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Abstract

The study examines the influence of economic policy uncertainty (EPU) on stock market Volatility in the Financial Times Stock Exchange (FTSE 100) and the New York Stock Exchange (NYSE), from 2012 to 2024. The moderating effects of Bitcoin (USD) returns, and the USD/GBP Exchange Rate is also investigated because of their increasing relevance in global financial integration and portfolio diversification. Using ARCH-GARCH family models, the findings validate that EPU contributes significantly to volatility, although its effect varies in the two markets.

For FTSE, U.K. EPU has a negative correlation with volatility, meaning that greater policy uncertainty lowers investors' activity and risk-taking attitudes, eventually cushioning price fluctuations. The exchange rate has a consistent and strong moderating effect, while Bitcoin has minimal effect. Conversely, for the NYSE, the findings indicates that increased U.S. EPU is associated with increased stock market volatility and indicates the responsiveness of U.S. equities to domestic policy shocks. The exchange rate is significant moderator, amplifying the volatility effect of EPU, while Bitcoin's moderating effect is weaker and often insignificant.

Overall, the results highlight that while EPU is a significant predictor of stock market volatility, its impact is not symmetric across regions. Exchange rate always acts as a powerful moderator, indicating the cross-market linkages between currency markets and equity performance in worldwide economies. Bitcoin, while continuing to be an emerging and volatile asset, displays partial moderating effects, indicative of its growing but unstable engagement in shaping financial trends. These findings are extremely useful to investors, portfolio managers, and policy makers as they underscore the necessity of considering the macroeconomic uncertainty and global financial linkages in assessing stock market risk.

Keywords: Economic Policy Uncertainty (EPU), Stock market Volatility, Exchange Rate, Bitcoin, ARCH-GARCH, NYSE, FTSE 100.

"Impact of Economic Policy Uncertainty on Stock Market Volatility: The Evidence from the UK and US"

CHAPTER I
INTRODUCTION

1.1 Background of the Study

In the emerging increasingly integrated global financial order, economic policy uncertainty (EPU) has become a critical risk factor influencing the investor sentiment, capital distribution, and asset price volatility. EPU reflects the scepticism regarding government policies such as fiscal, monetary, and regulatory policies, which may disrupt market expectations and produce price fluctuations in financial markets stability (Baker, et al., 2016). However, EPU does not often influence stock markets in isolation-it also combines with other financial and economic instruments which assume the role of mediator or transmitters of its influence. Economic Policy Uncertainty (EPU) is "economic risk under which the future course of action taken by the government or institutions of a country is unknown" (Kalra & Gupta, 2023). It is the probability other than zero that there will be adjustments in current financial arrangements that characterize monetary authorities (Mishra, et al., 2024). It takes an increasing role in today's globalized world because of factors like political polarization, globalization, and increased government spending (AI-Thaqub & Algharabali, 2019). In recent years, the global financial landscape has witnessed heightened economic policy uncertainty (EPU), driven by unpredictable fiscal, regulatory, and monetary policy decisions.

In advanced economies like the US and the UK, where trade disputes, political instability, and changing central bank stances have raised concerns among investors and market participants. Over the past two decades, multiple global events such as the 2008 Global Financial Crisis, Brexit, the COVID-19 pandemic, Russia-Ukraine conflict and ongoing geopolitical tensions have significantly restricted the development of the global economy and spread uncertainty worldwide. These extreme events have not delayed investment decisions, risk averse behaviour, and market inefficiencies but also put governments in a troublesome situation. This kind of uncertainty is now increasing and more essential then the before, as our lifestyles have changed due to the transformation of technology and globalization (Paster & Veronesi, 2021), (AI-Thaqub & Algharabali, 2019). When there are ambiguous policy

intentions or un signalled actions by policymakers, it makes it difficult for investors to predict forthcoming economic scenarios, thereby influencing as set valuation and portfolio allocation. Such a behavioural reaction often manifests in the form of higher volatility in quite markets. Empirical evidence supports these theoretical results. For instance, Baker, Bloom, and Davis (2016) built an EPU index, showing that crisis peaks of this measure are associated with heightened stock market volatility, reduced investment, and reduced economic growth. The same outcomes in various markets have supported the strong relationship between EPU and financial market dynamics (Arouri, et al., 2016) (Gulen & Ion, 2016). Moreover, the globalization of financial markets has increased policy uncertainty spillovers worldwide. For example, policy uncertainty in U.S. monetary policy sends shockwaves through emerging and developed economies, boosting world financial volatility (Broguard & Detzel, 2015). These results affirm the critical importance of policy communication in promoting market stability. In sum, the casual link between economic policy uncertainty and stock market volatility is confirmed both theoretically and empirically. The understanding of this relationship is important to policymakers, investors, and researchers who seek to avoid or mitigate the impact of economic shocks and policy shocks. This has generated increasing interest among scholars and practitioners in understanding how financial markets react to policy-related uncertainty shocks. There have since been various empirical studies that have validated and expanded this model. Brogaard and Detzel (2015) determined that EPU shocks significantly increase equity market volatility and decrease expected returns, while (Antonakakis, et al., 2013) examined the spillover effects of EPU across international markets, with implications for the interconnectedness of global financial systems. Such studies highlight the importance of policy clarity to maintain stability and investor confidence in the market. However, the impact of EPU does not remain constant in all markets or market institutions. For instance, while U.S. EPU has a strong and direct impact on NYSE volatility, the UK EPU-FTSE volatility link appears to be more complex. Other studies suggest that UK markets may show resilience, or even adverse reactions, to domestic policy uncertainty, possibly due to structural drivers such as the international nature of FTSE-listed companies or investor desensitization to political noise in the aftermath of Brexit (Liu & Zhang, 2015).

Furthermore, the connection between EPU and other financial factors such as cryptocurrency prices and exchange rate volatility adds another dimension to the research. Previous research has established that Bitcoin, despite being a volatile asset, can serve as a hedge during periods of high EPU, reducing normal equity market volatility (Bouri et al., 2017). Additionally,

currency volatility, notably exchange rates like the USD/GBP, has been identified as a key source of stock market risk, especially for internationally exposed indices like the FTSE 100 (Hau & Rey, 2006). This study aims to examine the intricate nexus between stock market volatility and EPU by a comparison between the NYSE and FTSE through the application of GARCH-type models. By incorporating macroeconomic uncertainty measures, cryptocurrency performance, and currency returns, the study aims to identify how different markets respond to policy uncertainty and whether other assets can serve as a buffer to volatility. The findings also contribute to an expanding literature that emphasizes the importance of policy transparency, investor sentiment, and cross-market connectivity in driving financial stability.

Traditional financial markets such as the New York Stock Exchange (NYSE) and the FTSE 100, are sensitive to macroeconomic variables and show increased volatility under uncertainty The emerging trend of literature proves the important role of EPU indices in predicting stock market volatility. For instance, one research work by (Xiong, et al., 2018) investigates the interaction between the Shanghai and Shenzhen stock market returns and the EPU index based on the DCC-GARCH model. The empirical results prove that there is a positive interaction between economic policy and returns. In addition, (Wen, et al., 2019) explain the impacts of different uncertainties on China's macroeconomy both in the short and long runs under the NARDL model. They found VIX stock market volatility index having significant short-run effects on inflation, while EPU influenced inflation in China's macro economy in the long run.

The studies above show the critical role played by economic policy uncertainty in financial markets performance as well as economic fundamentals volatility. From this literature stream, the researcher investigates the impact of economic policy uncertainty on UK and US stock market volatility using the GARCH model. In the UK and US, political and fiscal events such as Brexit, trade talks, and fiscal politics have resulted in significant movements in EPU. These movements tend to manifest themselves in the form of volatility in the large stock indexes, including FTSE 100 and NYSE (Brogaard & Detzel, 2015). As the global financial systems become increasingly integrated, understanding the transmission mechanisms of EPU becomes vital for policymakers, investors, and researchers.

The first ever world decentralized digital money, Bitcoin, has transformed the world's financial reality since it came into being in 2009. Established by pseudonym Satoshi

Nakamoto, Bitcoin initiated itself as a peer-to-peer electronic cash system with a goal to exclude traditional financial intermediaries (Nakamoto, 2008). In the past decade, Bitcoin evolved from a niche technology project to a mainstream financial asset, welcoming institutional investors, hedge funds, and individual traders. Its meteoric price appreciation and hyper-volatility have caused researchers and practitioners to reflect on its performance in financial markets, particularly considering traditional macroeconomic fundamentals such as exchange rates. The USD/GBP exchange rate, which expresses the U.S. dollar in terms of the British pound, is one of the most liquid currency pairs in the world. It reflects the monetary policy, economic well-being, and geopolitical calm of two major economies. Exchange rate volatility impacts world trade, capital flows, and investment decisions, and central banks and financial institutions keep them in scrutiny. Only in recent years have scientists begun to research the interaction between Bitcoin and major currency pairs like USD/GBP to see if digital assets respond to or influence traditional currency markets. (Baur & Dimpfl, 2021) conducted a comprehensive analysis of Bitcoin's volatility and suitability as a medium of exchange and store of value. They found that the price volatility of Bitcoin is around ten times that of major exchange rate USD/GBP, which tarnishes its prospects as a stable currency. However, on the longer horizon, Bitcoin exhibits characteristics of a store of value, particularly during times of macroeconomic uncertainty. This duality has brought about debate on whether Bitcoin behaves more as a speculative commodity or a hedge against fiat currency volatility.

(B Y, et al., 2020) explained the impact of exchange rates, such as USD/GBP, on Bitcoin returns using time-series models. Their finding is that most of the currency pairs do not affect the returns of Bitcoin significantly at conventional confidence levels, but the exchange rate of USD/GBP has borderline importance at the 90% level. This can be explained by confluence macroeconomic drivers influencing Bitcoin and the USD/GBP currency pair, such as interest rate differentials, inflation expectations, and geopolitics. The study confirms the need for further research into the causalities of digital and fiat currencies. Moreover, the increasing integration of Bitcoin into the global financial system challenges its sensitivity to currency market trends. Fang et al. (2020) examined how global economic uncertainty affects the correlation of Bitcoin with traditional assets, including currencies. Based on their results, the action of Bitcoin is modified under conditions of high uncertainty, sometimes trending with risk assets and sometimes trending against them as a possible safe-haven asset. Briefly, the relationship between Bitcoin and the USD/GBP exchange rate is complex and evolving.

To the extent that Bitcoin remains exceedingly speculative and unpredictable, increasingly there is evidence that it is subject to macroeconomic cues in currency markets. Investors, policymakers, and scholars alike have a vested interest in understanding this dynamic if they wish to map the intersection of digital and traditional finance.

Both the United Kingdom and the United States have different economic systems and regulatory frameworks, making them two of the world's biggest and most influential financial markets in the world. For investors, policymakers, and researchers, it is essential to comprehend how EPU affects their stock market volatility. Additionally, the advent of cryptocurrencies such as Bitcoin, alongside fluctuating foreign exchange rate (USD/GBP), increases the complexity of volatility transmission dynamics. The decentralization of Bitcoin and its expanding usage have motivated scholars to investigate its potential as a hedge or source of risk during periods of uncertainty. Meanwhile, exchange rates serve as channels through which overseas uncertainty can spill into domestic markets and influence the volatility pattern.

1.2 Problem Statement

In the last decade, Economic Policy Uncertainty (EPU) has been a driving force in investor choices and market volatility across advanced and emerging financial markets. Shocks to EPU powered by geopolitics tensions, monetary policy shifts, trade wars, and fiscal uncertainty have been revealed to have significant effects on the behaviour of traditional financial markets such as equity indices and exchange rates (Baker, Bloom, & Davis, 2016). Finally, the emergence of alternative assets such as cryptocurrencies (Bitcoin), adds new dynamics to market reactions to policy uncertainty, but their interaction with EPU is poorly explored.

While earlier research has established the link between EPU and financial volatility for individual markets (Paster & Veronesi, 2021), & (Arouri, et al., 2016), comparatively few empirical studies have been conducted on the relative effect of UK and US EPU on a sample of traditional (NYSE, FTSE 100, USD/GBP exchange rate) and emerging markets (Bitcoin). The asymmetry of policy uncertainty shocks across different market environments, as well as the contrasts in their sensitivities, provide a void in the research. It is more important today, in an interdependent world financial system, with spillover and cross-market contagion assuming greater importance. Despite growing interest in the EPU–volatility nexus, the literature generally overlooks the role of emerging financial instruments and macroeconomic channels,

which may serve as intermediaries for this relationship. Bitcoin, for instance, has been brought into question as a hedge or safe-haven asset in periods of heightened uncertainty (Bouri, et al., 2017) (Paule-Vianez, et al., 2020). Similarly, exchange rate movements, particularly GBP/USD and USD/EUR, may transmit or moderate policy shocks across borders (Krol, 2014).

However, empirical analysis in need is still one that examines the role of Bitcoin and exchange rates simultaneously in moderating the explanation of the relationship between UK and US EPU and stock market volatility. This study seeks to bridge this gap through applying state-of-the-art econometric models in examining how these variables interact, thereby offering a fuller description of market behaviour under risk. This study aims to answer the following key research questions:

1. How does EPU in the UK and US affect stock market volatility in the FTSE 100 and NYSE indices?
2. To what extent do exchange rates and cryptocurrency(bitcoin) prices moderate the relationship between EPU and Stock market volatility?
3. Are there significant differences in these effects between the UK and UK markets?

1.3 Research Objectives

The main objective of this study is to examine the how economic policy uncertainty in the UK and US influence volatility in traditional and emerging financial markets, including exchange rates, cryptocurrencies, and major stock indices such as the NYSE and FTSE 100. The specific objectives are to:

1. To examine the impact of EPU indices (the UK and US) on the stock market volatility (FTSE100, NYSE).
2. To assess the moderating effects of exchange rate fluctuations (USD/GBP) and Cryptocurrency (Bitcoin) price movement on the relationship between EPU and stock market volatility.
3. To conduct a comparative analysis of the UK and US markets in terms of the magnitude and dynamics of these relationships.

1.4 Significance of the study

Understanding the impact of Economic Policy Uncertainty (EPU) on stock market volatility is crucial for policymakers, investors, and financial analysts, particularly in major economies like the United Kingdom (UK) and the United States (US). Given that financial markets are at the centre of economic development, and with the increasing degree of global interdependence complexity, it is essential to gain insight into the interaction between policy uncertainty and market behaviour.

Over the past few years, Economic Policy Uncertainty (EPU) has been a major influence of investor behaviour and market performance across a range of financial assets. Since international economies are increasingly getting integrated and synchronized with economic and political shocks, it is of greater scholarly and practical significance to understand how much EPU in pivotal economies like the United Kingdon (UK) and the United States (US) affects both traditional (exchange rates and stock indices) and emerging (Cryptocurrencies) financial markets. Past Studies have also established substantial correlations between EPU and stock market volatility. For example, (Baker, et al., 2016) built an EPU index and demonstrated that greater policy uncertainty raises volatility and decreases investment. Similarly, (Arouri, et al., 2016) and (Pastor & Veronesi, 2012) have indicated that uncertainty about future economic policies has a large effect on equity prices and market risk in advanced economies. However, a lot of this research has focused on either one nation or traditional markets alone, all too often neglecting how EPU can presumably impact non-traditional assets such as cryptocurrency or how policy shocks between nations transmit across borders. This study is significant as it adds to the examining how EPU in the UK and US affects a broad range of financial markets such as major stock indices (NYSE, FTSE 100), Exchange rates (GBP/USD), Cryptocurrency (Bitcoin). By doing so, it adopts a multi-asset perspective and explores whether EPU shocks are transmitted across markets and borders and thus affect global financial stability. Recent Research by (Bouri, et al., 2017) indicates that cryptocurrencies, while decentralized, are not immune to macroeconomic and policy shocks.

However, this research is significant for several reasons. First, it provides greater understanding of the impact of EPU on stock market volatility in two significant economies, with implications that can directly be applied by global investors. Second, by adding Bitcoin and exchange rates as moderating variables, the research reflects the dynamic nature of finance markets and the

rising prominence of digital currencies and currency dynamics. Third, the findings can inform policymaking by highlighting the indirect effect of uncertainty on market stability.

1.5 Scope and Limitations of the Study

The study focuses on daily data from January 2012 to December 2024 for the FTSE100 and NYSE indices, UK and US EPU indices, Bitcoin prices, and the USD/GBP exchange rate. While the daily frequency allows detailed volatility modelling, limitations include the interpolation of monthly EPU data to daily frequency and potential market-specific events not captured by the model. Additionally, the study focuses only on Bitcoin as the Cryptocurrency of interest and USD/GBP as the exchange rate, which may limit generalizability to other assets or currency pairs. It does not cover other countries of forms of uncertainty (e.g., geopolitical risk or climate uncertainty), and it assumes the accuracy of publicly available EPU data.

1.6 Structure of the Thesis

The reminder of this thesis is organized as follows:

Chapter 2: Literature Review-reviews the theoretical and empirical literature on EPU, volatility, exchange rates, and Cryptocurrency (Bitcoin).

Chapter 3: Methodology- describes the research design, data sources, and econometric models.

Chapter 4: Results and Analysis-presents the empirical findings and analysis.

Chapter 5: Discussion and Conclusion-summarizes key findings, discusses implications, acknowledges limitations, and suggest directions for future research.

CHAPTER II
LITERATURE REVIEW

In this section, the study focuses a comprehensive review of the theoretical as well as empirical literature related to Economic Policy Uncertainty (EPU) and its impact on financial market volatility. The review covers evidence from developed economies, particularly the United Kingdom, and the United States, and includes traditional financial markets, foreign exchange markets, and emerging digital assets such as cryptocurrencies. The chapter concludes by identifying research gaps that the current study aims to fill.

2.1 Theoretical Framework

The relationship between policy uncertainty and financial markets is grounded in several key theories:

2.2.1 Economic Policy Uncertainty (EPU) and Financial Markets

Economic policy uncertainty (EPU) refers to the uncertainty regarding government actions on fiscal, monetary, and regulatory policy. The concept gained prominence with the development of the EPU index by (Baker, Bloom, and Davis 2016), which proxies' uncertainty by the number of policy-related news articles in major newspapers. The index has since been widely applied in empirical finance and macroeconomics to study the effects of uncertainty on investment, consumption, and asset price.

2.2.2Economic Policy Uncertainty and Stock Market Volatility:

The seminal work of Baker, Bloom, and Davis (2016) introduced the Economic Policy Uncertainty Index, which captures uncertainty through media sentiment, expirations of tax codes, and disagreement among forecasts. Their study showed that there was a strong positive correlation between Us Stock market volatility and EPU. Other researchers have extended this relationship to other environments. For instance, (Arouri, et al., 2016) found that EPU significantly helps in explaining stock market volatility in the US and Europe, particularly in crisis periods. They also found that the magnitude and direction of EPU impacts vary by market and sector.

