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Market-Microstructure and Stock Market Movements: An Interaction with Economic and Regulatory Variables

by

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To Allah Almighty (SWT) Who has been there right from the beginning to this very point.

To My Parents My Father and My Mother

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This is to certify that the research work presented in the dissertation, entitled "**Market-Microstructure & Stock Market Movements: An Interaction with Economic and Regulatory Variables**" was conducted under the supervision of **Dr. Imran Riaz Malik**. No part of this dissertation has been submitted anywhere else for any other degree. This dissertation is submitted to the **Department of Management Sciences, Capital University of Science and Technology** in partial fulfillment of the requirements for the degree of Doctor in Philosophy in the field of **Management Sciences.** The open defence of the dissertation was conducted on **November 13, 2025**.

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Abstract

The dynamics of stock markets in emerging economies have sparked considerable interest in market microstructures and their related aspects, attracting attention from both academic researchers and regulatory bodies. With respect to stock market efficiency emerging economies facing challenges at market-micro level such as significant information asymmetry, increased downfall risk, liquidity constraints, and overreaction of investors which affect stock market movements. Further, they are also extremely susceptible to macroeconomic shocks and policy uncertainty. Although market microstructure has been studied in relation to asset prices, little is known about how macro shocks and Economic Policy Uncertainty (EPU) moderate these effects. To address this gap, this study investigates how market liquidity, asymmetric information, investor attention, and market risk affect stock movements across emerging economies. This study empirically provides important insights into investor behavior, market reactions, and structural inefficiencies by highlighting the impact of macro shocks and increased economic policy uncertainty on less developed markets.

This study makes a theoretical contribution to the Adaptive Market Hypothesis (AMH) and Prospect Theory by empirically demonstrating that regulatory macro-economic factor (EPU)and fundamental economic-factor (interest rate and exchange-rate) conditionally affects the relationship between market microstructure factors and stock movement. So, it can be said that two theoretical pillars of this study are (1) Prospect theory and (2) Adaptive Market Hypothesis.

To empirically analyze this study the panel data set spanning 17 emerging economies across Asia, Europe, and America over 17 years (2004-2020) are being selected. The System Generalized Method of Moments (GMM) technique is being applied to address the issue of endogeneity as data nature is panel. According to empirical findings, stock returns are highly impacted by market microstructure factors, with regional variations. While asymmetric information has a detrimental influence in Asia and America, whereas liquidity has a favorable impact on returns in Asia. In every region, market risk has a negative impact on returns, but investor attention consistently demonstrates a favorable association. Furthermore, volatility

is influenced by investor interest and liquidity, with different effects in different geographical areas. Moreover, EPU only reduces the correlation between market liquidity and returns in Asia; it has no influence on the said effects of asymmetric information and investor attention on returns. Further, with respect to volatility, EPU exacerbates the detrimental effects of liquidity in Asia, moreover EPU also amplifies the impact of investor attention in the American economy. Interest rates have a significant effect on volatility solely in the American economy, Exchange rates show region-specific outcomes by amplifying the positive correlation between investor attention and returns in Asia and its impact on volatility in America. The following are some of the main empirical findings: (1) Market microstructure factors have a significant impact on stock movement in combined emerging markets and on a regional level; (2) Economic Policy Uncertainty (EPU), has a strong moderating effect on these relationships.

In practice, investors and policymakers need to adjust quickly when there is macroeconomic and regulatory uncertainty. Because of information asymmetry and investor overreaction, high EPU can skew liquidity and increase noisy trading. To control volatility, investors can profit from risk-adjusted, sentiment-sensitive strategies, while regulators could improve transparency and stabilization measures.

Keywords: Market-microstructure, Stock market Movements, Economic Policy Uncertainty, Interest-rate and exchange-rate

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Abbreviations

AI	Asymmetric Information
AMH	Adaptive Market Hypothesis
AR	Autocorrelation
EMH	Efficient Market Hypothesis
EPU	Economic Policy Uncertainty
ER	Exchange-rate
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
GMM	Generalized Model of Moments
IA	Investor Attention
INF	Inflation
IR	Interest-rate
MLI	Market Liquidity Index
MR	Market Risk
MB	Market Breadth
MD	Market Depth
MR	Market Resilience
OLS	Ordinary Least Square
PCA	Principle Component Analysis

Chapter 1

Introduction

The stock market stands as a central indicator of economic growth, playing a crucial role in fostering liquidity and enabling seamless transactions between investors. This process enhances the efficient allocation of capital, supporting the broader economy. In addition, the stock market acts as a reliable mechanism for reflecting fair asset prices by ensuring that pertinent information is accurately incorporated into valuation. To maintain the stock market's efficiency, institutional and market systems must operate autonomously and effectively. Given its critical role in the financial system, the stock market not only offers the potential for significant returns but also exposes investors to varying levels of risk and volatility, cumulatively stock market is a platform where stock movements are observed critically and empirically.

From a return perspective, investors realize gains when the selling price exceeds the purchase price, with historical data showing that long-term stock returns often outperform other asset classes. However, volatility is caused by factors such as company performance, macroeconomic conditions, geopolitical events, and market sentiment can lead to fluctuations in stock prices. This volatility introduces risk, which investors must manage through diversification strategies. Furthermore, emotional responses like fear and greed, often triggered by short-term volatility, can lead to impulsive decisions. However, successful investors remain focused on long-term objectives, exercising discipline and risk management. In this regard, Almahirah et al. (2021) employed volatility analysis and disequilibrium models to show that price volatility stems from various market imperfections and trading

irregularities, urging for regulatory measures to enhance market efficiency. Given the inherent volatility and potential for returns, investors must adopt strategies that mitigate risk while maximizing potential gains. By understanding the factors driving volatility and utilizing prudent risk management techniques, investors can navigate market fluctuations, accumulate wealth, and meet financial goals over time.

In last few decades the dynamics of stock market have changed a lot at regional and global level due to dramatic changes occurring in market development area, institutional quality, and exposure to macro-financial shocks. However, at global level stock markets are highly impacted by interlinked economic forces such as global interest-rate fluctuation, geopolitical disturbances, stock price fluctuations, and shifts in the world's risk appetite, which altogether generate amplified volatility across different economies (Aigbovo and Isibor, 2017) However, when studied at regional level these dynamics depict great discrepancy. In this regard Aigbovo and Isibor (2017) postulated that developed stock markets of North America and Europe' depict stronger regulatory frameworks, more advanced trading infrastructures, and greater liquidity that all collectively contribute to comparatively stable return. In contrast to that emerging economies such as Asia, Latin America, and Africa show increased volatility, more sensitivity to external shocks, and slower price discovery processes, which are mostly caused by institutional contexts that are changing, structural constraints, and increased information asymmetry. These differences highlight the fact that while cross-market connections have been strengthened by global financial integration, but still regional market attributes such as regulatory quality and local economic conditions depict distinct return behavior patterns, volatility, and overall market resilience. Due to this reason, it is necessary to examine stock market dynamics from global and a regional perspective.

As earlier said, the stock market's structure observed significant transformations in recent decades, such as traditional exchanges have given way to transnational markets, while physical trading floors have been largely replaced by continuous electronic trading. Futures and options markets now function with greater independence. Simultaneously, a burgeoning body of literature has emerged, delving into

the microstructures of financial markets through theoretical, empirical, and experimental lenses. This expanding field of market microstructure reflects a departure from neoclassical assumptions of perfect markets towards a deeper examination of the intricacies of financial market operations amidst periods of substantial financial innovation. Moreover, in recent years the market micro-structure also made a substantial contribution towards sustainable growth of the stock market.

The term "market microstructure" was first introduced in an essay by Garman (1976), though its conceptual foundations tracing back to Leon Walras' theoretical work in 1876. Walras' research, focused on the functioning of real markets such as the Paris Bourse, laid the groundwork for modern market microstructure studies (Walker, 1987). Subsequent research has explored how trading activities influence both short-term and long-term asset prices. Later, the concept of market microstructure was defined by O'hara (1998) as the study of "the process and outcomes of exchanging assets under explicit trading rules", whereas Madhavan (2000) defines it "the process by which investors' latent demands are ultimately translated into prices and volumes". The concept of market microstructure pertains to the exchange of both real and financial assets, with extensive evidence available primarily on the microstructure of financial markets owing to the accessibility of volume and price data. Later, Hautcoeur et al. (2011) elaborate on how investment trading exerts both short-term and long-term impacts on asset value. While the informational aspects of trade contribute to lasting effects on asset prices, various market frictions, and transaction costs influence short-term outcomes, resulting in deviations from the fundamental value of securities. In alignment with this perspective, Madhavan (2000) suggests that asset prices often fail to reflect complete information due to various market frictions. Therefore, it is evident empirically that deviations and market frictions in the stock market can introduce volatility while diminishing liquidity, posing challenges to effective portfolio allocation for investors, acting as hurdles for capital allocation, and imposing additional costs on firms, collectively impacting overall efficiency. Further, the National Bureau of Economic Research (NBER) has delved into the relationship between information, liquidity, and market efficiency. A key finding is that asset prices often fail to fully

reflect all available information due to market frictions, a notion central to market microstructure.

In the past, most of the empirical work related to market microstructure is confined to the study of different models such as Bid-ask spread models proposed by Stoll and Whaley (1983), Price-formation model proposed by Kyle (1985) and Market-structure model Stoll and Whaley (1983). Later, Francioni et al. (2008) work focused more on market structure and design. However, in recent study Aigbovo and Isibor (2017) broaden the horizon of market microstructure analysis and suggest that along with market structure and design issues, it is necessary that research dynamics of market-microstructure should be shifted towards its factors such as investor behavior, risk, information & disclosure, that are not only deal within market micro-structure spectrum but highlighted issues of stock market as it effects stock movements. With respect to the dynamics of stock markets specifically in terms of return and volatility differ substantially between emerging and developed economies due to variations in market microstructure factors such as liquidity, trading activity, bid–ask spreads, information asymmetry, and investor attention.

Empirical analysis postulate that developed economies, have cultured trading infrastructures and robust regulatory frameworks, which show high liquidity and enable faster information incorporation into prices and more stable return–volatility patterns (Aigbovo and Isibor, 2017) In contrast, emerging markets often exhibit lower depth, higher asymmetry of information, and sensitivity to global shocks instigate volatility and low returns (Aigbovo and Isibor, 2017). Therefore, it is inculcated that different return and volatility behaviors exhibited by the emerging and developed markets are due to the interaction of market microstructure factors and global uncertainty. Related to the correlation of market microstructure factor with stock return, latest research done by EHIEDU and AKUNOMA (2023), who analyzed the Nairobi stock exchange, highlighting how liquidity, risk, and trading behavior affect stock returns, while Jedidiah (2020) focused on the Kenyan market's correlation of return to market risk and trading volume. Moreover, volatility, as a measure of price fluctuations, is closely linked to these microstructure factors. Related to this, Mupondo (2022) emphasizes the importance of the relationship

between market microstructure factors and volatility, as heightened volatility often indicates larger swings in asset prices and vice versa and hinders market activity. Mupondo (2022) analyzes the impact of liquidity (a market microstructure factor) on volatility and reveals a negative association between them. So, it can be said that stock market volatility and return are a barometer of market activity and understanding this intricate relationship of market microstructure factors with return and volatility is a concern area for researchers.

