependent and independent variables by minimizing the sum of squared errors.
- **Refinitiv Workspace** – A financial data platform used to obtain historical market data, exchange rates, and trading activity for this study.
- **Robust Standard Errors** – Adjusted standard errors used in regression analysis to correct for heteroskedasticity, ensuring more reliable hypothesis testing.
- **Trading Volume** – The number of shares or contracts traded in a security or market during a given period.
- **Turnover (GBP)** – The total value of traded securities in British Pounds, calculated as the product of price and volume.

- **Volatility (volatility_5d)** – A statistical measure of the dispersion of returns, calculated in this study as a 5-day rolling standard deviation of FTSE 100 returns, used to represent short-term market risk.
- **Variance Inflation Factor (VIF)** – A diagnostic tool used to detect multicollinearity among independent variables in regression analysis.

Chapter 1

1. Introduction

1.1. Background

Brexit, the UK's exit from the EU, has had major political, economic, and financial effects. Since the June 23, 2016, referendum, in which 51.9% of voters supported leaving the EU, governments, businesses, and investors have been uncertain about Brexit (Abuzayed et al., 2022). The UK stock market has been affected by this uncertainty. Brexit-related political developments, economic policies, and market mood have caused considerable fluctuations in the stock market, a leading indicator of economic sentiment and investor confidence (Aguilar, 2021).

Historic geopolitical events like Brexit were no exception. After the referendum, UK market indices like the FTSE 100 and 250 fell sharply, suggesting concerns about the economy after Brexit. Investor sentiment fell, and certain industries saw capital outflow. The British pound devalued rapidly, reaching its lowest level versus the US dollar in almost three decades. This depreciation raised inflation and UK consumer purchasing power concerns, causing stock market volatility (Maqsood et al., 2022).

The early aftermath of Brexit saw huge price swings in UK shares, particularly in sectors susceptible to foreign commerce and EU rules. Financial services, automobiles, pharmaceuticals, and manufacturing fell as investors worried about additional trade barriers and EU regulatory divergence. In contrast, the weaker British pound made UK exports more competitive abroad, benefiting export-heavy industries. Arshad et al. (2020) and Ngwakwe (2020) show the early market reaction.

Market volatility intensified in the weeks after the referendum due to uncertainty. Due to UK economic concerns, the FTSE 250 index, representing locally focused enterprises, lost more than the FTSE 100. The FTSE 100, which includes multinational corporations that make much money from overseas markets, rebounded faster due to the pound's fall, giving exporters an edge (Nagarakatte & Natchimuthu, 2022).

The UK administration struggled to develop a Brexit strategy weeks and months after the referendum. Stock prices fluctuated as government resignations, EU negotiations, and Brexit parliamentary votes shook market sentiment (Atomos, 2023). The Brexit decision caused volatility and uncertainty, but its long-term effects are more complicated. Brexit negotiations and several deadlines increased market uncertainty, harming investment and economic growth. After the UK left the EU on January 31, 2020, the transition period, trade agreement negotiations, and regulatory changes caused uncertainty (Ngwakwe, 2020).

Academic study has examined these long-term implications. Balci et al. (2021) found that Brexit impacted UK stock market efficiency, investor behaviour, and industry-specific performance patterns via structural changes. Balci et al. (2021) found that certain sectors, including finance and manufacturing, suffered more than others, while others, like technology and healthcare, showed resilience. Brexit has had a major long-term impact on FDI and capital flows into UK markets. Multinational firms reconsidered UK investments due to trade agreements and EU regulatory uncertainty. Frankfurt and Paris, which wanted to attract businesses from London, have been harmed by Brexit (Ben Ameer & Louhichi, 2022).

1.2. Problem Statement

Brexit generated one of the UK's most unpredictable economic and political moments. Financial markets have been volatile, and investors have been nervous since the June 2016 referendum on Brexit. The economic repercussions of Brexit, trade disruptions, and macroeconomic effects have been extensively studied, but a structured analysis of its influence on the UK stock market is still needed. Understanding how Brexit has affected stock prices, market efficiency, investor behaviour, and sector-specific performance is crucial given the stock market's role as a barometer of economic sentiment and investor confidence (Caporale et al., 2021).

Financial markets often react to economic and political uncertainty by increasing volatility and inefficiency. The Brexit referendum was unprecedented and complicated for market participants. The vote followed a significant decrease in stock indices, a historic plunge in the British pound, and greater volatility across asset classes. Brexit discussions, government policies, and investor expectations about trade deals and financial regulations affected the stock market throughout time (Qiao et al., 2021).

Brexit's long-term effects on stock market performance and efficiency are unclear despite earlier studies on financial market volatility and political instability. Studies like Balci, Akgüller, & Güzel (2021) and Ben Ameer & Louhichi (2022) highlight the need for further research on stock market co-movements and sector-specific disruptions.

Market reactions are multidimensional, making Brexit's influence on the UK stock market difficult to assess. Different industries, sectors, and investment groups react differently to exogenous shocks in the stock market. Due to trade barriers, regulatory changes, passporting rights, financial services, and manufacturing declined immediately. Still, export-oriented industries benefited from a depreciated British pound, which made UK exports more competitive abroad.

Brexit has highlighted questions about financial market efficiency and volatility spillovers. Li (2020) found that volatility spillovers across European stock markets increased dramatically after Brexit, showing that Brexit spread outside the UK. Extended talks, many parliamentary votes, and UK government leadership changes produced anxiety and stock price volatility. However, whether these volatility patterns represent underlying economic changes or speculative trading remains unclear (Elsayed & Abdelrhim, 2021).

1.3. Rationale

Brexit marked a major political and economic turning point, introducing unprecedented uncertainty to the UK financial markets. Unlike traditional financial crises, Brexit's political nature made its impact on stock prices, volatility, and investor sentiment unpredictable (Koch et al., 2024; Aguilar, 2021). As markets reflect both economic fundamentals and investor psychology, studying Brexit offers key insights into how political shocks shape financial behavior. The June 2016 referendum triggered one of the steepest FTSE 100 drops and a historic plunge in the British pound, highlighting Brexit's disruptive market influence.

This research is driven by the need to understand how Brexit reshaped investment strategies and risk perception. It explores behavioural biases such as loss aversion, herding, and confirmation bias influencing trading patterns during and after Brexit (Caporale et al., 2021; Maqsood et al., 2022).

1.4. Aims and Objectives

The primary aim of this research is to examine how Brexit-related political events influenced short-term market volatility in the UK stock market, using an event-based econometric analysis. The dissertation focuses on how key Brexit events impacted market behavior, particularly regarding volatility and trading activity.

Objectives:

- 1) To assess the short-term effects of major Brexit events on FTSE 100 market volatility.
- 2) To evaluate the relationship between trading volume, turnover, and market volatility in the context of Brexit-related uncertainty.
- 3) To analyze whether Brexit-related market shocks have a delayed (lagged) impact on volatility.

1.5. Research Questions

- 1) How have major Brexit events influenced short-term market volatility in the UK stock market?
- 2) Does Brexit delay affect market volatility, or are reactions immediate?
- 3) What role do trading volume and turnover play in moderating volatility during periods of Brexit-related uncertainty?

1.6. Significance of Study

Brexit has had far-reaching economic and financial consequences, particularly impacting on the UK's stock market. The persistent uncertainty has disrupted investor sentiment, increased volatility, and altered asset valuations. Since political events directly affect financial markets, understanding Brexit's influence is crucial for investors, policymakers, and financial analysts (Ben Ameer et al., 2022). This dissertation provides insights for retail and institutional investors, hedge funds, and portfolio managers seeking to manage risk and refine investment strategies in politically uncertain environments (Opatrny, 2021).

By analyzing pre- and post-Brexit market data, this dissertation explores how political shocks shape stock prices, trading volume, and sectoral performance. It further examines behavioural finance elements—such as emotional reactions, speculation, and herding—that influence decision-making (Bielykh et al., 2021). Policymakers and regulators, including the FCA and Bank of England, can use findings to enhance market stability mechanisms and develop regulatory responses to geopolitical risks like Brexit (Qiao et al., 2021; Caporale et al., 2021).

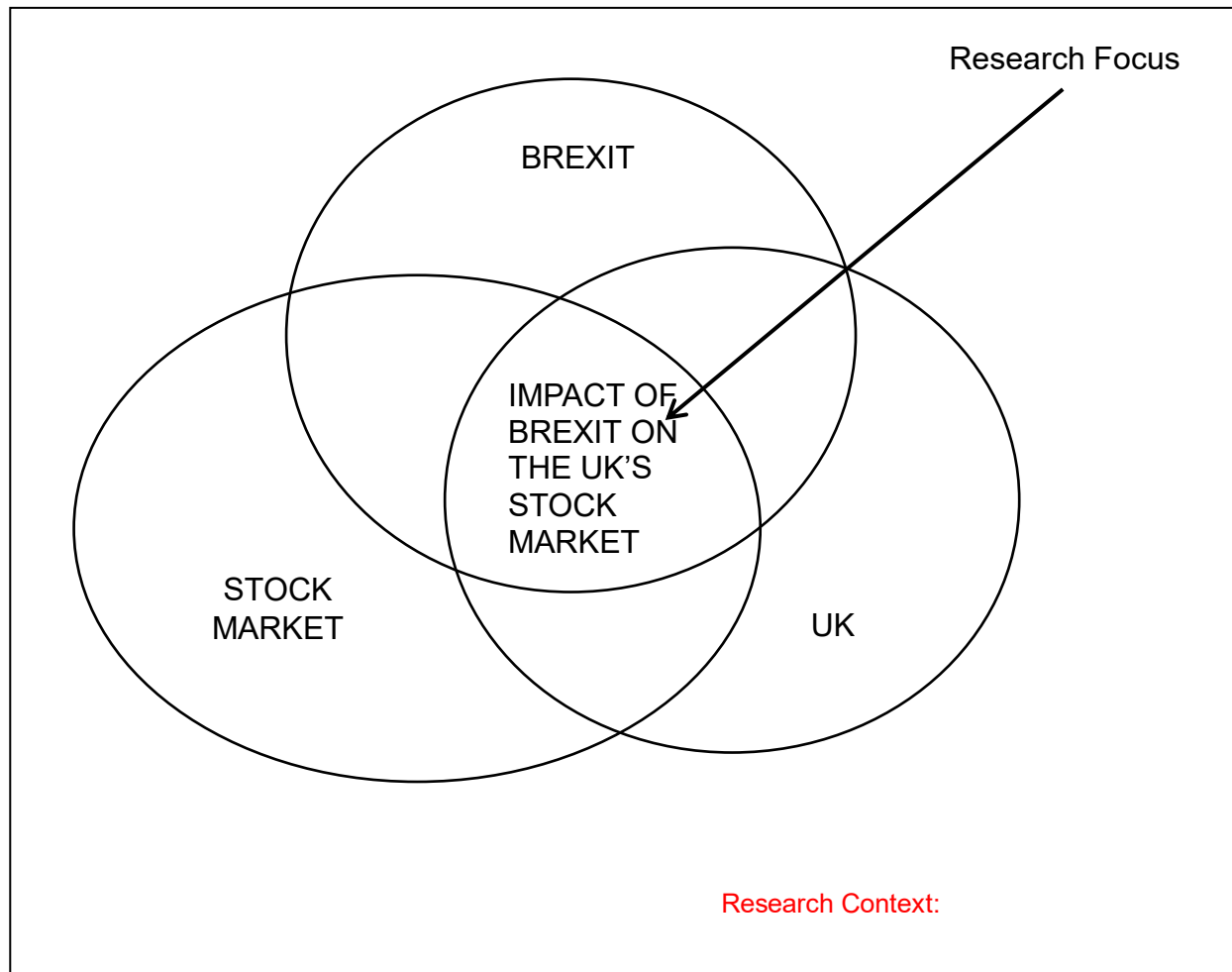


Figure 1. Research Scoping Diagram

1.7. Chapter Outline

This dissertation includes six chapters: an introduction, a literature review, methodology, data analysis, discussion, and conclusion. Each chapter addresses Brexit's impact on UK financial markets, focusing on investor sentiment, stock volatility, sectoral effects, and policy implications through theoretical and empirical lenses.

The following chapter will provide a comprehensive review of the literature that is available on the subject, with an examination of the theoretical background, as well as empirical studies on market volatility, political uncertainty, and economic repercussions of Brexit.

Chapter 2

2. Literature Review

2.1. Introduction

This chapter reviews the literature to prepare for Brexit's stock market impact. It examines theoretical and empirical examinations of Brexit's economic and political uncertainty and financial market repercussions. The review forms research questions and objectives after describing this dissertation's conceptual framework and identifying research gaps.

The UK's exit from the EU was one of modern European history's most significant political and economic developments. Brexit uncertainty has hurt financial markets, especially the UK stock market. Stock markets reflect economic conditions, investor sentiment, and financial stability; therefore, studying how Brexit affects stock prices, market volatility, and investor behaviour is crucial (Koch et al., 2024). Brexit is political and economic, making its financial effects unexpected and complex.

Investors, policymakers, and researchers must understand how Brexit has affected market performance, volatility, and investor sentiment. Investors need to know how political uncertainty affects asset pricing and trading behaviour, policymakers need to assess Brexit's financial stability risks, and academics can use Brexit to refine market efficiency, investor behaviour, and economic shock theories (Li, 2020). Political unpredictability and the unique interaction of financial markets motivate this research.

The Brexit referendum in June 2016 shows how political events may startle markets. In the aftermath, the FTSE 100 index fell almost 8% in one day, one of the greatest drops in history. Meanwhile, Brexit uncertainty drove the British pound to a 31-year low against the US dollar. After months of recovery, negotiations, legal fights, and shifting government policies continued to affect stock market volatility (Koch et al. 2024). Ben Ameer & Louhichi (2022) found that Brexit has enhanced market co-movements and financial fluctuations, particularly in Europe.

This dissertation was prompted by Brexit's impact on investor sentiment and market psychology. According to behavioural finance, investors are impacted by emotions, biases, and external events. Brexit is a good example of how investors react to political uncertainty and narrative shifts (Arshad et al., 2020). Loss Aversion: Investors fear losses more than gains. Due to Brexit uncertainty, many investors may overreact to unfavourable news, selling equities prematurely or shunning UK investments. Herding: Investors follow market trends rather than making individual decisions under uncertainty.