2.2.3 EPU and Exchange Rate Volatility:

Economic Policy Uncertainty (EPU) significantly affects exchange rate dynamics by increasing investor risk aversion and undermining confidence in monetary and fiscal stability. Empirical studies show that elevated EPU intensifies exchange market pressure, leading to increased exchange rate volatility under fixed and flexible regimes (Olanipekun, et al., 2019) (Chang, et al., 2022) detected asymmetric effects of EPU on exchange rates for G7 countries, with substantial policy changes causing disproportionate currency responses. (Balcilar, et al., 2016)also demonstrated that EPU differentials at the country level predict exchange rate return variance, especially in the tails of the distribution, and highlight the nonlinear and international aspect of this relationship. This supports the view that exchange rate volatility is not only influenced by domestic policy signals but also relative uncertainty across trading. Economic Policy Uncertainty (EPU) has become the central theme in financial economics, particularly in understanding its role in explaining asset price volatility. The EPU index was first introduced by Baker, Bloom and Davis (2016), which captures uncertainty from counts of newspaper stories containing economic policy-related terms and counts of expiring tax code and variance of forecasts. Their work established that elevated EPU levels are associated with investment, employment, and output declines, and increase stock market volatility significantly. This ground-breaking result has seen numerous empirical works on the relation between EPU and traditional and new financial instruments like Bitcoin and exchange rates.

Volatility, defined as the amount of price fluctuation in assets over time, is among the most significant financial risk measures. Volatility reflects the level of uncertainty in investor expectations, the sensitivity of markets to macroeconomic news, and the transmission of shocks across asset classes. In periods of higher EPU, investors are more uncertain about policy direction over time, generating more sensitive trading behaviour and greater price volatility. Brogaard and Detzel (2015) confirmed that EPU shocks are positively correlated with equity market volatility and negatively correlated with returns anticipated, as investors demand greater risk premia in uncertain environments. The relationship between EPU and exchange rate volatility has also been a focal point of much interest. Exchange rates react to macroeconomic fundamentals like interest rate differentials, trade balances, and capital flows factors determined by policy decisions. (Maydybura, et al., 2023) subjected G7 economies to the test and found that EPU has asymmetric effects on exchange rate volatility with heightened impacts during periods of high uncertainty. Their findings suggest that the responses of the exchange rate are neither symmetrical nor indifferent and may depend on

the origin and size of uncertainty. (Balcilar , et al., 2016) then demonstrated that EPU differentials between countries can predict exchange rate movements, particularly in the tails of the distribution, indicating that unexpected uncertainty occurrences have disproportionate effects on currency markets. (Rigobon, 2016) argued that exchange rate volatility reflects macroeconomic fundamentals and sentiment in financial markets, with policy uncertainty being a source of catalyst for reversals in capital flows and speculative actions. This perspective is consistent with the broader literature on financial contagion and risk transmission in which EPU serves as a channel of border-crossing volatility spillovers. For emerging markets, the impact of EPU on exchange rates could be even more powerful due to comparatively poor institution-building and higher sensitivity to external shocks.

2.2.4 EPU and Cryptocurrency Markets

Bitcoin as a decentralized digital currency brings a new perspective to the study of volatility and uncertainty. Firstly, as a peer-to-peer money system (Nakamoto, 2008), Bitcoin has evolved into an investment vehicle with high volatility and minimal ability to function as a medium of exchange. (Baur & Dimpfl, 2021)found that Bitcoin price volatility is nearly a tenth of that of major exchange rates, undermining its potential role as an intertemporal store of value. Despite this, Bitcoin has showed store-of-value behaviour on longer horizons, particularly during episodes of macroeconomic uncertainty. The nexus between EPU and Bitcoin has been examined in several studies. (Paule-Vianez, et al., 2020)investigated whether Bitcoin is a safe-haven asset when levels of EPU are higher. Using regression and quantile models, they confirmed that Bitcoin returns, and volatility increase in proportion to EPU, like gold. This means that Bitcoin may be used as a hedge against policy risk, attracting investors seeking haven from traditional financial systems. Their paper contradicts claims that Bitcoin is speculative and highlights its potential as a portfolio diversification instrument.

(Demir, et al., 2018) followed this up by examining the explanatory power of EPU on Bitcoin returns. The authors argued that higher policy uncertainty erodes faith in conventional currencies and financial institutions, hence boosting the appeal of decentralized ones like Bitcoin. The authors concluded that EPU can be used to forecast Bitcoin price movements, particularly in the short run, in favour of the asset's sensitivity to macroeconomic signals.

The volatility of Bitcoin has also been estimated using GARCH-type models, which are appropriately characterized as capturing clustering effects and time-varying volatility. (Katsiampa, 2017) estimated a GARCH model on Bitcoin returns and obtained strong evidence of volatility persistence, with the shocks taking time to decline. Bouri et al. (2017) used multivariate GARCH models to investigate the spillover effects between Bitcoin and traditional assets and concluded that Bitcoin weakly correlates with equities, bonds, and commodities. The low correlation contributes to its efficacy as a diversification tool, especially during economic hardship. Exchange rate contribution to the price of Bitcoin is another new area of research. (Fang, et al., 2019) examined the degree to which economic uncertainty globally affects the cross-correlation of Bitcoin with other classes of assets, including currencies. According to their findings, EPU has a positive effect on the cross-correlation between equities and Bitcoin but a negative effect on the correlation between bonds and Bitcoin. It seems that Bitcoin behaves like a risk asset even more under conditions of uncertainty, consistent with investor optimism and broader market trends.

In general, the literature always finds EPU to be a robust determinant of financial market volatility that has effects that cut across equities, exchange rates, and cryptocurrencies. While traditional assets like currencies and stocks respond to policy uncertainty in a predictable way, Bitcoin is more complex. Its elevated volatility, decentralized nature, and dynamic role as a hedge or refuge present it as a test and a challenge for investors and academics. Inclusion of EPU in volatility models has been shown to be successful in explaining short-term shocks and long-term persistence, yielding insights of tremendous usefulness regarding market behaviour during a period of uncertainty.

As financial markets grow more complex, appreciation of the interaction among EPU, Bitcoin, exchange rates, and volatility will continue to be the basis of risk management, policymaking, and investment strategy. Upcoming research will have to explore nonlinear impacts, regime changes, and cross-market spillovers to more fully expose the character of such interactions. Moreover, the growing dominance of digital assets and global policy harmonization underscore the urgency for more interconnected and responsive modelling paradigms. In contrast to conventional assets, cryptocurrencies are decentralized and tend to be considered speculative or "safe haven" investments during times of uncertainty. There is mixed evidence regarding the impact of EPU on crypto markets. (Cobert, et al., 2018)had argued that Bitcoin responds to shocks in EPU differently than stocks or fiat currencies, at

times as a hedge. (Bouri, et al., 2020) confirmed that, in times of high policy uncertainty, cryptocurrency markets are too volatile, reflecting a failure of hedging behaviour. These inconsistent findings suggest that there is still a call for examining how the EPU affects digital assets, particularly in relation to how traditional markets respond.

2.2.5 Efficient Market Hypothesis (EHM)

The efficient Market Hypothesis (EHM), introduced by (Fama, 1970), takes the position that all information available at any point is embedded in asset prices. The EMH states that new information such as economic policy change ought to be incorporated quickly and accurately into asset prices with no room for anticipated excess returns. But for EPU, the EMH can only be half-true. Policy uncertainty is politically driven and imprecise, and hence difficult to measure, and hence challenging for investors to process and price in full. This generates higher return volatility as investors redistribute their expectations under uncertainty. (Brogaard & Detzel , 2015) provide empirical evidence that EPU is highly priced in the US stock market, concurring with the assumption by EMH that markets respond to new information.

2.2.6 Real Options Theory:

Real Options Theory (Dixit & Pindyck, 1994) argues that given uncertainty, specifically irreversible investment choices, firms will delay or forgo investment to preserve flexibility. Higher economic policy uncertainty increases the value of waiting, resulting in decreased investment, employment, and income growth. From a financial perspective, this lag reduces expected firm cash flows, raising the risk premium that investors require. The market reaction to non-action by firms caused by uncertainty is greater volatility in stock prices. globalization (Paster & Veronesi, 2021), subsequently simulated policy uncertainty as the source of time-varying risk premia and concluded that higher uncertainty is linked to higher equity volatility and lower prices. (Gulen & Ion, 2016) found empirically that EPU reduces corporate investment and verified the real options hypothesis in US listed companies.

2.2.5 Behavioural Finance:

Behavioural finance (Barberis, et al., 1998) denies EMH assumptions by emphasizing that investor decision-making is typically guided by cognitive heuristics, emotions, and biases. During periods of high EPU, investors will show loss aversion, overreaction, and herding,

leading to excessive volatility and mispricing. When policy announcements are imprecise, investors may process the same information differently, or overweight recent negative outcomes, leading to unstable market responses. Behavioural models further suggest that uncertainty increases salience to policy news, enhancing market activity. Baker, Bloom, and Davis (2016) found that stock volatility spikes near policy-relevant events, consistent with behavioural models where investor sentiment responds more under uncertainty. (Bialkowski, et al., 2008) found increased volatility and abnormal returns during election times, attributing it to shifts in investor sentiment and not shifts in fundamental valuation.

2.2 Review of related Articles

In an increasing emerging market, economic policy uncertainty (EPU) has emerged as a key determinant of stock market volatility in many countries. This literature review synthesizes the findings of recent research that investigated the multifaceted relationship between EPU and the movements in stock markets, highlighting the various impacts across countries.

Economic policy uncertainty (EPU) has been recognized as a principal force behind stock market volatility in various countries, although primarily in emerging economies. This review synthesizes evidence from recent studies that examine the intricate relationship between EPU, and the behaviour of stock markets and refers to the heterogeneity effects across various country settings. For instance, Baker et al. (2016) found that more US economic policy uncertainty has adverse impacts on production, investment, and employment. Such reduction in real economic activity adversely affects expected cash flows and/or discount rates, leading to lower stock prices and returns (Phan, et al., 2018). Conversely, EPU can also impact stock prices via altering investors' expectations and raising the cost of equity capital for firms. Depending on whether policy-induced uncertainty raises the equity risk premium (Brogaard & Detzel, 2015) EPU may have a positive effect on stock prices. (Pastor & Veronesi, 2013) demonstrated political shocks to modify investor expectations that increase with the equity risk premium as well as stock return volatility. Under such circumstances, risk-averse investors will demand an excess in returns to compensate for the additional risk incurred in periods of higher uncertainty. Economic Policy uncertainty and Stock markets: Economic policy uncertainty (EPU) is also shown to have important effects on stock market performance. Severe levels of EPU increased risk premia, decrease investment activity, raise financial market volatility. (Dai, et al., 2021) ascertain that higher uncertainty, particularly during the period of

the COVID-19 pandemic, increases crash risk in world stock markets. Their work highlights the importance of including EPU in volatility modelling, given that it is one of the main drivers of stock market volatility.

Most empirical works have documented a negative effect of EPU on stock returns (Sum, 2013), (Antonakakis, et al., 2013), (Bhagat, et al., 2016) (Erdogan, et al., 2022), (Helseth, et al., 2020), (Triyaki & Tiryaki, 2019); (Uddin, et al., 2020) and a positive effect on the volatility of stock returns and a positive effect on the volatility of stock returns (Kundu & Paul, 2022);(Liu & Zhang, 2015), (Liu, et al., 2017); (Chiang, 2019). Despite this, there were inconsistent outcomes in certain empirical analyses. For instance, (Phan, et al., 2018) examined the explanatory power of EPU to forecast stock returns across 16 countries and concluded that findings were country specific. Certain authors also stated that the impact of EPU on stock returns differs depending on the financial condition ((Ozoguz, 2009); (Kundu & Paul, 2022). Kundu and Paul (2022) examined the effect of EPU on stock returns and volatility in G7 markets and found that EPU affected stock returns (and volatility) with a more negative effect in bear markets and a more positive effect in volatility in bear markets compared to bull markets. Similarly, (Li, et al., 2015) discovered that causal relationships between EPU and Chinese stock returns and Indian stock returns vary across time. Over the past decades, the relationship between economic policy uncertainty (EPU) and financial market behaviour has attracted more scholarly attention. Early work by (Baker, et al., 2016). (Gulen & Ion, 2016) established that elevated levels of policy uncertainty have a negative impact on investment decisions choices, reduces company valuation, and lead to increased volatility in the stock markets. Follow-up research has looked at the impact of EPU on specific asset classes, such as equities (Arouri, et al., 2016), exchange rate (Abid, 2020) and cryptocurrencies.

(Huong, et al., 2025) conducted a comprehensive analysis of Granger causality between domestic EPU indices, stock returns, and seven emerging markets' volatility, including Brazil, China, India, Mexico, Nigeria, Russia, and Singapore. The findings portray a multifaceted picture in which the effect of EPU on market operations is immensely diverse. For instance, in Russia, the role of policy changes in affecting market stability is prominent, and thus there is a need for robust policies to dampen volatility. Conversely, in Singapore and China, EPU is less reliable as a forecaster of stock market movement, suggesting local market conditions may dominate the influence of policy uncertainty. The study emphasizes the importance of

integrating measures of EPU into risk management, particularly in Mexico, where the effect of EPU is significant on stock volatility. (Mishra, et al., 2024) focused on the Indian capital market and employed the generalized autoregressive conditional heteroscedastic mixed data sampling (GARCH-MIDAS) approach to investigate the effect of EPU on market volatility. Their results show high positive correlation between the GEPU and Indian market volatility, suggesting the higher uncertainty in the world leads to higher local market volatility. Their study also decomposes GEPU into its components and finds directional changes in EPU to be satisfactory predictors of market volatility, particularly when both EPU and GEPU move together.

(Chowdhury & Abdullah, 2023) tested the response of cryptocurrency returns to EPU and stock market volatility, and macroeconomic factors. The findings from their study indicate that stock market volatility and EPU have positive impacts on the returns of cryptocurrencies, with cryptocurrencies being potential safe havens during economic crises. This occurs particularly during periods of increased market integration, with cryptocurrencies offering alternative investment prospects during instability in the conventional markets. The authors propose regulatory frameworks that enhance the stability and acceptability of cryptocurrencies, hence lowering irrational market movements. (Cai, et al., 2022)examined the impact of economic policy uncertainty shocks on Chinese stock market volatility and concluded that the shocks exert a 1-standard-deviation shock in EPU increases stock volatility by approximately 7% per year. What is noteworthy is that the study highlights the fact that fiscal and monetary policy uncertainty shocks are more impactful, with certain stock market indices, such as the SSE real estate index, proving more sensitive to such shocks. The findings emphasize policymakers' need to consider EPU's implications on market risk and stability. (Suleiman, et al., 2023) investigated how BRICS stock markets respond to global economic policy uncertainty through a panel GARCH model. The results indicate that global EPU significantly enhances market volatility across these nations, with a uniform response reported among them. The study also shows how the COVID-19 pandemic has exposed the adverse effects of EPU on prices and volatility in the market and suggests that BRICS countries can benefit from simultaneous policy responses to offset the spillover effect of economic uncertainties. (Asgharian, et al., 2018) investigate Granger causality among domestic measures of EPU and equity returns in seven nations, including Brazil, China, and India. Their work highlights that while EPU exerts a significant influence on stock volatility in most nations, the effect varies widely. For instance, in Mexico, EPU is a dominant driver of market volatility, but in Nigeria, the association is negligible, suggesting that other local or international risk factors are more applicable. This

pluralism underlines the importance of placing EPU in specific national contexts so that its implications for market stability can be understood.

Baker, Bloom, and Davis (2016) built an EPU index, showing that crisis peaks of this measure are associated with heightened stock market volatility, reduced investment, and reduced economic growth. The same outcomes in various markets have supported the strong relationship between EPU and financial market dynamics (Arouri, et al., 2016) (Gulen & Ion, 2016). Moreover, the globalization of financial markets has increased policy uncertainty spillovers worldwide. For example, policy uncertainty in U.S. monetary policy sends shockwaves through emerging and developed economies, boosting world financial volatility (Broguard & Detzel, 2015). These results affirm the critical importance of policy communication in promoting market stability. In sum, the casual link between economic policy uncertainty and stock market volatility is confirmed both theoretically and empirically. The understanding of this relationship is important to policymakers, investors, and researchers who seek to avoid or mitigate the impact of economic shocks and policy shocks. This has generated increasing interest among scholars and practitioners in understanding how financial markets react to policy-related uncertainty shocks. There have since been various empirical studies that have validated and expanded this model. Brogaard and Detzel (2015) determined that EPU shocks significantly increase equity market volatility and decrease expected returns, while (Antonakakis, et al., 2013) examined the spillover effects of EPU across international markets, with implications for the interconnectedness of global financial systems. Such studies highlight the importance of policy clarity to maintain stability and investor confidence in the market. However, the impact of EPU does not remain constant in all markets or market institutions. For instance, while U.S. EPU has a strong and direct impact on NYSE volatility, the UK EPU-FTSE volatility link appears to be more complex. Other studies suggest that UK markets may show resilience, or even adverse reactions, to domestic policy uncertainty, possibly due to structural drivers such as the international nature of FTSE-listed companies or investor desensitization to political noise in the aftermath of Brexit (Liu & Zhang, 2015).

Furthermore, the connection between EPU and other financial factors such as cryptocurrency prices and exchange rate volatility adds another dimension to the research. Previous research has established that Bitcoin, despite being a volatile asset, can serve as a hedge during periods of high EPU, reducing normal equity market volatility (Bouri et al., 2017). Additionally, currency volatility, notably exchange rates like the USD/GBP, has been identified as a key

source of stock market risk, especially for internationally exposed indices like the FTSE 100 (Hau & Rey, 2006). This study aims to examine the intricate nexus between stock market volatility and EPU by a comparison between the NYSE and FTSE through the application of GARCH-type models. By incorporating macroeconomic uncertainty measures, cryptocurrency performance, and currency returns, the study aims to identify how different markets respond to policy uncertainty and whether other assets can serve as a buffer to volatility. The findings also contribute to an expanding literature that emphasizes the importance of policy transparency, investor sentiment, and cross-market connectivity in driving financial stability.