Economic factors are the key elements that influence any country's economic performance and the behavior of individuals, businesses, and governments. These factors are crucial for comprehending how economies function and making informed decisions in investment, policy-making, and strategic planning. Further Economic shifts have an impact on investor behavior, market risk, and company fundamentals, all of which eventually affect stock price swings in the emerging econmoies. Balcilar et al. (2017). Therefore, predicting returns and controlling investment risk require an understanding of economic dynamics, especially over the past ten years, the European debt crisis, political unpredictability, and global financial crises of 2007 have attracted a lot of scholarly attention. Specifically, in recent years the regulatory economic factor "Economic Policy Uncertainty (EPU)" gained researchers' attention. EPU is defined as the unpredictability or uncertainty around economic policies that may impact investors, consumers, and enterprises' investment behavior. Changes in trade policy, regulations, and political events are the main causes of this unpredictability. Financial markets, economic activity, and general economic stability can all be significantly impacted by EPU. Moreover, the significance of consistent economic policies has become increasingly apparent due to globalization, competitiveness, and interconnectedness (Al-Thaqeb and Algharabali, 2019). Numerous empirical studies, including those by Gulen and Ion (2016), Istiak and Serletis (2018), Phan et al. (2018), and Zhang et al. (2019b), assert that stock markets are also sensitive to shifts in overall uncertainty. Furthermore, numerous studies have surfaced in recent years that have documented the myriad ways in which policy uncertainty impacts financial variables (Balcilar et al., 2017; Kang et al., 2014). Further, concerning economic factors Easley and O'hara (1992) also underscored the potential enhancement of microstructure factor studies through

the incorporation of economic factors in the linkage between microstructure factors and asset returns, as Caroline (2011) and Ali (2021) illustrate that macroeconomic factors appear to have a significant impact on how financial aggregates, such stock prices return and the volatility of the stock market. Moreover, Caroline (2011) and Ali (2021) state that with the advent of globalization due to digitalization, nothing can better perform in isolation, and therefore integration in stock market becomes necessary for investing activity.

Further emerging economies are getting the attention of researchers nowadays due to their increasing importance in the global economic landscape and other crucial factors such as; rapid growth, industrialization, and improving living standards, present unique opportunities and challenges that necessitate thorough investigation Balcilar et al. (2017). From an investment perspective, compared to developed markets, investing in emerging economies carries a different set of risks, such as economic volatility, regulatory changes, and political instability. In emerging markets, regulatory or economic shocks often cause liquidity constraints, amplifying volatility due to over and underreaction of investors and high information asymmetry Pratima et al. (2021). Policy uncertainty and abrupt interventions also instigate volatility and lower return, causing sudden capital outflows to further destabilize markets. The increased level of uncertainty and its consequences for investors, stock markets, and other economic activities have compelled scholars and practitioners to consider the repercussions of uncertainty more thoroughly (Pratima et al., 2021). So, the objective of this study is to analyze the effects of market microstructure factors (market liquidity, asymmetric information, market risk, and investor attention) on returns and volatility across three emerging economies (Asia, America, and Europe). Additionally, regulatory macroeconomic policy indicators i.e. economic policy uncertainty (EPU) and fundamental macro-economic factor interest rates, and exchange rates will be incorporated as moderators individually and jointly to further enhance the relationship between market microstructure factors with returns and volatility, ultimately aiming to improve market efficiency. Further studying the market microstructure factor of emerging economies can facilitate understanding how to manage stock movements during various regulatory and fundamental turmoil.

Moreover, this research bridges the gap between macro-level uncertainty and micro-level trading dynamics by focusing on emerging markets in Asia, America, and Europe. These regions are generally considered to have less developed financial systems, feeble regulatory regimes, increased vulnerability to external shocks, lower liquidity, higher volatility and weak institutional frameworks (Pratima et al., 2021). At the same time besides these shortcomings, emerging economies frequently display unique market dynamics and are considered a cornerstone for future research. Further, this comprehensive research employs a multifactor framework to examine the relationship between macroeconomic indicators and market microstructure components. Although conventional financial models frequently concentrate on a single set of variables (either macroeconomic or microeconomic), this empirical research acknowledges that a variety of internal and external factors influence stock market movements.

This study aims to contribute to the field of finance by examining the impact of market microstructure factors specifically, market liquidity, asymmetric information, market risk, and investor attention on stock movements in three emerging economies: Asia, America, and Europe. The study also incorporates macroeconomic indicators, including EPU, interest rates, and exchange rates, as moderating factors to understand their influence on the relationship between microstructure factors and stock market movements. This empirical study offers a more comprehensive analytical framework by examining moderating variables including EPU, interest rates, and exchange rates in addition to market risk, liquidity, asymmetric information, and investor attention. This multifaceted method can improve the accuracy of stock market returns and volatility forecasts, especially in settings like developing countries where exchange rate changes and uncertainties about economic policy are common. Moreover, examining how macroeconomic factors as moderators influence the relationship between market microstructure parameters and stock market movement is one of this research's most innovative features. This is a significant development because most of the research ignores the moderating effects of macroeconomic factors and treats them as independent variables. According to this research, macroeconomic variables impact stock markets beyond direct consequences and how microstructure elements affect market outcomes. A

fundamental tenet of financial theory is market efficiency, which holds that asset prices accurately reflect the information at hand. On the other hand, inefficiencies are more noticeable in emerging markets because of things like less transparent marketplaces, less regulatory control, and a greater frequency of information asymmetry. By examining how the combined effects of macroeconomic moderators and microstructure issues affect the efficiency of stock markets in emerging economies, this research contributes to the ongoing discussion.

1.1 Theoretical Background

There are three underpinning theories related to (1)stock market efficiency issues, (2) stock movement issues, impacted by regulatory and fundamental economic factors of developing economies; such as (a) Efficient Market Hypothesis; The Efficient Market Hypothesis (EMH) offers a standard by which to measure the impact of external moderating variables and microstructure characteristics on stock returns and volatility, (b) Prospect Theory; sheds light on the psychological aspects of investors that influence how markets respond to microstructure factors. Understanding why some microstructure issues result in higher volatility or abnormal returns can be greatly aided by this, particularly when these aspects combine with more general economic or regulatory conditions, (c) Adaptive Market Hypothesis; A more detailed examination of how market participants react to amendments in microstructure and regulatory and economic aspects is made possible by AMH. Unlike the static assumptions of EMH, it can aid in explaining times of high volatility or anomalous results when markets adjust to changing circumstances.

1.1.1 Efficient Market Hypothesis

Today's finance landscape is largely shaped by the Efficient Market Hypothesis (EMH), initially proposed by Fama (1965), which stands as a fundamental pillar of modern portfolio theory, as acknowledged by financial economists (Francioni et al., 2008). According to EMH, the market is deemed informational efficient if security prices promptly and accurately reflect all available information at any given

moment (Fama, 1970). The result is that the cost of equities reflects the entire economic environment in which they exist. In such efficient markets, no trader or investor can consistently achieve abnormal profits, as all pertinent information is swiftly incorporated into prices and share is traded at fair value. Three categories were established by EMH for the stock markets: weak-form, semi-strong-form, and strong-form. The weak form of the Efficient Market Hypothesis (EMH) implies that all available public market information is reflected in securities prices. It also assumes that historical data on volume, price, and returns does not indicate future pricing. The semi-strong variant of the Efficient Market Hypothesis (EMH) builds upon the assumptions that prices react promptly to past prices and newly disclosed public information. However, the strong form of the EMH assumes that prices always reflect all types of public and private information. This embodies historical, new, or current, as well as insider information. The other side of flip, i.e. critics, such as Grossman and Stiglitz (1980), have demonstrated that markets cannot be perfectly efficient. Perfect efficiency would negate the necessity of trading, potentially leading to market collapse. Moreover, inefficiencies driven by noise traders' individuals who trade based on perceived information that is noise contribute to market volatility and weaken efficiency Black (1986). Even proponents of behavioral finance argue against the absolute efficiency assumed by EMH, suggesting instead that markets may be relatively efficient Chuvakhin (2002).

In recent years, researchers have delved into the realm of market microstructure in relation to EMH, investigating whether microstructure factors influence strong, semi-strong, or weak-form efficiency. Studies have explored market efficiency globally and in emerging economies, with some focus on how changes in market microstructure affect efficiency from an operational standpoint. For instance, Okumu (2013) observed that the introduction of electronic trading in emerging stock markets has contributed to improved efficiency to some extent. Moreover, research on weak-form efficiency has led to the adoption of standardized methodologies for assessing efficiency levels, typically classifying markets as either weak-form efficient or inefficient. Madhavan (2000) highlighted numerous market frictions at the microstructure level that can impede efficiency, echoing concerns raised

by Francioni et al. (2008) regarding liquidity and asymmetric information as challenging microstructure factors. Additionally, investor trading behavior, a crucial aspect of market microstructure, can either positively or negatively impact market efficiency by introducing noise. Said et al. (2024) scrutinized the influence of market microstructure components on enhancing market efficiency and concluded that these components play a paramount role. So, it is evident that the presence of some frictional factors at the market microstructure level can make one stock market inefficient and affect the stock movements of any stock market, specifically in emerging economies.

According to the Efficient Market Hypothesis (EMH), stock returns follow a random walk and cannot be reliably anticipated using either public or private information because financial markets efficiently incorporate all available information into asset values. According to this viewpoint, the speed and accuracy with which information is reflected in prices is influenced by market microstructure factors such liquidity, asymmetric information, investor attention, and market risk. For example, price changes may be delayed by reduced liquidity or increased information asymmetry, leading to short-term inefficiencies and increased volatility. Additionally, according to EMH, investor attention improves information flow and assimilation, which in turn improves price discovery. However, the existence of macroeconomic uncertainties, like fluctuation in exchange-rate, shifting interest rates, and EPU, might disturb the information environment and momentarily hinder the market's capacity to digest information effectively. Therefore, EMH offers a robust theoretical model for evaluating the impact of market microstructure on price formation and volatility, particularly when broader economic shocks and uncertainty are present.

1.1.2 Prospect Theory

In the late 20^{th} century, behavioral finance emerged as a prominent field, focusing on the influence of psychological factors on financial market dynamics. Unlike classical finance, which posits that investors are rational, markets are efficient, and consistent market outperformance is unattainable, behavioral finance scrutinizes market inefficiencies through the lens of psychological theories and phenomena Zafar

and Siddiqui (2020). Since the advent of behavioral finance, questions have been raised about market efficiency, and yet no theory developed that consolidates the irrational investors and their impact on financial markets. Therefore, it is necessary that at the market microstructure level impact of the investor's behavior toward stock movement is empirically analyzed which may further contribute towards market efficiency.

Prospect theory is a behavioral theory, initially formulated in 1979 and later refined in 1992 by Tversky and Kahneman, posits that investors assign different values to gains and losses and remain unaffected by the decision-maker's current wealth status. Prospect theory provides a strong behavioral basis that how investors truly make investment decisions in the time of risk and uncertainty, which frequently differs from the strictly rational or "expected utility" models found in conventional economics. In addition, prospect theory explains that Individuals evaluate results in relation to a reference point and fear losses more than they appreciate similar gains, in other words exhibit loss aversion, which is the propensity to place a higher value on losses than on comparable gains. This is the crux of prospect theory.