This dissertation examines how behavioural biases affected stock market movements before, during, and after Brexit. By understanding these biases, market participants can improve risk management and investment decision-making (Atomos, 2023). The Brexit sectoral impact is another crucial part of our dissertation. Brexit has damaged the UK economy broadly, but different industries have been affected differently. This paper examines how Brexit has affected stock market performance in key sectors, particularly financial services, where passporting rights permitted UK-based corporations to operate across the EU. Businesses have moved parts of their operations to Frankfurt and Paris, European financial hubs.

2.2. Theoretical Literature

2.2.1. Efficient Market Hypothesis (EMH)

The EMH hypothesis (1970) by Eugene Fama asserts that financial markets are "*informationally efficient*," with stock prices reflecting all available information. Due to price volatility, stock selection and timing cannot regularly outperform the market. Balci et al. (2021) identified three forms of EMH: weak, semi-strong, and strong efficiency, based on stock price information. The historical, political, and economic event, Brexit, tests EMH. The UK's withdrawal from the EU spurred trade talks, regulatory changes, and financial instability. Exogenous shocks like these can reduce market informational efficiency. Due to fast-changing news and conjecture, stock prices diverged from fundamentals throughout Brexit events, including the 2016 referendum and debates (Ren, 2022).

Market efficiency studies on Brexit find inconsistencies. Volatility and unexpected returns just after Brexit suggest the market struggled to understand its ramifications. Overreaction to unfavorable news and investor herding impair semi-strong EMH assumptions (Abuzayed et al., 2022). Brexit influenced financial services, manufacturing, consumer goods, equities, and market indices. These sector-specific tendencies reflect market inefficiencies when pricing complicated and dynamic information (Kenourgios et al., 2020).

2.2.2. Behavioral Finance Theory

In behavioral finance theory, presented by Daniel Kahneman and Amos Tversky in the 1970s, psychological biases and emotional responses affect investor behavior, affecting financial decision-making rationality. Behavioral finance opposes the Efficient Market Hypothesis (EMH) that markets are logical and efficient, stating that cognitive and emotional variables cause market anomalies, especially during unpredictable and dramatic events like Brexit (Ben Ameer & Louhichi, 2022). Brexit's uncertainty and complexity played into investor biases. Anchoring, loss aversion, and overreaction may explain investors' uncertainty management (Li, 2020).

Anchoring bias occurs when investors base judgments on initial information or reference points. Market players often mispriced and overreacted to Brexit statements due to preliminary news or assumptions (Opatrny, 2021). Loss aversion in behavioral finance explains why investors fear losses more than gains. Brexit's economic concerns led investors to choose government bonds despite lower returns (Bielykh et al., 2021). Overreacting to bad news is another Brexit pattern.

Trade talks or political impasses trigger disproportionate selloffs, heightening market volatility (Koch et al., 2024). Investors engage in herding behavior that duplicates what others are doing, leading to market instances. For example, during Brexit announcements, panic selling led to extreme market responses because the investors used general reviews as signals rather than individual assessments (Caporale et al., 2021).

Confirmation Bias indicates that many investors reflexively looked for and relied on evidence reinforcing their views during Brexit. This selective attention mainly drove excessive sentiment-based trading and supported market inefficiencies (Aguilar, 2021). The framing effect was seen in how the information presented to the investors affected their decisions regarding Brexit. For instance, potential economic risks were associated with pessimism and defensive trading behaviors, whereas opportunities such as exporters' devaluation engendered optimism in specific sectors (Atomos, 2023).

2.3. Empirical Literature

2.3.1. Short-Term Market Reactions to Brexit Announcements

Studies of short-term market reactions to Brexit show how political uncertainty affects the UK stock market. The unexpected Brexit referendum in June 2016 caused significant losses in UK shares and heightened market volatility (Balci et al., 2021). After the referendum, the FTSE 100 and 250 indices plummeted dramatically, according to event research. Due to its foreign currency sales, the FTSE 100, representing larger worldwide corporations, recovered quickly from the British pound's drop. The FTSE 250, which favors local firms, struggled longer as investors coped with UK economic uncertainty (Basak et al., 2023).

Sectoral disparities in short-term market reactions were noticeable. Fears of European market restrictions and regulatory realignments hurt banks and insurers most. Real estate plummeted after investors projected a drop in property demand and investment. The pound plummeted and global investor sentiment improved, benefiting exporters and technology businesses (Ren, 2022). Event analysis demonstrates extraordinary returns and volatility around Brexit milestones like parliamentary votes, negotiating deadlines, and trade agreement announcements.

2.3.2. Long-Term Implications of Brexit on the UK Stock Market

Brexit uncertainty, trade talks, and corporations adapting to a post-Brexit future have damaged the UK stock market. Longitudinal studies suggest that these influences cause gradual recovery in certain sectors, persistent volatility in others, and altered investor expectations (Abuzayed et al., 2022)—key trend: sectoral performance variation post-Brexit. The financial services, real estate, and car industries have faced regulatory harmonization, market access, and supply chain disruptions. The weakening of the British pound made UK exports more competitive, allowing medicine and technology companies to survive (Elsayed & Abdelrhim, 2021).

Brexit causes long-term instability. Stock prices and investor mood fluctuated throughout the UK-EU Trade and Cooperation Agreement discussions. Despite Brexit in January 2020, concerns, including Northern Ireland trade arrangements and regulatory divergences, continue to endanger market stability (Escribano & Íñiguez, 2021). Trade negotiations have profoundly affected market expectations. Good news from UK-EU trade talks boosted market optimism, while bad news lowered risk appetite. Prolonged talks that inhibited foreign direct investment drained several market segments (Kenourgios et al., 2020).

2.3.3. Impact of Brexit on Investor Sentiment

In uncertain situations like Brexit, investor sentiment drives market behavior. Investor surveys, trading volumes, and volatility indexes show Brexit's impact. Brexit increased risk aversion, making investors more cautious and avoiding high-risk assets (Hassan et al., 2024). Investor surveys of Brexit milestones like the 2016 referendum and trade talks are pessimistic. Economic volatility, trade barriers, and regulatory uncertainty caused investors to expect market upheaval. Media coverage of UK economic threats like decreasing foreign direct investment and GDP growth reinforced this view (Arshad et al., 2020).

Trading volume data illustrates investment shifts. Trading activity dropped in volatile sectors, including financial services and real estate, as investors sought safety in government bonds and blue-chip stocks. To hedge losses during uncertainty, market players buy more options and

futures (Qiao et al., 2021). Market anxiety and risk perception fueled volatility indices like the FTSE during Brexit. Studies show that Brexit-related speculative trading and sentiment-driven reactions increase short-term volatility (Ngwakwe, 2020).

2.3.4. Sector-Specific Impacts

Based on resilience, Brexit's economic and political uncertainty affected the UK industry differently. Balci et al. (2021) found that financial services, manufacturing, and real estate face issues, but technology and export-oriented industries are stable due to their unique market dynamics and global location. Brexit raised concerns about losing "passport rights" that allowed UK financial firms to operate freely across the EU, hurting the UK financial services sector, a key economic driver. Frankfurt and Paris attracted many corporations, decreasing market confidence and costing UK jobs. Due to uncertainty, major financial institutions' stock prices declined, and the business became more volatile (Maqsood et al., 2022). Trade agreements and tariff uncertainty hurt manufacturing, especially just-in-time supply chains.

European supply chain integration raised pricing and logistical issues for automotive and aerospace firms. According to studies, Brexit uncertainty slowed industrial investment and reduced competitiveness (Stoupos & Kiohos, 2021). Investor confidence and office space demand declined in the real estate market, particularly commercial properties, as businesses predicted lower economic growth and likely relocation. This influence was strongest in London, a global corporate hub (Ren, 2022). Technology and export-oriented industries like medicines survived. A weaker pound made UK exports more competitive, helping these industries cope with Brexit. Sectors less dependent on EU markets also adapted faster to economic shifts (Abuzayed et al., 2022).

2.3.5. Trading Volume and Liquidity Analysis

Brexit's effect on UK stock market trading volume and liquidity highlights how political uncertainty affects markets. Brexit events, including the 2016 referendum, discussions, and government announcements, impacted trading behavior, typically with decreased trading volumes and liquidity constraints in particular asset classes (Kenourgios et al., 2020). UK equity trading volumes declined throughout the referendums and Brexit deadlines. Investors "wait and see" due to concerns about unintended outcomes, dampening market activity.

Financial services and real estate, which were most affected by Brexit, saw trading volumes plummet (Kenourgios et al., 2020). Market efficiency indicator liquidity fell. Bid-ask spreads increased, and market depth reduced during Brexit milestones, making traders less eager to trade. Political instability limited small-cap and mid-cap shares, which are less liquid (Qiao et al., 2021). Brexit moved investor tastes towards liquid, low-risk investments. Blue-chip stocks, government bonds, and defensive sectors traded flat or climbed as investors avoided risky assets. Risk-hedging increased options and futures market activity (Maqsood et al., 2022).

The graph shown in Figure 2 captures the trading volume during significant Brexit events of the trading year. Specifically, the exponential slump in trading in the second quarter of 2016 also indicates that revenue is directly affected by the political risk during the referendum period. Consequently, the partial recovery in Q4 2016 stems from adjustments in response to specific key negotiation announcements.

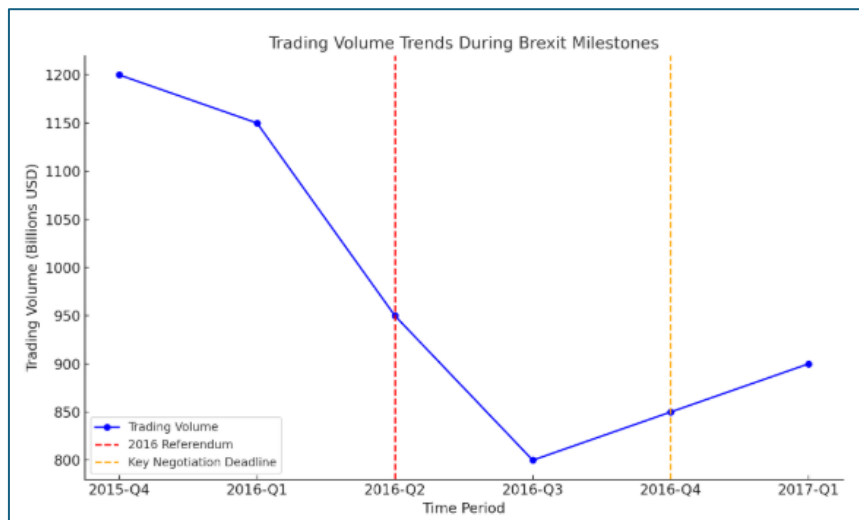


Figure 2. Trading Volume Trends During the Brexit Milestone

This bar chart, as shown in Figure 3, shows bid-ask spreads throughout significant Brexit phases; it demonstrates that even in significant periods, Bid-Ask spreads increased, indicating a decrease in liquidity. The highest spread was observed at “Key Negotiation Deadline,” showing that uncertainty corresponds to the decrease in efficiency. Therefore, as visible from the figure above, the spread reduced significantly during the ‘Trade Deal Announcement’, showing more confidence in the market.

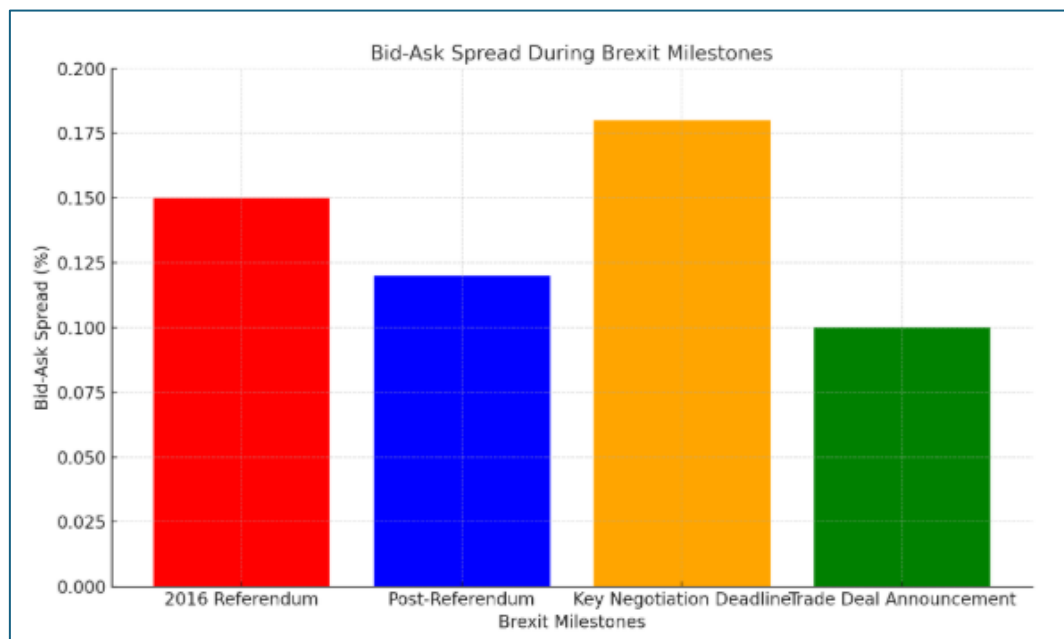


Figure 3. Bid-Ask Spread During Brexit Milestones

2.3.6. Comparative Studies: Brexit vs. Other Political Events

Comparisons relate Brexit's impact to market reactions to major political crises like the US-China trade war and Greece's economic catastrophe. Brexit's unique qualities are examined in the context of geopolitical changes and financial markets (Stoupos & Kiohos, 2021). Both Brexit and the US-China trade war involve uncertainty and market volatility. Both events raised investor risk aversion, currency fluctuations, and global supply chain disruptions. Brexit trade deal and regulatory reform worries mimic the US-China trade war tariffs and trade restrictions. Brexit affects the UK and European markets more regionally (Ben Ameer & Louhichi, 2022).