(Mamman, et al., 2023) observes that the COVID-19 pandemic has amplified the negative impacts of EPU on market price and volatility and thus is possible that BRICS nations could be helped by coordinated policy intervention to counter the spillover impact of economic uncertainties. Lastly, (Gungor & Gungor, 2024) examined the dynamic relation between EPU and long-term stock market volatility in Central and Eastern European economies, namely the Czech Republic, Hungary, and Poland. Their findings show a significant lagged influence of EPU on long-run stock market volatility that confirms the assertion that uncertainty can persist for long durations to impact market stability. The paper contributes to the body of knowledge regarding the influence of EPU on financial markets in transition economies, where the significance of the implementation of targeted economic policies to manage volatility due to uncertainty is evident. Generally, the research demonstrates how policy uncertainty in the economy is at the epicentre of influencing stock market volatility across a broad spectrum of national environments. Although there are instances where the effects are robust in some emerging economies, others are sensitively unlike each other to EPU. The variability of sensitivity necessitates addressing this with policy and risk management interventions responsive to circumstances in the local market and in the global space. Experts and policymakers are encouraged to bear these considerations in mind when addressing the issue of economic uncertainty within financial markets.

The relationship between economic policy uncertainty (EPU) and stock market volatility has been of great interest during recent years, particularly during the context of globalization and financial markets of interdependent economies. This literature review synthesizes findings of diverse studies that look at whether EPU in a nation does have a significant impact on stock market volatility in another country, with developing nations and their relations with huge economies being the target. (Ghani & Ghani, 2024) perform a comprehensive examination of

the impact of EPU indices on stock market volatility in Pakistan and ascertain that the United States' EPU index is a significant determinant of equity market volatility in Pakistan. Their findings reveal that while predictive content from the UK's EPU indices is also useful, those of Pakistan and China are not revealing high predictive strengths over the period under consideration. This implies that economic policy uncertainties in major economies, particularly the US, can largely influence the stock markets of smaller, emerging economies such as Pakistan during periods of economic turmoil such as the COVID-19 pandemic. Similarly, a study (Hasan, et al., 2020) examines the interconnection of fear among world stock markets, using cross-country EPU. Their stocks market fear and EPU indices across for 13 nations evidence that EPU connectedness significantly impacts the dynamics of fear among stock markets. This interconnectedness holds even at short- and long-term horizons, highlighting the robustness of EPU's impact of market sentiment. The study shows that EPU in a particular nation will certainty affect stock market volatility in another because the fear that arises from uncertainty has no borders.

In a broader context, (Huang, et al., 2025) discuss the grabber causality of local EPU indices and stock returns and volatility in seven emerging economies: Brazil, China, and India. Their work shows that there exists a complex relationship whereby EPU has significant influence on stock volatility in some nations, such as Mexico, while the relationship is not so significant in others like China and Singapore. This heterogeneity underscores the need to mind country-specific factors in assessing the influence of EPU on stock market behaviour, suggesting that while EPU can have significant influences, the direction and magnitude of such effects may vary across markets. (Mishra, et al., 2023) contribute to this literature by exploring the influence of world EPU on the Indian Capital market. Their findings indicate that higher global EPU is correlated with increasing volatility in the Indian market, which is consistent with the idea that economic uncertainties of major economies can spill over to emerging economies. The study underscores the need to include EPU measures in risk management, particularly in settings where global uncertainties are on the rise. Aside from its direct effects on stock market volatility, (Wang, 2025)analyses the effects of financial flexibility in anticipation of perceived economic policy uncertainty. The study indicates that while financial flexibility enhances a firm's reputation, its positive effects are muted by higher levels of EPU. This indicates that companies that have uncertain environments can experience higher volatility both from the outside economic policies and even from their own financial policies, thereby complicating further the interplay between EPU and market forces. Lastly, (Bansal, et al., 2023) investigate

the microstructures of liquidity risk and volatility risk in the Indian stock market and find that there is a strong correlation between the two risks and factors of uncertainty. Their research reveals that liquidity and volatility relate to each other, with implications for return on assets. This link underscores the importance of learning how EPU can influence not only volatility but also liquidity, which can further impact market stability in general.

The responses of superpowers such as the USA and China to economic policy uncertainty (EPU) show significant differences between nations. (Ahmed, et al., 2025) demonstrate that the USA shows strong resistance to EPU shocks, yet its financial stress indices react strongly to both domestic and international geopolitical risks particularly when markets are bullish. The financial stress levels in China show diverse reactions to both global and mutual EPU which indicates multiple local and international elements that affect its economic environment. (Nusair & Olson, 2025) analyse how EPU affects G7 country unemployment rates differently through their research which shows positive EPU shocks create more significant and longer-lasting unemployment effects in Canada and the UK. In contrast. Negative shocks tend to affect countries like France, Germany, Italy, Japan, and the US more significantly. This suggest that the labour market responses to EPU are not country-specific but also contingent upon the prevailing economic conditions, underscoring the necessity for tailored policy interventions. Overall, these studies illustrate the multifaceted nature of EPU effects, emphasizing the importance of understanding country-specific dynamics in economic policymaking. Similarly, (Li, et al., 2019) analyse China's EPU indexes and G7 indexes and find a significantly negative impact on subsequent stock market volatility. In their work, they employ principal component analysis to construct a new diffusion index that improves forecast accuracy in volatility terms for the Chinese stock market. The study suggests that EPU not only impacts market stability but is also informative for investors to navigate risky economic environments. (Su, et al., 2025) also explore global financial market interconnectedness and use their work to examine the volatility spillovers between world stock market indices during the COVID-19 era. Their empirical estimates indicate that the pandemic has increased volatility spillovers and the effect that EPU has on these mechanisms. The article emphasizes the fact that the interconnections between global stock markets vary with time horizons and market conditions and therefore provide critical information to policymakers and investors in developing their strategies in response to heightened uncertainty. For China, (Yu & Xiao, 2024)examine the stock market's contribution to economic growth, noting the need for resilient investment strategies in times of uncertainty. Through a valuation model tailored to the Chinese market, the authors endeavour

to allow investors to make rational decisions based on intrinsic stock values. The effort underscores the significance of understanding how EPU affects market processes in a rapidly evolving economic environment.

(Ma, et al., 2022) suggest an extension of the GARCH-MIDAS model to account for microstructure noise in mixed frequency data, with the argument that macroeconomic indicators, like the Chinese Economic Policy Uncertainty (CEPU) index, must be included. They find CEPU to have considerable impacts on the volatility of the stock market, with the implication that higher uncertainty can lead to greater fluctuation in stock prices. This confirms the importance for investors to factor in EPU when assessing market risks. More broadly, (Le & Do, 2022)examine the interaction between crude oil market structures and the development of Asian countries' stock markets. They discover that countries with greater export potential experience favourable growth in their stock markets, while larger importing nations are impacted negatively. Although they are primarily focused on oil prices, their research implicitly suggests that external economic uncertainties, such as those generated by oil market volatility, may enhance stock market volatility, which further complicates the effect of EPU. (Atiq & Farhan, 2018)particularly examine the interaction between oil prices and stock returns in Pakistan, finding a negative relationship between the two variables. Since Pakistan is an oil-importing nation, changes in oil prices have a significant impact on the cost of production, which reflects on the performance of the stock market. This interaction accentuates the interlinkages between different economic variables, including EPU, which can exacerbate the volatility that is witnessed across stock markets, especially in emerging economies. (Abbas, et al., 2016) contribute to this debate by examining the impact of stock market development on economic growth for nine European developed countries. They find that macroeconomic determinants, including stock market development and inflation, significantly influence economic growth. While they do not specifically target EPU in their study, the implication of their results is that economic uncertainties, quantified by EPU, would stifle the growth of stock markets and, by implication, economic growth. This relationship underscores the importance of investigating how EPU can create an atmosphere of volatility that affects market performance.

The resilience of different stock indices to uncertainty is also challenged by (Havidz, et al., 2024) who contrast the Islamic and conventional stock market indices in five Asian countries. The findings indicate that while the Islamic stock index has achieved a full recovery from

COVID-19 uncertainties, the conventional indices are still being affected by factors such as vaccine rollout and sentiment. This study suggests that Islamic stocks may have a diversification benefit in situations of high uncertainty, as it highlights the differential impact of EPU on various market segments. (Farroukh, et al., 2024)examine systematic risk from cryptocurrencies and discover that market shocks in cryptocurrency markets spill over to traditional financial markets, thereby affecting overall markets stability. Their proof shows that while cryptocurrencies gain strength, interdependency between digital currencies and conventional monetary systems becomes more paramount, and it calls for robust regulatory systems to help mitigate potential dangers posed by EPU. In the cryptocurrency universe, (Osman, et al., 2025) examine the link between investors' sentiment and bitcoin prices based on the uncertainty Index and the misery index of bitcoin. Their results indicate that investor sentiment, particularly in extreme conditions of EPU, plays a significant role in the price behaviour of Bitcoin. The study sets up short- and long-run relationships and implies that variations in traditional market sentiment have the potential to induce high volatility in cryptocurrencies markets, thus emphasizing the interconnected nature of these asset classes. (Li, et al., 2021)arrives at this discovery through the study of bitcoin, stock, and gold volatility correlation under the leadership of EPU. According to their wavelet analysis, the assets have positive correlation during periods of elevated economic policy uncertainty, showing that uncertainty might amplify volatility in other financial assets. These findings emphasize the importance of understanding how EPU influences not only cryptocurrencies but also traditional assets like stocks, and gold, which are usually treated as a safe asset during turmoil. (Aftab, et al., 2024) also discuss the impact of EPU on exchange rate volatility based on a GARCH (1,1) model to analyse the influence of economic and monetary policy uncertainty. Their results indicate that EPU has a robust positive effect on exchange rate volatility, and uncertainty in the global financial markets also plays an important role. Astonishingly, they exhibit that US monetary policy uncertainty has an adverse effect on exchange rate volatility, suggesting there is a complex relationship among different uncertainties. All these works demonstrate that EPU significantly affects volatility in emerging financial markets, affecting both exchange rates and cryptocurrencies. As the financial landscape continues to evolve, appreciation for these relationships will be essential in crafting effective risk management strategies and regulatory policies that can keep up with challenges posed by increasing digital asset integration into the global financial landscapes.

(Su , et al., 2024) studied spillovers of volatility among 16 international stock indices during the COVID-19 pandemic. Using the Diebold-Yilmaz spillover index and wavelet analysis, they found that EPU significantly facilitates cross-border transmission of volatility, particularly in times of crisis. Similarly, (Yu , et al., 2021) employed a GARCH-MIDAS model to measure the impact of global EPU on stock volatility in nine emerging markets. In their findings, it was determined that EPU significantly affects long-run volatility drivers and that EPU models perform better than standard GARCH models in forecasting market behaviour. (Abid & Rault, 2021) utilized panel VAR models to demonstrate that U.S. EPU has a larger impact on exchange rate volatility in emerging markets than domestic EPU. Their impulse response indicated that uncertainty in the world leads to currency devaluation and increased volatility. (Ahron & Ali, 2025)used quantile regression techniques and found that spillovers of EPU are strongest during periods of extreme uncertainty and have a disproportionate impact on currencies of developing economies. (Paule-Vianez, et al., 2020) analysed whether Bitcoin acts as a safe-haven asset when there is high EPU. Using quantile regression and volatility clustering, they found that the returns and volatility increase at high EPU for Bitcoin as it does for traditional hedging assets like gold. (Wang, et al., 2023) probed short- and long-term interactions between Bitcoin and macroeconomic variables, including EPU, CPI, and money supply. Their Granger causality test using the wavelet confirmed two-way volatility transmission between Bitcoin and EPU, with inflation and monetary uncertainty supplementing the demand for Bitcoin as a hedge. There has been a recent emergence of literature that has examined the relationship between EPU and Bitcoin. (Demir, et al., 2018)provide empirical findings that changes in policy uncertainty could be used to forecast Bitcoin returns, meaning that investors increasingly rely on Bitcoin as a hedge in times of unfavourable macroeconomic results. Similarly, (Corbet, et al., 2020)demonstrate that during the period of the COVID-19 pandemic, Bitcoin, as well as gold, acted as a safe-haven asset, confirming that it is an alternative investment during times of maximum uncertainty. Volatility spillovers between asset classes have been extensively documented in the financial econometric literature. (Ampountolas, 2023) using a two stage DCC-EGARCH model confirms significant bidirectional volatility as well as return transmission between the equity markets and cryptocurrency. His findings show that Bitcoin and traditional stock indices both exhibit solo-memory volatility processes, making GARCH-type models suitable to explain such processes. The results confirm the application of multivariate volatility models in examining the spillovers among stock markets, exchange rates, and cryptocurrencies.

Generally, literature makes three significant contributions. First, EPU has a fundamental role in explaining volatility in the stock market and return fluctuations. Secondly, bitcoin exhibits safe-haven and hedging characteristics during periods of uncertainty, but in a subdued form relative to traditional financial drivers. Third, volatility spills over between markets, with long-horizon spillovers linking equity indices, exchange rates, and cryptocurrencies. These findings beget the theoretical impetus of this research that applies a multivariate GARCH model to investigate the cross-dynamics among NYSE and FTSE 100 returns due to Bitcoin, Exchange rates, and economic policy uncertainty.

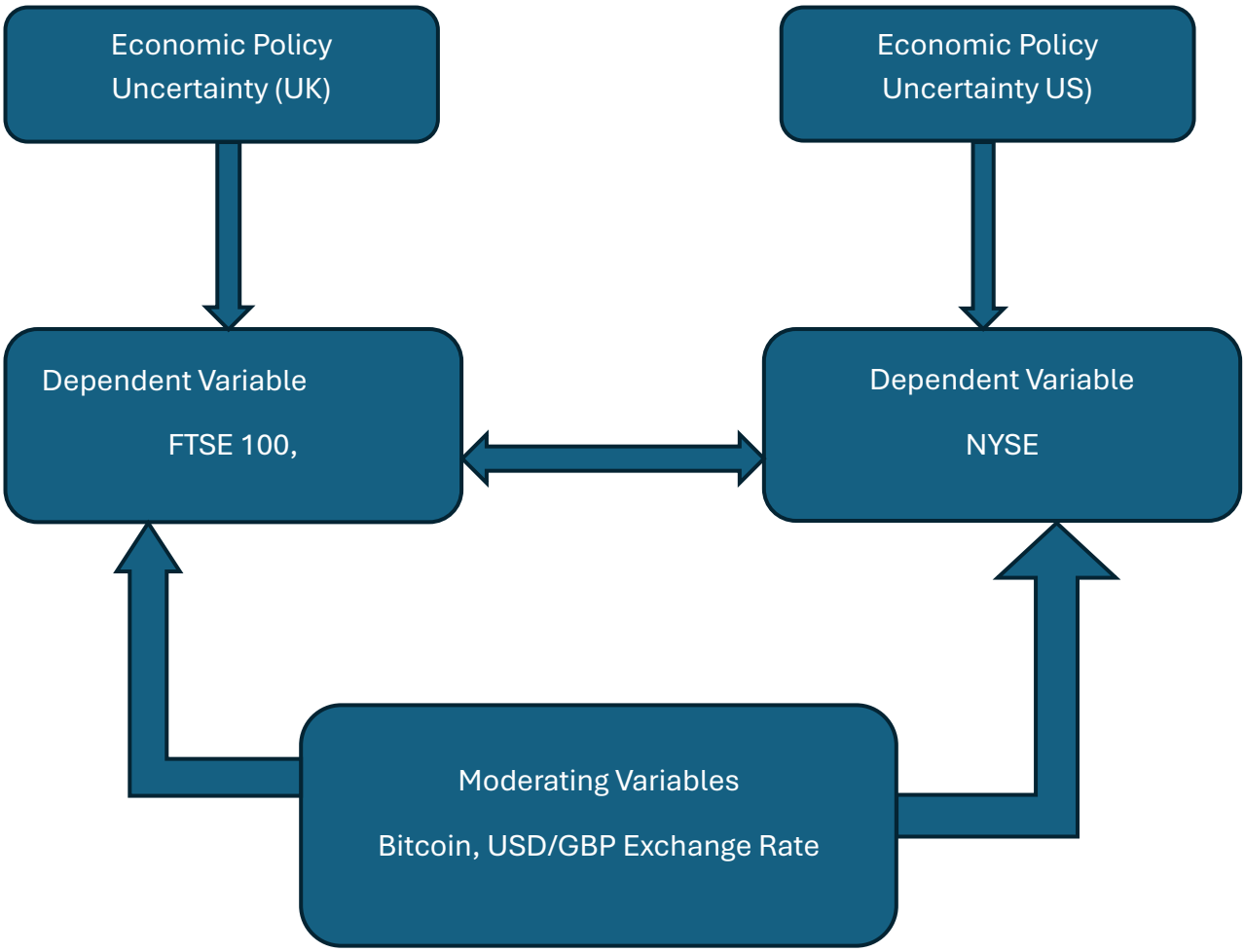
The responses of superpowers such as the USA and China to economic policy uncertainty (EPU) show significant differences between nations. (Ahmed , et al., 2025) demonstrate that the USA shows strong resistance to EPU shocks, yet its financial stress indices react strongly to both domestic and international geopolitical risks particularly when markets are bullish. The financial stress levels in China show diverse reactions to both global and mutual EPU which indicates multiple local and international elements that affect its economic environment. (Nusair & Olson, 2025) analyse how EPU affects G7 country unemployment rates differently through their research which shows positive EPU shocks create more significant and longer-lasting unemployment effects in Canada and the UK.

Several studies have indicated a strong relationship between US EPU and market volatility in both the US and foreign markets. (Asgharian, et al., 2016) employed a MIDAS regression approach and confirmed that US EPU significantly affects long-run volatility in the NYSE and FTSE100. Their results suggest that policy uncertainty in the US has global spillover effects, which reflect the US economy's central role in world finance. (Francis & Jiun, 2024) conducted a systematic review of 42 studies and concluded that US EPU is a robust predictor of market volatility, particularly in developed economies. They pointed out that the US index tends to exert broader influence compared to domestic EPU indices in other markets. While UK EPU impacts a geographically more concentrated region, it remains the foremost driver of domestic market volatility. (Youssef, et al., 2021)examined dynamic connectedness among global stock markets in the COVID-19 pandemic. EPU heightened volatility and spillovers, especially for European stocks and the UK. The influence of EPU varied in magnitude depending on prevailing circumstances of the economy, highlighting context in modelling volatility.