In the realm of market microstructure, which includes trading processes, bid-ask spreads, liquidity, and information asymmetry, and investor attention. Prospect Theory offers essential insights into the impact of investor attention on price dynamics and market behavior. Moreover, in recent years, the emergence of dynamic uncertainty, driven by economic indicators and pandemics, the impact of macroeconomic uncertainty, amplifies the behavioral responses anticipated by Prospect Theory. Consequently, Prospect Theory enhances this research by providing a behavioral rationale for the asymmetric and nonlinear correlations between investor attention and stock movement, especially in contexts of heightened policy, monetary, and exchange-rate related uncertainty.

1.1.3 Adaptive Market Hypothesis

Recently, an effort has been made by Lo (2004) to bridge the gap between the Efficient Market Hypothesis (EMH) and behavioral finance, leading to the development of Adaptive Markets Efficiency (AMH). The Adaptive Market Hypothesis

(AMH) hypothesize that when investors adjust their behavior to changing market conditions, competition, and learning, market efficiency varies over time. As a result, depending on how much the market adapts over time, return predictability and market anomalies may emerge or vanish.

Adaptive Markets Hypothesis (AMH) offers a framework that reconciles these two contrasting viewpoints by explaining market efficiency through an evolutionary lens. In this framework, the evolving nature of return predictability is rationalized, highlighting that market efficiency is not static but rather influenced by constantly changing market conditions. According to Lo (2004), market efficiency cannot be assessed in isolation but is instead highly dependent on various dynamic factors such as regulatory reforms, investor demographics, and microstructural changes within the market.

While AMH provides a pathway for understanding why some markets may exhibit efficiency at certain times and inefficiency at others, its ability to conclusively settle the debate on market efficiency remains uncertain. However, Lo (2007) did not empirically emphasize the significance of the economic environment in determining stock market efficiency. In contrast, Santosa et al. (2011) advocate for the incorporation of macroeconomic indicators into the AMH framework to better assess market efficiency. This suggests that a comprehensive understanding of market efficiency requires consideration of both micro-level factors and broader economic regulatory and fundamental factors.

Within the framework of market microstructure, the Adaptive Market Hypothesis elucidates how market microstructure factors such as market liquidity, asymmetric information, investor attention, and market risk dynamically affect stock movement, as investors oscillate between rational and emotional reactions. Furthermore, these effects are moderated by macroeconomic factors like interest rates, exchange rates, and Economic Policy Uncertainty (EPU), which modify the market environment and force investors to reevaluate their approaches. AMH thus offers a versatile theoretical framework for comprehending how market microstructure interacts under various macroeconomic circumstances to influence stock movements and exhibit either efficiency or inefficiency. So, it can be said that the dynamic changes

in regulatory frameworks, environmental factors, and microstructural dynamics contribute to stock movements and impact on market efficiency over time. As a result, emerging markets of Asia, Europe, and American economies may exhibit strong, semi-strong, or weak forms of efficiency at different durations.

This research study contributes to two foundational theories (1) Adaptive Market Hypothesis (AMH), and (2) Prospect Theory. EMH assumption is that prices reflect all available information, however as there are lot of frictions at the micro-level such asymmetric information environment, market risk, liquidity constraints and macroeconomic instability that makes it difficult to say market is efficient all the time. Further AMH refines this by suggesting that market efficiency changes from time to time, as influenced by changing the market macro-environment, making it suitable for examining dynamic interactions under shifting policy environments. Prospect Theory adds an investor behavioral perspective, how during time of heightened EPU investor attention diverge from rational expectations, give weightage to losses more than gain as being risk averse. By combining these three theories, this study captures the element of rational, adaptive, and psychological dimensions of stock market behavior, especially in emerging economies which are considered in-efficient.

In this study, the AMH theory and prospect theory underpins as Prospect theory elucidates why and how investors behave irrationally during the time frame of high , whereas AMH illuminates when and to what level such behaviors affect markets over time, as prevailing economic shocks affect the stock market at micro-level which ultimately impacts stock market movements and makes the market inefficient of emerging economies. So, it can be said that the hybrid approach of these two theories is being observed. Further, by integrating both theories this study provides a dynamic, behaviorally informed view of financial markets, particularly helpful for analyzing emerging markets and periods of economic and policy shocks.

1.2 Gap Analysis

As mentioned earlier, the study of market microstructure delves into the behavior and establishment of prices in stock markets, while return refers to the optimization

of investment profit while managing a certain level of risk. A growing body of research has recognized stock market returns as a pivotal component of the entire market microstructure. The factors underlying price movements significantly affect returns, with prices responding to various firm-, market-, and macroeconomic shocks (Said et al., 2024). Easley and O'hara (1992) seminal work laid a revolutionary foundation in the study of market microstructure, emphasizing the linkage between market microstructure factors and asset return, along with corporate finance. Empirical research on the impact of market microstructure factors on return has also been conducted by EHIEDU and AKUNOMA (2023) on the Nairobi stock exchange, where factors such as liquidity, idiosyncratic risk, size, and trading behavior were identified as key drivers of market return. Similarly, Jedidiah (2020) analyzed the relationship between microstructure factors and market return in the Kenyan stock market, considering trading volume, market risk, and trading activity as microstructure factors. They found that market risk exhibited a negative relationship with return, while trading activity and volume showed a positive relationship. Additionally, Jedidiah (2020) stressed the investigation of other dynamic microstructure variables' relationships with a return. Hikouatcha et al. (2022) highlighted the importance of future research in exploring the relationship between microstructure factors and market returns, as it provides a new foundation for measuring stock market efficiency. They particularly emphasized investigating asymmetric information and market risk using VaR as a microstructure factor. Previous research has primarily focused on the individual impact of microstructure components on return. For instance, Anifowose et al. (2020) examined the influence of asymmetric information on stock return in the Nigerian capital market. Vozlyublennaia (2014) analyzed the dynamic relationship between investor attention and stock return, indicating that investor attention enhances return efficiency. Fink and Johann (2014) empirically studied the relationship between investor attention, return, and volatility in China, suggesting that investor attention influences short-term stock returns but not significantly. Batten and Vo (2014) found a positive relationship between liquidity and return, while Jedidiah (2020) proposed a negative relationship between market risk and return in Kenya. Similarly, Said et al. (2024) illustrated that market risk as a microstructure factor reduces the efficiency of emerging stock

markets. Overall, the existing literature reveals that, although market microstructure factors such as liquidity, information asymmetry, and investor behavior are empirically and extensively recognized as important determinants of asset prices, the empirical evidence on their influence of stock returns still needs to be explored. Most of the current research is conducted in developed markets, or study only one microstructure dimension at a time, which restricts its applicability to emerging economies where trading mechanisms, investor behavior, and market structure vary substantially. So, this domain requires extensive empirical research, in which causal relationship of market microstructure factors with stock -market return is being conducted in the emerging economies. Therefore, this study will address that gap and empirically analyze the relation of market microstructure factors (market liquidity, asymmetric information, market risk, and investor attention) with stock-market returns across three emerging economies (Asia, Europe, and America).

Future expectations, driven by the influx of new information, play a pivotal role in shaping investment decisions made by investors, consequently leading to fluctuations in stock prices. Volatility, as a result, serves as a crucial indicator of market activity and efficiency within a stock market (Said et al., 2024). Extensive research has identified various factors in the stock market that contribute to volatility, with liquidity and macroeconomic factors being among the most extensively studied variables due to their significant impact on investor decision-making, as well as on policymakers and regulators. Traders, including speculators, hedgers, and arbitrageurs, adopt diverse investment approaches based on the behavior of these variables as they respond to new information in the stock market, anticipating future prices. The perspectives of policymakers and regulators regarding market activities heavily rely on these fundamental factors (Mupondo, 2022). Mupondo (2022) conducted a study on the Zimbabwe stock exchange, postulating a negative association between liquidity and volatility. An information-based model that predicted negative correlations between volatility and liquidity was introduced by Kyle (1985). It suggested that knowledgeable traders had insider knowledge that affects asset supply and demand, increasing bid-ask, and ultimately leading to increased transaction costs, reduced liquidity, and heightened volatility. This underscores

the importance of empirically investigating the linkage between microstructure factors, particularly liquidity, and volatility. Similarly, Easley and O'hara (1992) highlighted the empirical linkage of microstructure variables to volatility, suggesting that disruptions in the evolution of prices due to information disruptions contribute to volatility. Further, Gabaix et al. (2006) empirically analyze the association of institutional investors with stock market volatility and found that institutional investors are a profound variable of market microstructure. Thus, understanding the relationship between microstructure factors (liquidity and institutional investors) and volatility is crucial for enhancing stock market efficiency. Moreover, proponents of behavioral finance argue that traders' behavior primarily drives stock market efficiency. Therefore, recent advances in market microstructure have attempted to incorporate traders' psychology into models to explain phenomena such as overconfidence among knowledgeable traders, which can cause volatility (Madhavan, 2000). Ruan and Zhang (2016) analyzed the relationship between investor attention (a trading behavior) and volatility by extending Kyle (1985) market microstructure information model. Their empirical results indicated that investor attention leads to higher market volatility. Similarly, Fink and Johann (2014) studied the relationship between investor attention and volatility, finding a significant correlation between the two. Moreover, empirical literature suggests that high investor attention is associated with higher stock market volatility (Da et al., 2011); Aouadi et al. (2013). Gabaix et al. (2006) analyzed the relationship between institutional investors' behavior and stock market volatility, revealing that institutional investors are a significant component of total stock investment, thereby influencing market microstructure. A critical review of the literature reveals a notable gap wherein no study has specifically addressed the influence of liquidity and invested attention on volatility within the framework of market microstructure. Moreover, the relation of market microstructure factors with volatility has not been addressed in the emerging economies of Asia, Europe, and America. Therefore, these gaps need in-depth empirical investigation