The Greek debt crisis differs. For various reasons, Brexit and the Greek crisis caused political and economic instability. Fiscal mismanagement and sovereign debt problems sparked the Greek crisis, generating Eurozone contagion fears. Brexit was political first, then economic. Brexit hurt financial sectors, real estate, and manufacturing, but Greece's crisis heightened systemic EU concerns (Li, 2020). Brexit's market reactions were distinctive due to years of negotiations and occurrences. This contrasts with the stronger but shorter Greek crisis, and trade war volatility rises (Opatrny, 2021). The Qatar Diplomatic Crisis – when, in 2017, Qatar decided to leave the other countries of the Gulf Cooperation Council – also had serious economic consequences. However, it affected global financial markets, but it was more limited to the region.

2.4. Research Gaps

Research in the aftermath of Brexit decision immediately focused on the effects that the change would have on financial markets; however, the contribution of this dissertation is to fill a considerable gap in the existing literature by providing evidence concerning the effects of Brexit on the UK stock market especially, and concerning stock prices, market volatility, investor sentiment, and trading activity in specific. Previous research mostly investigates the immediate market responses that followed Brexit and the related announcements. The market dynamics of Brexit remain largely unexamined, including the change of investor sentiment over time (Elsayed & Abdelrhim, 2021).

Moreover, while most prior studies have focused on large capitalization stocks like the FTSE 100, relatively little emphasis has been placed on small capitalization stocks. These markets, composed of small capitalization stocks, are influenced mostly by domestic economic conditions, and are integrated more domestically than globally, a research field. Focused on analyzing small-cap and mid-cap equities, it can describe Brexit's local economic impact, which is often masked in the studies of large-cap stocks (Escribano & Íñiguez, 2021).

2.5. Conceptual Framework

In Figure 4, the conceptual model developed for this dissertation visually captures the hypothesized relationships between Brexit-related political uncertainty and stock market volatility in the UK, drawing from both the Efficient Market Hypothesis (EMH) and Behavioral Finance Theory. At the center of the model is market volatility, represented by the 5-day rolling standard deviation of FTSE 100 returns. This primary dependent variable reflects short-term fluctuations in investor sentiment and perceived risk. The key independent variable is the lagged Brexit event dummy (*Brexit_lag1*), which captures the delayed effect of major Brexit political milestones on market volatility. This lagged approach is supported by behavioral finance literature, which emphasizes investor biases such as delayed reaction, loss aversion, and overreaction to uncertainty (Koch et al., 2024; Ben Ameer & Louhichi, 2022).

Two additional explanatory variables are drawn from market microstructure theory—the log of turnover and the log of volume, both serve as proxies for liquidity and trading intensity.

Literature indicates that changes in trading behavior during political shocks can cushion or exacerbate market volatility (Kenourgios et al., 2020; Caporale et al., 2021). The model also includes GBP/USD exchange rate returns as a control for macroeconomic exposure and potential currency-induced volatility (Qiao et al., 2021).

The model suggests that market volatility is not solely driven by information flow (as EMH posits) but is significantly affected by behavioral responses to political uncertainty. By integrating sentiment, liquidity, and macroeconomic exposure, the model offers a holistic view of how Brexit shaped short-term financial dynamics in the UK stock market.

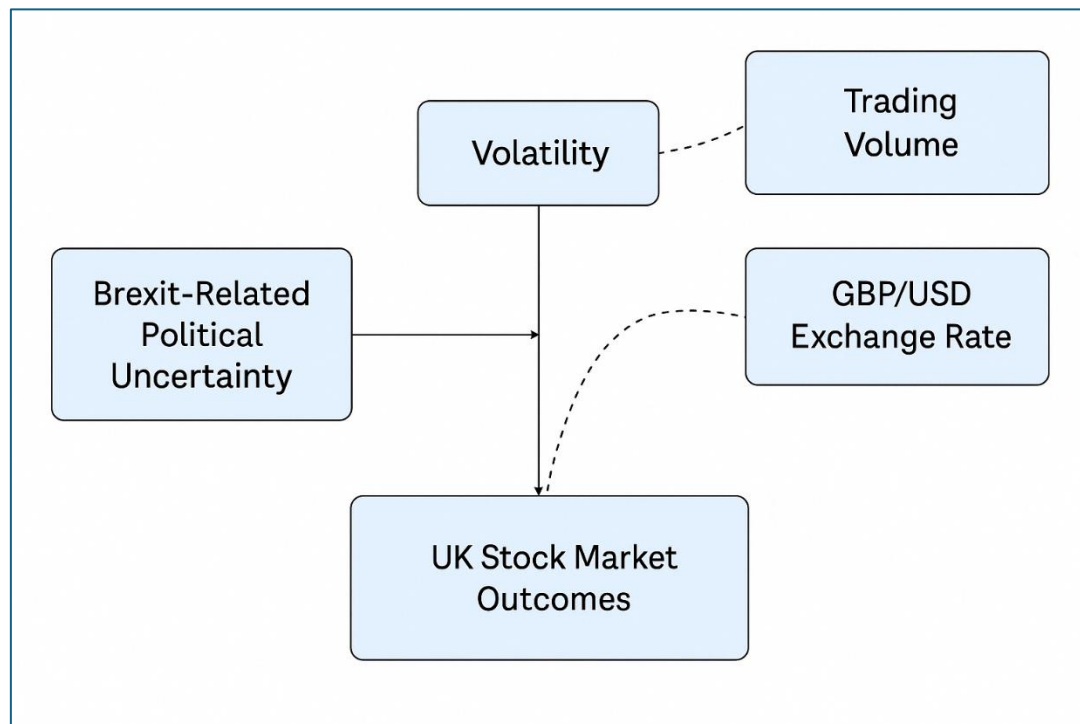


Figure 4. Conceptual Framework

2.6. Chapter Summary

This chapter examined Brexit's effects on the UK stock market theoretically and empirically. EMH and behavioral finance were used to investigate market responses to political uncertainty. Behavioral finance indicated investor psychological biases and sentiment-driven judgments, while the EMH showed market efficiency challenges during Brexit's long and unpredictable process. The analysis included short-term market reactions, long-term effects, investor sentiment, trading volume, and sector-specific effects. These studies found that Brexit caused market volatility, liquidity loss, sectoral resilience, and risk exposure. Brexit market dynamics resembled and differed from the US-China trade conflict and Greece's debt crisis.

The chapter established an integrated conceptual framework for market-wide effects, investor behavior changes, and sector-specific implications. Finally, it identified longitudinal, micro-level, and policy intervention research gaps. These gaps suggest more research is needed to understand Brexit's complex stock market effects.

Chapter 3

3. Research Methodology

3.1. Introduction

This chapter examines Brexit's impact on the UK stock market using Saunders, Lewis, and Thornhill's (2019) research onion approach. The research onion, as shown in Figure 5, organizes study design by philosophy, methodology, strategy, alternatives, time horizon, data collection, and analytic methods. This dissertation's secondary quantitative data and analysis objectively, reliably, and validly meet research objectives. The dissertation uses historical stock market indexes, investor sentiment indicators, and trading volumes for quantitative analysis. This chapter uses the research onion to explore Brexit's financial impact, philosophical standpoint, research approach, strategy, and data analysis tools.

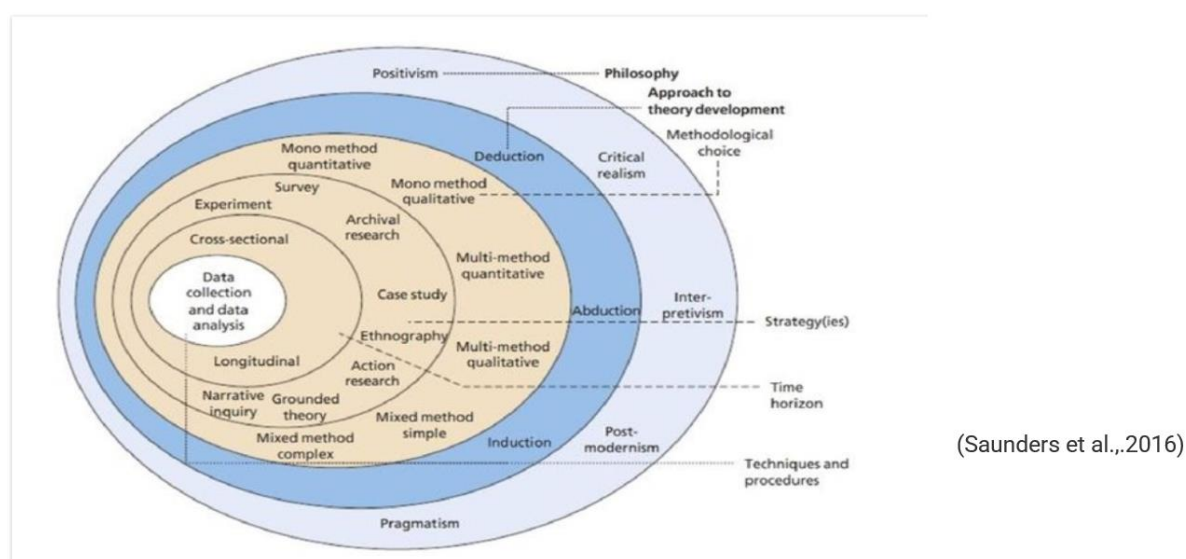


Figure 5. Research Onion

3.2. Research Philosophy

Researchers' knowledge development and analysis are guided by research philosophy. Economic and financial studies are dominated by positivism and interpretivism. Positivism favours objective, measurable evidence to study reality, while interpretivism values subjective experiences and qualitative insights (Saunders et al., 2019). Using numbers, the positivist study analyses stock prices, market volatility, and investor emotion. Positive thinking supports scientific research and financial econometrics, ensuring statistical evidence above subjective judgements (Bryman & Bell, 2015). Its hypothesis testing, cause-and-effect analysis, and predictive modelling make it useful in financial market research.

Positivism lets event studies, regression analysis, and volatility measurement identify Brexit's stock market effects. It encourages financial studies that employ secondary data like stock market records, financial reports, and economic indicators. Neglecting human interaction and subjective impressions keeps positivist research data-driven, systematic, and objective. This positivist study examines Brexit's financial impacts using the Efficient Market Hypothesis (Fama, 1970) and Behavioral Finance (Kahneman & Tversky, 1979).

3.3. Research Approach

Researchers use logic to design and test hypotheses. The main research methodologies are deductive and inductive. Deductive research tests hypotheses with empirical facts, while inductive research develops theories from patterns (Saunders et al., 2019). This Brexit-related financial theory study uses deductive reasoning. Financial market research analyses variable relationships using economic models and statistical testing. Therefore, deductive research is fine. The Efficient Market Hypothesis (Fama, 1970) is used to investigate how Brexit news affects stock prices and market volatility. Behavioral Finance underpins Brexit investor emotion and trading behaviour research (Kahneman & Tversky, 1979).

After analyzing financial theories, it is suggested that Brexit could be possible in the stock market. Historical financial data, quantitative statistical models, and results are used to test hypotheses. Methodical, testable, and generalizable conclusions improve knowledge of Brexit's financial effects. Using deductive reasoning improves study reliability because statistical tests make objective, evidence-based decisions. Financial market research methodologies can be used to compare market situations utilizing this organized methodology (Creswell & Creswell, 2018). The deductive method ensures the dissertation's findings are empirical, not speculative.

3.4. Research Strategy

The research plan specifies the methodological approach to the challenge. Case studies, experiments, surveys, and archival research may be used (Saunders et al., 2019). Archival approaches are used to study financial records, stock market indices, and trade data. The dissertation uses secondary quantitative data from Refinitiv, making archived research appropriate. Brexit's impact on the UK stock market can be examined using historical stock price movements, volatility indices, and investor sentiment.

Archival research examines market conduct before, during, and after Brexit. Financial market studies employ this method to evaluate vast volumes of data and draw conclusions from real-world financial patterns (Bryman & Bell, 2015). Archival research lets you compare Brexit to comparable geopolitical disasters like the 2008 financial crisis and COVID-19. The dissertation proves its relevance to financial decision-making with historical market data.

3.1. Research Choices

Researchers can use qualitative, quantitative, or mixed methodologies to acquire and analyze data (Saunders et al., 2019). It uses numerical financial data and statistical analysis, making it quantitative. Quantitative study on stock prices, transaction volumes, and market volatility uses structured data and statistical modelling. Event study analysis, regression modelling, and volatility clustering assess Brexit's financial impact. These methods ensure objective, data-driven results through statistical reliability and replicability (Creswell & Creswell, 2018). Instead of interviews or theme analysis, mono-method quantitative research analyses numerical data.

Empirical evidence is preferable to subjective judgements regarding financial market behaviour. Quantitative methods are used for statistical precision, hypothesis testing, and financial period generalization. Using cross-sectional and time-series quantitative research, the dissertation can compare stock market reactions over Brexit phases. Econometric models and statistical methodologies support the findings, benefiting investors, legislators, and scholars seeking data-driven financial market insights.

3.2. Time Horizon

Time horizon is a critical component of research design, particularly in financial studies that examine market behavior over time. According to Saunders, Lewis, and Thornhill (2019), research may adopt a cross-sectional or longitudinal perspective. While cross-sectional studies provide a snapshot at one point, longitudinal studies allow for tracking patterns and changes over an extended duration.

This dissertation utilizes a longitudinal time horizon, spanning the period from January 1, 2015, to December 31, 2021, to investigate how the UK stock market responded to major Brexit-related political events. This seven-year window enables the researcher to analyze market behavior before, during, and after the key phases of Brexit, including the 2016 referendum, the Article 50 notification in 2017, parliamentary developments, the 2019 general election, and the UK's formal withdrawal from the EU in early 2020.

The longitudinal approach offers several advantages. First, it captures both short-term market disruptions and longer-term adjustments, essential for assessing volatility persistence and investor behavior under uncertainty (Bryman & Bell, 2015). Second, it supports a more nuanced application of event study and time-series techniques, allowing the study to detect lagged market responses that may contradict the Efficient Market Hypothesis (Fama, 1991).