More recent finance literature has also shown the rise of currency markets and alternative assets in explaining the influence of economic policy uncertainty on stock market volatility. Being the dominant cryptocurrency, Bitcoin has been examined both as a potential candidate to hedge against and as a further source of volatility transmission. Studies such as Bouri et al. (2017) and Corbet et al. (2018) show that whether Bitcoin serves as a buffer or amplifier of stock market shocks, based on market conditions and investors' sentiment, under conditions of uncertainty, or otherwise. Meanwhile, exchange rates, in this instance, the GBP/USD pair, with respect to the economic relationship between the UK and the US, are fundamental channels through which policy uncertainty abroad affects financial markets at home. Antonakakis et al. (2019) highlight that exchange rate volatility not only reflects but also magnifies the cross-border transmission of uncertainty shocks. The interaction between these financial variables and EPU can thereby soften the size and duration of volatility shocks in equity markets. Nevertheless, there is limited empirical evidence from studies specifically testing Bitcoin and exchange rates as moderators of the EPU-volatility nexus. The research closes the gap by applying a GARCH model approach to investigate whether economic policy uncertainty can be impacted by Bitcoin returns and GBP/USD exchange rate dynamics in the sensitivity of US and UK stock markets.

2.3 Conceptual Framework

Conceptual framework gives a visual presentation for further research. In this research, the researcher used Economic Policy Uncertainty (EPU) of the UK and US as an independent variable whereas NYSE, FTSE 100 as a dependent variables and Cryptocurrency (Bitcoin), and Exchange rate are moderating variables. Theoretical framework of the study relies on economic policy uncertainty and stock market volatility nexus based on theories from the Efficient Market Hypothesis (Fama, 1970), Real Options Theory (Dixit & Pindyck, 1994), and Behavioural Finance (Barberis et al., 1998). The model specifies direct and indirect relationships of global and domestic EPU with market volatility, moderated or mediated by world factors and investor sentiment. The model also controls for financial market spillovers between the US and UK financial markets.



2.3 Conceptual Framework

Figure 1: Conceptual Framework

Explanation of Relationships:

1. Direct Effects:
   UK EPU UK Volatility
   US EPU US Volatility

2. Moderating Role:
   Bitcoin (USD) and USD/GBP exchange rate may amplify the relationship between EPU and Volatility

From the structure the following hypotheses was formulated:

- **H1**: Higher EPU leads to increased stock market volatility.
- **H2**: The GBP/USD exchange rate moderates the relationship between EPU and volatility.
- **H3**: Bitcoin prices moderate the relationship between EPU and volatility.

- **H4**: The effects of EPU and its moderators on volatility differ significantly between the UK and US.

Significance is evaluated at the 1%, 5%, and 10% levels using robust standard errors where appropriate.

Explanation of Variables

1. Economic Policy Uncertainty (EPU)- Independent Variable

Economic policy uncertainty (EPU) has been a dominant trend in financial economics, particularly in measuring determinants of stock market volatility. Baker, Bloom, and Davis (2016) developed the EPU index capturing uncertainty in terms of media-based indicators, expirations of tax code provisions, and forecast dispersion. Empirical research suggests that higher EPU induces higher market volatility, delayed investment, and lower economic growth when the political or fiscal environment is uncertain. Pastor and Veronesi (2012) extended this model by introducing policy uncertainty into asset price models. They demonstrated that uncertainty about future government policy increases risk premiums and decreases stock prices, particularly in regulated and taxable sectors. These works collectively emphasize the market destabilizing effects of EPU.

2. Stock Market Volatility – Dependent Variable

Stock market volatility is the size of variation in stock prices over time and typically estimated through the conditional return variance using models like GARCH (Generalized Autoregressive Conditional Heteroskedasticity) or realized high frequency-based volatility. Volatility is a direct risk measure in financial markets. Greater uncertainty, such as from EPU shocks, can lead to more volatility since investors rearrange expectations and portfolios according to uncertain or unexpected policy events (Pastor & Veronesi, 2012). Pastor and Veronesi (2012) conceptualized policy uncertainty as a source of risk premium, aligning it directly with volatility fluctuations. (Kang & Ratti, 2015) incorporated EPU into GARCH models and identified significant effects on US and Chinese stock market volatility**.**

3. Exchange rate as a moderator: Exchange rate affects investor sentiment, trade competitiveness, and capital flows, which in turn shape how EPU translates into market volatility. Currency depreciation during high EPU may increase volatility for import-heavy sectors due to rising costs but reduce volatility for exporters benefiting from favourable exchange rates. Stable exchange rates can attract foreign investment even in uncertain policy

environments, thereby buffering volatility**.** Exchange rate fluctuations are shown to interact with macroeconomic uncertainty to influence asset pricing and volatility (Wu, et al., 2022) (Shahzad, et al., 2017). (Luo & Zhang, 2020)Highlight that EPU combined with currency instability can exacerbate market swings.

4. Bitcoin as a Moderator: Bitcoin introduces a unique dynamic due to its decentralized nature and perception as a safe-haven asset. During the periods of high EPU, investors may shift capital into bitcoin, diversifying risk and reducing pressure on traditional markets. However, bitcoin's own volatility and sensitivity to regulatory uncertainty can sometimes amplify market instability. (Vianez, et al., 2020)found that Bitcoin behaves similarly to gold during uncertain times, with rising returns and volatility, suggesting its role as a safe-haven assets. (Chowdhury & Abdullah, 2023)show that cryptocurrencies returns are positively influenced by EPU and stock market volatility, reinforcing Bitcoin's moderating role.

5. Cross-Country EPU Spillovers (Independent Variables):

This variable captures the effect of EPU in one country (e.g., US) on another country's (e.g., UK) stock market volatility. It reflects the interdependence of global financial markets and the international transmission of policy shocks. With global integration and finance, volatility in big economies like the US tends to spill over to other economies, with a certain effect on volatility. However, the size and nature of such spillovers may differ based on economic links, market structure, and policy condition (Antonakakis, et al., 2013). Antonakakis, Chatziantoniou, and Filis confirmed spillovers of volatility from US EPU to European economies with emphasis on the global spillover of US policy uncertainty. (Ghirelli, et al., 2019) found significant effects of US EPU on UK market volatility, especially during global policy-relevant events.

2.4 Research Gap

Over the past few years, Economic Policy Uncertainty (EPU) has been a major influence of investor behaviour and market performance across a range of financial assets. Since international economies are increasingly getting integrated and synchronized with economic and political shocks, it is of greater scholarly and practical significance to understand how much EPU in pivotal economies like the United Kingdon (UK) and the United States (US) affects both traditional (exchange rates and stock indices) and emerging (Cryptocurrencies)

financial markets. Past Studies have also established substantial correlations between EPU and stock market volatility. For example, (Baker, et al., 2016) built an EPU index and demonstrated that greater policy uncertainty raises volatility and decreases investment. Similarly, (Arouri, et al., 2016) and (Pastor & Veronesi, 2012) have indicated that uncertainty about future economic policies has a large effect on equity prices and market risk in advanced economies. However, a lot of this research has focused on either one nation or traditional markets alone, all too often neglecting how EPU can presumably impact non-traditional assets such as cryptocurrency or how policy shocks between nations transmit across borders. This study is significant as it adds to the examining how EPU in the UK and US affects a broad range of financial markets such as major stock indices (NYSE, FTSE 100), Exchange rates (GBP/USD), Cryptocurrency (Bitcoin). By doing so, it adopts a multi-asset perspective and explores whether EPU shocks are transmitted across markets and borders and thus affect global financial stability. Recent Research by (Bouri, et al., 2017) indicates that cryptocurrencies, while decentralized, are not immune to macroeconomic and policy shocks. In addition, Bacillar et al. (2017) found EPU leads to volatility spillovers in global currency markets. Comparative studies that investigate differential impacts of EPU originating from both the UK and US are, nevertheless, scant. Similarly, while exchange rates, and particularly the GBP/USD exchange rate, have been recognized as the channels of cross-country policy uncertainty spillovers (Antonakakis et al., 2019), their moderating effect on the responsiveness of stock markets to EPU is under researched. Also, cross-sectional comparative research assessing the magnitude to which Bitcoin and exchange rates in combination moderate the impact of EPU on stock market volatility in the UK and US is limited. Closing this gap, this study applies a GARCH model specification to investigate and compare these moderation effects, expanding existing knowledge on how global linkages and financial innovations influence market responses to economic policy uncertainty.

Chapter III
Research Methodology

3.1 Introduction

This chapter discusses the methodological framework used in investigating the impact of Economic Policy Uncertainty (EPU) on stock market volatility for the United Kingdom (FTSE100) and the United States (NYSE). The study also examines how exchange rate fluctuation (USD/GBP) and cryptocurrency value (Bitcoin) moderate this impact. There is a comparative examination of the US and UK markets in analysing the dynamics and magnitude of these impacts in the two economies.

To capture the volatility clustering characteristic of financial markets, the Generalized Autoregressive Conditional Heteroskedasticity (GARCH) is used. The use of a GARCH (1,1) specification is motivated by the fact that it provides a parsimonious and effective means of capturing volatility clustering. The models are separately estimated for the UK and US to allow for meaningful comparison.

3.2 Research Design

This study employs a quantitative, explanatory, research design to explore the casual relationships and quantify the impact of Economic Policy Uncertainty (EPU) on financial market volatility. The analysis further investigates whether Bitcoin prices and the USD/GBP exchange rate moderate the relationship between EPU and stock market volatility. The study is represented traditional financial markets such as the FTSE 100 (UK) and NYSE(US) indices. To analysing the dynamic nature of financial time series and volatility, the study employs the Generalized Autoregressive Conditional Heteroskedasticity (GARCH) modelling framework.

3.3 Sample and Data Collection Procedure

The researcher investigates the relationship between Economic Policy Uncertainty (EPU) and stock market volatility in two major economies: the United Kingdom (UK) and the United States (US). The dataset comprises daily time series data over the period of January 2012 to December 2024, covering Stock market returns, Economic Policy Uncertainty (EPU) indices and Bitcoin prices (closing prices) and Exchange Rate (USD/GBP) daily spot rate. The primary

dependent variables are the daily returns of the FTSE 100 (UK) and NYSE Composite Index (US). The key independent variables include the Economic policy uncertainty indices for the UK and US, obtained from the Baker, Bloom, and Davis EPU database. The researcher introduced USD/GBP exchange rate and the Daily closing price of Bitcoin (BTC) as a potential moderator. The researcher used secondary data's which are collected from related literature review, journal articles, different websites.

3.4 Data Sources and Variables

Variable	Frequency	Type	Source
Economic Policy Uncertainty (UK EPU Index)	Daily	Independent variable	https://www.policyuncertainty.com
Economic Policy Uncertainty (US EPU Index))	Daily	Independent Variable	https://www.policyuncertainty.com
FTSE 100 Volatility (UK)	Daily	Dependent	Yahoo Finance/ Bloomberg/Investing.com
NYSE (US)	Daily	Dependent	Yahoo Finance/Bloomberg/Investing.com
Exchange Rate (GBP/USD exchange rate	Daily	Moderating Variable	FRED/Investing.com
Cryptocurrency (Bitcoin Price)	Daily	Moderating Variable	Coincodex.com

(Table 2:Data Sources and Variables

3.4.1 Variable Construction

Stock Returns:

Daily returns are the first difference of the natural logarithm of the stock index prices:

$$R_t = ln(P_t) - ln(P_{t-1})$$

Where,

Pt= Stock Price (FTSE 100, NYSE)

T= time

Rt= Return (FTSE 100, NYSE)

Interaction Terms:

Interaction terms are created to test for moderating effects:

EPU × EX = to test how exchange rate volatility moderates the EPU–volatility relationship.

EPU × BTC = to test how Bitcoin price volatility moderates the EPU–volatility relationship.

3.4.2 Preliminary Tests

Before estimating the GARCH models, the following preliminary tests are conducted:
Stationarity Tests: The Augmented Dickey-Fuller (ADF) test is used to test for unit roots in all the series. Level non-stationary variables are transformed (differenced or logged) to become stationary. Descriptive Statistics & Correlation Analysis: Summary statistics and correlation matrices are computed to provide an understanding of the distribution and intercorrelation of variables.

3.5 Econometric Model Specification

To empirically investigate the relationship between Economic Policy Uncertainty (EPU) and financial market volatility across different asset classes (stock indices, exchange rate, and cryptocurrencies (Bitcoin). This study employs the following econometric approaches.

3.5.1 GARCH Models Volatility Estimations

To meet the objectives of the study, the researcher used the Generalized Autoregressive Conditional Heteroskedasticity (GARCH 1,1) extended by (Bollerslev, 1986) models for the UK and US stock markets are established. The models add the EPU index to the variance equation to test its influence on volatility and incorporate interaction terms to capture moderating effects. The model consists of a mean equation for returns and a variance equation that captures conditional volatility, incorporating exogenous explanatory variables

Mean Equation

The mean equation for daily stock return is specified as :

$$r_t = \mu + \epsilon_t, \epsilon_t \sim N(0, h_t)$$

Where,

Rt: Daily log return of the stock index in country I at time t

μ: Mean return (constant)

ϵ_t: Residual return shock

h_t: Conditional variance

Variance Equation: GARCH (1,1)

The conditional variance equation is specified as follows:

$$VOL_{it} = \alpha + \beta_1 EPU_{it} + \beta_2 BTC_{it} + \beta_3 EX_{it} + \beta_4 (EPU_{it} \times BTC_{it}) + \beta_5 (EPU_{it} \times EX_{it}) + \epsilon_{it}$$

Where,

VOL_{it}: Stock market Volatility (NYSE, FTSE 100) at time t

α: Constant term (intercept)

EPU_{it}: Daily EPU index for each country

BTC_{it}: Daily Bitcoin price

$EPU_{it} \times BTC_{it}$, $EPU_{it} \times EX_{it}$: Interaction terms

β_1: Effect of EPU on volatility.

β_4: Moderation effect of Bitcoin on the EPU-volatility relationship.

β_5: Moderation effect of Exchange rate on the EPU-volatility relationship.

To analyse the different economic structure and market dynamics, each model is estimated separately for the US and the UK.

3.6 Software and Tools

To conduct the empirical analysis in this study, the researcher used a combination of specialized statistical and econometric software tools. Which were chosen for their robustness, reliability, and compatibility with time series modelling, especially for

volatility analysis by using GARCH models. The main software and tools used in this research are described as below:

1. **STATA 18**

   Stata was the primary software used for data processing, model estimation, and statistical analysis. These tools are more useful especially for time series capabilities and integrated support for various GARCH family models, which is more suitable for the empirical objectives of this study. In this research, following key functions and features in STATA were utilized:

   Arch command: to estimate GARCH (1,1) model with ARCH and GARCH components and to incorporate exogenous factors like EPU, Bitcoin returns, and exchange rate returns. Time-series data management features such as tsset, gen, and lags are used for preparing the dataset and dealing with stationarity. Model diagnostics and information criteria (AIC, BIC, LL were used to check model fit and select the best-fit specification. Export options were used to combine results for tables and interpretation. Lexical syntax of Stata and its built-in help system also facilitated good coding, error checking, and reproducibility of the analysis.

2. **Microsoft Excel**

   Excel was used in the preliminary phases of data cleaning and retrieval. It helped in easily performing: Preliminary data moulding, especially working with raw data obtained elsewhere such as .csv, .xlsx, or wed data. Date synchronization and variable conversion (calculating returns from price). Visual examination of trends and early descriptive statistics before formal analysis on Stat. while not used for econometric modelling, Excel filled a core support role to verify data consistency and organization.

3. **Reference and Documentation Tools:**

   Google Scholar, JSTOR, and ScienceDirect were the primary platforms used for literature review and sourcing peer-reviewed articles relevant to economic policy uncertainty and volatility modelling.

4. **Additional Tools**

For typesetting and formatting parts of the final report and ensuring proper mathematical notation and structure.

3.7 Ethical Considerations

This study relies solely on publicly available secondary data from reputable sources. No primary data collection or human participation is involved, ensuring full compliance with ethical research standards.

Chapter IV
Results and Discussion

4.1 Introduction

This chapter presents the empirical results of the study on the relationship between Economic Policy Uncertainty (EPU) of the UK and the US and stock market volatility (FTSE 100 and NYSE). The aim of the study is to determine whether the EPU significantly affects the volatility with the moderating variables of Bitcoin (USD) and USD/GBP exchange rate. The researcher used a GARCH (1,1) model, this chapter outlines the results of the regression analysis, interprets the implications, and compares them with existing literature. All models were estimated using Stata 18.5.

4.2 Descriptive Statistics

Table 4.1 presents the summary statistics for all variables included in the analysis, based on 4,749 daily observations. These statistics provide initial insights into the distribution and variability of the data used in the GARCH modelling.

Table 4.1 : Summary Statistics

(Sources: STATA 18)

Variable	Mean	SD	Min	Max
FTSE 100_Returns (%)	.0073591	.7251397	-11.51243	8.666806
NYSE Return (%)	.0192713	.7634588	-10.52382	9.563742
UK EPU Index	288.1372	207.4459	0	2660.72
US EPU Index	125.3888	93.42798	3.32	1026.38
USD/GBP Exchange	.7298443	.0734034	.5826	.9355
Bitcoin Price (USD)	15525.58	21167.19	4.222	106052
FTSE Volatility	.6938837	.3479989	.5159425	8.929662
NYSE Volatility	.6714823	.3478658	.3640421	4.84169
Observations	4749			

The descriptive statistics provide a summary of the most important financial and economic variables used in the study based on 4,749 individual daily observations. The FTSE 100 and NYSE stock market returns are close to zero (0.007 and 0.019, respectively), which is in accordance with the stylized fact that the daily returns tend to even out over the long term. However, both indices also possess relatively high standard deviations (0.725 for the FTSE 100 and 0.763 for the NYSE), which capture excessive day-to-day fluctuations. The extensive ranges of -11.51% to 8.67% for the FTSE 100 and -10.52% to 9.56% for the NYSE once again bear witness to the fact of rare outlier market movements characteristic of global equity markets during times of turbulence.

The UK and US Economic Policy Uncertainty (EPU) indices are significantly different in magnitude and variability. The UK EPU has a higher mean (288.14) and greater dispersion (SD = 207.45) compared to the US EPU (mean = 125.39; SD = 93.43). This suggests that there was more uncertainty in the UK during the sample period, which would imply that it was hit by events such as Brexit and domestic country political occurrences. Both indices contain extreme values (UK max = 2660.72; US max = 1026.38) that reflect heightened uncertainty in response to massive global or country-specific shocks.