The term "uncertainties in economic policy" refers to the uncertainty surrounding decisions made by policymakers responsible for setting economic policy (Tiryaki and Tiryaki, 2019). Over the past few decades, there have been significant changes

in economic policy, market microstructure, and the economic environment, leading to increased unpredictability in the economy, which in turn complicates resource allocation and investment decisions (Wen et al., 2021). Handley and Limao (2015) highlight the robust impact of Economic Policy Uncertainty (EPU) on stock market efficiency and economic growth compared to monetary or fiscal policies. Economic policy changes have an impact on firm performance, which raises operational risks at the firm level. At the stock market level, however, investors may pull money out of the market to reduce investment risks due to uncertainty about future market trends and policy developments, which could affect how well policy interventions work for the economy Bernal et al. (2016). There is a sudden decrease in stock market liquidity because of investors delaying or stopping business and investment activity due to this uncertainty in the capital markets (Ali, 2021). Debata and Mahakud (2018) investigates the connection between market liquidity and economic policy uncertainty, pointing out that illiquidity contributes to EPU and that co-movements become more intense during crises. Additionally, financial economists show a strong interest in examining Economic Policy Uncertainty (EPU) from an asset-pricing perspective, as it significantly impacts financial markets by reducing returns and increasing volatility (Albulescu et al., 2019) and (Brogaard and Detzel, 2015). Studies by Albulescu et al. (2019) and (Brogaard and Detzel, 2015) highlight how EPU instigates instability into market behavior, influencing investor decisions and leading to fluctuating asset prices. Understanding this relationship is essential, as it provides insights into market dynamics, aids forecasting returns, and contributes to developing strategies for managing market risks amid uncertain policy conditions. Moreover, investors often feel uncertain and unclear about the timing, content, and potential impact of policy decisions. When unexpected information is introduced, investors must adjust their investment expectations, which can influence stock prices positively or negatively. Chan and Lien (2003) suggests that negative correlations between EPU and stock values stem from market participants' pessimistic projections regarding future dividends and/or discount rates, which are influenced by uncertainty surrounding economic policies. Furthermore, Wen et al. (2021) attribute the prevalence of EPU in developing countries to factors such as asymmetric information, low production levels, and a lack of technological

advancement. This underscores the significant concern surrounding EPU among academics, particularly in the fields of finance and economics, with much research focused on the direct relationship between EPU and stock returns. For example, Tiryaki and Tiryaki (2019) find a negative relationship between EPU and stock returns in Turkey, while Arouri et al. (2016) study the relationship between EPU and stock returns in the U.S. economy from 1900 to 2004, demonstrating a negative link between the two. However, there has been relatively less attention given to the moderating role of EPU, especially within the realm of market microstructure and in Emerging economies such as Asia, Europe, and America. Numerous research examined the effects of microstructure and EPU on returns independently. However, there is a gap of integrated empirical frameworks that specifically address EPU as a moderator between returns and microstructure factors. Moreover, most of the empirical research that connects EPU, microstructure factors, and stock returns, confined to developed markets, such as the US and other European countries, whereas limited search done on the emerging economies. So, there is a substantial gap in research in this regard that needs empirical investigation. So, this study seeks to assess whether EPU strengthens or weakens the relationship between these microstructure factors and stock returns. Additionally, the study aims to explore whether EPU may hinder or facilitate investors in distinguishing between noise and relevant signals in the market due to transparency issues surrounding information given the dynamic changes in economic uncertainty at both the domestic and global levels, and changes in market microstructure, as suggested by the Adaptive Market Hypothesis. Moreover, by incorporating EPU as moderator, policymakers and investors can gain a better understanding of how economic policy uncertainty affects market dynamics, returns, and economic uncertainties and facilitate investors in making more rational investment decisions.

As earlier said, (EPU) represents the uncertainty faced by economic entities due to uncertainty about potential changes to current economic policies by the government. It is an external and uncontrollable factor that impacts the operations of the stock markets at both micro and macro levels. Its influence on the efficiency of emerging economies is profound, given factors such as irrational investors, thin markets, transparency issues, and poor governance (Said et al., 2024). In such conditions,

stock markets tend to be highly volatile, and heightened EPU exacerbates this volatility (Cai et al., 2022). Regarding the moderating impact of EPU, Xiao and Wang (2021) examined the role of EPU as a moderator in the relationship between investor attention (a microstructure variable) and market volatility in BRICS and G7 countries, particularly focusing on the oil market. They found that economic policy uncertainty strengthens the positive relationship between investor attention and volatility. This indicates that regulatory economic factors not only directly influence financial variables but also serve as crucial moderators in the relationships between financial variables and stock market movements. However, limited research has been conducted in this area, particularly at the micro-level of the stock market, necessitating further empirical investigation. Therefore, this study aims to analyze the moderating role of EPU between microstructure variables and market volatility. This research gap is significant because understanding how EPU moderates the relationship between market microstructure, market returns, and volatility can provide valuable insights into market behavior during periods of policy uncertainty. By addressing this gap, academics and investors can gain a better understanding of how shifts in economic policy uncertainty affect the relationship between market microstructure and stock market outcomes. Moreover, the integration of the microstructure model with EPU in analyzing stock movements will provide valuable insights into how market dynamics change in response to high levels of uncertainty surrounding economic policy, ultimately influencing stock market efficiency.

Economists and finance experts are increasingly interested in understanding the connection between asset returns and macroeconomic factors. The current environment, characterized by greater integration of financial markets and the implementation of stock market reforms, has made the operations of the stock market and their relationship with the macroeconomic environment increasingly significant (Singh et al., 2011). This underscores the adverse impact of macroeconomic indicators on stock market activity. Empirical research has explored the relationship between macroeconomic factors such as interest rates, exchange rates, inflation, and GDP with stock returns in both developed and developing economies across different periods, yielding mixed results. For example, Singh et al. (2011) found that in

the Taiwanese economy, exchange rates and GDP affect returns positively, while inflation rates, exchange rates, and money supply have a negative relationship with returns. Similarly, Barnor (2014) investigated the impact of macroeconomic variables on returns in Ghana and found that interest rates and money supply negatively affect stock market returns, whereas exchange rates have a positive effect on returns. Most of the research in the past has been confined to a single economy and the direct relationship of an economic factor with a return. Regarding this Easley and O'hara (1992) also emphasize the linkage of economic factors with microstructure factors to enhance the spectrum of market-microstructure. However, the moderating impact of macroeconomic factors is an under-research area specifically within the domain of market microstructure. This gap needs to be addressed and requires an in-depth and comprehensive empirical investigation. Given this gap in research, this study aims to examine the moderating role of macroeconomic indicators, such as exchange rates and interest rates, between market microstructure factors and market returns on Emerging economies of Asia, America, and Europe. By addressing this gap, the study seeks to provide insights into how macroeconomic conditions influence the relationship between market microstructure and stock market returns, thereby contributing to a deeper understanding of market dynamics at the micro level

The relationship between macroeconomic factors and stock market volatility is indeed a crucial area of research with practical implications for investors, policymakers, and regulators. While existing studies have explored the impact of macroeconomic indicators on stock market volatility, there is a notable void in the literature regarding the moderator role of macroeconomic indicators within the context of market microstructure, particularly in emerging economies. Empirical research in this area could provide valuable insights into how macroeconomic factors interact with market microstructure to influence stock market volatility. By incorporating economic indicators as moderators in the relationship between market microstructure and volatility, researchers can offer a more comprehensive understanding of the dynamics driving stock market behavior. For instance, investigating how interest rates or exchange rate volatility moderate the relationship between market liquidity, investor behavior, and stock market volatility could yield

insights into how changes in economic conditions impact market dynamics. This research could inform investment strategies, risk management practices, and policy decisions aimed at promoting financial stability and market efficiency. Furthermore, studying the moderating role of macroeconomic indicators in emerging economies is particularly relevant given their unique economic characteristics and susceptibility to external shocks. Understanding how economic variables interact with market microstructure in these contexts can help anticipate and mitigate the effects of volatility on economic growth and stability. In conclusion, addressing this gap in the literature through empirical research on the moderating role of macroeconomic indicators in the relationship between market microstructure and stock market volatility is essential for advancing our understanding of financial market dynamics and informing decision-making in both academic and practical settings.

In recent years the notion of joint moderation where two moderating variables collaboratively affect the link between independent and dependent variables has gained prominence in financial and economic research, particularly in the analysis of intricate systems such as stock markets. In recent studies, joint moderation is important for several reasons such as (1) Financial markets are concurrently affected by various macroeconomic and microstructural factors, (2) Joint moderation enables researchers to investigate how the influence of one moderator (e.g., Economic Policy Uncertainty, EPU) on a relationship varies in the context of another moderator (e.g., interest rates or exchange rates), (3) Single-moderator models frequently lack the depth and realism that this joint moderation provides. Moreover, in enhancing model precision, inclusion of joint moderator can increase the mode's explanatory power. With reference to joint moderation, limited literature available such as Tsai and Yang (2013) analyze the impact of firm innovativeness on firm performance in Taiwan's high-tech industry with joint interaction of market turbulence and competitive intensity. Their empirical result demonstrates how competitive intensity and market turbulence work together to affect the degree and direction of the business innovativeness performance. Further, Elmashtawy et al. (2024) examined the impact of corporate governance on the performance of corporations with a joint moderating impact of audit and accounting conservatism on the Egyptian firms. This reflects that the joint interaction of moderators should be further explored in

other fields of finance, especially in the domain of market microstructure. Further, existing empirical studies, such as those conducted by Ling et al. (2023) and Aziz et al. (2020), have provided valuable insights into the individual impacts of macroeconomic factors and economic policy uncertainty (EPU) on stock market returns. Similarly, related to volatility research conducted by Ghani et al. (2022), has highlighted the individual impacts of macroeconomic factors and economic policy uncertainty (EPU) on stock market volatility in emerging economies. So, most of the studies may emphasize the independent effects of EPU and macroeconomic variables (such as interest rates and exchange rates) on market microstructure. In addition, most of the research is restricted to a particular stock market. There is a lack of research on whether the joint moderation effects vary among areas with distinct monetary and policy environments. There's a gap in fully integrating both layers with joint moderation effects to build a comprehensive framework that explains how stock prices respond under varying macro-micro dynamics. By affecting the cost of borrowing and investing, interest rates have an impact on market players' trading volume and liquidity provision. A high EPU may discourage market makers from offering liquidity because they believe it to be risky, but by reducing the cost of capital, an accommodating interest rate may counteract this hesitancy. Through joint moderation, the model can represent how these two forces interact to either reinforce or undermine the market microstructure's resilience, which impacts volatility and returns. Further, investors in emerging markets are particularly concerned about exchange rate swings, as currency instability can reduce profits and increase volatility. This sensitivity is made worse by high EPU, which raises doubts about economic stability and governmental policies. The joint influence of inter-action terms exchange rate and EPU on investor attention will shape trade volume as investors modify their exposure to currency and policy risks, eventually influencing volatility and returns. This reflects that economic and regulatory issues can either exacerbate or lessen the consequences of one another, and they frequently cooperate. The basic purpose of joint moderation is to capture and get insight into how the combined effect of policy related and fundamental economic factors simultaneously reshape the correlation between market microstructure factor and stock movements. Further, joint moderation enables us to capture the shifts in

regime and nonlinear investor behavior that cannot be captured through single moderators. Therefore, analyzing the joint moderating effect of macroeconomic factors and EPU is required in emerging economies as they significantly affect market efficiency. Taking into consideration this gap, in this study the joint interaction of fundamental macro-economic factors (interest rate and exchange rate) and regulatory (EPU) macroeconomic factors as moderators between market microstructure and stock market return will be studied. Further, this represents an important study with significant implications for investors, policymakers, and academics. By addressing this gap, researchers and investors can understand the complex interactions of microstructure factors, with macro-economic and regulatory factors, that affect stock market movements and may facilitate investors in making informed decisions.

The above-mentioned gap analysis revealed inefficiencies in emerging markets are frequently caused by information asymmetries, structural flaws, and low investor attention. Previous studies have shown that microstructure has an impact on return and volatility, but they frequently overlook the ways in which these associations change depending on the macroeconomic environment. In the field of finance there is a need to investigate conditional effects that might strengthen or decrease market dynamics, especially the function of moderators like Economic Policy Uncertainty (EPU) and important macro indicators. Despite their significance EPU and macro variables are still not well studied in developing market environments, as moderators. With respect to methodology, a large portion of literature uses static panel methodologies, which might not fully account for endogeneity and the dynamic character of financial markets. This study addresses these gaps by integrating EPU and macro factors into the analysis of microstructure-return-volatile relationships. By doing this, it improves knowledge of how policy environments and external shocks alter market behavior.