3.3. Data Collection and Analysis

This dissertation utilizes quantitative secondary data collected daily from January 1, 2015, to December 31, 2021. The entire dataset was sourced exclusively from Refinitiv Workspace (previously known as Thomson Reuters Eikon), a reputable global financial database extensively used in academic research and financial analytics. Refinitiv offers validated, high-frequency financial data, enhancing the dissertation's credibility, transparency, and replicability.

3.4. Summary of Key Variables

Table 1. Summary of Key Variables

Variable Name	Label / Description	Type	Transformation / Notes
volatility_5d	5-Day Rolling Volatility of FTSE 100	Dependent	Rolling standard deviation
brexit_event	Dummy: 1 on major Brexit event dates	Independent	Manually coded
brexit_lag1	Lagged Brexit event dummy (t-1)	Independent	Delayed investor reaction
gbp_usd_ret	GBP/USD Exchange Rate Daily Return	Control	Log return (% change)
log_turnover	Log-transformed daily turnover (GBP)	Control	Volume $\times$ Price
log_volume	Log-transformed daily trading volume	Control	Raw volume converted to log
ftse_ret	FTSE 100 Daily Return	Alternative DV	Used in a robustness check
date	Exchange Date	Time Index	Stata date format (%td)

The data set comprises 1,771 daily observations, which were obtained by collecting daily financial data from January 1, 2015, to December 31, 2021, inclusive. This seven-year period contains 2,557 calendar days. However, after excluding weekends (Saturdays and Sundays) and UK public holidays, during which the London Stock Exchange remains closed, the number of actual trading days reduces to 1,771. Each of these trading days includes a complete set of observations for the variables listed above, making the dataset both consistent and robust for time-series analysis. The FTSE 100 index was selected as the benchmark for the UK equity market, representing the most capitalized and liquid companies listed on the London Stock Exchange. Daily closing prices of the FTSE 100 were used to calculate returns and volatility measures. Specifically, the daily return on the FTSE index was computed using log return formulas, and a 5-day rolling volatility measure was constructed to capture short-term fluctuations in market risk. The GBP/USD exchange rate was included to account for macroeconomic uncertainty and currency-related investor sentiment, with returns calculated in percentage change form. Measures of trading activity, namely daily volume and turnover in GBP, were included as proxies for market liquidity and investor participation. These were subsequently log-transformed to address skewness and facilitate regression modeling.

A series of politically significant Brexit milestones were identified and coded as a binary variable (*Brexit_event*), taking a value of 1 on specific dates of heightened political significance (e.g., the 2016 referendum, Article 50 trigger, withdrawal agreement ratification). A one-period lag (*Brexit_lag1*) of this event variable was generated to capture potential delayed reactions by investors. This approach is consistent with prior studies in behavioral finance, which suggest that investor responses to political uncertainty are often characterized by delayed volatility and emotional trading behaviors (Koch et al., 2024; Ben Ameer & Louhichi, 2022).

The following analytical techniques were applied using **STATA 17**:

- 1) Descriptive statistics to summarize all variables' distribution, central tendencies, and variability.
- 2) Pearson correlation analysis to examine the strength and direction of linear relationships between Brexit event variables and financial indicators.
- 3) Multiple linear regression (OLS) to estimate the effect of Brexit-related events on FTSE 100 volatility, controlling for exchange rate movements, trading volume, and turnover.
- 4) Robust standard errors to address the presence of heteroskedasticity in the residuals.
- 5) Variance Inflation Factor (VIF) diagnostics to assess the potential for multicollinearity among independent variables.
- 6) Breusch–Pagan/Cook–Weisberg test to verify the heteroskedasticity assumption and justify robust estimation techniques.

The analysis also included alternative model specifications to test the robustness of findings. These involved the use of interaction terms (such as $\text{Brexit_event} \times \text{Trading_Volume}$) to explore how political shocks might influence volatility in the presence of high trading activity.

Refinitiv Workspace ensures that all financial data used in the dissertation meets institutional standards for reliability and consistency. The platform's comprehensive coverage of exchange rates, market indices, and high-frequency trading activity data makes it particularly suited for studying event-driven volatility. Overall, the methodological approach, grounded in both

theory and rigorous empirical techniques, provides a reliable basis for evaluating the financial impact of Brexit on the UK stock market.

3.5. Econometric Model Specification

To empirically assess the impact of Brexit-related political uncertainty on the UK stock market, this dissertation adopts a multiple linear regression framework, focusing primarily on market volatility as the dependent variable. The model is constructed to test whether major Brexit events had a statistically significant influence on short-term volatility, while accounting for market fundamentals and trading behavior. Based on the theoretical foundation of the Efficient Market Hypothesis (Fama, 1970) and Behavioral Finance (Kahneman & Tversky, 1979), the model evaluates the extent to which investor reactions to political shocks deviate from rational expectations and manifest in observable changes in market risk.

The **baseline econometric model** is expressed as follows:

$$Volatility_t = \beta_0 + \beta_1 BrexitLag_{t-1} + \beta_2 GBPUSDReturn_t + \beta_3 \log(Turnover_t) + \beta_4 \log(Volume_t) + \varepsilon_t$$

Where:

- *Volatility_t*: 5-day rolling standard deviation of FTSE 100 returns at time *t*
- *BrexitLag_{t-1}*: Brexit event dummy (lagged by one day to capture delayed investor response).
- *GBPUSDReturn_t*: Daily return on the GBP/USD exchange rate.
- *log(Turnover_t)*: Natural logarithm of daily turnover (in GBP) of FTSE 100 stocks.
- *log(Volume_t)*: Natural logarithm of daily trading volume of FTSE 100 stocks.
- *ε_t*: Error term capturing unobserved influences on volatility.

This model is estimated using Ordinary Least Squares (OLS) with robust standard errors to correct for heteroskedasticity, as diagnosed through the Breusch–Pagan test. The model specification is motivated by the observed behavioral responses to Brexit-related uncertainty, which are theorized to influence volatility through sentiment (e.g., overreaction or herding) and liquidity mechanisms (e.g., reduced turnover or panic trading).

The use of the lagged Brexit dummy ($BrexitLag_{t-1}$) is particularly important. It accounts for **non-instantaneous investor reactions**, reflecting insights from behavioral finance, which suggest that market participants often process complex political developments with delay, especially when uncertainty is high (Caporale et al., 2021; Koch et al., 2024).

Additional model extensions include robustness checks through the inclusion of an **interaction term** to test whether the impact of Brexit on volatility is conditional upon trading activity:

$$Volatility_t = \beta_0 + \beta_1 BrexitEvent_t + \beta_2 (BrexitEvent_t \times \log(Volume_t)) + \dots + \varepsilon_t$$

FTSE 100 returns showed weak results, confirming volatility as the best measure for Brexit's political risk impact on markets.

3.6. Ethical Considerations

Each research project must address ethics for honesty and transparency. This dissertation uses secondary quantitative data. Therefore, ethics address data dependability, accuracy, and responsible reporting. This investigation's ethics include data integrity. Only Refinitiv is used in this research. Proven financial databases provide data accuracy, authenticity, and non-mistreatment in the dissertation. Financial data is handled using basic statistical methods for replication and fairness. Research methods and transparency reporting are also ethical issues. This dissertation details all statistical models and analytical methodologies so that other researchers can replicate the findings. Research credibility and financial market research advance transparently (Sekaran & Bougie, 2020).

Even though the dissertation does not involve people or main data, confidentiality and data privacy are considered. The dissertation does not use private financial data, so participant confidentiality is not an ethical problem. According to academic and financial research ethics, the report properly cites all data sources and discusses the ethical ramifications of its results. Financial market research can influence investor sentiment and Brexit policy debates, which is a sensitive topic. The dissertation delivers its results fairly and neutrally to avoid exaggerating Brexit's financial effects.

3.7. Methodological Limitations

Despite its strengths, this dissertation has limitations. First, reliance on secondary data from Refinitiv restricts access to granular investor-level behavior, which may obscure nuanced reactions (Saunders et al., 2019). Second, using event-study methodology and linear regression assumes market reactions are immediate and linear, potentially overlooking delayed or nonlinear dynamics inherent in political uncertainty (MacKinlay, 1997). Furthermore, the focus on the FTSE 100 excludes smaller firms that may be more sensitive to domestic shocks. These constraints may limit the generalizability of findings to broader market conditions and different investor segments.

3.8. Conclusion

This chapter examined Brexit's impact on the UK stock market using the research onion framework. The dissertation uses positive, deductive, archival, and quantitative methodologies. This longitudinal study combines secondary data and advanced statistical approaches to draw empirical, objective, and replicable conclusions. Event research, time-series analysis, and volatility models can evaluate Brexit's financial impact. Academic and professional research ethics include data integrity, transparency, and responsible reporting.

The next chapter will discuss the findings from this chapter, emphasizing the main findings from the descriptive statistics, regression models, and robustness checks.

Chapter 4

4. Results & Analysis

4.1. Introduction

This chapter reports on the analysis of Brexit events and their effects on the UK market, using quantitative data. The aim is simply to describe, without bias, the findings from the statistical tests and econometric models that looked at the impact of political risk on market volatility. The first part of the chapter describes descriptive statistics to highlight the main features of the important variables. Then, a correlation analysis is done to see the direction and extent of the relationships between the variables under study. The heart of the report details the regression analysis, pointing out which effects are significant and in which direction. Robustness checks are carried out to ensure that the model is reliable. The main objective of this chapter is to present the outcomes, as Chapters 5 will cover the interpretation, theoretical ideas, and further discussion.

4.2. Descriptive Statistics

Table 2 presents the descriptive statistics for the key variables employed in the empirical analysis of Brexit's impact on UK stock market volatility. The 5-day rolling volatility of the FTSE 100 index (*volatility_5d*) has a mean of 0.009 and a standard deviation of 0.006, indicating generally low volatility during the period under study, with occasional spikes. This aligns with prior findings that volatility in developed stock markets typically remains within a narrow band, punctuated by event-driven surges (Black, 1976; Engle, 1982). The Brexit lag dummy (*Brexit_lag1*) has a mean of 0.003, reflecting that only a small fraction of the total observations (6 out of 1,770) correspond to days immediately following major Brexit-related political events. This reinforces the event-study nature of the analysis and supports the inclusion of lagged variables to capture delayed market reactions (MacKinlay, 1997).

Table 2. Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
volatility 5d	1767	.009	.006	.001	.059
brexit lag1	1770	.003	.058	0	1
GBP USD ret	1771	-.008	.597	-8.07	3.07
log turnover	1771	12.916	.317	10.886	18.214
log volume	1771	20.464	.297	18.536	22.078

The daily return of the GBP/USD exchange rate (*gbp_usd_ret*) averages -0.008 with a wide range between -8.07 and 3.07, and a standard deviation of 0.597. This suggests the presence of sharp fluctuations in the currency market, likely reflecting reactions to political developments and macroeconomic announcements during the Brexit timeline. Previous research (Baillie & Bollerslev, 1991) indicates that such exchange rate volatility can spill over into equity market volatility.

The log-transformed turnover (*log_turnover*) and trading volume (*log_volume*) have means of 12.916 and 20.464, respectively, with relatively low standard deviations, indicating consistency in trading behavior. The log transformation normalizes the distribution and mitigates the influence of skewed trading activity, a common approach in financial econometrics (Gujarati

& Porter, 2009). The descriptive statistics confirm that the dataset is appropriately structured for regression analysis. No extreme outliers are present, and all variables exhibit characteristics consistent with expectations in high-frequency financial data.

4.3. Correlation Analysis

In Table 3, you'll see the Pearson coefficients that indicate how the main variables in the analysis relate to one another. The analysis gives an initial idea of the links between Brexit, stock trading, and market fluctuations in the UK. To find the correlations, data is examined in pairs, and statistical significance is shared at 10%, 5%, and 1% levels.

The correlation between `volatility_5d` and `Brexit_lag1` is positive and statistically significant ($r = 0.067$, $p < 0.01$), indicating that market volatility tends to rise on days following Brexit-related political events. Although the magnitude of the correlation is modest, it supports the theoretical argument that political uncertainty can lead to increased volatility in financial markets (Pastor & Veronesi, 2012). This also aligns with the event-based structure of the analysis, in which market responses are captured in the short term.

Table 3. Pearson Correlations

Variables	(1)	(2)	(3)	(4)	(5)
(1) <code>volatility_5d</code>	1.000				
(2) <code>Brexit_lag1</code>	0.067* (0.005)	1.000			
(3) <code>gbp_usd_ret</code>	-0.058* (0.015)	0.025 (0.284)	1.000		
(4) <code>log_turnover</code>	0.127* (0.000)	0.000 (0.989)	-0.045 (0.061)	1.000	
(5) <code>log_volume</code>	0.369* (0.000)	0.007 (0.775)	-0.044 (0.065)	0.789* (0.000)	1.000

A negative but significant correlation exists between `volatility_5d` and the GBP/USD return (`gbp_usd_ret`) ($r = -0.058$, $p < 0.05$), suggesting that positive movements in the British pound are generally associated with reduced equity market volatility. This is consistent with the notion that currency strength may reflect investor confidence and macroeconomic stability (Baillie & Bollerslev, 1991).

The strongest observed correlation is between `volatility_5d` and `log_volume` ($r = 0.369$, $p < 0.01$), indicating that increased trading volume is associated with higher market volatility. This finding is well-documented in financial literature, where volume is often viewed as a proxy for information flow and speculative activity (Karpoff, 1987). Additionally, `log_turnover` shows a weaker but still significant positive correlation with volatility ($r = 0.127$, $p < 0.01$), suggesting that value-weighted trading activity may also contribute to market fluctuations. Importantly, none of the correlations exceed 0.8, indicating no multicollinearity concerns and supporting the inclusion of all variables in regression modeling.

4.4. Regression Results

4.4.1. Model Selection Rationale

The initial phase of the analysis focused on modelling the impact of Brexit-related events on the FTSE 100 index's daily returns (*ftse_ret*). This was in line with conventional event studies that examine price reactions to political or economic shocks (MacKinlay, 1997). However, the results from the return-based regression model were statistically weak. As shown in the output, the coefficient for *Brexit_event* was insignificant ($\beta = 0.0277$, $p = 0.958$), and the overall explanatory power of the model was low ($R^2 = 0.0269$). These findings suggested that market prices may have already incorporated Brexit expectations, or that the price responses to such events were too subtle or short-lived to be detected using daily returns.