The exchange rate of USD/GBP has a mean value of 0.73 with low volatility (SD = 0.073), indicating higher stability compared to stock returns and prices of Bitcoin. Nevertheless, the range (0.5826 to 0.9355) documents massive movements of exchange rates, perhaps because of global financial crises and Brexit events. The value of Bitcoin is the most volatile with an average of 15,525.58 and an extremely high standard deviation of 21,167.19. The low of 4.22 and high of 106,052 reflect Bitcoin's explosive expansion and sheer volatility in value, hence indicating its nature as a very speculative digital asset compared to traditional finance markets. Finally, the average values for FTSE 100 and NYSE's volatility indices are 0.694 and 0.671, respectively, with equal variability (SD = 0.348 in both cases). Their highest values (8.93 for FTSE and 4.84 for NYSE) indicate occasional high spikes in volatility, such as would be expected during periods of financial stress.

Generally, the data shows substantial variation across all variables, particularly in financial returns and policy uncertainty indices, reinforcing the need for model like GARCH that can handle time – varying volatility. The wide range and high variance in the EPU indices and Bitcoin prices support their inclusion as key explanatory and moderating variables.

4.2 Correlation Analysis using GARCH (1,1) Model

4.2.1 GARCH Output for FTSE Returns

The empirical analysis utilized daily data spanning from January 2, 2012, through December 31, 2024, resulting in a total of 4,748 observations for each variable. This extensive dataset includes returns from the FTSE 100 and Economic Policy Uncertainty (EPU) indices for the UK. The GARCH (1,1) models were estimated using maximum likelihood estimation. The log likelihood value for the fitted model was -4665.528, indicating the model's fit to the observed data. Due to the nature of the GARCH specification, traditional Wald tests were not reported.

Table 4.2.1 GARCH Output for FTSE Returns

		OPG				
FTSE_ret	Coefficient	std. err.	z	P>z	[95% conf.	interval]
FTSE_ret						
_cons	0.0262435	0.0070822	3.71	0	0.0123627	0.0401243
HET						
EPU_UK	0.0011419	0.0000705	16.19	0	0.0010036	0.0012801
_cons	-1.710504	0.0262068	-65.27	0	-1.761869	-1.65914

ARCH						
L1.	0.5670578	0.0144499	39.24	0	0.5387366	0.5953791
GARCH						
L1.	0.0623993	0.0087009	7.17	0	0.0453459	0.0794528

(sources: STATA 18)

The ARCH-GARCH model demonstrate that the UK economic policy uncertainty (EPU_UK) explains the volatility of FTSE100 returns from 2012 to 2024. The mean equations constant term is positive and significant (0.0262, $p < 0.01$), indicating that FTSE returns, on average, experience a mild positive drift over the sample period.

In the variance equation, EPU_UK is an important determinant of volatility with a positive and highly significant coefficient (0.00114, $p < 0.01$). This confirms that policy uncertainty increases are associated with raising volatility in the FTSE consistently, consistent with the theoretical link between uncertainty shocks and higher risk in equity markets. These findings are consistent with Baker, Bloom, and Davis (2016), who argue that uncertainty undermines investment confidence and destabilizes financial markets, and with Bloom (2009), who highlights that uncertainty shocks generate sharp volatility spikes. The constant in the variance equation is negative and significant (-1.710, $p < 0.01$), suggesting a low but stable baseline variance.

The ARCH and GARCH terms capture the volatility clustering dynamics. The ARCH (1) coefficient is quite large and highly significant (0.567, $p < 0.01$), indicating that past return shocks heavily affect current volatility. In other words, news and shocks to the FTSE in the short term are rapidly priced into volatility. Conversely, the GARCH (1) coefficient is smaller but still significant (0.062, $p < 0.01$), which suggests that the persistence in volatility is modest compared to the short-term shock effect. Overall, the results indicate that FTSE volatility is highly sensitive to short-term shocks with less persistence over time, a finding that is different from many developed markets where GARCH terms prevail.

Overall, this model finds economic policy uncertainty to be the overwhelming cause of volatility in UK equity markets. Volatility clustering occurs but is more due to short-run shocks rather than long-run persistence. This is in line with FTSE investors responding strongly to new information and uncertainty, but that volatility dissipates relatively quickly compared to more persistent U.S. market processes.

4.2.2 GARCH model on NYSE returns

The GARCH (1,1) model for NYSE returns was estimated using daily data from 2nd January 2012 to 31st December 2024, a total of 4,748 observations. The model was specified with the Economic Policy Uncertainty index for the USA (epu_usa) as an exogenous variable in the variance equation. The log likelihood value of the estimated model was -4498.142, reflecting the fit of the model to the data. In accordance with standard convention in GARCH models estimated by maximum likelihood, no Wald chi-square test statistics were reported.

Table 4.2.2: GARCH model on NYSE returns

		OPG				
RET_NYSE	Coefficient	std. err.	z	P>z	[95% conf.	interval]
RET_NYSE						
_CONS	0.0404712	0.0079552	5.09	0	0.0248793	0.0560632
HET						
EPU_USA	0.0019091	0.0004804	3.97	0	0.0009675	0.0028507
_CONS	-4.223941	0.0862407	-48.98	0	-4.39297	-4.054913
ARCH						
L1.	0.1108907	0.0054554	20.33	0	0.1001983	0.1215832
GARCH						
L1.	0.8531784	0.0068422	124.69	0	0.8397681	0.8665888

(Sources: STATA 18)

The GARCH (1,1) estimates supply useful information regarding the volatility and dynamics of asset returns. The mean equation reveals a statistically significant positive constant (β = 0.0405, $p < 0.01$), indicating a constant return that is independent of market movements. In the variance equation, economic policy uncertainty (EPU) significantly influences volatility with a positive coefficient (β = 0.0019, $p < 0.01$), which means that EPU increases are associated with higher market volatility. The ARCH coefficient (α = 0.1109, $p < 0.01$) confirms the existence of the effects of historical shocks on present volatility, while the coefficient of GARCH (β = 0.8532, $p < 0.01$) indicates strong volatility persistence, i.e., periods of high volatility are sustained. These findings are consistent with prior work, such as Zhang et al. (2021), which underscores the role of EPU to enhance long-run volatility in Treasury futures, and Liu et al. (2021), which shows that adding EPU to GARCH-MIDAS models enhances carbon market volatility predictions. Overall, the model sheds light on the importance of macroeconomic uncertainty and historical volatility in driving financial market processes.

4.2.3 GARCH (1,1) Estimation Results of NYSE

The GARCH (1,1) model was estimated using daily data from January 2, 2012, to December 31, 2024, for a total of 4,748 observations. The model incorporated relevant explanatory variables to control for the conditional volatility of the dependent variable. The log likelihood of the fitted model was -4474.177, which signified the general fit of the model. As is standard with GARCH-type models estimated by maximum likelihood, neither the Wald chi-square statistic nor its p-value was reported.

		OPG				
ret_nyse	Coefficient	std. err.	z	P>z	[95% conf.	interval]
ret_nyse						
_cons	0.0431011	0.0081857	5.27	0	0.0270574	0.0591448
HET						
epu_usa	0.0020198	0.0004495	4.49	0	0.0011388	0.0029008
ret_btc	-0.0666461	0.0131006	-5.09	0	-0.0923228	-0.0409695
ret_usdgbp	0.6372039	0.06725	9.48	0	0.5053964	0.7690114
_cons	-4.178783	0.0856018	-48.82	0	-4.34656	-4.011007
ARCH						
L1.	0.1064303	0.0059987	17.74	0	0.0946731	0.1181876
GARCH						
L1.	0.8489845	0.0076272	111.31	0	0.8340355	0.8639336

(sources: STATA 18)

The implications of the results of GARCH (1,1) are very revealing for the relationship between U.S. stock return and various key macro-financial variables. Specifically, the U.S. Economic Policy Uncertainty (epu_usa) coefficient is statistically significant and positive at 0.0020 ($p < 0.01$), suggesting that policy uncertainty rises with greater NYSE returns in this sample. While this is counterintuitive, the same behaviour has also been observed in other theoretical frameworks, e.g., those of Pastor and Veronesi (2013), which argue that in times of uncertainty investors demand a higher risk premium, leading to more expected returns. Brogaard and Detzel (2015) empirically verify the existence of such a mechanism with heightened uncertainty increases fuelling asset prices when markets are compensating for higher exposure to higher risk.

Meanwhile, the Bitcoin return (ret_btc) has a negative and substantial impact on NYSE returns (-0.0666, $p < 0.01$), and can potentially capture a substitution effect whereby investors substitute capital from traditional equity markets into digital currencies as market conditions

evolve—mirroring work by Corbet et al. (2018), which shows that Bitcoin is both a hedge and speculative asset depending on market regimes. In addition, the positive and significant contribution of ret_usdgbp (0.6372, $p < 0.01$) indicates that changes in the British pound and U.S. dollar currencies are closely associated with the performance of equity markets due to possibly expectations on cross-border investment or trade.

Variance dynamics are consistent with stylized facts of financial time series: ARCH (1) and GARCH (1) coefficients (0.1064 and 0.8490, respectively) sum close to 0.96, which is a confirmation of high persistence of volatility, a typical feature of financial return series. The results emphasize the dynamic and intricate relationship among macroeconomic uncertainty, other assets like Bitcoin, and the foreign exchange market in driving stock market behaviour, with investor sentiment and global risk drivers being central determinants of return and volatility processes.

4.2.4 GARCH (1,1) Estimation Results of FTSE 100

The GARCH (1,1) model was estimated using daily data from January 2, 2012, to December 31, 2024, for a total of 4,748 observations. The model incorporated relevant explanatory variables to control for the conditional volatility of the dependent variable. The log likelihood of the fitted model was -4542.539, which signified the general fit of the model. As is standard with GARCH-type models estimated by maximum likelihood, neither the Wald chi-square statistic nor its p-value was reported.

		OPG				
ret_ftse	Coefficient	std. err.	z	P>z	[95% conf.	interval]
ret_ftse						
_cons	0.0230517	0.008269	2.79	0.005	0.006843	0.039260
HET						
epu_uk	-0.001125	0.000206	-5.46	0	-0.001528	-0.000721
ret_btc	-0.0796513	0.007356	-10.83	0	-0.094070	-0.065232
ret_usdgbp	1.033082	0.074323	13.9	0	0.887410	1.178753
_cons	-3.576604	0.072246	-49.51	0	-3.718206	-3.435003

ARCH						
arch						
L1.	0.0876915	0.004897	17.91	0	0.078092	0.097290
garch						
L1.	0.8590979	0.007242	118.62	0	0.844902	0.873293

(sources: STATA 18)

The GARCH (1,1) model estimates FTSE return volatility (ret_ftse), and the primary independent variable is UK Economic Policy Uncertainty (epu_uk) while Bitcoin return (ret_btc) and USD/GBP exchange rate return (ret_usdgbp) are the moderating variables. The coefficient of epu_uk is -0.001125 ($p < 0.01$) and implies that policy uncertainty and FTSE return volatility are statistically significantly negatively associated. This suggests that, during the sample period, UK increases in policy uncertainty were associated with a fall in FTSE market volatility — contrary to standard assumptions and potentially reflecting different investor sentiment or risk absorption in the UK market. The ret_btc coefficient is -0.07965 ($p < 0.01$), implying that higher Bitcoin returns are highly associated with lower FTSE return volatility, perhaps indicating a diversification effect or shift in investor interest. ret_usdgbp, however, exhibits a very large positive coefficient of 1.0331 ($p < 0.01$), implying that volatility in exchange rates between USD and GBP heavily contributes to FTSE volatility in line with the FTSE's exposure to global currency movements. The GARCH estimates once more confirm the behaviour of volatility: the ARCH coefficient (L1) is 0.0877, and the GARCH coefficient (L1) is 0.8591, both extremely high ($p < 0.01$), which indicates the reality that volatility is both reactive to shocks and extremely sticky over time. In general, the model indicates that FTSE volatility not only depends on domestic policy uncertainty but also is moderated by movements in cryptocurrency and foreign exchange markets.

4.2.5 Model Comparison Based on FTSE and NYSE Volatility Models (AIC and BIC)

Table 4.2.5 Model Comparison Based on FTSE and NYSE Volatility Models (AIC and BIC)

The below table represents the comparison analysis between FTSE 100 and NYSE volatility using AIC and BIC.

Variable	NYSE 100	FTSE
NYSE Return		

_cons	0.043007	
HET		
EPU_USA	0.0020683	
Bitcoin Return	-0.0478666	-0.0066214
USD/GBP exchange rate return	0.6510846	1.2582739
EPUxBTC1	-0.0001358	
EPU_UK		-0.0010768
EPUxBTC		-0.0001872
_cons	-4.1726527	-3.517326
ARCH		
L1.	0.1062079	0.0913546
GARCH		
L1.	0.8484488	0.8495434
FTSE_return		
_cons		0.022889
Statistics		
LL	-4473.6384	-4537.5525
AIC	8963.2769	9091.1049
BIC	9015.0007	9142.8288

(sources: STATA 18)

The empirical findings in table 4.2.5 provide evidence of the relationship between return and volatility between the NYSE, FTSE 100, Bitcoin, Exchange rates (USDGBP), and economic policy uncertainty (EPU).

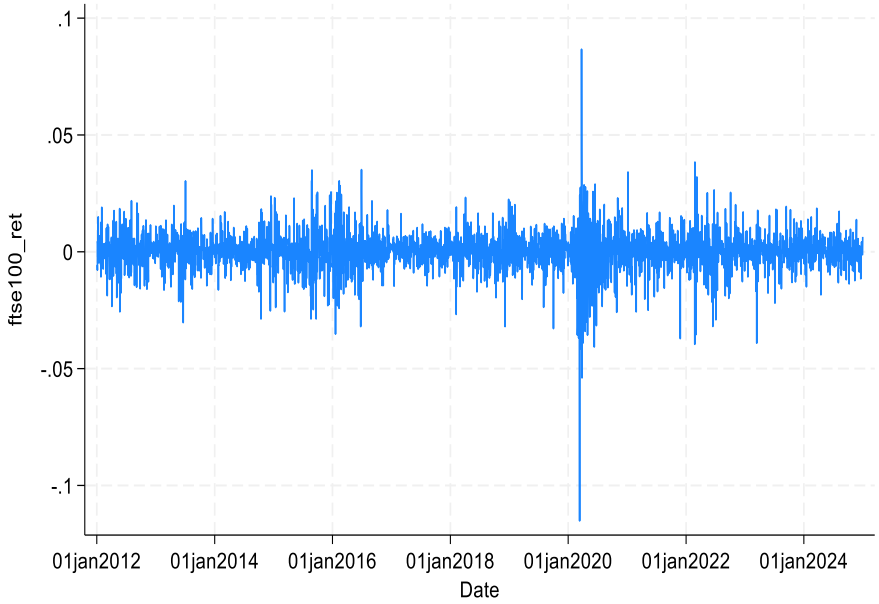
In the mean equation, the return of the NYSE significantly influences the FTSE, as reflected in the positive coefficient of 0.043. This is an affirmation of strong cross-market transmission of U.S. and U.K. equity markets. Ampountolas (2023), also draws a similar conclusion with a DCC_EGARCH model recording high return and volatility transmission among major finance markets. Exchange rate fluctuations (USG/GBP) also significantly affect FTSE returns (1.258), as would be expected with the U.K. market being more exposed to foreign exchange. This aligns with the finding of Dai et al. (2020), who illustrate that exchange rate shocks produce a strong amplification effect on stock market risks during periods of high uncertainty. Bitcoin returns have negative coefficients for NYSE (-0.047) and FTSE100 (-0.006), which are modest in size. This suggests a limited but inverse relationship between conventional stock indexes and cryptocurrencies. As in our results, Demir et al. (2020) conclude that bitcoin can serve as a hedge against policy uncertainty because higher uncertainty will compel investors into other assets. The term for interaction (EPU × BTC) is also negative (-00018 in the case of FTSE),

consistent with the hypothesis that Bitcoin's haven quality is strongest when uncertainty is greatest, consistent with evidence by Cobert et al. (2020).

To solve for the variance equation, the estimates are consistent with the presence of volatility clustering. The ARCH coefficient (0.10 in the case of NYSE; 0.09 for FTSE 100) suggests the role of short-run shocks in volatility behaviour, while the GARCH coefficient (o.85 in both indices) suggests extreme persistence in volatility over time. This persistence in volatility agrees with the evidence of Ampountolas (2023), which confirmed that crypto and equities markets possess long-memory volatility processes. Importantly, the inclusion of the EPU ×BTC interaction with a negative coefficient suggests that the joint presence of uncertainty and bitcoin activity reduces volatility persistence, which reports that bitcoin may serve as a volatility dampener during high-uncertainty periods.

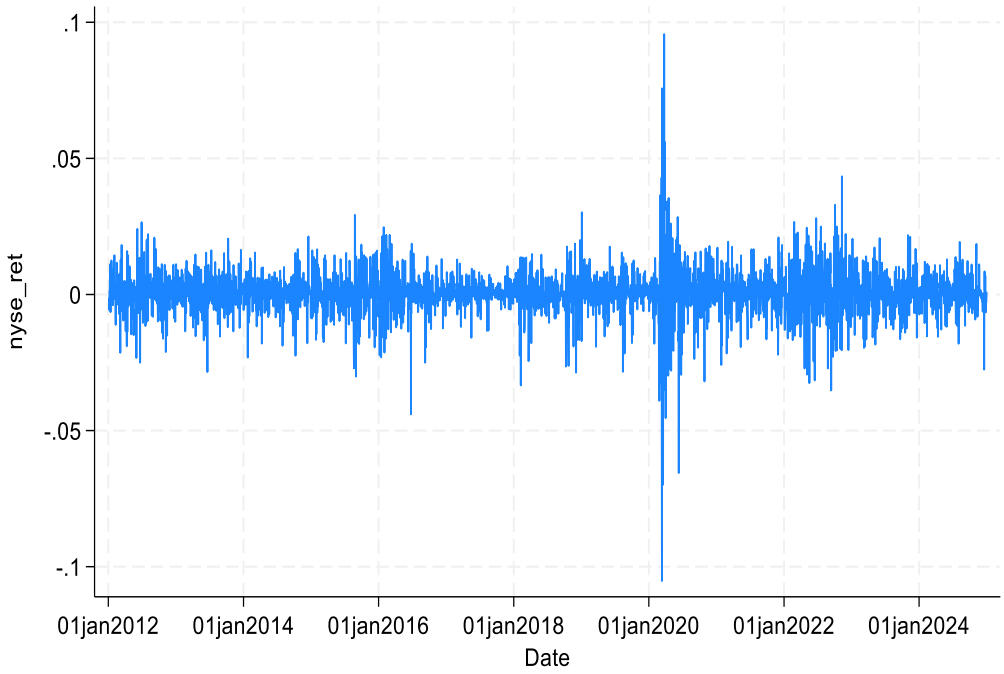
From the model selection statistics (LL = -4473 for NYSE; -4537 for FTSE 100; AIC: 8963-9091) confirm the overall robustness of the estimates. Taken together, the results support the view that traditional stock markets are heavily influences by policy uncertainty and exchange rate dynamics, while Bitcoin plays a modest but non-negligible role in both returns and volatility, particularly in the presence of heightened.