The market microstructure domain, which looks at how trading processes, information asymmetries, and investor behavior affect asset prices and market dynamics, essentially forms the theoretical basis of this subject. These microstructure factors are crucial in determining return and volatility patterns in emerging nations, where

financial systems are less established and frequently prone to inefficiencies. This study specifically examines four important microstructure factors: asymmetric information, investor attention, market risk, and market liquidity. According to Amihud et al. (1997), market liquidity influences price stability and the ease of trade execution; illiquidity frequently results in increased volatility. Market risk is essential for capturing systematic uncertainty, but in less developed markets, it could be priced inefficiently. According to the behavioral finance notion of investor attention, noise trading and excessive volatility might result from cognitive overload and inadequate cognitive capacity. According to models developed by Glosten and Milgrom (1985) and Kyle (1985), asymmetric information emphasizes how pricing and liquidity are distorted by market actors' unequal access to information. Even while these micro-level factors are important in and of themselves, macroeconomic circumstances can change how they affect things. Thus, interest rates, exchange rates, and Economic Policy Uncertainty (EPU) all play moderate roles in this study. According to Baker et al. (2016), EPU captures the volatility of regulatory rules, which can affect trading behavior and investor mood. Exchange-rate depreciation and appreciation impact stock market activity, especially in open emerging markets, while interest rate variations impact risk-adjusted returns and the cost of capital. This study provides a thorough framework to comprehend the intricate and dynamic character of financial markets in emerging economies by fusing the notion of market microstructure with macro-level uncertainty variables.

1.3 Problem Statement

Understanding the drivers of stock market movements is essential for comprehending how financial markets function. One critical area of focus is market microstructure, which encompasses the internal mechanisms that influence how trading processes impact stock prices and, consequently, overall market efficiency. Market microstructure factors such as asymmetric information, liquidity, investor attention, and market risk play a pivotal role in shaping stock movements, particularly in terms of stock returns and volatility (EHIEDU and AKUNOMA, 2023; Jedidiah, 2020). These factors directly influence price discovery and the efficient functioning of

markets. Moreover, in the past many empirical studies analyzed the direct correlation of economic factors with return and volatility. Whereas the moderating effect of the economic factor between the dynamic relationship of microstructure factors and stock movements requires empirical attention. As its external and uncontrollable factor that impacts the operations of the stock markets at both micro and macro levels. It influences on the efficiency of emerging economies is profound, (Said et al., 2024). In connection with this, financial economists have recently shown a great deal of interest in comprehending the EPU phenomena from the standpoint of stock-movement since it lowers returns and causes stock market volatility (Belke et al., 2018; Albulescu et al., 2019). Further, EPU affects how market participants respond to information, particularly during periods of heightened uncertainty. When EPU is high, the effects of market microstructure may intensify, such as liquidity crunches increased market volatility, and heightened susceptibility to fluctuations in returns. Conversely, during periods of low EPU, the influence of market microstructure factors on returns and volatility may diminish, as the market environment appears more stable and predictable. Regarding this, Kundu and Paul (2022) conducted a thorough analysis of how economic policy uncertainty affects return and volatility in a variety of market scenarios, including bullish and negative trends in G-7 nations. They found that when EPU rises, volatility increases. This trend is more noticeable in bearish markets (less deep/thin) than in bullish markets (thicker/deeper).

Despite the established importance of market microstructure factors in shaping stock movements, limited research has explored the moderating role of EPU in this relationship. Therefore, to develop reliable financial models and strategies that account for the complex interplay between macroeconomic uncertainty and micro-level market mechanisms, it is crucial to understand the individual moderating effect of EPU specially in emerging markets which are considered to be susceptible due to weak structural efficiency regulatory volatility, limited information transparency, systemic uncertainty and macroeconomic disruptions may make them more vulnerable. This study seeks to address the problem that in emerging markets, regulatory or economic shocks often cause liquidity constraints, amplifying volatility due to over and underreaction of investors and high information asymmetry. So,

by focusing on the emerging economies of Asia, Europe, and America, this research aims to provide insights into the intricate workings of financial markets, particularly in regions where economic growth and market efficiency are of critical importance.

1.4 Research Questions

These research questions comprehensively cover the scope of the study, focusing on the intricate relationships between market microstructure factors, macroeconomic factors, economic policy uncertainty (EPU), and their combined impact on stock market returns and volatility. List of research questions:

i. Do market microstructure factors influence stock market returns?

ii. Do market microstructure factors impact stock market volatility?

iii. Does Economic Policy Uncertainty (EPU) moderate the relationship between market microstructure factors and stock market returns?

iv. Does Economic Policy Uncertainty (EPU) moderate the relationship between market microstructure factors and stock market volatility?

v. Can macroeconomic factors (interest rate & exchange rate) moderate the relationship between market microstructure factors and stock market returns?

vi. Can macroeconomic factors (interest rate & exchange rate) moderate the relationship between market microstructure factors and stock market volatility

vii. Do macroeconomic factors and regulatory economic factor (interest rate & exchange rate) and Economic Policy Uncertainty (EPU) jointly moderate the relationship between market microstructure factors and stock market returns?

viii. Do macroeconomic factors (interest rate & exchange rate) and Economic Policy Uncertainty (EPU) jointly moderate the relationship between market microstructure factors and stock market volatility?

These questions aim to provide a thorough understanding of how micro-level and macro-level indicators interact to influence market efficiency, focusing on both stock returns and volatility. By investigating these relationships, the study will offer valuable insights for researchers, policymakers, and investors, particularly in the context of emerging economies where market structures and investor behavior can be significantly different from those in developed markets.

1.5 Research Objective

The main objectives of this study are as follows:

i. To investigate the impact of market microstructure factors on stock returns in emerging economies.

ii. To investigate the impact of market microstructure factors on stock market volatility in emerging economies.

iii. To analyze the moderating role of the regulatory economic factor (Economic Policy Uncertainty, EPU) on the relationship between market microstructure factors and stock returns in emerging economies.

iv. To analyze the moderating role of the regulatory economic factor (Economic Policy Uncertainty, EPU) on the relationship between market microstructure factors and stock market volatility in emerging economies.

v. To examine the moderating role of fundamental economic factors independently (interest rate and exchange rate) on the relationship between market microstructure factors and stock returns in emerging economies.

vi. To examine the moderating role of fundamental economic factors independently (interest rate and exchange rate) on the relationship between market microstructure factors and stock market volatility in emerging economies.

vii. To analyze the joint moderation role of fundamental economic factors (interest rate and exchange rate) and the regulatory economic factor (EPU) on the

relationship between market microstructure factors and stock returns in emerging economies.

viii. To analyze the joint moderation role of fundamental economic factors (interest rate and exchange rate) and the regulatory economic factor (EPU) on the relationship between market microstructure factors and stock market volatility in emerging economies.

These objectives aim to thoroughly explore the relationship between market microstructure factors, macroeconomic variables, and regulatory economic factors in influencing stock returns and volatility across emerging markets in different regions. By addressing these objectives, the study will provide valuable insights into the mechanisms driving market efficiency and inform strategies for policymakers, investors, and researchers.

1.6 Theoretical Significance

To explain the intricate dynamics of market behavior in emerging economies, this work integrates and critically assesses two important financial theories: Prospect Theory and Adaptive Market Hypothesis (AMH). This provides a substantial theoretical contribution. To understand how macroeconomic variables (economic policy uncertainty, interest rate, and exchange rate) interact with market microstructure factors (market liquidity, asymmetric information, market risk, and investor attention) to influence financial market outcomes, each of these theories makes a distinct contribution.

i. According to the AMH, market efficiency is dynamic and changes over time in response to shifting market circumstances. This study illustrates how in times of high economic uncertainty EPU can momentarily impair market efficiency and as moderator changes the impact of microstructure factors on stock movements. This underlines how flexible markets are in reacting to outside shocks. Therefore, it can be said that AMH has a theoretical significance in this study by demonstrating that market microstructure impact market

movements significantly, especially during heightened EPU and other economic factors such as interest rate fluctuations, exchange rate.

ii. Concepts like reference reliance, probability weighting, and loss aversion are introduced by prospect theory and are crucial for comprehending investors' frequently illogical and irrational behavior. During the heightened EPU, interest-rate fluctuation, investor attention diverts towards policy announcement, being risk-averse, may over-underreact and take irrational decisions that impact stock movements. Therefore, it can be said that this research design enriches Prospect Theory by entrenching it in a macro-financial context and by extending its application to emerging market investor behavior

1.6.1 Contextual Significance

This study intends to explore the relationship between market microstructure factors and market outcomes (returns and volatility) with the moderating role of Economic Policy Uncertainty (EPU) and other economic factors in emerging economies yields following key contextual contributions:

i. Unlike developed economies, emerging economies frequently display distinct market structures defined by lesser liquidity, higher volatility, and less developed financial infrastructure. Due to these structural variations, variables about the market's microstructure may exhibit distinct behaviors and affect volatility and returns differently.

ii. By enabling comparative examination across various institutional and macroeconomic contexts, a cross-regional focus on emerging economies in Asia, America, and Europe enhances the research. The rapid financial expansion in Asia, the political and economic unpredictability in Latin America, and the regulatory shift in Eastern Europe under the influence of the European Union offer a multifaceted view of how structural and policy variations impact market behavior.

iii. Emerging economy markets are usually more vulnerable to shocks from within and outside their country. In these situations, where policy changes or economic instability can significantly impact market dynamics. So, the role of EPU and other economic factors as moderators is especially relevant.

Therefore, examining the correlation between market microstructure elements and market results in emerging economies, considering the moderating influence of EPU and other economic factors, offers a comprehensive contextual contribution. This study contributes to the advancement of theoretical frameworks, offer investors and policymakers practical insights, and advances the overarching objective of financial market maturation and economic progress. Through a focus on the distinct features and obstacles of developing markets, this research provides insightful viewpoints that help improve the stability, effectiveness, and expansion of these rapidly developing economies.

1.7 Practical Significance

The findings of this study will offer valuable guidance to investors as they navigate the complexities of the stock market. By analyzing the liquidity provision of various stock profiles, investors will be equipped to assess the ease of entering or exiting positions without causing significant price fluctuations. Moreover, understanding the moderating influence of economic policy uncertainty (EPU) and fundamental factors will empower traders to adapt their investment strategies in response to economic shifts and heightened uncertainty. This includes identifying undervalued or overvalued stocks, estimating future cash flows, and effectively managing portfolio risk through enhanced hedging activities. Furthermore, the insights gleaned from this study will be invaluable to policymakers in their efforts to formulate and implement effective regulatory measures. By comprehending how variations in the policy environment interact with market dynamics, policymakers can design strategies aimed at promoting market stability, fostering investor confidence, and stimulating economic growth. Additionally, targeted interventions can be devised

to mitigate systemic risks and enhance market resilience in the face of economic uncertainties.

In essence, the results of this study will serve as a valuable resource for both investors and policymakers alike, providing them with the tools and knowledge needed to navigate the ever-evolving landscape of the financial markets and foster sustainable economic prosperity.