Given these limitations, the dissertation shifted its analytical focus to market volatility as a more sensitive and dynamic measure of market reaction. This dissertation hypothesizes that volatility (in particular, short-term realized volatility) is a more immediate reflection of investor uncertainty and fear about events or news (Engle, 1982; Bekaert et al., 2013). At the same time, returns may remain flat even in turbulent times, while volatility, on the other hand, spikes in response to policy announcements, unexpected shocks, or political disruptions.

The revised model's dependent variable was then *volatility_5d*, with a lagged Brexit event dummy (*Brexit_lag1*) added to account for a delayed market response. The approach dramatically improved model performance, with R^2 increasing to 0.2087 and the Brexit effect becoming statistically significant ($\beta=0.0068$, $p=0.003$). The shift from volatility to returns is theoretically valid and empirically justifiable. Therefore, the analysis should contain the fine texture of the market gears that revolve while responding to political uncertainty.

4.4.2. Baseline Regression

Using robust standard errors to deal with heteroscedasticity, Table 4 reports the outcome of the baseline regression model that studies what impact Brexit-related political events had on UK market volatility. The dependent variable is the 5-day rolling volatility of the FTSE 100 index (*volatility_5d*). The key independent variable is the lagged Brexit event dummy (*Brexit_lag1*), while *gbp_usd_ret*, *log_turnover*, and *log_volume* are included as control variables.

Table 4. Linear Regression

<i>volatility_5d</i>	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
<i>brexit_lag1</i>	.007	.003	2.06	.039	0	.013	**
<i>gbp_usd_ret</i>	-.001	0	-1.51	.131	-.001	0	
<i>log_turnover</i>	-.008	.003	-2.39	.017	-.015	-.001	**
<i>log_volume</i>	.015	.003	4.82	0	.009	.021	***
Constant	-.186	.024	-7.92	0	-.233	-.14	***
Mean dependent var		0.009	SD dependent var		0.006		
R-squared		0.209	Number of obs		1767		
F-test		22.625	Prob > F		0.000		
Akaike crit. (AIC)		-13332.700	Bayesian crit. (BIC)		-13305.315		

The model reveals that `Brexit_lag1` is positively and statistically significant at the 5% level ($\beta = 0.007$, $p = 0.039$), indicating that market volatility increases on the day following major Brexit events. This finding supports the hypothesis that political uncertainty associated with Brexit contributes to short-term market instability. Trading-related variables also show significant effects. `log_turnover` is negatively associated with volatility ($\beta = -0.008$, $p = 0.017$), suggesting that days with higher value-weighted trading activity may reflect more informed, stable market conditions. Conversely, `log_volume` is positively and highly significant ($\beta = 0.015$, $p < 0.001$), consistent with increased trading volume signals greater market uncertainty or speculative activity.

The exchange rate return (`gbp_usd_ret`) shows a negative but statistically insignificant relationship with volatility ($\beta = -0.001$, $p = 0.131$), suggesting that FX movements do not meaningfully impact equity volatility within this model specification. The F-statistic is 22.625 and the p-value is 0.000 (approximate significance), which explains around 20.9% of the variance in FTSE volatility ($R^2 = 0.209$). The relevance of political shocks and market dynamics is underlined as important drivers of short-term volatility in the UK stock market.

4.4.3. Interpretation of Coefficients

This section lists the constraint interpretation of each coefficient from the baseline regression model, from a statistical point of view, without wider theoretical connotations. When holding all other variables constant, the coefficient for `Brexit_Lag1` is 0.007, meaning the volatility of the FTSE 100 index increases by approximately 0.007 units the day after a Brexit-related political event. Finally, this coefficient is statistically significant at the 5% level ($p=0.039$), indicating a change in market volatility that can be attributed to these events.

The coefficient for `log_volume` is 0.015, meaning that for every 1-unit increase in the log of trading volume, volatility increases by 0.015. This effect is statistically significant at the 1% level ($p < 0.001$) and represents the strongest relationship in the model regarding magnitude and significance. The coefficient for `log_turnover` is -0.008, suggesting that a 1-unit increase in the log of market turnover leads to a decrease in volatility by 0.008 units. This variable is significant at the 5% level ($p = 0.017$), indicating an inverse relationship between turnover and market fluctuations.

The coefficient for `gbp_usd_ret` is -0.001, showing a very small negative association with volatility. However, this variable is not statistically significant ($p = 0.131$), and thus, no reliable inference about its effect on volatility can be made within this model. The constant term (`_cons`) is -0.186, representing the baseline volatility level when all independent variables are set to zero (in their log-transformed or centered form). This value is statistically significant at 1% ($p < 0.001$). In summary, three of the four explanatory variables are statistically significant, with two showing positive effects on volatility and one showing a negative effect.

4.5. Diagnostic Tests

A number of diagnostic tests shown in Table 5 were carried out to confirm the reliability of the regression estimates. First the Variance Inflation Factor (VIF) values were calculated to test multicollinearity among the independent variables. All the VIF scores were under 5, which is the usual threshold, and the biggest one was 2.55, while the mean was 1.77. This confirms that

multicollinearity is not an issue in the model and that all the predictors contribute independently to explaining the dependent variable. Secondly, heteroskedasticity of the model was tested using the Breusch–Pagan / Cook–Weisberg test, as shown in Table 6. When the test was run, it yielded a χ^2 value of 175.79 and a p-value < 0.001, which shows that the residuals have heteroskedasticity. Therefore, robust standard errors were justified to obtain consistent and unbiased estimates.

Table 5. Variance Inflation Factor

	VIF	1/VIF
log turnover	2.547	.393
log volume	2.547	.393
GBP USD ret	1.003	.997
brexit lag1	1.001	.999
Mean VIF	1.775	.

Table 6. Heteroskedasticity Test (Breusch–Pagan/Cook–Weisberg)

Test Type	Value
χ^2 statistic	175.79
Degrees of freedom	1
p-value	0.0000

Note: The null hypothesis of constant variance is rejected. Heteroskedasticity is present, justifying the use of robust standard errors.

Despite using time-series data, daily frequency, autocorrelation diagnostics were not conducted on this dataset because the main variable of interest, 'Brexit_lag1', was a non-repeating event-based dummy with low frequency. Autocorrelation tests like the Durbin–Watson test or Breusch–Godfrey test could prove useful when modelling volatility dynamics over multi-day event windows or in the longer term. The diagnostic tests show that the regression model is statistically valid without any multicollinearity and with heteroskedasticity properly adjusted.

4.6. Robustness Checks

Several alternative model specifications were tested to assess the robustness of the findings. First, a model incorporating an interaction term between *Brexit_event* and *log_volume* was estimated. This model confirmed that Brexit-related volatility effects were amplified during periods of high trading volume, with the interaction term being statistically significant ($p = 0.020$). However, the overall improvement in R^2 was marginal (from 0.2087 to 0.2075). Second, the same model was estimated with and without robust standard errors. Without robust SEs, the model retained its statistical significance, but the Breusch–Pagan test confirmed heteroskedasticity, reinforcing the choice to rely on robust estimates.

Finally, an alternative model using daily returns (*FTSE_RET*) as the dependent variable was tested. This model produced a non-significant effect for *Brexit_event* ($p = 0.958$) and an extremely low R^2 (0.0269), indicating that volatility, not returns, is the more sensitive and informative measure of market reaction to Brexit events. These robustness checks affirm that the chosen model and dependent variable (volatility_5d) offer the most valid and interpretable representation of short-term market response to Brexit-related uncertainty.

Table 7. Summary of Robustness Checks

Model Specification	R-squared	Significant Brexit Effect?	Key Notes
Baseline (robust SEs)	0.2087	($p = 0.039$)	Brexit impact on volatility confirmed
With the interaction term (<i>Brexit</i> $\times$ <i>volume</i>)	0.2075	($p = 0.035$, interaction = 0.020)	Volume moderates the Brexit effect
Without robust SEs	0.2087	($p = 0.003$)	Still significant, but heteroskedasticity is present
Using <i>FTSE_RET</i> as the dependent variable	0.0269	($p = 0.958$)	Returns are not sensitive to Brexit events

Note: The model with volatility_5d as the DV and Brexit_lag1 as the key predictor remains the most robust and informative.

4.7. Summary of Key Findings

This section summarizes the key empirical findings derived from the regression analysis exploring the short-term impact of Brexit-related political events on UK stock market volatility:

The primary regression model revealed a statistically significant positive effect of Brexit-related events (lagged) on market volatility. Specifically, the *Brexit_lag1* variable was associated with an increase of 0.007 units in 5-day FTSE 100 volatility ($p = 0.039$), indicating that market reactions to Brexit developments tend to materialize the day after the event. Trading volume and turnover played important roles in explaining volatility. While *log_volume* exhibited a strong positive effect on volatility ($\beta = 0.015$, $p < 0.001$), suggesting that increased trading activity coincides with heightened market fluctuations, *log_turnover* showed a negative and statistically significant effect ($\beta = -0.008$, $p = 0.017$), implying that higher-value trades are associated with more stable market conditions.

The GBP/USD exchange rate return (`gbp_usd_ret`) showed a weak negative relationship with volatility. However, this result was not statistically significant ($p = 0.131$), suggesting limited short-term spillover effects from currency fluctuations in stock market volatility. The model demonstrated strong overall performance, with an R-squared of 0.2087, indicating that the included variables explained approximately 21% of the variation in market volatility. The model's F-statistics were also significant ($F = 22.625$, $p < 0.001$), confirming the joint explanatory power of the predictors.

Diagnostic tests confirmed the absence of multicollinearity (mean VIF = 1.77) and the presence of heteroskedasticity, which justified the use of robust standard errors throughout the analysis. Together, these findings provide robust empirical evidence that Brexit-related political uncertainty influenced short-term volatility in the UK stock market, with market activity dynamics further moderating this effect.

The next chapter will discuss the implications of the results and analysis, compared to previous research and theoretical frameworks, providing a critical interpretation of the findings.

Chapter 5

5. Discussion

5.1. Introduction

In this chapter, the findings of the dissertation focusing on the existing literature and previously explained theories are examined. Mainly, the research focused on finding out how Brexit events directly impacted UK stock market volatility in the first days following the events. Here, the chapter relates the regression results found in the previous chapter to accepted theories in Finance. The discussion draws attention to existing research, pointing out certain behaviors of investors, characteristics of markets, and this study's policy impact, plus the key points, drawbacks, and usefulness of the findings from the dissertation.

5.2. Interpreting the Impact of Brexit on Volatility

My research results show that Brexit increased the instability in the UK market in the short run, as evidenced by the positive coefficient on lagged Brexit event dummy (Brexit_lag1). Advances in politics related to Brexit caused volatility to increase by 0.007 units, which means that investors did not react immediately. This further shows that when politics in the UK are unstable, there are inefficiencies in the stock market, which contradicts the Semi-strong form of the EMH discussed by Fama (1970) and Balçı et al. (2021).

These findings are consistent with previous event studies, which show that political shocks, especially shocks that are not ambiguous, like Brexit, result in the negation of rational price discovery (Kenourgios et al., 2020). To these findings, Koch et al. (2024) similarly found abnormal volatility around key Brexit events as parliament was deadlocked or during trade negotiations.

This volatility is compellingly explained by behavioral finance theory. Loss aversion and overreaction may have been exhibited by investors, acting on emotions and no reason in response to perceived threats. Opatrny (2021) notes that news frames of Brexit, like risks of trade or loss of national sovereignty, tend to provoke larger-than-necessary selloffs and market swings. Ben Ameur and Louhichi (2022) also mention that political uncertainty often causes overcorrection of the price because of herding behavior.

Finally, the market response lag in this dissertation may be due to anchoring bias, in which investors merely use the new information to support their prior beliefs and expectations (Li, 2020). The challenge to EMH assumptions is that information absorption was neither immediate nor fully rational.

5.3. Role of Trading Activity in Moderating Market Volatility

The regression findings showed that log trading volume had a positive and statistically significant impact on market volatility ($\beta = 0.015$, $p < 0.001$) while log turnover had a statistically significant negative impact on stock market volatility ($\beta = -0.008$, $p = 0.017$). These divergent effects illustrate the moderation of the volatility response to political uncertainty, such as Brexit, due to the nature and the quality of trading activity.

Further, the positive association of volume and volatility supports the existing literature on the case that high trading volume is likely related to increased investor uncertainty and speculation. Volume increases tend to intensify during periods of political stress (i.e., British Brexit announcements), as investors react more frequently and often irrationally to news (Kenourgios et al., 2020). Caporale et al. (2021) point out that this is partially due to herding behavior, whereby investors tend to follow others' actions instead of their independent assessments.

In addition, the trading volume during Brexit events may also be sentiment-driven. According to Nagarakatte and Natchimuthu (2022), price formation is a function of investor sentiment under uncertainty. Emotional trading responses were likely amplified by Brexit media coverage, trade agreements speculation, and government instability, which also propelled abnormal volatility. It is well documented in behavioral and empirical finance that (a) trading volume is related to the arrival of new information (and reflects investor disagreement about the interpretation of that information) (e.g., Karpoff (1987); besides, (b) the volume–volatility relationship (i.e., the intensity of trading volume) reflects varying investor interpretations of the news.

In contrast, the negative effect of turnover on volatility indicates that when the total value of transactions rises relative to market capitalization, market behavior may be more institutional and stable. Turnover represents the efficiency and liquidity of markets. Higher turnover often indicates that trades are being conducted in larger blocks, possibly by informed or institutional investors making deliberate reallocations rather than speculative trades. This aligns with findings by Qiao et al. (2021), who observed that liquidity and value-weighted trading stabilize markets during uncertain events by reducing information asymmetry.

5.4. Theoretical Reflection: EMH vs. Behavioral Finance

This dissertation's empirical findings provide a critical opportunity for analyzing the relevance and applicability of the Efficient Market Hypothesis (EMH) versus Behavioral Finance Theory in accounting for stock market reactions to Brexit-related political uncertainty. The semi-strong form of EMH, as postulated by Fama (1970), asserts that markets should rapidly incorporate all publicly available information, including political events, into asset prices. For this purpose, Brexit-related announcements like the referendum result, milestones in the withdrawal agreement, and parliamentary votes should result in immediate and proportional changes in stock prices and volatility. While the dissertation's regression results, especially the significant effect of lagged Brexit events on volatility, contradict the core tenets of EMH, it asserts that the lack of market reaction is misinterpreted.