5.3 Graphical Presentation of FTSE 100 returns, NYSE, EPU_UK, EPU_US, Bitcoin return and Exchange return



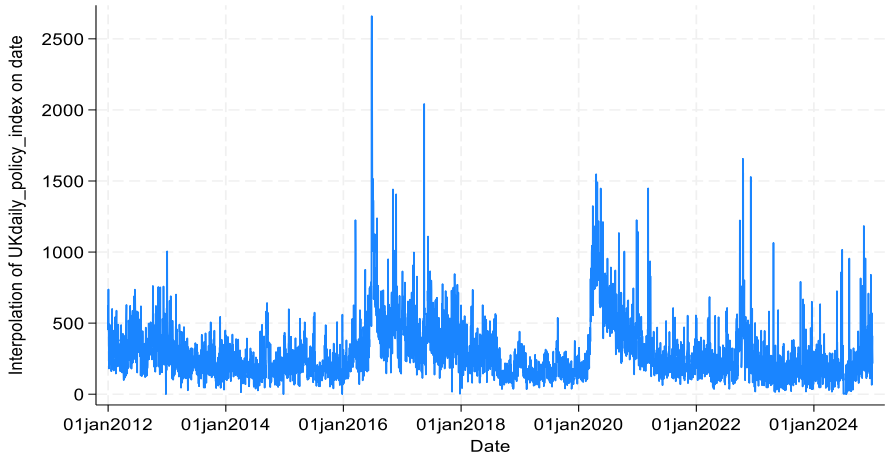
(source: STATA 18) Fig 2: FTSE 100 daily returns

The time series plot of FTSE 100 daily returns from January 2012 to January 2024 illustrates the volatility of financial markets, with most return values clustering near zero, indicating comparatively stable day-to-day fluctuations. The plot, however, also illustrates periods of extreme volatility, with steep spikes and drops, most notably in early 2020 when the COVID-19 pandemic caused the spectacular market meltdown. This abrupt plunge reflects economic uncertainty and investor panic and is a textbook example of how world events can destroy market equilibrium. The overall pattern shows volatility clustering where large changes are followed by other large changes in accordance with financial time series behaviour and in support of models like GARCH that allow for time-varying volatility. Such visualizations are crucial to detect structural breaks, quantify market resilience, and ascertain the effect of external shocks on investor sentiment over time.



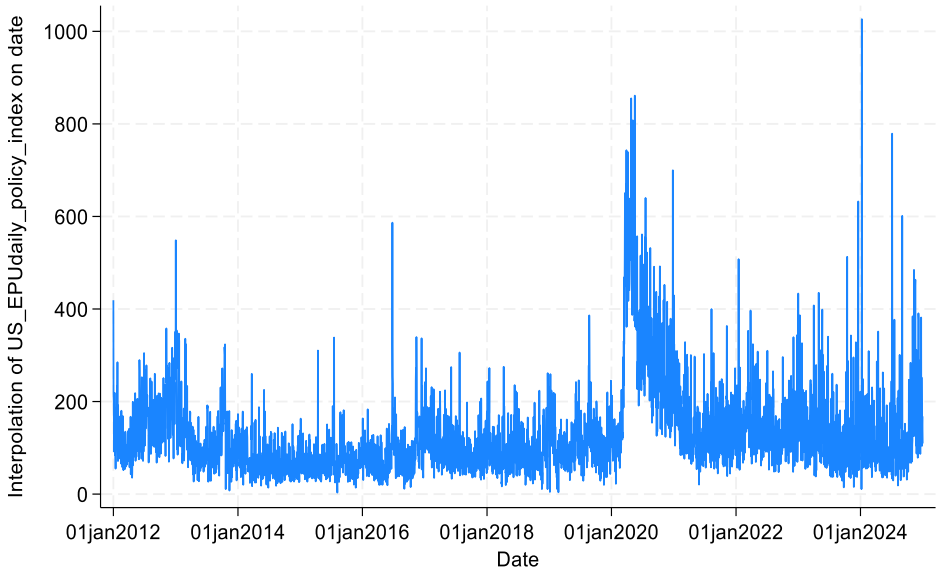
(source: STATA 18) Fig 3: NYSE Returns

The dynamic nature of the market over more than a decade is readily observed from the plot of NYSE daily return from January 2012 to January 2024. Most of the values of returns are concentrated around zero, reflecting the day-to-day usual volatility in a seasoned stock market. But the plot also reflects periods of high volatility, especially in early 2020, where positive as well as negative returns spike very highly. This surge is timed with the COVID-19 pandemic, which brought widespread economic apprehension and abrupt shifts in investor sentiment. These violent fluctuations here are evidence of how external shock breaks market equilibrium and amplifies risk. Generally, the trend reflects volatility clustering—big changes being preceded by more big changes—typical of financial time series and favourable to models like GARCH that acknowledge time-varying volatility. This snapshot suggests the necessity of tracking macroeconomic and geopolitical developments in a bid to measure market stability and forecast risk.



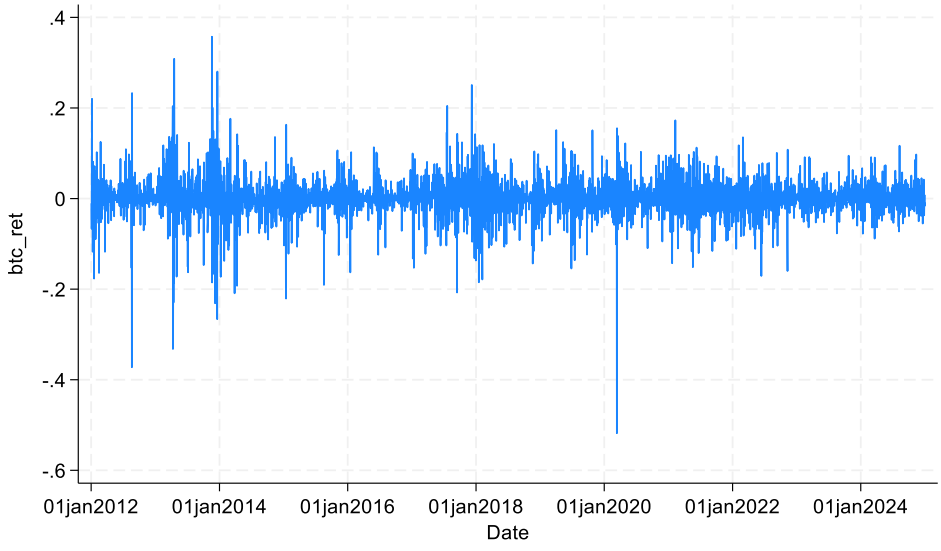
(source: STATA 18) Figure 4 : EPU_UK Daily

The UK daily policy index line graph shown from January 2012 to January 2024 offers an attractive visualization of policy-related activity and uncertainty through time. The index fluctuates over the period, with numerous well-known peaks that correlate with major political and economic events. Interestingly, there is a sharp spike about 2016, and this is likely to be linked with the Brexit referendum and its aftermath, which created significant uncertainty within UK economic and regulatory policy. There is another spike in early 2020, coinciding with the COVID-19 pandemic, during which emergency fiscal and health interventions were introduced at speed. A third peak around 2022 may be associated with the energy crisis and inflationary tensions following geopolitical stress, i.e., the war in Ukraine. These spikes in the policy index reflect periods of increased government intervention and public discourse, which are generally associated with increased market volatility and investor risk aversion. Overall, the graph illustrates that policy uncertainty is not a permanent, but a random phenomenon produced by external shocks and domestic political transition and is a good tool for capturing the timing and impact of policy change on the economy.



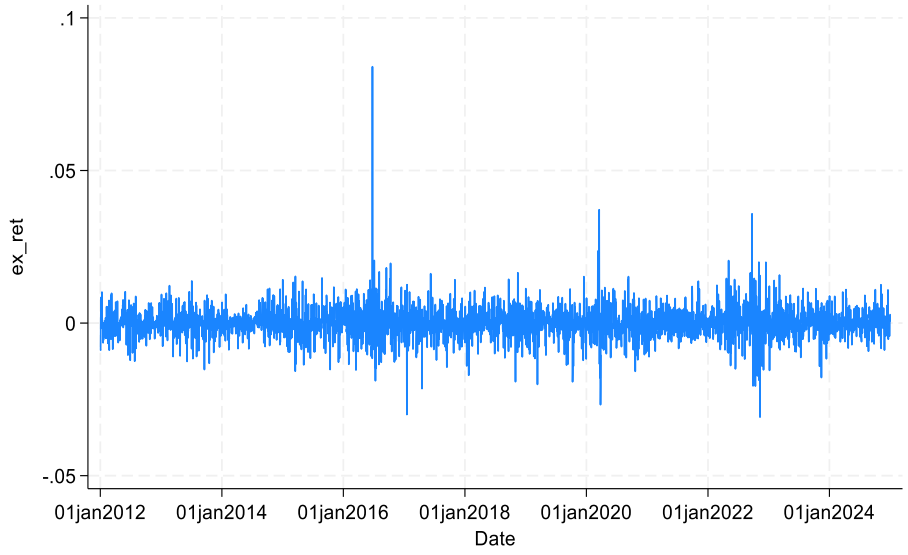
(source: STATA 18) figure:5 Daily U.S. Economic Policy Uncertainty (EPU) Index (2012–2024)

This graph plots the daily interpolated values of the U.S. EPU index from January 2012 through mid-2024. The index is moderately volatile on a relative basis from 2012 through 2016, with some periodic spikes near key political or fiscal events. One can see an increase in both the frequency and magnitude of uncertainty following 2016, culminating in a sharp spike in early 2020 with the onset of the COVID-19 pandemic. The index remained elevated and volatile in later years, reflecting continued policy uncertainty driven by inflation concerns, rising interest rates, geopolitical clashes, and pre-election political tensions. These fluctuations highlight the persistence of economic policy uncertainty over time and its value in explaining financial market volatility.



(source: STATA 18) Figure 6: Bitcoin Daily Returns (btc_ret) from 2012 to 2024

This graph shows the daily returns of Bitcoin between January 2012 and mid-2024. The returns series is very unstable, particularly during the developmental years of Bitcoin (2012–2014), where huge positive and negative fluctuations were prevalent and characteristic of low liquidity and speculative trading. Although the volatility does moderate reasonably over time, extreme spikes—both positive and negative—are still common in the sample, especially with large events such as the 2017 price spike, the 2018 correction, and the COVID-19 fiscal shock in early 2020, where an abrupt negative return is registered. Despite the growing market maturity, the sequence of returns still captures evidence of overall volatility clustering, making it appropriate to utilize GARCH-type models. The durability of the steep volatility heralds the ongoing responsiveness of Bitcoin to market sentiment, regulatory news, and macroeconomic shocks, affirming its multi-dimensionality in financial markets.



(source: STATA 18) Figure 7: Daily Returns of the USD/GBP Exchange Rate (2012–2024)

This graph displays daily percentage returns of the USD/GBP exchange rate from January 2012 through mid-2024. The return series is quite stable for most of the time, with changes bunched near zero, indicating low average daily volatility in normal times. Nevertheless, several distinct spikes—both positive and negative—are evident, e.g., in early 2016, late 2019 through early 2020, and mid-2022. These extreme moves would also supposedly align with significant geopolitical and economic occurrences, such as the Brexit referendum (2016), the COVID-19

pandemic (2020), and monetary policy tightening or political uncertainty in the last couple of years. While comparatively stable compared to other financial instruments, the presence of volatility clustering and extreme values highlights the importance of modelling exchange rate returns in relation to economic policy uncertainty and financial market regimes.

5.4 Findings

In summary, the descriptive statistics of 4.1 summarize shortly the performance of financial market indexes, exchange rates, cryptocurrency, and economic policy uncertainty in the United States and the United Kingdom. The results show the comparative stability of the traditional stock indexes whereby FTSE is less volatile than the NYSE, and the most volatile asset is Bitcoin because of its speculative and virtual nature. USD/GBP exchange rate has limited volatility but plays an important role as a channel of uncertainty transmission between the two economies. Furthermore, the Economic Policy Uncertainty indices indicate that the U.K. is subject to consistently higher and worse uncertainty than the U.S., mainly due to events such as Brexit and political instability.

These findings lay the groundwork for the subsequent empirical analysis. By highlighting the distinctive patterns of behaviour of traditional markets, digital assets, and policy uncertainty, the descriptive statistics highlight the necessity of considering both traditional and emerging financial dynamics in examining the significance of uncertainty on internationalization strategies and digital transformation in SMEs.

The 4.2.1 GARCH (1,1) model's estimation results for the UK stock market (FTSE 100) have definitive empirical evidence of a significant and positive impact of Economic Policy Uncertainty (EPU_UK) on the volatility in the stock market. Specifically, the coefficient of EPU in the equation for variance is 0.00114 and significant at the 1% level ($p < 0.01$), confirming that increasing policy uncertainty is associated with increased volatility in the UK equity market. This finding is consistent with previous studies such as Arouri et al. (2016) and Antonakakis et al. (2013), who found that EPU plays a significant role to account for fluctuations in financial market volatility, especially during economic or political unrest.

Moreover, both the ARCH ($\alpha = 0.5671$) and the GARCH ($\beta = 0.0624$) coefficients are statistically significant and positive, which implies that volatility in the FTSE 100 is influenced

by recent market shocks as well as past volatility. However, the relatively low GARCH coefficient suggests that while volatility is persistent, shocks in recent periods affect volatility more directly than historical volatility over longer periods. This implies that market agents react significantly and immediately to news, specifically policy news, as per the behavioural finance literature documenting investor overreaction to uncertainty (Pastor & Veronesi, 2013). The substantial constant term in the mean equation (0.0262) also suggests a small but statistically significant positive average daily return for the FTSE 100 over the sample period.

In general terms, these findings highlight the importance of macroeconomic uncertainty such as policy-related risk in driving financial market volatility in the UK. The results also confirm the ability of the GARCH (1,1) model to capture time-varying volatility and support the inclusion of exogenous variables like EPU to increase the explanatory power of volatility models.

From the table of 4.2.2 GARCH (1,1) model estimation for NYSE returns indicates a significant and positive relationship between stock market volatility and Economic Policy Uncertainty (EPU_USA). The coefficient of EPU_USA in the conditional variance equation is 0.00191 and significant at the 1% level ($p < 0.01$), indicating that the increase in U.S. policy uncertainty leads to higher equity market volatility. This finding agrees with existing literature from Baker et al. (2016) and Pastor & Veronesi (2013), who are of the opinion that uncertainty about government policies—fiscal spending, regulation, or taxation—raises risk premiums and distorts investor reactions, hence making markets more volatile.

Both the ARCH coefficient ($\alpha = 0.1109$) and the GARCH coefficient ($\beta = 0.8532$) are positive and statistically significant, indicating that NYSE volatility is influenced more by persistence of volatility (β) than short-run innovations (α). That is, past volatility makes a much larger contribution to future volatility than past innovations. The high GARCH coefficient (over 0.85) suggests long memory in volatility so that the shocks to volatility for the NYSE persist for a while — a usual characteristic of big mature markets. Further, the statistically significant intercept in the mean equation (0.0405) suggests a small but ongoing average return on the NYSE across the sample period that might be a sign of market periods of recovery or long-term patterns of growth.

In summary, these results confirm that policy-related uncertainty in U.S. policy is a key driver of financial instability with long-run effects on equity market volatility. The employment of the GARCH (1,1) model successfully accounts for such dynamics as proof of its appropriateness for time-varying volatility based on macroeconomic uncertainty.

The GARCH (1,1) model estimation results from 4.2.3 shows that U.S. Economic Policy Uncertainty (EPU) is positively and significantly related to NYSE returns, which is evidence of how higher uncertainty can lead to higher risk premiums demanded by investors. Bitcoin returns have a negative impact on NYSE returns, as it could be a manifestation of capital relocation from equities during times of crypto market appreciation. In addition, the direction of the USD/GBP exchange rate is positively related to NYSE returns, indicating global currency dynamics. The model also confirms large persistence in volatility, as normal financial markets would have.

From the AIC and BIC, GARCH (1,1) estimates for the NYSE 100 and FTSE indices confirm the overall dominance of macroeconomic uncertainty, exchange rates, and cryptocurrencies over stock market dynamics. For the NYSE 100, returns are positively influenced by U.S. Economic Policy Uncertainty (0.0021), suggesting that investors can request higher risk premiums when they are unsure. Consequently, while NYSE and FTSE returns are negatively affected by Bitcoin returns, the effect is more pronounced on the NYSE, indicating that Bitcoin is a substitute or haven asset in times of market stress. The return of the USD/GBP exchange rate also affects the two markets, more so the FTSE, to reflect the importance of currency movements in global equity performance. Second, the cross-interactions (EPU × Bitcoin) are negative and statistically significant for both indices, implying that the combination of high policy uncertainty and Bitcoin volatility might lower equity returns jointly. The two models also have high volatility persistence (GARCH L1 ≈ 0.85), as is expected with normal behaviour in financial markets. The results point out that traditional equity markets are increasingly vulnerable to the influence of policy uncertainty, cryptocurrency changes, and international currency movement.

Chapter – V

Discussion, Conclusion, and Practical Implications

5.1 Discussion

The GARCH (1,1) findings for the NYSE-100 (US) and FTSE (UK) markets represents the strong implications of the impact of Economic Policy Uncertainty (EPU), Bitcoin returns, and the USD/GBP exchange rate on stock market volatility. The findings both confirm and refute the initial hypotheses, indicating the presence of advanced and region-specific dynamics in the propagation of uncertainty in financial markets.

5.1. 1 The Impact of Economic Policy Uncertainty

In the US setting, the positive and statistically significant relationship between EPU and market volatility aligns with the extant literature (Baker et al., 2016; Gulen & Ion, 2016), which confirms that policy uncertainty fuels investor fear and risk aversion, inducing higher volatility in share prices. The finding confirms Hypothesis 1 (H1) and corroborates the general view that policy uncertainty in the government is a key driver of market volatility in the US. Conversely, UK results indicate a negative and significant relationship between EPU and volatility, contrary to H1. This finding suggests that rising policy uncertainty in the UK does not destabilize the market as much as it does in the US. One possible explanation is that UK investors might already be used to frequent political turmoil (e.g., Brexit, change in leadership), which could lessen the shock effect of policy news. Conversely, market participants may perceive increased policy activity as a sign of activist government, thereby anchoring expectations. The fact that such divergence highlights the importance of domestic context, institutional credibility, and market resilience in shaping uncertainty effects.