1.8 Organization of the Study

The second chapter of the research proposal covers the literature review and the development of research hypotheses. The third chapter outlines the proposed methodology, detailing the measurement of variables, data sources, data types, statistical model measurement, and the application of suitable statistical techniques. Chapter 4 presents the results, along with their interpretation and discussion. The final chapter concludes the research, offering recommendations, acknowledging limitations, and suggesting future directions for the study.

Chapter 2

Literature Review

Many academic studies have been conducted on the dynamics of stock market behavior, in particular the relationship between market microstructure characteristics and stock return volatility. Scholars and professionals must comprehend these relationships since they provide valuable perspectives on investor conduct, market efficiency, and the impact of economic and regulatory factors. Previous research has primarily concentrated on conventional elements like information asymmetry and liquidity, but more recently, behavioral and adaptive viewpoints on market functioning have been included. In addition, there is still a dearth of knowledge in many areas, especially emerging economies, about the interactions between market microstructure and larger economic and regulatory frameworks. To give a thorough overview of how regulatory and fundamental economic issues, in combination with market microstructure factors, affect stock returns and volatility, this chapter covers pertinent empirical literature. The present study delves into the intricate dynamics of stock market performance across several countries and periods, building upon the foundation established by this thesis.

2.1 Market Microstructure

Over the past two to three decades, there has been a notable expansion in the realm of market microstructure. This growth is evident through rapid advancements in structural, technical, and regulatory domains that have significantly influenced

global securities markets. Simultaneously, there has been a sustained and enduring interest among academicians and researchers in exploring the intricacies of market microstructure. Essentially, market microstructure encompasses the intricate framework of rules governing trading and the trading systems utilized by any stock market. These systems serve as conduits through which investors' future expectations and trading strategies are effectively translated into current asset prices and trading volumes (Said et al., 2024).

According to Hasbrouck (2004), the study of market microstructure differs from the more traditional perspectives in financial economics in two fundamental ways. Firstly, within a context marked by diverse trader types and access to various sets of private and public information, microstructure endeavors to decipher the underlying sources of value and the motivations driving trade decisions. Secondly, it acknowledges the existence of multiple price levels within the microstructure. Depending on factors such as the direction of their trades (buying or selling), trade volume, and the urgency to complete transactions, investors may encounter a wide range of pricing options at any given time. Moreover, the relationships traders have with potential counterparties can also influence pricing. Consequently, the study of market microstructure scrutinizes the behavior and establishment of prices in asset markets.

A significant conclusion drawn from the examination of market microstructure is the profound impact of trading mechanisms and rules on the behavior of asset prices in terms of returns and volatility. This challenges the traditional perspective of an efficient market, which often disregards the intricate mechanisms underlying the development of security prices (O'hara, 1998). Thus, the core premise of market microstructure suggests that securities prices may not fully reflect all available information due to various market frictions (Madhavan, 2000).

A plethora of literature provides empirical evidence on the similarities, differences, and efficiency of global stock markets. For instance, Comerton-Forde and Rydge (2004) identify significant disparities in trading mechanisms, transparency, and market structures across 18 developed markets, attributing these differences to economic and political developments. Similarly, Comerton-Forde and Rydge (2006)

report variations in market types, linkages, transparency, structures, and price fluctuations across ten Asia-Pacific markets.

Recent empirical research has focused on examining the relationship between market microstructure components and market returns. For example, Said et al. (2024) empirically analyze the impact of seven market microstructure factors: liquidity, volatility, trading costs, thin trading, anonymous trading, automation, and tick size on the efficiency of five emerging economies from 2001 to 2020. Their analysis, employing a system GMM model, highlights liquidity, market risk, thin trading, and trading costs as key determinants of efficiency in emerging markets. Conversely, anonymous trading, tick size, and automation are not found to be significant factors. Said et al. (2024) recommend that individual and institutional investors consider market microstructure factors when devising asset allocation strategies and enhance market efficiency.

Another study by EHIEDU and AKUNOMA (2023) examines the relationship between five market microstructure factors such as size, market liquidity, idiosyncratic risk, transaction costs, and trading behavior on stock market returns. Utilizing a system GMM approach, they conclude that all five factors are primary drivers of returns. As trading market activities advance, researchers emphasize the importance of paying attention to microstructure factors, given their significant impact on the intertemporal dynamics of financial markets and market efficiency. Therefore, in this study, the relationship between market microstructure factors (market liquidity, asymmetric information, investor attention, and market risk) and return will be empirically analyzed in the context of three emerging economies (Asia, America, and Europe).

2.2 Relation of Market Liquidity with Stock Market Return

Liquidity is a crucial element for a robust stock market, as highlighted by researchers such as Amihud et al. (2006) and Benson et al. (2015). Liquidity refers to the ease with which assets can be bought or sold. It encompasses the ability to swiftly execute

large trades with minimal costs and without significantly impacting the price. In the context of market microstructure, liquidity plays an integral role in theoretical models. Its primary function is to ensure equilibrium and facilitate trading among investors who possess varying levels of information. Modern microstructure theory suggests that automated systems are designed to lower transaction costs and enhance liquidity, as discussed by Brogaard and Detzel (2015).

From an operational standpoint, the sustainability and success of a financial market hinge on its capacity to attract and maintain both listed companies and investors. This perspective is supported by Said et al. (2024), who emphasize that a market's viability is determined by its appeal to these key stakeholders. Furthermore, according to Chordia et al. (2000), high trading volumes are indicative of the market's efficiency in quickly incorporating and adjusting prices in response to new information. This rapid adjustment process is a testament to the market's liquidity and its ability to reflect real-time changes in asset values.

On the other hand, the performance of a stock market reflects the behavior of securities in terms of risk and return. Return, in this context, acts as a benchmark for evaluating whether the market is operating fairly and efficiently. According to Gitman (2009), return represents the total gain or loss realized on an investment over a specified period, serving as the reward investors seek to hold a stock. Essentially, it reflects the profitability and growth potential of the stock market. Significant efforts have been devoted to developing models for predicting stock prices, with some achieving substantial academic recognition. One prominent example is the five-factor model proposed by Fama and French (Huang, 2019), which has garnered widespread acclaim. However, empirical studies exploring the short-term behavior of stock prices within the framework of market microstructure remain relatively limited. Florackis et al. (2011) challenge conventional thinking by arguing against the assumption of a straightforward relationship between microstructure components, such as trading costs, and stock returns. Similarly, Huang (2019) found a positive and significant relationship between firm-specific liquidity measures, transaction costs, and difficulties in immediate trading, and stock returns. However, in recent years, the correlation of liquidity as market microstructure factor with

return has garnered significant attention in market microstructure literature. It has also attracted interest from traders, policymakers, and academics. Numerous studies have explored the relationship between market microstructure and asset returns and found mixed results. Regarding this the pioneering theoretical work on the relationship between asset liquidity and returns was authored by (Amihud and Mendelson, 1986). They posited

Improved liquidity also broadens the investor base by lowering participation and transaction frictions, thereby increasing aggregate demand for the asset; the resulting price pressure enhances returns in periods of rising liquidity (Amihud and Mendelson, 1986).Furthermore, heightened liquidity facilitates faster incorporation of information into prices, enabling markets to respond more efficiently to favorable fundamental news, which again manifests as higher contemporaneous returns. Empirical evidence supports these mechanisms, showing that high liquidity raises market valuations and that assets more sensitive to liquidity improvements experience stronger return responses (Pástor and Stambaugh, 2003; Amihud, 2002). Collectively, these arguments suggest that increases in market liquidity are associated with higher returns due to a combination of lower discount rates, reduced transaction costs, and enhanced price-discovery efficiency.

However, Hasbrouck (2004) and Goyenko et al. (2009) identified varying impacts of stock-market liquidity on stock returns. Similarly, Leirvik et al. (2017) found no significant impact of market liquidity on stock returns on the Oslo Stock Exchange from 1983 to 2015. However, Dinh (2017) observed a low significant relationship between stock liquidity and returns in high frequency on the Oslo Stock Exchange. In recent years Ma et al. (2018) analyzed market liquidity and stock returns across 41 countries, including both developed and developing markets and their findings indicated that liquidity positively and significantly affects stock returns. The above literature empirically proves that in developed markets and developing market liquidity and stock return have a positive relation. The focus of this study is on the emerging economies of Asia, Europe, and America. Related to this Salehi et al. (2011) identified a positive relationship between liquidity and stock returns in the Tehran Stock Exchange. With that, Miralles-Quirós et al. (2017) found a

significant negative impact of market liquidity on stock returns in the Portuguese stock market. Liu and Zhang (2015) investigated the liquidity-return relationship around the 2007-2009 financial crisis in China and showed a positive relationship. The above literature although showed a positive relation between liquidity and return in the emerging economies. Since liquidity is a dynamic and multifaceted notion that cannot be fully comprehended or handled from a single perspective, it is crucial to consider its many dimensions. Moreover, market microstructure literature characterizes liquidity as a multi-dimensional concept, with dimensions such as depth, breadth, tightness, immediacy, and resilience, as noted by Sarr and Lybek (2002) and Liu and Zhang (2015). Further, the multi-dimensional nature of liquidity, characterized by tightness, resilience, and depth, emphasizes that liquidity cannot be captured by a single dimension Pham (2021). These dimensions provide a comprehensive framework for understanding liquidity in financial markets.

In recent years, the multi-dimensional aspect of liquidity has been examined by many researchers such as Lischewski and Voronkova (2012) explored the determinants of stock prices in the Warsaw Stock Exchange, an emerging market, from 1996 to 2009. They utilized various liquidity measures to capture the multidimensional nature of liquidity, including the zero-returns proportion, the proportion of trading days with zero-returns and positive volume, and the turnover ratio. Their empirical results indicated that no single liquidity factor can significantly impact security return on the Polish stock market. Similarly, Nguyen and Lo (2013) investigated the relationship between stock liquidity and returns in the New Zealand stock market. Their study applied both high-frequency liquidity measures (effective spread, quoted spread) and low-frequency measures as proxies for liquidity. They found that liquidity positively correlates with stock returns.

Hartian et al. (2015) studied the relationship between liquidity and stock returns across 16 developing and 10 developed countries from January 2000 to December 2013. Their empirical results revealed that higher market liquidity, measured by trading volume, turnover ratio, and turnover volatility, led to higher stock index returns in developing countries. Kahuthu (2017) focused on the width and depth aspects of liquidity, measured by the bid-ask spread and turnover rate,

respectively, in the Nairobi Securities Exchange. Using a panel regression their findings showed that market depth had an insignificant relationship with stock returns, while market width had a significant impact. Market participants perceived both market width and depth as significant to stock returns, though only to a moderate extent. Similarly, Fuenzalida et al. (2017) analyzed the impact of liquidity on stock returns in the MILA group, comprising stock markets in Chile, Colombia, Mexico, and Peru. Their study considered seven measures to proxy liquidity, including the bid-ask spread, turnover ratio, and the Amihud ratio. Their empirical findings exhibited a positive relationship between liquidity and stock returns in the MILA markets. Sharad Nath Bhattacharya and Basu (2019) empirically analyzed the relationship between stock market movements and liquidity. They examined liquidity across multiple dimensions, including depth, breadth, tightness, immediacy, and resilience, utilizing proxies such as the volume of trade, spread, market efficiency coefficient, turnover rate, trading probability, and the stock market index. The findings suggested that these multidimensional liquidity measures have a long-term relationship with stock market performance. In summary, the multidimensional nature of liquidity plays a crucial role in market microstructure, influencing stock returns across various markets and economic conditions. These studies collectively emphasize the multifaceted nature of liquidity and its critical role in influencing stock returns across different markets and periods.