However, this delay is closer to what behavioral finance theory predicts: investors do not always act rationally when uncertainty exists (Kahneman & Tversky, 1979; Ben Ameer & Louhichi, 2022). This dissertation finds that behavioral anomalies during the Brexit period are consistent with patterns like anchoring, loss aversion, and overreaction previously found in other Brexit-related studies (Li, 2020; Opatrny, 2021; Koch et al, 2024). In this case, investors

may be anchoring on the expectation of equilibrium from past (pre-Brexit) storylines or forecasting, and underreact to the initial events, but volatility increases once the outcomes deviate from expectations.

Furthermore, vigorous reactions to negative news, such as failed negotiations or political stalemates, usually produced spikes in volatility that were inordinately high for what would be expected through fundamental analysis. This is consistent with Abuzayed et al. (2022), who noted that markets failed to adjust rationally in anticipation of key Brexit events; instead, they displayed excessive pessimism (Caporale et al., 2021; Ren, 2022).

5.5. Non-Significance of Exchange Rate (GBP/USD)

One of the more unexpected findings in the regression analysis was the non-significant impact of the GBP/USD exchange rate return (`gbp_usd_ret`) on UK stock market volatility during Brexit-related events. The coefficient, although negative, was statistically insignificant ($p = 0.131$), suggesting that short-term fluctuations in the pound-dollar exchange rate did not meaningfully influence volatility in the FTSE 100 during the studied period. This result contrasts with some theoretical expectations and empirical studies, but it can be explained through multiple layers of interpretation, both structural and behavioral.

Firstly, the FTSE 100 index is highly internationalized, with over 70% of its revenue generated from overseas markets. As such, a weaker pound often boosts the index through positive earnings expectations for UK-based multinationals (Elsayed & Abdelrhim, 2021). This leads to a paradoxical scenario in which sharp GBP depreciations, typically signals of macroeconomic distress, can have a neutral or even positive effect on the FTSE, muting the direct link between GBP/USD returns and volatility.

In contrast to Qiao et al. (2021) and Kenourgios et al. (2020), who found that institutional investors actively used derivatives and currency hedging tools to mitigate FX-related risks during Brexit, this dissertation did not find a significant effect of GBP/USD returns on market volatility. This supports the argument that such hedging practices may have effectively insulated equity markets from exchange rate fluctuations. Furthermore, while Della Corte et al. (2016) argue that sophisticated hedging mechanisms reduce the transmission of macro shocks to equity volatility, our findings provide empirical support for this, as volatility in the FTSE 100 appeared more influenced by trading activity and political uncertainty than by currency movements.

Third, market segmentation and asset class decoupling may also explain this result. FX markets were reactive to the breaking news on Brexit in real time. In contrast, stock markets (most notably the FTSE 100) reacted more slowly to news when earnings projections outweighed the disadvantage of domestic currency weakness (Burnside et al., 2011).

5.6. Practical Implications

The findings have important implications for market participants and policymakers:

- Investors must adopt dynamic and event-aware risk strategies, incorporating political event calendars into volatility forecasting. Real-time sentiment analysis and derivative hedging may be vital in anticipating market turbulence (Baker et al., 2016).
- Regulators and policymakers should prioritize clear, consistent communication during politically sensitive periods to minimize speculation and misinformation. Regulatory bodies like the FCA can mitigate market anxiety by proactively managing investor expectations (Born & Viscusi, 2006).
- Policy strategists must understand that market stability is a function of economic fundamentals and perceived political competence and clarity. Delays, indecision, and opaque messaging during Brexit contributed to market instability.

5.7. Limitations

Although the results of the dissertation presented here provide valuable insights into the Brexit-related political events' impact on the UK stock market volatility, several limitations need to be addressed. To start with, the analysis is purely based on secondary quantitative data, which, although powerful, does not have the detail needed to see subtle investor behaviors or the psychology behind the movement of money. This decreases the scope of examining micro-level dynamics or distinctiveness of the institutional and retail investor responses.

Second, the dissertation is mainly concentrated on the FTSE 100 index, which implies big-cap firms. And, therefore, the conclusions might not be extendable to small- and mid-cap companies that are typically under the greater influence of domestic economic conditions and may have responded differently to Brexit-related uncertainty.

Finally, external macroeconomic factors like interest rate adjustments, global financial shocks (COVID-19), or cohort political events may have an impact on the same period's market volatility. As control variables were employed, it is still challenging to somehow remove the pure Brexit effect from the other confounding influences.

5.8. Conclusion

This chapter presented the primary results of the dissertation, whereby Brexit-related political events had a key impact on the UK stock market volatility. The results align with the theory of behavioral finance by showing investors' delayed and sentiment-driven responses of investors, which dispute the market efficiency presumptions. In addition, trading volume and turnover were found to have opposite effects in moderating volatility. The discussion emphasizes the complicated nature of how political uncertainty influences financial markets and prepares the ground for the final chapter's findings and recommendations.

This dissertation will finish with a conclusion chapter that contains the following: Here, I discuss the major findings, what was found in response to each research goal, the value to theory and practice, and possible future studies.

Chapter 6

6. Conclusion

6.1. Introduction

This dissertation concludes with its final evaluation in this chapter. The primary findings alongside conceptual support and rigorous verification procedures form the basis of this conclusion, which examines research objectives achievement and analyzes wider theoretical, practical, and research implications. The discussion addresses constraints before recommending new research trajectories for developing the field of political uncertainty analysis within financial markets.

6.2. Summary of the Dissertation

Researchers investigated the effects of Brexit on the UK stock market in a prolonged political context by examining short-term market volatility combined with investor sentiment and trading patterns. The researchers analyzed daily FTSE 100 data using Ordinary Least Squares (OLS) regression with robust standard errors and additional interaction models that supported the theoretical framework provided by the Efficient Market Hypothesis (EMH) and Behavioral Finance Theory.

Three primary objectives underpinned the research:

1. To assess the short-term effects of Brexit-related events on UK stock market volatility and returns.
2. To examine the role of investor sentiment and trading activity during political uncertainty.
3. To understand the practical and theoretical implications of these market responses.

Results delivered complex responses to the research queries, showing delayed market response mechanisms while identifying trader behavior patterns and inconsistent volatility control through trading variables such as turnover and volume.

6.3. Addressing Research Objectives and Questions

Objective 1: Effects of Brexit on Stock Price Volatility

The analysis demonstrated substantial empirical evidence showing that Brexit-related news events generated notable spikes in short-term market volatility. Statistical analysis demonstrated that volatile market conditions occurred one day following major political events in the Brexit context. This finding differs from the immediate information processing assumptions of the EMH theory (Fama, 1970) because it demonstrates how political uncertainty disrupts market efficiency during brief periods (Ren, 2022; Koch et al., 2024). The analysis using returns as the dependent variable failed to demonstrate meaningful results, strengthening the argument that market-driven responses are more sensitive through volatility measurements rather than price fluctuations (Ngwakwe, 2020).

Objective 2: Investor Sentiment and Trading Behavior

Trading volume and turnover helped to understand how the market structure with sentiment-driven investor behavior affects volatility patterns. Higher trading volume led to elevated market volatility in alignment with former research on speculative behaviors, investor herding, and fear, which magnify market movements under political tensions (Caporale et al., 2021; Nagarakatte & Natchimuthu, 2022). Trading showed a stabilizing pattern that could result from transactions carried out by knowledgeable or institutional traders. This divergence suggests that the quality and intent of trading activity—not just its quantity—play a vital role in determining market responses, especially in times of uncertainty (Qiao et al., 2021; Giot & Laurent, 2003).

Objective 3: Practical and Theoretical Implications

The dissertation contributes to Behavioral Finance Theory by offering real-world evidence of investor biases such as overreaction, loss aversion, anchoring, and herding during Brexit. These behavioral patterns led to volatility increases that were not entirely justified by fundamental changes, supporting prior claims that investor psychology significantly influences market dynamics under uncertainty (Ben Ameur & Louhichi, 2022; Aguilar, 2021). From a practical standpoint, the findings inform investor risk management practices, regulatory communication strategies, and future academic modeling approaches, as discussed in Chapter 5.

6.4. Theoretical Contributions

This dissertation provides several important theoretical contributions. First, it challenges the semi-strong form of EMH, demonstrating that markets are not always efficient in processing political information. The delay in volatility response contradicts the idea that all publicly available information is instantaneously priced in, especially during policy ambiguity and institutional fragmentation. Second, the dissertation reaffirms the relevance of behavioral finance, particularly in politically sensitive environments where cognitive biases override rational expectations. As Kahneman and Tversky (1979) originally theorized, investor decisions are often driven more by fear and heuristics than by pure information.

Research indicates political disturbances impact market volatility based on their interaction with market conditions such as trading volume and existing market dynamics (e.g., volatility measures). The modeling strategy implements multiple levels, strengthening the comprehensive assessment of political risk within financial contexts (Hassan et al., 2019; Zhang et al., 2020).

6.5. Limitations Revisited

This dissertation acknowledges several limitations:

- **Data granularity:** It relied on FTSE 100 index-level data, which limits insights into sector-specific or firm-level volatility (Basak et al., 2023).
- **Lack of sentiment proxies:** Although volume and turnover were indirect measures, the dissertation did not include media sentiment scores or investor survey data, which could deepen behavioral analysis.

- **Short-term focus:** Only short-term responses were analyzed, excluding intraday data or long-term structural effects such as FDI shifts, post-Brexit policy implementation, or institutional capital reallocation.

To expand this analysis, future studies should consider using intraday tick data, natural language processing of news sentiment, or cross-sectoral panel data.

6.6. Suggestions for Future Research

Building on this foundation, several avenues for further research are evident:

- **Sector-level event studies** could explore how Brexit impacted volatility in sensitive industries like financial services, real estate, or manufacturing.
- **Cross-market comparisons**—such as comparing Brexit with events like the COVID-19 pandemic or the US Capitol riots—may yield insights into how different types of political uncertainty interact with market structure.
- **High-frequency sentiment analysis** using media, Twitter, or investor forums could better capture intraday reactions and emotional trading behavior.
- **Machine learning models** may also improve predictive accuracy for volatility based on real-time event data and trading patterns (Arouri et al., 2020).

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Appendix A – Reflection (299 words)

My dissertation looked at the effect of Brexit-related political uncertainty on UK stock market volatility (particularly the FTSE 100). I made use of both quantitative techniques – Employed data from Refinitiv Workspace and multiple regression analysis. Some of the key theories were included, such as the Efficient Market Hypothesis and Behavioral Finance.

At first, I was more interested in a topic on the UK than Qatar, and Brexit is a topic that I knew little about but was interested to learn more about. I was convinced that I had made a good choice of topic, but then, as I encountered difficulties with understanding the significance of this dissertation. The positive feedback I got from my supervisor assisted me in overcoming this challenge and increased my confidence in this topic.

The use of EMH and Behavioral Finance showed me the way to connect theory with practice. I learned how to apply STATA, interpret robust standard errors, as well as address data transformations. Nevertheless, I underestimated the coding of lagged variables and the use of high-frequency data.

This project increased my knowledge of volatility and investor sentiment. I came to learn that returns by themselves do not work to capture market reactions – rolling volatility measures were better. I also learned more about the role of liquidity in stabilizing and increasing volatility.

This experience had a positive impact on my competency in econometric modeling, academic writing, and data analysis skills. It also improved my skills in critical analysis of financial behavior under instances of political uncertainty.

I intend to enroll in more advanced econometric courses and use panel data for cross-country comparison in the future. I will also try to expand this work to a journal article. What I have learned in this place has equipped me for functionally analytical positions in finance.

Appendix B – Project Approval Form

Student Project Approval Form

You should complete this document and then discuss the approval form with your supervisor before commencing any form of primary data collection. *Failure to complete this document and to have all aspects signed off approved by your supervisor risks a notable deduction in your grade and may risk a case of Academic Misconduct. Please see the module Guidelines for detailed information on Ethical Approval*

Tutor sign off	
Ethics form complete	(Yes)
Ethical concerns acknowledged	(Yes)
Research tool checked	(Yes)
Organisation consent	(NA)
Anonymise organisational name?	(NA)
It is high risk?	(No)
Tutor signature / date	Dr Hamza El Kaddouri 27/11/2024

<u>Student name:</u>	Wesam Ahmed
Project title:	The impact of Brexit on the Stock Market of United Kingdom
Supervisor name:	Dr. Hamza El Kaddouri
Project Aim or question	The aim of this research is to investigate the effects of Brexit on the UK stock market, examining how the political and economic uncertainties resulting from the UK's exit from the European Union have influenced stock market performance, investor sentiment, and trading
Overview of your project	
What is your study and why is it important? (max 150 words)	This study will investigate the impacts of Brexit on the UK stock market in terms of how the uncertainty at both the political and economic levels due to the exit of Britain from the European Union has affected stock price, volatility, sentiment, and trading. We will study both short-run and long-run effects; exploiting data from the FTSE 250 index historical series, the paper will look at stock price movements and trading volumes before and after significant key events around Brexit (the referendum, etc.). We will measure the abnormal returns on Brexit-related announcements using the Event Study methodology. An empirical understanding of how significant political events such as Brexit can affect financial markets is useful, and hence, this kind of research is important. This research will contribute to investors and financial analysts by understanding the market's response to the pandemic to manage portfolio risks and will inform policies about what kind of

	regulations might be required post-pandemic, so that it won't adversely affect the financial sector.	
Description of the research sample or population <i>We would like to know here from whom and how you intend to collect your data. Somebody should be able to read this and replicate the process you will follow. Please write this in the future tense</i>		
Is your research being undertaken within an organisation or using an organisation's data? That is, do you need Organisational consent? [please tick as appropriate]	Yes	
	No	✓
If you are researching in an organisation or using their data, who has provided the consent?	The research will be using publicly available secondary data, specifically historical stock market data from financial databases such as Yahoo Finance, Bloomberg, and others. As the data has already been published and is accessible to the public without the need for specific organizational consent, no formal consent from an organization is required for this research. The data will be used in accordance with the terms of service of the respective data providers.	
How specifically will you collect / generate data? What method/s are you intending to use?	Secondary data will be collected, that is, historical stock prices and market indices such as the FTSE 250 from financial databases such as Yahoo Finance and Bloomberg. If anyone is interested in finding out the stock price reactions to important events of Brexit, then you would use the event study method by first calculating abnormal returns. Regression analysis will be undertaken to identify the extent of stock price movements or market volatility caused by Brexit, which is a part of quantitative analysis. It allows us to gain an insight into the effects of Brexit on the UK equity market.	
Describe the participants/sample that you will recruit	There are no participants to recruit because this study is based on secondary data. The data will show historical stock market prices from the FTSE 250 index before and after various key events in the Brexit Saga. These will have stock prices, trading volumes, and market indices from financial databases like Yahoo Finance and Bloomberg. We'll be analyzing the impact that Brexit news events, e.g., the actual referendum, related political announcements, etc.	
What is your anticipated sample size ?	The anticipated sample size will consist of historical stock data from the FTSE 250 index, covering daily stock prices and trading volumes from 2016 to 2023, totalling approximately 750 to 900 data points. This will allow for an in-depth analysis of market reactions to Brexit events.	