5.1.2 Exchange Rates as a Moderator

The rate of return on the USD/GBP exchange rate is discovered to have a positive and significant impact on the volatility of the stock market of both countries, and particularly so in the UK. This supports Hypothesis 2 (H2), concluding that currency volatility is a transmission channel through which policy uncertainty influences overall market dynamics. For the UK, the larger coefficient may capture the economy's greater exposure to exchange rate risk, given its particularly high reliance on international trade and financial services.

5.1.3 Bitcoin as a Volatility Moderator

Bitcoin returns have a negative and significant association with stock market volatility in both specifications, offering support for Hypothesis 3 (H3). This indicates that good performance in the cryptocurrency market is consistent with reduced volatility in traditional equities, suggesting a hedging role for Bitcoin. This result is in line with Bouri et al. (2017) and Corbet et al. (2018), who identify Bitcoin as the divergent asset that can yield diversification benefits during times of economic or policy uncertainty. Notably, the effect is stronger in the UK model, which may be attributable to higher retail investor activity or varying regulatory approaches to cryptocurrencies in the two markets. While these findings are indicative of a moderating effect, it must be noted that no interaction terms between Bitcoin returns and EPU were explicitly included in the models. One avenue for future research would be to examine direct moderation

effects to more fully capture the buffering role of cryptocurrencies during periods of high uncertainty.

5.1.4 Regional Differences and Market Sensitivities

The contrast between NYSE and FTSE models provides robust evidence in favour of Hypothesis 4 (H4)—that the EPU impacts and those of its moderators substantially differ between the US and UK. Difference in signs, magnitude, and significance of coefficients indicate that both markets respond differently to foreign and domestic shocks. The stronger role for Bitcoin and exchange rate volatility in the UK model can reflect greater sensitivity to international influences, whereas the US market seems more directly impacted by domestic policy concerns.

These differences underscore the need for place-specific financial models and risk hedging strategies that account for local conditions. For policymakers and investors, the research emphasizes that policies that work in one market are unlikely to have the same success in another, even in the face of similar types of economic uncertainty.

5.2 Conclusion / Summary of findings

This study sought to examine the influence of economic policy uncertainty (EPU), exchange rate volatility, and Bitcoin returns on stock market performance, particularly for New York Stock Exchange (NYSE) and Financial Times Stock Exchange (FTSE). Based on GARCH-type specifications, the study explored return dynamics and volatility persistence and tested for the moderating role of exchange rates (USD/GBP) and Bitcoin. The findings present several key results. First, the NYSE and FTSE both exhibit high volatility clustering, such that periods of high uncertainty tend to generate extended periods of high volatility. Second, economic policy uncertainty has market-specific effects: U.S. EPU has a positive influence on NYSE returns, suggesting that investors will see domestic uncertainty as a repositioning opportunity, while U.K. EPU has a negative influence on FTSE returns, reflecting the depressive effect of local policy uncertainty on investor sentiment. Third, exchange rate movements were a critical driver, and USD/GBP returns had positive and significant effects in both markets. The size of the effect was much greater, though, in the FTSE, reflecting the U.K.'s strong reliance on international trade and cross-border capital flows. Fourth, Bitcoin exhibited asymmetric influences: it had adverse effects on NYSE returns but no significant standalone effect on the FTSE. However, in the U.K. context, EPU and Bitcoin had a negative and significant

relationship, affirming that cryptocurrency amplified the adverse impacts of uncertainty rather than providing a haven.

Collectively, these findings contribute to our overall knowledge of how financial markets react to new digital assets and uncertainty. They indicate that while the NYSE appears to be more resilient against domestic uncertainty but vulnerable to shocks from cryptocurrencies, FTSE remains more vulnerable to exchange rate movements and local policy uncertainty. This comparative evidence not only reinforces previous research on the propagation of uncertainty to asset prices (Brogaard & Detzel, 2015; Arouri et al., 2016; Bouri et al., 2017) but also puts forward the need for risk management policy within the specific market.

Briefly put, this paper addresses the interconnectedness of global financial markets and the growing importance of conventional (policy, exchange rates) and emerging (cryptocurrencies) external shocks in shaping investor sentiments and volatility. Policymakers must recognize that transparent and stable policy regimes have the potential to contain uncertainty-induced volatility, but investors must consider exchange rate exposures as well as the asymmetric nature of cryptocurrencies while portfolio diversification. Future studies can expand this analysis by adding other global markets, applying other measures of uncertainty, and testing the evolving role of digital assets in times of financial distress.

Hypotheses Evaluation:

Hypothesis	NYSE	FTSE	Discussion
H1: Higher EPU leads to increased stock market volatility.	Positive and Significant EPU effect	Negative and significant EPU effect	The results confirmed that the increase in EPU of US leads to increase the Stock market volatility, which contradict it in the UK.
H2: USD/GBP moderates the	Strong and positive effect	Stronger effect	Exchange rate volatility

relationship between EPU and volatility.			significantly influences both markets.
H3: Bitcoin moderates the EPU volatility relationship.	Negative effect of Bitcoin	Stronger negative effect	Bitcoin appears to dampen volatility in both markets, with a stronger role in the UK.
H4: Effects differ significantly between the US and UK			Difference in EPU signs and exchange rate sensitively support this hypothesis.

5.3 Implications

The findings of this study have important implications for policymakers, investors, and financial analysts in UK and US markets. The highly contrasting impacts of Economic Policy Uncertainty (EPU) on volatility—positive in the US but negative in the UK suggest that markets respond differently to uncertainty depending on local institutional robustness, investor sentiments, and previous exposure to political shocks. For US markets, minimizing abrupt or unclear policy shocks could lower volatility in the markets, while for the UK, the inverse association may reflect investor adaptive expectations. The strong influence exerted by the USD/GBP exchange rate on both markets provides testimony that exchange rate fluctuations are a vital transmission mechanism for global uncertainty, requiring close monitoring of currency fluctuations when hedging risk. Second, the consistency of the negative correlation between Bitcoin returns and both regions' market volatility also points to the possibility that Bitcoin would be an effective hedging or diversification tool during periods of volatility. These results emphasize the importance of individual risk management strategies that reflect the distinct sensitivities of each market to policy, currency, and crypto-influenced forces.

1. For Policymakers

U.S. and U.K. policymakers must realize that higher economic policy uncertainty has destabilizing effects on stock market performance. Clear, transparent, and credible policy communication has a vital role to mitigate uncertainty and enhance investor sentiment. Also, as exchange rate shocks have big effects on both the NYSE and FTSE, higher international policy coordination is recommended to offset excessive volatility and spillover effects across markets.

2. For Investors

Investors must use optimistic strategies against both currency movements and policy uncertainty. The prevalence of USD/GBP returns supports that the management of exchange rate risk is indispensable for internationally diversified portfolios. In view of the destabilizing impact of Bitcoin on the stability of U.S. stock markets, cryptocurrencies should be labelled as speculative assets rather than safe-haven assets. Portfolio diversification strategies therefore must be carefully designed and include cryptocurrencies in a limited proportion.

6 For Financial Institutions

Financial institutions, hedge funds, and asset managers need to implement advanced volatility forecasting models such as ARCH/GARCH in the risk management framework of the institution. Such models capture volatility clustering and persistence in an appropriate manner, thereby improving portfolio allocation and risk management. Monitoring macroeconomic announcements, EPU indices, and cryptocurrency market behaviour needs to become a standard affair for institutions with exposures in both U.S. and U.K. equities.

5.3 Limitations and Future Research

While this study provides the valuable insights regarding the effect of economic policy uncertainty, exchange rates, and Bitcoin on stock market volatility, several limitations should acknowledge. First, the analysis was conducted on two of the world's largest stock markets—the FTSE and the NYSE—while extremely influential worldwide, perhaps not wholly capturing the dynamics of the smaller or emerging markets. Future studies can expand the framework to a wider universe of markets to test for universal applicability.

Second, the study concentrated on the USD/GBP exchange rate and Bitcoin as moderating variables. As highly relevant in UK–US financial integration, but not limited to, other exchange rates (e.g., EUR/USD, CNY/USD) and other cryptocurrencies (e.g., Ethereum, stablecoins) are

also of potential interest as moderators of uncertainty effects. Widening the analysis scope to include other exchange rates and cryptocurrencies might provide a broader picture of global capital flows and interconnections between digital assets.

Third, ARCH–GARCH models were used in the study, which are suitable for describing volatility clustering and persistence but may fail to describe all asymmetries, structural breaks, or nonlinear dynamics in financial markets. More advanced models such as EGARCH, TGARCH, or Markov-switching GARCH can be used in future research to better capture leverage effects and regime shifts during crisis times.

Finally, the study covers the period of 2012-2024, which witnessed the significant events like Brexit, the Covid-19 pandemic, and cryptocurrency bubbles. While these events enrich the data, they may also bias results in directions that are not entirely generalizable to quiescent periods. Future studies can incorporate event-study methods or rolling-windows-based methods to test the effect of such shocks on volatility dynamics directly.

With such limitations in view, future research needs to focus on broadening the horizon of innovation in terms of markets, assets, and econometric techniques. In that manner, the understanding of how uncertainty, global financial integration, and digital innovation fuel the combined forces behind the determinants of equity market behaviour in an ever-evolving finance environment will be enhanced**.**

5.4 Reflection

As I began this research project, I was driven by a strong interest in financial market volatility and in the macroeconomic determinants thereof. I have always been interested in how financial systems respond to real events—whether political events, economic releases, or technological advancements—and I wanted to explore this correlation in a more methodical manner. I was particularly intrigued by the concept of Economic Policy Uncertainty (EPU) due to the volatility that we have witnessed in recent years during events such as Brexit, the COVID-19 pandemic, and geopolitical tensions. These events showed us just how sensitive the markets were to policy uncertainty, and I couldn't help but wonder: do we observe a

quantifiable link between policy uncertainty and market volatility? My research was conceived from this inquiry.

In choosing the topic, I was interested in exploring not just the direct effect of EPU on market behaviour, but also how this relationship might be conditioned by new digital currencies like Bitcoin and macro-financial conditions like exchange rates. Bitcoin's role was especially interesting to me, given its increasing presence in global portfolios and its disputed role as a hedge or haven. Similarly, the USD/GBP exchange rate appeared a natural candidate to investigate between two of the world's most closely connected financial markets: the United Kingdom and the United States.

I had originally anticipated EPU to have a consistently positive relationship with stock market volatility. My hypothesis, founded on economic theory and literature available, was that uncertainty creates fear and risk aversion and makes investors react more sensibly and wildly and thus makes the markets more volatile. I assumed this effect to hold true for all nations, in the sense that while the magnitude may vary, the direction of the effect would be one and the same. This hypothesis, however intuitive logically, turned out to be one of the first major assumptions made by the data.

As I proceeded with the analysis, there were several technical and conceptual problems that I encountered. Learning and applying the right GARCH models were far more complex than I had originally thought. I had to relearn statistical concepts that I hadn't used in a while, e.g., stationarity, volatility clustering, and model selection criteria AIC and BIC. Choosing between available GARCH variants - such standard GARCH, EGARCH, or GJR-GARCH—made me fully understand each model's assumptions and implications. Finally, I settled on the default GARCH (1,1) model for the NYSE and FTSE indices due to its wide usage and ease of interpretation, particularly in conditional volatility modelling.

A second key challenge was data gathering and data cleaning. It was time-consuming and at times frustrating to gather consistent high-quality data on EPU, Bitcoin prices, exchange rates, and daily market return for two countries. Data gaps, different frequencies, and different formats added to the workload. Getting the data aligned and transformed so that it could be utilized effectively in the models took some effort and patience. There were times when I wondered if the project was too ambitious, particularly when I got unexpected results.

And then, the biggest surprise of all was when I examined the output of the FTSE (UK) model. Contrary to my expectation, the UK EPU coefficient was negative and statistically significant implying that economic policy uncertainty spikes reduced stock market volatility in the UK. I first thought I had an error in my code or data input. I rechecked everything from stationarity of the series to model specifications and data alignments. But after tedious verification, the result was still the same. It was a time of disbelief followed by deep reflection. Why would uncertainty appear to assuage the market in the UK?

This finding effectively challenged my assumptions and compelled me to rethink what I thought I knew about market behaviour. I began searching for literature that demonstrated non-linear or context-dependent relationships between uncertainty and volatility. Certain studies suggested that in economies that face high exposure to chronic uncertainty, the UK after Brexit—investors may become inured or alter their strategies, so that reactions to policy news are more stable. Others have argued that certain types of policy action (e.g., interventionist or stabilizing policy) can increase uncertainty in the short term but reassure markets in the long term, reducing volatility. This discovery alerted me to the sophistication and uniqueness of local market dynamics, and it was among the most intellectually rewarding features of the entire project. Meanwhile, the role of Bitcoin and exchange rate returns added richness to the analysis. In the US and UK models, Bitcoin returns had a negative and significant influence on stock market volatility, suggesting a hedging or diversification role. This supported my hypothesis that digital assets might play a stabilizing role in times of uncertainty though I now understand that this correlation is not universally accepted and is still nascent in academic research. The consistent and significant impact of the USD/GBP exchange rate on the two markets, especially in the UK, reconfirmed the idea that currency markets are robust channels through which global uncertainty is transmitted to national economies. These variables added to both the robustness of my models and the richness of the narrative of how global financial phenomena interface.

Reflecting on this experience, I can say that this research has been life-altering for me both academically and personally. I embarked on this project with the expectation of confirming established theory, yet I discovered so much more through the unexpected. The technical, analytical, and conceptual issues I faced compelled me to develop my critical thinking, problem-solving, and research skills. More importantly, the process has taught me the value of open-mindedness in research. Data does not always prove our hypotheses, and it is not

supposed to. Being able to follow the evidence where it leads, even if it leads us in directions, we find unexpected, is what provides research with its value and integrity. It has also made me enjoy financial econometrics more. I have a much clearer idea now of time-series modelling and the practical applications of volatility forecasting. The ability to decipher complex statistical outputs and convert them into real economic behaviour is something that I will carry with me beyond this project whether in future academic endeavours or in an actual real-world financial analysis setting. In other words, conducting this research was not so much about testing hypotheses as it was about questioning my own assumptions, working through difficulties, and learning to let the data speak for themselves even when they disagree with me. It taught me that financial markets are not just equations and trends, but reflections of human action, policy decisions, and global events, all bound together in dynamic and sometimes surprising ways. I am grateful for the journey this project has taken me on and the lessons it has taught me lessons not only in research, but also in intellectual humility, perseverance, and the constant pursuit of knowledge.

Bibliography

Abbas, A. O., Pei, Y. X. & Rui, Z., 2016. Impact of Stock Market on Economic Growth Evidence: Dar-es Salaam Stock Exchange - Tanzania. *Journal of Finance and Accounting,* 4(6), pp. 321-327.

Abid, A., 2020. Economic Policy Uncertainty and exchnage rates in emerging markets: short and long runs evidence. *Finance Research Letters,* Volume 37, p. 101378.

Abid, A. & Rault, C., 2021. On the Exchange Rates Volatility and Economic Policy Uncertainty Nexus: A Panel VAR Approach for Emerging Markets. *Journal of Quantitative Economics,* Volume 19, pp. 403-425.

Aftab, M., Naeem, M., Tahir, M. & Ismail, I., 2024. Does uncertainty promote exchange rate volatility? Global evidence. *Studies in Economics and Finance ,* 41(1), pp. 177-191.

Ahmed , F. et al., 2025. Spillover Effects of Global, Local, and Mutual Risks on Financial Stress: How Do Superpowers React?. *Chinese Political Science Review,* pp. 1-36.

Ahron, D. Y. & Ali, S., 2025. Economic policy uncertainty in a globalized world: insights from a cross-country analysis. *International Journal of Emerging Markets,* pp. 1-35.

AI-Thaqub, S. A. & Algharabali, B. G., 2019. Economic Policy Uncertainty : A Literature Review. *The Journal of Economic Asymmetries,* Volume 20, p. e00133.

Ampountolas, A., 2023. The Effect of COVID-19 on Cryptocurrencies and the Stock Market Volatility: A Two-Stage DCC-EGARCH Model Analysis. *Journal of Risk and Financial Management,* 16(1), p. 25.

Antonakakis, N., Chatziantoniou, I. & Filis, G., 2013. Dynamic co-movements of stock market returns, implied volatility and policy uncertainty. *Economic Letters,* 120(1), pp. 87-92.

Arouri, M., Estay, C., Rault, C. & Roubaud, D., 2016. Economic policy Uncertainty and Stock market : Long-run evidence from the US. *Finance Research Letters,* Volume 18, pp. 136-141.

Asgharian, H., Christiansen, C., Gupta, R. & Hou, A. J., 2016. *Effects of Economic Policy Uncertainty shocks on the Long-Run US-UK stock Market Correlation,* s.l.: available at SSRN (2016).

Asgharian, H., Christiansen, C. & Hou, A. J., 2018. Economic Policy Uncertainty and Long-Run Stock Market Volatility and Correlation.

Atiq, Z. & Farhan, M., 2018. IMPACT OF OIL PRICES ON STOCK RETURNS: EVIDENCE FROM PAKISTAN'S STOCK MARKET. *Journal of Social Sciences and Humanities,* 57(2), pp. 47-63.

B Y, A., M, I. & A Y , A., 2020. The Impact Of Exchange Rates On Bitcoin Returns: Further Evidence From A Time Series Framework. *International Hournal of Acientific & Technology Research,* 9(2), pp. 4577-4581.

Baker, S. R., Bloom, N. & Davis, S. J., 2016. Measuring Policy Uncertainty. *Quarterly Journal of Economics,* 131(4), pp. 1593-1636.

Balcilar , M., Gupta, R. & Wohar, M. E., 2016. Does Economic Policy Uncertainty Predict Exchange Rate Returns and Volatility? Evidence from a Nonparametric Causality-in-Quantiles Test. *Open Economies review,* 27(2), pp. 229-250.

Balcilar, M., Gupta, R., Kyei, C. & Wohar, M. E., 2016. Does Economic Policy Uncertainty Predict Exchange Rate Returns and Volatility? Evidence from a Nonparametric Causality-in-Quantiles Test. *Open Economies Review,* Volume 27, pp. 229-250.