The consistent finding across various contexts is that liquidity significantly affects asset return, underscoring its importance in financial market analysis and investment strategies. The above-mentioned literature related to the multi-dimensional perspective has shown a positive relation between liquidity and stock return. This reflects that more liquidity typically translates into superior stock performance. Moreover, a liquid stock market enhances investor confidence leading to increased buying bustle which could result in higher stock prices and returns. Further, the highly liquid market helps in the incorporation of new information quickly and causes a reduction in arbitrage opportunities, which results in fair pricing of stock prices. Therefore, one can say that the positive relation of liquidity with stock return results in multiple advantages to the stock market such as increased demand

for stocks, greater informational efficiency, and favorable behavior factors. So based on the above literature, and the reasoning this study hypothesized.

H1 (a): Liquidity has a positive impact on the stock market return

2.3 Relation of Investor Attention with Stock Market Return

According to the efficient market hypothesis (EMH), asset prices reflect all available information in the market. This assumption implies that investors incorporate all market information into their buying and selling decisions. However, research shows that "attention is a scarce cognitive resource" (Kahneman, 1979), which impacts investor behavior. Barber and Odean (2013) observed that limited attention affects investors' buying decisions. Peng and Xiong (2006) described how attention constraints lead investors to favor market-wide information over firm-specific details. Due to limited attention spans and processing capacities, investors often rely on simple heuristics when making decisions (Tversky and Kahneman, 1974). This tendency means that investors may select stocks based on regional familiarity and may limit their investment horizons.

As a result of these attention constraints, not all available information is processed and incorporated into stock prices as traditional asset pricing theories by Sharpe (1964), Lintner (1965), and Merton et al. (1987) assume. Merton et al. (1987) hypothesized that increased investor attention is associated with rising stock prices, a finding later corroborated by Barber and Odean (2013). Related to this, Vozlyublennaia (2014) investigated the relationship between investor attention, measured by Google search data, and returns of various security indexes. The study found that increased attention causes significant short-term changes in index returns and that lagged returns and attention interact significantly. Vozlyublennaia (2014) supports the idea that increased attention reveals more information, and significantly contributes to market efficiency. Despite the digital age making information readily and almost freely accessible, inattention rather than information scarcity becomes

the bottleneck. Historical and ad-hoc financial data is instantly available through companies, financial data providers, and social networks.

In this digital age, individual investors face challenges in information search due to the vast number of stocks available for investment, compounded by time and attention constraints. Consequently, investors tend to purchase stocks that capture their attention, leading to price increases for those companies. Related to this, Chemmanur and Yan (2009) documented that higher levels of investor attention correlate with higher contemporary stock returns. Similarly, Da et al. (2011) used online ticker searches as a proxy for investor attention, finding that an increase in the search volume index (SVI) leads to higher short-term stock returns. Whereas, Pollet et al. (2009) explored how news impacts stock values through reactions in China , finding a negative association between media attention and stock results.

Conversely, selling decisions do not face the same search problems as investors already possess information about the stocks they own. Institutional investors, on the other hand, do not exhibit such asymmetric behavior between buying and selling because they have more time and access to advanced tools. They also engage in short selling more frequently, conducting intensive searches when buying and selling stocks. Fink and Johann (2014) analyzed whether short-term fluctuations in investor attention affect stock returns, showing that returns increase with heightened investor attention. The study found that high-attention events cause investors to sell stocks aggressively, leading to a market decline and reduced returns.

The correlation of investor attention with stock return also varies by region. Akarsu and Süer (2022) analyzed the effects of limited investor attention on stock returns across 31 countries in the Americas, Asia, and Asia-Pacific regions. They found that the impact of investor attention on stock returns varies significantly across different countries, indicating that the effect is not globally uniform but context dependent. Tantaopas et al. (2016) found negatively lagged returns impacting the current SVI in developed markets However, in emerging economies such as the Turkish stock market, Tan and Taş (2019), and Ekinci and Bulut (2021) found a positive association between investor attention and stock returns. Whereas, Carlsson et al.

(2020) found mixed results in European markets, with a positive relationship in Sweden and Denmark, a weak positive in Portugal, and a negative in Spain. The mixed empirical evidence on the relationship between investor attention and stock returns suggests the complexity and context-dependence of this relationship. In line with that Yang et al. (2017) found significant positive correlations between investor attention and returns in the Chinese market. Ayaz et al. (2021) showed that high investor attention correlates with high and positive returns in Pakistan. Given the extensive literature examining the relationship between investor attention and stock returns, it is evident that this relationship varies across different markets and economic conditions. Studies have shown mixed results, with some finding positive correlations, others negative, and yet others no significant relationship. However, the focus of this study is emerging economies of Asia, America, and Europe, and in the above literature, research of Tan and Taş (2019), Ekinci and Bulut (2021), Carlsson et al. (2020), Yang et al. (2017) and Ayaz et al. (2021) found a positive relation of investor attention with return in the emerging economies. The rationale for these positive relations could be (1) emerging markets are less proficient than developed markets due to low regulatory monitoring, liquidity issues, and a less knowledgeable investor base. So, in such situations, the focus of investor attention may facilitate correcting in-efficiencies. As investors give more attention, critically analyze, and trade on new information, prices are adjusted more rapidly and accurately, which results in short-term price increases and higher returns. (2) Investor attention can also amplify positive sentiment.

In emerging markets, where the investor base might be more prone to herd behavior, increased attention can lead to a positive feedback loop. As more investors focus on the market, positive sentiment can drive up prices, leading to higher returns. (3) News and trends have a greater impact on investor behavior in emerging markets than in developed ones. Momentum trading, in which investors purchase assets that have recently performed well, can result from increased attention and return increases. So, in summary, the positive relationship between investor attention and returns in emerging economies can be attributed to the correction of market inefficiencies, increased capital inflows, amplified market sentiment, and behavioral factors. These factors collectively enhance market performance and lead to higher

returns when investor attention increases. Therefore, based on these factors and the working of Tan and Taş (2019), Ekinci and Bulut (2021), Carlsson et al. (2020), Yang et al. (2017) and Ayaz et al. (2021) the following hypothesis is being formulated.

H1 (b): Investor attention has a positive impact on stock market return

2.4 Relation of Asymmetric Information with Stock Market Return

Asymmetric information is a fundamental factor in market microstructure, referring to the differing levels of information held by market participants. This concept highlights the informational advantage that firm insiders and informed investors possess in the financial markets (Raihan and Tuspekova, 2022). Traders can learn about market dynamics and price movements by observing market information. Overall, asymmetric information plays a critical role in market microstructure by influencing how information is distributed and used among market participants, impacting trading behavior, and ultimately affecting market efficiency and price formation.

Literature extensively explores asymmetric information through complex models to explain information quality, access, and asymmetry. Related to this, the empirical examination of the informative content of prices in an asymmetric information environment was initially conducted by Glosten and Milgrom (1985), with further advancements by Ravi and Hong (2015). Easley and O'hara (1992) provided theoretical evidence for the informational content in the time between trades, suggesting that a lack of trading activity could indicate negative information or the absence of new information in the stock market. In the past, the following researchers worked on the relationship of asymmetric information with stock returns. Such as Kyle (1985) posited a positive correlation between expected stock returns and asymmetric information. Stoll (2003) analyzed how microstructure factors affect asset pricing, noting that informed traders receive better prices than uninformed ones due to their ability to act on good news first. Easley et al. (2002) studied the

role of asset information in affecting asset returns using the market microstructure model, finding that information significantly and negatively impacts asset returns. Related to this, Levi et al. (2014) observed that increased information asymmetry leads to higher market returns. The rationale for the positive correlation between asymmetric information and stock return is the uneven distribution of information among investors. In such a scenario when some investors have better information than others, they can exploit this advantage to earn higher returns.

The relationship between asymmetrical information and stock return also varies region-wise. Related to this, Zhang (2004) indicated that asymmetric information negatively affects projected stock returns. Abosede and Oseni (2011) postulates the negative effect of asymmetric information on stock return, in developing and emerging economies. Similarly, Anifowose et al. (2020) found a significant negative effect of asymmetric information on stock returns in the Nigerian capital market. Ripamonti et al. (2018) discovered a long-run negative relationship between asymmetric information and stock prices in Brazil. Kelly and Ljungqvist (2012) and Buckley and Long (2015) both found that increased asymmetry lowers stock prices by reducing uninformed investors' trades in riskier stocks. Mirjamali Mehrabadi et al. (2021) found that asymmetric information negatively impacts stock returns in the Tehran Stock Exchange due to economic turbulence and the market's structure. Khavari et al. (2022) analyzed the short- and long-term impacts of information asymmetry on stock returns in the Tehran Stock Exchange, finding a significant negative effect. Wang et al. (2022) highlight the pivotal role of informed trading in determining crypto-currency returns. According to EMH theory, if markets are efficient, in such scenarios all information is readily embedded in stock prices. Therefore, no investors can acquire excess returns. However, Kyle (1985) and Stoll and Whaley (1983) postulated that high information asymmetry implies more active trading by better-informed agents; their trades incorporate private signals into prices. As a result, the scope for positive future returns available to uninformed investors shrinks and returns are further reduced by wider spreads and adverse-selection trading costs. So, it is empirically proven that asymmetric content of information makes markets imperfect in terms of efficiency, and the pricing mechanism falls short of accurately reflecting the assets' true value. Secondly, the

perceived risk assumed by the less informed investor can also lead to lower overall demand for the stock. Thirdly, due to asymmetrical information, less informed investors may purchase expensive equities or sell cheap ones. As a result, there are market inefficiencies that can lower total stock returns by causing prices to diverge from their real underlying values. So, the extensive body of research demonstrates the critical role of asymmetric information in market microstructure, its varying impacts on stock returns across emerging markets, and logical reasoning behind varying impacts. Based on the findings of various studies, including those by Khavari et al. (2022), Mirjamali Mehrabadi et al. (2021), Ripamonti et al. (2018), and Abosede and Oseni (2011) hypothesis can be formulated regarding the relationship between asymmetric information and return. These studies collectively suggest a negative association between asymmetric information and return, indicating that an increase in asymmetric information tends to be accompanied by lower returns in financial markets. Therefore, the following hypothesis is being postulated

H1(c): Asymmetric Information negatively impacts the stock market return.