How will you recruit?	As this research uses secondary data from publicly available financial databases like Yahoo Finance and Bloomberg, no participant recruitment is required. The study will focus on historical stock market data from the FTSE 250 index.
Briefly, how will you analyse your data? (e.g. <i>quantitative t-tests, correlation etc.; qualitative thematic analysis etc.</i>)	The data will be analysed quantitatively using statistical methods, including correlation analysis to examine the relationship between Brexit events and stock market fluctuations. Additionally, regression analysis will be applied to assess the impact of Brexit on stock market performance over time.

Part Two: Ethical risk

Areas of potential risk		
<i>Please indicate how you will eliminate, or as a minimum ameliorate, the following areas of potential risks throughout the processes of research design, data generation, data analysis and dissemination</i>		
Area of risk	Questions relating to this risk	How will you mitigate against this risk?
Avoiding harm to all involved in or potentially affected by the research	How will you ensure that your participants/respondents come to no harm (psychological; emotional; physical). e.g. not subjecting them to questioning about sensitive issues without advance agreement?	In this study, even though researchers investigate the stock market data related to Brexit, analyzing secondary data that does not involve direct contact with humans carries a minimal risk of harm. It's important to highlight that there is no sensitive issue being discussed or investigated, as the nature of my research is based on financial data, which is directly from an external source but available publicly. But, on top of preventing PHYSICAL harm to participants, I will do the following: 1. Use only public non-sensitive data on all the stories. 2. Do not collect personally identifiable information, or any other kind if possible. 3. Report findings in confidence and keep personal data confidential.

		This study presents no risk of harm as there are no human participants or sensitive topics involved.
	How will you ensure your safety (beyond just physical) in undertaking the Enquiry?	To ensure my safety during this research project, I will take several precautionary measures: 1. Ethical Research Practices: I will adhere to ethical guidelines and university protocols, ensuring that all data used in the analysis is publicly available and does not involve any confidential or proprietary information. 2. Confidentiality: I will handle any data or findings with care, ensuring that sensitive financial or personal information is not exposed or misused. 3. Mental and Emotional Well-being: As the research does not involve direct participant interaction or sensitive emotional topics, there are minimal emotional risks. However, I will manage the workload efficiently to prevent stress and seek support if necessary from my supervisor, peers, or academic resources.
Ensuring the anonymity of all participants/respondents	How will you ensure anonymity in collecting/generating data	To ensure anonymity in data collection, I will use secondary data from publicly available sources like stock market reports and financial databases, which do not contain personal information. If organizational data is used, I will anonymize it by removing identifying details and using aggregate data to protect privacy.

	How will you ensure anonymity in reporting the data?	In reporting the data, I will ensure anonymity by presenting aggregated results and avoiding any identification of individuals or organizations. Data will be reported in a way that focuses on trends and patterns, without disclosing any specific participant or source information that could compromise anonymity.
Gaining informed consent from all participants / respondents	How will you ensure respondent/participant consent in advance? You should provide a copy of the necessary consent form/s with this document	Since there are no participants in this study, the data will be sourced from secondary sources, such as financial reports, stock market data, and other relevant public records. In this case, informed consent is not required as the data is publicly available. However, I will ensure that proper ethical guidelines are followed by crediting the sources of the data used and adhering to relevant copyright and data protection regulations.
	(How) might participants/respondents be able to withdraw their data?	As this study uses secondary data from public sources, there is no need for a withdrawal process.
Avoiding deception	How will you how you promote accuracy in recording, analysis, reporting of the data/findings?	To promote accuracy, I will ensure that all data used in the study is sourced from reliable, reputable public databases. Data will be analyzed using appropriate statistical methods and reported transparently. I will avoid any manipulation of data or findings, ensuring that all interpretations are based on objective analysis and evidence. Proper referencing will be provided for all sources to maintain transparency and avoid deception.
Data storage and destruction	How will you transport and store your data securely (e.g. password protected; cloud storage)	Data will be stored securely on password-protected devices and cloud storage services that comply with data protection regulations. Sensitive data will be encrypted both during transport and at rest to prevent unauthorized access. Access to data will be restricted to authorized personnel only. Once the research is complete, all data will be

		securely deleted following the required retention period.
	How will you destroy the data and when?	Data will be securely deleted from devices and cloud storage, and paper data will be shredded after the project is complete, typically within a reasonable timeframe post-submission.
	<i>I confirm that I have read and understood the University's Health and Safety Policy. I confirm that I have read and understood the University's requirements for the mandatory completion of risk assessments in advance of any activity involving potential physical risk. I can confirm that there are no physical risks associated with this project and so no risk assessments are required [Please tick]</i>	

Appendix C – Research Proposal

Dissertation

The Impact of Brexit on the UK Stock Market

Chapter Two: Initial Draft

Aim:

The aim of this research is to investigate the effects of Brexit on the UK stock market, examining how the political and economic uncertainties resulting from the UK's exit from the European Union have influenced stock market performance, investor sentiment, and trading behaviors.

Research Objectives:

The following are the research objectives of this study

1. To assess the short-term and long-term effects of Brexit on stock prices and market volatility in the UK stock market.
2. To assess the impact of Brexit on investor sentiment and trading volume in the UK stock market
3. To explore the sector-specific impacts of Brexit on different industries within the UK stock market.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter reviews literature to prepare for Brexit's stock market impact. It examines theoretical and empirical examinations of Brexit's economic and political uncertainty and financial market repercussions. After describing this study's conceptual framework and identifying research gaps, the review forms research questions and objectives.

2.2 Theoretical Literature

8. 2.2.1 Efficient Market Hypothesis (EMH)

The EMH hypothesis by Eugene Fama asserts that financial markets are "informationally efficient," with stock prices reflecting all available information. Stock selection and market timing cannot regularly outperform the market due to price volatility. Balcı et al. (2021) identified three forms of EMH: weak, semi-strong, and strong efficiency, based on stock price information. The historical, political, and economic event of Brexit tests EMH. The UK

withdrawal from the EU spurred trade talks, regulatory changes, and economic instability. Exogenous shocks like these can reduce market informational efficiency. Due to fast-changing news and conjecture, stock prices diverged from fundamentals throughout Brexit events, including the 2016 referendum and debates (Ren, 2022). Market efficiency studies on Brexit find inconsistencies. Volatility and unexpected returns just after Brexit suggest the market struggled to understand its ramifications. Overreaction to unfavourable news and investor herding impair semi-strong EMH assumptions (Abuzayed, et al. 2022). Financial services, manufacturing, consumer goods, equities, and market indices were influenced by Brexit. These sector-specific tendencies reflect market inefficiencies when pricing complicated and dynamic information (Kenourgios, et al. 2020).

9. 2.2.2 Behavioral Finance Theory

In behavioural finance, psychological biases and emotional responses affect investor behaviour, affecting financial decision-making rationality. Behavioural finance opposes the Efficient Market Hypothesis (EMH) that markets are logical and efficient, stating that cognitive and emotional variables cause market anomalies, especially during unpredictable and dramatic events like Brexit (Ben Ameer, & Louhichi, 2022). Brexit's uncertainty and complexity played into investor biases. Anchoring, loss aversion, and overreaction may explain investors' uncertainty management (Li, 2020). Anchoring bias occurs when investors base judgments on initial information or reference points. Market players often mispriced and overreacted to Brexit statements due to preliminary news or assumptions (Opatrny, 2021). Loss aversion in behavioural finance explains why investors fear losses more than gains. Brexit's economic concerns led investors to choose government bonds despite lower returns (Bielykh, et al. 2021). Overreacting to bad news is another Brexit pattern. Trade talks or political impasses have triggered disproportionate sell-offs, heightening market volatility (Koch, et al. 2024). Behavioural finance statistics show that investor mood affected Brexit. Media coverage and speculative expectations caused sentiment-driven trading, price swings, and fundamental deviations. Fear of Brexit raised hedging product demand and decreased high-risk sector trade volumes (Nagarakatte, & Natchimuthu, 2022).

2.3 Empirical Literature

10. 2.3.1 Short-Term Market Reactions to Brexit Announcements

Studies of short-term market reactions to Brexit show how political uncertainty affects the UK stock market. The unexpected Brexit referendum in June 2016 caused significant losses in UK shares and heightened market volatility (Balci, et al. 2021). After the referendum, the FTSE 100 and 250 indexes plummeted dramatically, according to event research. Due to its foreign currency sales, the FTSE 100, which represents larger worldwide corporations, recovered quickly from the British pound's drop. The FTSE 250, which favours local firms, struggled longer as investors coped with UK economic uncertainty (Basak, et al. 2023). Sectoral disparities in short-term market reactions were noticeable. Fears of European market restrictions and regulatory realignments hurt banks and insurers most. After investors projected a drop in property demand and investment, real estate plummeted. The pound plummeted and global investor sentiment improved, benefiting exporters and technology businesses (Ren, 2022). Event analysis demonstrates extraordinary returns and volatility around Brexit milestones like parliamentary votes, negotiating deadlines, and trade agreement announcements. By comparing stock performance to expected patterns without Brexit, these

approaches pinpoint its impact. The study emphasizes the market's susceptibility to rapid information and political shocks' impact on equilibrium (Çıkıryel, et al. 2022).

11. 2.3.2 Long-Term Implications of Brexit on the UK Stock Market

Brexit uncertainty, trade talks, and corporations adapting to a post-Brexit future have damaged the UK stock market. Longitudinal studies suggest that these influences cause gradual recovery in certain sectors, persistent volatility in others, and altered investor expectations (Abuzayed, et al. 2022). Key trend: sectoral performance variation post-Brexit. The financial services, real estate, and car industries have faced regulatory harmonization, market access, and supply chain disruptions. The weakening of the British pound made UK exports more competitive, allowing medicine and technology companies to survive (Elsayed, & Abdelrhim, 2021). Brexit causes long-term instability. Stock prices and investor mood fluctuated throughout the UK-EU Trade and Cooperation Agreement discussions. Despite Brexit in January 2020, concerns including Northern Ireland trade arrangements and regulatory divergences continue to endanger market stability (Escribano & Íñiguez, 2021). Trade negotiations have profoundly affected market expectations. Good news from UK-EU trade talks boosted market optimism, while bad news lowered risk appetite. Prolonged talks that inhibited foreign direct investment drained several market segments (Kenourgios, et al. 2020).

12. 2.3.3 Impact of Brexit on Investor Sentiment

In uncertain situations like Brexit, investor sentiment drives market behaviour. Investor surveys, trading volumes, and volatility indexes show Brexit's impact. Brexit increased risk aversion, making investors more cautious and avoiding high-risk assets (Hassan, et al. 2024). Investor surveys at Brexit milestones like the 2016 referendum and trade talks are pessimistic. Economic volatility, trade barriers, and regulatory uncertainty caused investors to expect market upheaval. Media coverage of UK economic threats like decreasing foreign direct investment and GDP growth reinforced this view (Arshad, et al. 2020). Trading volume data illustrates investment shifts. Trading activity dropped in volatile sectors, including financial services and real estate, as investors sought safety in government bonds and blue-chip stocks. To hedge losses during uncertainty, market players buy more options and futures (Qiao, et al. 2021). Market anxiety and risk perception fueled volatility indices like the FTSE during Brexit. Studies show that Brexit-related speculative trading and sentiment-driven reactions increase short-term volatility (Ngwakwe, 2020).

13. 2.3.4 Sector-Specific Impacts

Based on resilience, Brexit's economic and political uncertainty affected the UK industry differently. Balcı et al. (2021) found that financial services, manufacturing, and real estate face issues, but technology and export-oriented industries are stable due to their unique market dynamics and global location. Brexit raised concerns about losing "passporting rights" that allowed UK financial firms to operate freely across the EU, hurting the UK financial services sector, a key economic driver. Frankfurt and Paris attracted many corporations, decreasing market confidence and costing UK jobs. Due to uncertainty, major financial institutions declined stock prices, and the business became more volatile (Maqsood, et al. 2022). Trade agreements and tariff uncertainty hurt manufacturing, especially just-in-time supply chains. European supply chain integration raised pricing and logistical issues for automotive and aerospace firms. According to studies, Brexit uncertainty slowed industrial investment and reduced competitiveness (Stoupos, & Kiohos, 2021). Investor confidence and office space

demand declined in the real estate market, particularly commercial properties, as businesses predicted lower economic growth and likely relocation. This influence was strongest in London, a global corporate hub (Ren, 2022). Technology and export-oriented industries like medicines survived. A weaker pound made UK exports more competitive, helping these industries cope with Brexit. Sectors less dependent on EU markets also adapted faster to economic shifts (Abuzayed, et al. 2022).