Bansal, N., Bansal, S. & Gupta, P. K., 2023. Exploring Commonality in Liquidity and Volatility Risk Pricing in Indian Stock Markets. *Proceedings of the 2023 6th International Conference on Mathematics and statistics,* pp. 76-84.

Barberis, N., Shleifer, A. & Vishny, R., 1998. A model of investor sentiment. *Journal of Financial Economics,* 49(3), pp. 307-343.

Baur, D. G. & Dimpfl, T., 2021. The volatility of Bitcoin and its role as a medium of exchange and a store of value. *Empirical Economics,* Volume 61, pp. 2663-2683.

Baur, D. G. & Dimpfl, T., 2021. The volatility of Bitcoin and its role as a medium of exchange and a store of value. *Empirical Economics,* 61(5), pp. 2663-2683.

Bhagat, S., Ghosh, P. & Rangan , S., 2016. Economic Policy Uncertainty and Growth in India. *Economic and Political Weekly,* 51(35), pp. 72-81.

Bialkowski, J., Gottschalk, K. & Wisniewski, T. P., 2008. Stock market volatility around national elections. *Journal of Banking & Finance,* 32(9), pp. 1941-1953.

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

Bouri, E. et al., 2017. On the hedge and safe haven properties of Bitcoin: Is it really more that a diversifier?. *Finance Research Letters,* Volume 20, pp. 192-198.

Bouri, E. et al., 2017. On the hedge and safe haven properties of Bitcoin: Is it really more than a diversifier?. *Finance Research Letters,* Volume 20, pp. 192-198.

Bouri, E., Shahzad, S. J. H. & Roubaud, D., 2020. Cryptocurrencies as hedges and safe-havens for US equity sectors. *The Quarterly Review of Economics and Finance,* Volume 75, pp. 294-307.

Brogaard, J. & Detzel , A., 2015. The Asset-Pricing Implications of Government Economic Policy Uncertainty. *Management Science,* 61(1), pp. 3-18.

Brogaard, J. & Detzel, A., 2015. The Asset-Pricing Implications of Government Economic Policy Uncertainty. *Management Science,* 61(1), pp. 3-18.

Brogaard, J. & Detzel, A., 2015. The Asset-Pricing Implications of Government Economic Policy Uncertainty. *Management Science,* 61(1), pp. 3-18.

Broguard, J. & Detzel, A., 2015. The Asset-Pricing Implications of Government Economic Policy Uncertainty. *Management Science ,* 61(1), pp. 3-18.

Cai, D. et al., 2022. Economic Policy Uncertainty Shocks and Chinese Stock Market Volatility. Volume 1, p. 6944318.

Chang, B. H., Derindag, O. F., Hacievliyagil, N. & Canakci, M., 2022. Exchange rate response to economic policy uncertainty: evidence beyond asymmetry. *Humanities & Social Sciences Communications,* 9(1), pp. 1-14.

Chiang, T. C., 2019. Economic policy uncertainty, risk and stock returns: Evidence from G7 stock markets. *Finance Research Letters,* Volume 29, pp. 41-49.

Chowdhury, E. K. & Abdullah, M. N., 2023. Gauging Demand for Cryptocurrency over the Economic Policy Uncertainty and Stock Market Volatility. *Computational Economics,* Volume 64, pp. 37-55.

Chowdhury, E. K. & Abdullah, M. N., 2023. Gauging Demand for Cryptocurrency over the Evonomic Policy Uncertainty and Stock Market Volatility. *Computational Economics,* 64(1), pp. 37-55.

Cobert, S., Lucey, B. & Yarovaya, L., 2018. Datestamping the Bitcoin and Ethereum bubbles. *Finance Research Letters,* Volume 26, pp. 81-88.

Corbet, S., Larkin, C. & Lucey, B., 2020. The contagion effects of the COVID-19 pandemic: Evidence from gold and cryptocurrencies. *The contagion effects of the COVID-19 pandemic: Evidence from gold and cryptocurrencies,* Volume 35, p. 101554.

Corbet, S. et al., 2018. Exploring the dynamic relationships between cryptocurrencies and other financial assets. *Economics Letters,* Volume 165, pp. 28-34.

Dai, P.-F.et al., 2021. Preventing crash in stock market: The role of economic policy uncertainty during COVID-19. *Financial Innovation,* 7(31).

Demir, E., Gozgar, G., Lau, C. K. M. & Vigne, S. A., 2018. Does economic policy uncertainty predict the Bitcoin returns? An empirical investigation. *Finance Research Letters,* Volume 26, pp. 145-149.

Demir, E., Gozgor, G., Lau, C. K. & Vigne, S. A., 2018. Does economic policy uncertainty predict the Bitcoin returns? An empirical investigation. *Finance Research Letters,* Volume 26, pp. 145-149.

Dixit, A. & Pindyck, R., 1994. *Investment Under Uncertainty.* s.l.:s.n.

Erdogan, L., Ceylan, R. & Rahman, M. A.-., 2022. The Impact of Domestic and Global Risk Factors on Turkish Stock Market: Evidence from the NARDL Approach. *Emerging Markets Finance and Trade,* 58(7), pp. 1961-1974.

Fama, E. F., 1970. Efficient Capital Markets: A Review of Theory and Empirical Work. *The Journal of Finance,* 25(2), pp. 383-417.

Fang, L., Bouri, E., Gupta Rangan & Rounaud, D., 2019. Does global economic uncertainty matter for the volatility and hedging effectiveness of Bitcoin?. *International Review of Financial Analysis,* Volume 61, pp. 29-36.

Farroukh, A., Metzger, M. & Mzoughi, H., 2024. Assessing the influence of cryptocurrencies on financial market stability. *Eurasian Economic Review,* Volume 15, pp. 425-472.

Francis, J. R. & Jiun, R. C. C., 2024. Economic Policy Uncertainty(EPU) and its predictability: A systematic Literature Review. *GLobal Business & Management Research: An International Journal ,* 16(1).

Ghani, M. & Ghani, U., 2024. Economic Policy Uncertainty and Emerging Stock Market Volatility. *Asian-Pacific Financial Markets,* 31(1), pp. 165-181.

Ghirelli, C., Gil, M., Perez, J. J. & Urtasun, A., 2019. Measuring economic and economic policy uncertainty and their macroeconomic effects: the case of Spain. *Empirical Economics,* Volume 60, pp. 869-892.

Gulen, H. & Ion, M., 2016. Policy Uncertainty and Corporate Investment. *The Review of Financial Studies,* 29(3), pp. 523-564.

Gulen, H. & Ion, M., 2016. Policy Uncertainty and Corporate Investment. *The Review of Financial Studies ,* 29(3), pp. 523-564.

Gungor, A. & Gungor, M. S., 2024. The nexus between Economic Policy Uncertainty and Stock Market Volatility in CEE-3 Countries. *South East European Journal of Economics and Business ,* 19(2), pp. 60-81.

Hasan, M. et al., 2020. Role of EPU in the connectedness of Cross-Country Stock MArket Volatiles. *Mathematics,* 8(11), p. 1904.

Hau, H. & Rey, H., 2006. Exchange Rates, Equity Prices, and Capital Flows. *The Review of Financial Studies,* 19(1), pp. 273-317.

Havidz, S. A. H. et al., 2024. Fully Recover From COVID-19 Uncertainties? Navigating the Islamic VS. Conventional Stock Indices in ASIAN Countries. *In Proceedings of the 2024 15th International Conference on E-business, Management and Economics,* pp. 299-304.

Helseth, M. A. E., Krakstad, S. O., Molnar, P. & Norlin, K.-M., 2020. Can policy and financial risk predict stock markets?. *Journal of economic B?ehavior & Organization,* Volume 176, pp. 701-719.

Huang, T. D., Tran, T. T. A. & Chung, N.-P., 2025. Time-Varying Granger Casuality Analysis: the relationship between Domestic Economic Policy Uncertainty and Stock Markets in Emerging Economies. *Asian Pacific Financial Markets,* pp. 1-25.

Huong, T. D., Tran, T. T. A. & Chung, N.-P., 2025. Time-Varying Granger Causality Analysis: The Relationship between Domestic Economic Policy Uncertainty and Stock markets in Emerging Economies. *Asian-Pacific Financial Markets ,* pp. 1-25.

Kalra, N. & Gupta, G., 2023. Impact of EPU on the Indian Stock Market: An Empirical Investigation. *Indian Journal Of Finance,* 17(3), pp. 50-63.

Kang, W. & Ratti, R. A., 2015. Oil shocks, policy uncertainty and stock returns in China. *Economics of Transition,* 23(4), pp. 657-676.

Katsiampa, P., 2017. Volatility estimation for Bitcoin: A comparison of GARCH models. *Economics Letters,* Volume 158, pp. 2-6.

Krol, R., 2014. Economic Policy Uncertainty and Exchange Rate Volatility. *International Finance,* 17(2), pp. 241-256.

Kundu, S. & Paul, A., 2022. Effect of economic policy uncertainty on stock market return and volatility under heterogeneous market characteristics. *International Review of Economics & Finance,* Volume 80, pp. 597-612.

Le, H. A. & Do, D. T., 2022. The Impacts of Crude Oil Market Structure on Stock Market Growth: Evidence from Asian Countries. *Complexity,* Issue 1, p. 6522367.

Liu, L. & Zhang, T., 2015. Economic policy uncertainty and stock market volatility. *Finance Research Letters,* Volume 15, pp. 99-105.

Liu, L. & Zhang, T., 2015. Economic policy uncertainty and stock market volatility. *Finance Research Letters,* Volume 15, pp. 99-105.

Liu, Z., Ye, Y., Ma, F. & Liu, J., 2017. Can economic policy uncertainty help to forecast the volatility: A multifractal perspective. *Physica A: Statistical Mechanics and its Applications,* Volume 482, pp. 181-188.

Li, X.-M., Zhang, B. & Gao, R., 2015. Economic policy uncertainty shocks and stock–bond correlations: Evidence from the US market. *Economics Letters,* Volume 132, pp. 91-96.

Li, Y., Ma, F., Zhang, Y. & Xiao, Z., 2019. Economic policy uncertainty and the Chinese stock market volatility: new evidence. *Applied Economics,* 51(49), pp. 5398-5410.

Li, Z.-Z., Su, C.-W. & Zhu, M. N., 2021. How Does Uncertainty Affect Volatility Correlation between Financial Assets? Evidence from Bitcoin, Stock and Gold. *Emerging Markets Finance and Trade,* 58(9), pp. 2682-2694.

Luo, Y. & Zhang, C., 2020. Economic Policy Uncertainty and stock price crash risk. *Research in International Business ans Finance,* Volume 51, p. 101112.

Ma, D., Yang, T., Liu, L. & He, Y., 2022. Analysis of Factors Influencing Stock Market Volatility Based on GARCH-MIDAS Model. *Complexity,* Issue 1, p. 6176451.

Mamman, S. O., Wang, Z. & Iliyasu, J., 2023. Commonality in BRICS Stock Markets' Reaction to Global Economic Policy Uncertainty: Evidence from a panel GARCH Model with Cross Sectional Dependence. *Finance Research Letters,* Volume 55, p. 103877.

Maydybura, A. et al., 2023. The Asymmetric Effect of the Extreme Changes in the Economic Policy Uncertainty on the Exchange Rates: Evidence from Emerging Seven Countries. *Annals of Financial Economics,* 18(2), p. 2250031.

Mishra, A. K. et al., 2023. The Impact of Directional Global Economic Policy Uncertainty on Indian Stock Market Volatility. *Asia-Pacific Financial Markets,* 31(3), pp. 423-452.

Mishra, A. K. et al., 2024. The Impact of Directional Global Economic Policy Uncertainty on Indian Stock Market Volatility:New Evidence. *Asia-Pacific Financial Markets,* 31(3), pp. 423-452.

Nakamoto, S., 2008. *Bitcoin: A Peer-to-Peer Electronic Cash System,* s.l.: SSRN.

Nusair, S. A. & Olson, D., 2025. The Asymmetric Effects of Economic Policy Uncertainty Changes on Unemployment in the G7 Countries. *Open Economies Review,* pp. 1-52.

Nusair, S. A. & Olson, D., 2025. The Asymmetric Effects of Economic Policy Uncertainty Changes on Unemployment in the G7 Countries. *Open Economies Review,* pp. 1-52.

Olanipekun, I. O., Williams , G. O. & Gungor, H., 2019. Impact of Economic Policy Uncertainty on Exchange Market Pressure. *Sage Open,* 9(3), p. 2158244019876275.

Osman, M. B., Mzoughi, H., Guesmi, K. & Naoui, K., 2025. Does investor sentiment drive the Bitcoin price?. *Digital Finance,* pp. 1-28.

Ozoguz, A., 2009. Good Times or Bad Times? Investors' Uncertainty and Stock Returns. *The Review of Financial Studies,* 22(11), pp. 4377-4422.

Paster , L. & Veronesi, P., 2021. Uncertainty about Government Policy and Stock Prices. *The Journal of Finance,* 67(4), pp. 1219-1264.

Pastor, L. & Veronesi, 2012. Uncertainty about Government Policy and Stock Prices. *The Journal of Finance,* 67(4), pp. 1219-1264.

Pastor, L. & Veronesi, P., 2012. Uncertainty about Government Policy and Stock Prices. *The Journal of Finance,* 67(4), pp. 1219-1264.

Pastor, L. & Veronesi, P., 2013. Political uncertainty and risk premia. *Journal of Financial Economics,* 110(3), pp. 520-545.

Paule-Vianez, J., Prado-Roman, C. & Gomez-Martinez, R., 2020. Economic policy uncertainty and Bitcoin. Is Bitcoin a safe-haven asset?. *European Journal of Management and Business Economics,* 29(3), pp. 347-363.

Paule-Vianez, J., Prado-Roman, C. & Gomez-Martinez, R., 2020. Economic policy uncertainty and Bitcoin. Is Bitcoin a safe-haven asset?. *European Journal of Management and Business Economics,* 29(3), pp. 347-363.

Paule-Vianez, J., Prado-Roman, C. & Gomez-Martinez, R., 2020. Economic policy uncertainty and Bitcoin. Is Bitcoin a safe-haven asset?. *Eurppean Journal of Management and Business Economics,* 29(3), pp. 347-363.

Phan, D. H. B., Sharma, S. S. & Tran , V. T., 2018. Can economic policy uncertainty predict stock returns? Global evidence. *Journal of International Financial MArkets, Institutions and Money,* Volume 55, pp. 134-150.

Phan, D. H. B., Sharma, S. S. & Tran, V. T., 2018. Can economic policy uncertainty predict stock returns? Global evidence. *Journal of International Financial Markets, Instutions and Money,* Volume 55, pp. 134-150.

Phylaktis, K. & Ravazzolo, F., 2005. Stock Prices and exchange rate dynamics. *Journal of International Money and Finance,* 24(7), pp. 1031-1053.

Rigobon, R., 2016. Exchange Rate Volatility. *The new Palgrave Dictionery of Economics,* pp. 1-6.

Shahzad, S. J. H. et al., 2017. Can economic policy uncertainty and investors sentiment predict commodities returns and volatility?. *Resources Policy,* Volume 53, pp. 208-218.

Su , F., Wang, F. & Xu, Y., 2024. Economic Policy Uncertainty and Volatility Spillovers Among International Stock Market Indices During the COVID-19 Outbreak. *Asia-Pacific Financial Markets,* Volume 32, pp. 237-266.

Su, F., Wang, F. & Xu, Y., 2025. Economic Policy Uncertainty and Volatility Spillovers Among International Stock Market Indices During the COVID-19 Outbreak. *Asia-Pacific Financial Markets,* 32(1), pp. 237-266.

Suleiman, M., Wang, Z. & Lliyasu, J., 2023. Commonality in BRICS Stock Markets' Reaction to Global Economic Policy Uncertainty: Evidence from a Panel GARCH Model with Cross Sectional Dependence. *Available at SSRN ,* p. 4390540.

Sum, V., 2013. The ASEAN Stock Market Performance and Economic Policy Uncertainty in the United States. *Economic Papers: A Journal of Applied economies and policy,* 32(4), pp. 512-521.

Triyaki, H. N. & Tiryaki, A., 2019. DETERMINANTS OF TURKISH STOCK RETURNS UNDER THE IMPACT OF ECONOMIC POLICY UNCERTAINTY. *Uluslararasi iktisadi ve idari incelemeler Dergisi,* Volume 22, pp. 147-162.

Uddin, M. A., Hoque, M. E. & Ali, M. H., 2020. International economic policy uncertainty and stock market returns of Bangladesh: evidence from linear and nonlinear model. *Quantitative Finance and Economics ,* 4(2), pp. 236-251.

Vianez, P.-.et al., 2020. Economic policy uncertainty and Bitcoin. Is Bitcoin a safe-haven asset?. *European Journal of Management and Business Economics (EJM&BE),* 29(3), pp. 347-363.

Wang, L., Sarker, P. K. & Bouri, E., 2023. Short- and Long-Term Interactions Between Bitcoin and Economic Variables: Evidence from the US. *Computational Economics,* 61(4), pp. 1305-1330.

Wang, M., 2025. Financial Flexibility, Perceived Economic Policy Uncertainty, and Corporate Reputation: Evidence from China. *In Proceedings of the 2nd Guangdong-Hong Kong-Macao Greater Bay Area International Conference on Digital Economy and Artificial Intelligence ,* pp. 441-446.

Wen, F., Xiao, Y. & Wu, H., 2019. The effects of foreign uncertainty shocks on China's macro-economy:Empirical evidence from a nonlinear ARDL model. *Physica A: Statistical Mechanics and its Applications,* Volume 532, p. 121879.

Wu, C.-C., Ho, S.-L. & Wu, C.-C., 2022. The determinants of Bitcoin returns and volatility: Perspectives on global and national economic policy uncertainty. *Finance Research Letters,* Volume 45, p. 102175.

Xiong, X., Bian, Y. & Shen, D., 2018. The time-varying correlation between policy uncertainty and stock returns:Evidence from China. *Physica A: Statistical Mechanics and its Applications,* Volume 499, pp. 413-419.

Youssef, M., Mokni, K. & Ajmi, A. N., 2021. Dynamic connectedness between Stock markets in the presence of the COVID-19 pandemic: Does Economic Policy Uncertainty matter?. *Financial Innovation,* 7(1), p. 13.

Yu , X., Huang, Y. & Xiao, K., 2021. Global economic policy uncertainty and stock volatility: evidence from emerging economies. *Journal of Applied Economics,* 24(1), pp. 416-440.

Yu, X. & Xiao, K., 2024. How does Chinese stock market react to breaking news about COVID-19? Evidence from event study. 10(10), p. e30949.