14. 2.3.5 Trading Volume and Liquidity Analysis

Brexit's effect on UK stock market trading volume and liquidity highlights how political uncertainty affects markets. Brexit events, including the 2016 referendum, discussions, and government announcements, impacted trading behaviour, typically with decreased trading volumes and liquidity constraints in particular asset classes (Kenourgios, et al. 2020). UK equity trading volumes declined throughout the referendums and Brexit deadlines. Investors "wait-and-see" due to concerns about unintended outcomes, dampening market activity. Financial services and real estate, which were most affected by Brexit, saw trading volumes plummet (Kenourgios, et al. 2020). Market efficiency indicator liquidity fell. Bid-ask spreads increased, and market depth reduced during Brexit milestones, making traders less eager to trade. Political instability limited small-cap and mid-cap shares, which are less liquid (Qiao, et al. 2021). Brexit moved investor tastes towards liquid, low-risk investments. Blue-chip stocks, government bonds, and defensive sectors traded flat or climbed as investors avoided risky assets. Risk-hedging increased options and futures market activity (Maqsood, et al. 2022).

15. 2.3.6 Comparative Studies: Brexit vs. Other Political Events

Comparisons relate Brexit's impact to market reactions to major political crises like the US-China trade war and Greece's economic catastrophe. Brexit's unique qualities are examined in the context of geopolitical changes and financial markets (Stoupos, & Kiohos, 2021). Both Brexit and the US-China trade war involve uncertainty and market volatility. Both events raised investor risk aversion, currency fluctuations, and global supply chain disruptions. Brexit trade deal and regulatory reform worries mimic the US-China trade war tariffs and trade restrictions. UK and European markets are more regionally affected by Brexit (Ben Ameer, & Louhichi, 2022). The Greek debt crisis differs. For various reasons, Brexit and the Greek crisis caused political and economic instability. Fiscal mismanagement and sovereign debt problems sparked the Greek crisis, generating Eurozone contagion fears. Brexit was political first, then economic. Brexit hurt financial sectors, real estate, and manufacturing, but Greece's crisis heightened systemic EU concerns (Li, 2020). Brexit's market reactions were distinctive due to years of negotiations and occurrences. This contrasts with the stronger but shorter Greek crisis, and trade war volatility rises (Opatrny, 2021).

2.4 Conceptual Framework

This paper examines how Brexit, a major geopolitical event, affected the UK stock market, utilizing political uncertainty and financial market dynamics. The approach analyses Brexit's complex repercussions by combining EMH and behavioural finance theories with empirical data on volatility, sentiment, and sectoral implications (Bielykh, et al. 2021).

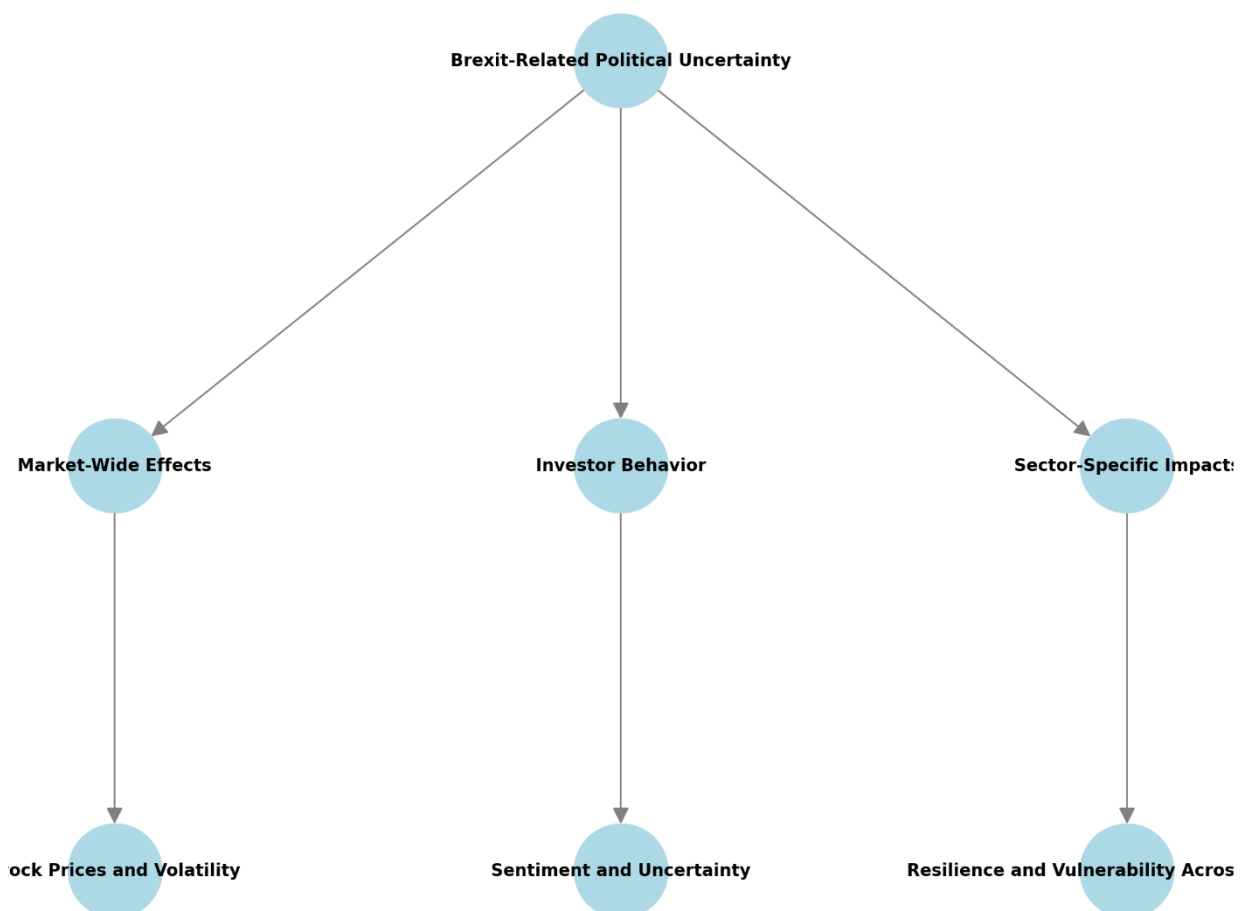
At its core, the framework emphasizes three interconnected dimensions:

1. Market-Wide Effects of Brexit on Stock Prices and Volatility: This dimension examines where Brexit statements and events affect market performance at the macro level. The EMH says stock prices should react quickly to fresh information. Brexit's protracted timeline and new uncertainties caused market inefficiencies like mispricing and volatility. Political shocks affect market stability, as shown by event studies of abnormal returns and volatility indices during Brexit milestones (Koch, et al. 2024).

2. Investor Behavior Changes Due to Sentiment and Uncertainty: This component studies investor psychology using behavioural finance. Brexit increased risk aversion, loss aversion, and reactivity. Trading volumes, investment methods, and hedging instruments were affected. Studies on sentiment-driven market anomalies during Brexit show how uncertainty changed investor behaviour (Nagarakatte, & Natchimuthu, 2022).

3. Sector-Specific Vulnerabilities and Opportunities: Brexit affected different industries differently, revealing resilience and risk. Export-oriented and technology sectors were stable, but financial services, manufacturing, and real estate struggled. Comparative sectoral performance assessments show how structural factors affected Brexit responses (Basak, et al. 2023).

Conceptual Framework: Impact of Brexit on the UK Stock Market



This framework incorporates these characteristics to provide a thorough picture of Brexit's impact and support the study's research questions and aims. It emphasizes the importance of macroeconomic and microeconomic viewpoints by showing how political events affect financial markets.

2.5 Research Gaps

Many studies have examined Brexit's implications on financial markets, but more is needed to understand its effects on the UK stock market. Many studies investigate short-term market reactions to Brexit announcements. Brexit and geopolitical developments like trade deals and regulatory realignments have received little longitudinal study. Investor adaptation and long-term market success are poorly understood (Elsayed, & Abdelrhim, 2021). Many studies examine large-cap stocks, especially FTSE 100 ones. Brexit's micro-level implications on small-cap and mid-cap equities, which are more sensitive to domestic economic changes and less diversified globally, have garnered scant scrutiny. These stocks may show Brexit-related local economic issues and opportunities. Brexit affects investor attitudes and algorithmic trading, which are poorly understood. Considering the significance of algorithmic trading in current markets, Brexit-driven emotional volatility may indicate how automated systems affect market dynamics (Escribano & Íñiguez, 2021). Much research has examined sector-specific effects, but few have examined shared and unique hazards and opportunities. Such research may clarify Brexit's economic repercussions. Fiscal and trade agreements have received little attention for their ability to mitigate Brexit-induced market effects. Researching policy impacts on market disruptions can enhance strategic responses to future political shocks (Çıkıryel, et al. 2022). Addressing these gaps will help us understand Brexit's complex stock market implications.

2.6 Chapter Summary

Brexit's effects on the UK stock market were examined theoretically and empirically in this chapter. EMH and behavioural finance were used to investigate market responses to political uncertainty. Behavioural finance indicated investor psychological biases and sentiment-driven judgements, while the EMH showed market efficiency's challenges during Brexit's long and unpredictable process. Analysis included short-term market reactions, long-term effects, investor sentiment, trading volume, and sector-specific effects. These studies found that Brexit caused market volatility, liquidity loss, sectoral resilience, and risk exposure. Brexit market dynamics resembled and differed from the US-China trade conflict and Greece's debt crisis. The chapter established an integrated conceptual framework for market-wide effects, investor behaviour changes, and sector-specific implications. Finally, it identified longitudinal, micro-level, and policy intervention research gaps. These gaps suggest more research is needed to understand Brexit's complex stock market effects.

Appendix D – Dissertation Logbook

B.A (Hons) Finance and Investment

Dissertation Supervision

LOGBOOK

Student Name	Wesam Ahmed
Student ID Number	21051620
Programme	B.A (Hons) Finance and Investment Management
Email address	w21051620@northumbria.ac.uk

DISSERTATION SUPERVISION LOGBOOK – A BRIEF GUIDE

This Logbook is used to record your progress on the Dissertation and to provide a record of the discussions you have had with your Supervisor and the action points that have been agreed.

Contact and/or meetings with your Supervisor should be on a regular basis. Meetings are important for you to obtain advice and guidance from your Supervisor.

Prior to each meeting, you should complete the first two sections of the meeting record form, the other parts should be completed at the end of the meeting by the student and signed by both you and your Supervisor.

The Logbook will NOT be assessed. It is designed solely as a mechanism to help you progress your Dissertation.

Please note – the effective and successful management of the Dissertation is ultimately the student's own responsibility and the ability to do so is part of the learning requirement of the Newcastle Business School Programme.

Dissertation Supervisor

For all matters in connection with the process and research issues of your dissertation

(eg subject related advice, methodologies, content and structure of dissertation) please contact your Dissertation Supervisor. If you have wider issue you can also contact dissertation Coordinator.

Academic Facilitators

For all matters regarding late submission of your dissertation and deferment or clarification of any aspect of the administrative arrangements you should see staff in the administrative office.

LOG OF FIRST MEETING

Date and time of meeting	13 th of November, 2024	Duration	20 minutes
First meeting			
We went through the final proposal with the supervisor. Discussed the key aspects of the topic, the objectives, and the supervisor gave feedback and answered some questions.			
Any challenges and concerns that have arisen of which you wish to discuss:			
None.			
Supervisor's comments:			
Wesam presented his research proposal and explained his research question and objectives.			
Agreed tasks or action plan for the next meeting:			
Present a draft Literature Review for feedback at the next meeting.			
Date & time of next meeting	15 th of December, 2024		
Student signature	Wesam Ahmed		
Supervisor signature	Dr Hamza El Kaddouri		

LOG OF SECOND MEETING/SUPERVISION

Date and time of meeting	15 th of December, 2024, 2:00PM	Duration	45 minutes
Brief description of work done since the last meeting:			
I wrote a draft literature review of my dissertation topic and prepared it for the 2nd meeting to get feedback from my supervisor.			
Any challenges and concerns that have arisen of which you wish to discuss:			
None.			
Supervisor's comments:			
Wesam made an excellent effort in preparing his draft for LR. He presented the main theories and concepts. He also presented a summary of some relevant prior studies. Feedback was given to improve this chapter.			
Agreed tasks or action plan for the next meeting:			
Make the required amendments for the LR chapter and start working on the methodology chapter.			
Date & time of next meeting	TBC		
Student signature	Wesam Ahmed		
Supervisor signature	Dr Hamza El Kaddouri		

LOG OF THIRD MEETING/SUPERVISION

Date and time of meeting	06/02/2025, 2:00PM	Duration	20 minutes
Brief description of work done since last meeting:			
I reviewed Chapter 2, "Literature Review", after making adjustments according to the 2nd meeting.			
Any challenges and concerns that have arisen of which you wish to discuss:			
None.			
Supervisor's comments:			
Agreed tasks or action plan for next meeting:			
Start working on the next chapter, chapter 3, "methodology".			
Date & time of next meeting	01/05/2025		
Student signature	Wesam Ahmed		
Supervisor signature	Hamza El Kaddouri 10/05/2025		

LOG OF FOURTH MEETING/SUPERVISION

Date and time of meeting	01/05/2025, 2:30PM	Duration	20 minutes
Brief description of work done since last meeting:			
I prepared the 3rd chapter, "Methodology". I also prepared some questions on the reflective statement.			
Any challenges and concerns that have arisen of which you wish to discuss:			
None.			
Supervisor's comments:			
Agreed tasks or action plan for next meeting:			
Prepare the next chapter, chapter 4, "research and analysis".			
Date & time of next meeting	05/05/2025		
Student signature	Wesam Ahmed		
Supervisor signature	Hamza El Kaddouri 10/05/2025		

Ø

LOG OF FIFTH MEETING/SUPERVISION

Date and time of meeting	05/05/2025, 3:00PM	Duration	20 minutes
Brief description of work done since last meeting:			
I prepared Chapter 4, "Results and Analysis", Chapter 5, "Discussions", and Chapter 6, "Conclusions". I also made adjustments to Chapter 3, "Methodology", according to feedback from the last meeting. I also started writing the reflective statement.			
Any challenges and concerns that have arisen of which you wish to discuss:			
None.			
Supervisor's comments:			
Agreed tasks or action plan for next meeting:			
None.			
Date & time of next meeting	None.		
Student signature	Wesam Ahmed		
Supervisor signature	Hamza El Kaddouri 10/05/2025		