2.5 Relation of Market Risk with Stock Market Return

Risk has long been a central concern in financial literature, with the predictability of equity returns and its associated risks remaining prominent topics. Markowitz (1991) credited with modernizing the mathematical formulation of risk, defining it as deviation from the mean value. Standard deviation, often denoted as sigma, emerged as a common measure of risk due to its ability to capture variation from the average. Theoretical models, such as Sharpe (1964) asset-pricing model, Ross's (1976) arbitrage model, and Fama and French (1993)) three-factor model, consider various types of risk in financial asset valuation. Sharpe (1964) proposed beta as a measure of non-diversifiable risk, particularly highlighting market risk as a significant factor affecting stock returns. Market participants often utilize Value at Risk (VaR) as an alternative to beta when assessing market risk in the stock market. Initially introduced by J.P. Morgan in the early 1990s, VaR

has gained popularity in managing financial risk, particularly among professional investment and hedge fund managers (Ho et al., 2000). It provides a practical and efficient method for monitoring and managing market risk. Some researchers such as Santosa et al. (2011) suggest that VaR and beta have a relatively equal positive impact on returns according to the Capital Asset Pricing Model (CAPM), emphasizing their explanatory power in measuring market risk and its influence on returns. According to the CAPM and Markowitz theory high risk pertain to high return but some empirical research in this regard postulated negative relation between risk and return. Such as Mehrara et al. (2014) investigated the relationship between market risk, specifically non-diversifiable risk, and stock returns in the Tehran Stock Exchange based on CAPM. Their study found a statistically negative and significant relationship between systematic risk and stock returns. Similarly, Rezagholizadeh et al. (2020) explored the variables influencing stock return on Iran's Tehran Stock Exchange, focusing on market risk, oil price risk, and gold price risk. They found a negative relationship between market risk and stock returns during market downturns. Whereas Chen and Chiang (2016) identified a negative correlation between VaR and equity returns. Maditinos et al. (2010) examined the relationship in the Athens stock exchange, revealing a large negative relation between the two. Moreover, within the context of market microstructure Karwitha (2020) investigated how market microstructure dynamics affect market returns in Kenya's equity securities market, noting a negative correlation between market risk and equity market returns. Hikouatcha et al. (2022) defined microstructural risk as systematic risk resulting from unfavorable changes in the constituent elements of financial market structure. Despite its importance, market risk in financial market microstructure is often overlooked in literature. The above literature depicts a negative relation between the two and it might be due to the times of high market risk such as the financial crises of 2007-2008, and the economic downturn, investors being risk-averse, started selling their riskier assets and move their capital into safer investments, such as government bonds or blue-chip stocks. This "flight to quality" may cause a bearish trend in the stock market, especially in emerging economies, lowering the prices of riskier assets, leading to lower returns. Further, the structural and behavioral features of emerging markets are

responsible for the negative relationship between market risk and return. The increase in market risk usually implies poor institutions, political unpredictability and macroeconomic instability. As a result, increased risk causes withdrawals of foreign investors, pressure on prices to decline, and loss-dominant volatility, all of which lower returns. Furthermore, when market inefficiency and information asymmetry coincide, increase in volatility is considered as indicators of declining fundamentals values of price rather than probability of greater returns. In this regard Mwaurah et al. (2017) also empirically proven the negative relation between risk and return in Kenya and the reason is under depressed economic conditions, any additional risk is undesirable as it reduces shareholder market value. Therefore, during depressed economic times, market risk in emerging markets is consistently associated with lower realized returns rather than high. Based on the findings of various studies, including those by Hikouatcha et al. (2022), Karwitha (2020), Chen and Chiang (2016), Mehar et al., (2014), and Rezagholizadeh et al. (2020) hypothesis can be formulated regarding the relationship between market risk and return. These studies collectively suggest a negative association between market risk and return, indicating that amplified market risk tends to be accompanied by lower returns in financial markets. Therefore, the following hypothesis is being postulated

H1 (d): Market risk negatively impacts the stock market returns.

2.6 Relation of Market Liquidity with Stock Market Volatility

The most prominent study in financial and economic studies is volatility. One of the most crucial aspects of financial markets is their volatility. It has a direct bearing on market volatility and influences both individual and corporate investing behavior. One of the main concerns of contemporary financial research is the examination of the volatility of returns on financial assets. However, most of the research related to volatility is confined to forecasting perfect market volatility. Though there are numerous techniques or models available such as GARCH model.

but still difficult to measure perfect volatility (Bhowmik and Wang, 2020). The quality of information flow is low in emerging markets, according to Saleem et al.,2019 investors wait for confirmation news before setting stock prices, which results in persistent stock returns. Further, from the last two decades, the stock market volatility also plays a major role in investment decisions for the investors as well as the portfolio managers for corporate performance (Saleem et al.,2019). This reflects that in recent years. The stock market volatility has recently attracted much attention in the finance literature not only from the measuring volatility perspective but also stock performance and development perspective. Further, Volatility, also a fundamental aspect of market microstructure, and become increasingly pronounced in the context of economic globalization and the recurring international financial crises. It refers to the degree of deviation in an asset's price over a specific period, reflecting the erratic behavior of variables over time (Taylor, 2011). Essentially, volatility mirrors the continuous cycle of market information arrival, altering investor perspectives and trading decisions, consequently leading to fluctuations in stock prices. This phenomenon underscores the significance of accurately measuring stock index return volatility to mitigate uncertainty and foster the development of the stock market within the global economy (Bhowmik and Wang, 2020). The impact of volatility extends beyond mere risk, significantly affecting the operational dynamics of the stock market. Therefore, gaining a theoretical understanding of volatility's importance is essential for navigating the complexities of contemporary financial markets. Given that several components of market microstructure can have an impact on financial market volatility, the relationship between market microstructure and volatility is dynamic and complex.

The literature extensively explores the relationship between liquidity and volatility, recognizing liquidity's critical role in risk measurement and asset pricing. In recent years the influence of liquidity on volatility has been extensively investigated in the literature (Qiao et al., 2019). Past studies consistently suggest a negative relationship between liquidity and volatility, indicating that higher liquidity tends to decrease volatility (Pástor and Stambaugh, 2001). Foster and Viswanathan (1990) also find an inverse link between volatility and liquidity, potentially due to informed traders' presence. Domowitz et al. (2001) emphasize a robust correlation between

volatility and liquidity, with variations observed at a national level. Theoretical models, such as those proposed by Brunnermeier and Pedersen (2009), underscore the interconnectedness of market volatility and liquidity dynamics. Empirical investigations, like those conducted by Sojika and Kilber (2018), further support this negative relationship by revealing causal associations between liquidity ratios and volatility proxies.

Zhu et al. (2022) investigated the relationship between various liquidity dimensions and volatility in China, and empirical findings reveal that liquidity can explain high or low volatility in a stock market, but it cannot explain volatility concerning the expansion or contraction of liquidity. Gharaibeh and Al-Qudah (2019) studied the causal relationship between different liquidity proxies and volatility, revealing that liquidity proxies (VOV, HLR, LTV) have a causal relationship with risk proxies (VORET, SQRET). Al-Yahyaee et al. (2020) focused on the efficiency of the crypto-currency market, indicating that higher liquidity improves crypto-currency efficiency, while higher volatility weakens it. Fakunmoju (2020) empirically analyzes the relationship between stock market turnover and stock volatility in the Nigerian stock market from 1997 to 2019 and reveals that liquidity has a negative relation with volatility. Mupondo (2022) analyzed the impact of liquidity on volatility in the Zimbabwe stock market, they used bid-ask spread and trading volume as liquidity proxies. They applied the system GMM model for estimating the empirical relationship and revealed that trading volume has a significant positive impact, while bid ask spread has a negative relation with volatility. They found that high liquidity with low volatility facilitates arbitrage opportunities and enhances market efficiency. Based on the findings of various studies, including those by Zhu et al. (2022), Gharaibeh and Al-Qudah (2019), Al-Yahyaee et al. (2020), Fakunmoju (2020), and Mupondo (2022), a hypothesis can be formulated regarding the relationship between liquidity and volatility. These studies collectively suggest a negative association between liquidity and volatility, indicating that higher liquidity tends to be accompanied by lower volatility in financial markets. Therefore, the following hypothesis is being postulated.

H2 (a): Market liquidity negatively impacts stock market volatility.

2.7 Relation of Investor Attention with Stock Market Volatility

The recent surge in research focusing on the influence of investor attention on asset pricing underscores the growing recognition within the fields of behavioral finance and market microstructure that traditional asset pricing models may not accurately capture market dynamics (Da et al., 2011). Specifically, these models often assume that information is instantaneously reflected in asset prices, but this overlooks the crucial factor of whether the information receives sufficient attention from investors. Empirical findings, such as those from Xiao and Wang (2021), highlight that investors exhibit behavioral biases that can cause them to either overestimate or underestimate the importance of fundamental information, thereby contributing to irrational market outcomes. This growing body of research underscores the need to incorporate investor attention dynamics into asset pricing models to provide a more comprehensive understanding of market behavior.

The relationship between investor attention and volatility is crucial as behavioral finance postulates that psychological factors predominantly impact market dynamics. When investors focus on certain stocks due to high attention levels, it can lead to sudden price reactions, causing unexpected fluctuations or volatility in stock prices (Barber and Odean, 2013). Conversely, when investor attention is low, there may be underreactions to announcements, as highlighted by DellaVigna and Pollet (2009), and prices may not fully reflect new information (Huberman and Regev, 2001). Andrei and Hasler (2015) conducted extensive research on how investors pay attention to news related to the stock market and economic uncertainty affects asset prices, proposing a direct relationship between investor-attention and volatility. They suggest that low attention leads to slow incorporation of knowledge into pricing, resulting in low volatility, while high attention leads to rapid assimilation of new information, causing high volatility. Empirical evidence from Andrei and Hasler (2015) research supports the notion that high attention levels are associated with increased volatility. This reflects that during time of heightened market activity, investor attention towards the stock market tends to increase, which is

often followed by a rise in market volatility. Notably, Vlastakis and Markellos (2012) found that Google search volume (GSV) accounts for nearly half of the variation in the Market Volatility Index, indicating the significant role of investor attention in market volatility. However,Amin and Ahmad (2013) observed only a partial effect of investor attention on the volatility of the Pakistan stock market in their study of forty-two firms listed on the Karachi Stock Exchange. Similarly, Aouadi et al. (2013) investigated the influence of investor attention on French stock market volatility using a unique proxy based on Google search volume. Their findings highlighted the importance of investor attention in determining market volatility. Moreover, Ben El Hadj Said and Slim (2022) also assess how investor interest affects realized volatility prediction across fourteen global stock markets, discovering a positive impact of investor attention on volatility. Audrino et al. (2020) explored the influence of investor attention on market volatility using a comprehensive dataset, finding that both factors contribute to volatility forecasting, albeit with a relatively small magnitude. Finally, Ouadghiri et al. (2022) investigated the impact of institutional investor attention on stock volatility across various countries, revealing a robustly positive relationship between institutional investor attention and stock volatility. The above-mentioned literature empirically proves the positive relation of investor attention with return. However, within the context of market microstructure, Ruan and Zhang (2016) developed an economic model within Kyle (1985) framework to analyze the impact of investor attention on market volatility and empirically revealed a positive relationship between higher investor attention. As the focus of this study is on emerging economies, these economies compared to developed markets, frequently exhibit lesser market efficiency. Further, this market takes a longer time to assimilate and incorporate new knowledge, and information diffusion is also weaker. Therefore, the absorption of new information can cause quick price changes and increased volatility when investor attention is focused too much, since the market finds it difficult to process and apply the information effectively. Moreover, the investors of emerging economies rely on behavioral biases such as over-reaction and under-reaction and do sentiment trading. These behavioral factors are amplified by an increase in investor attention causing pronounced and erratic price movements.

Based on the findings of various studies, including those by Ben El Hadj Said and Slim (2022), Audrino et al. (2020), Ruan and Zhang (2016), and Aouadi et al. (2013) hypothesis can be formulated regarding the relationship between investor attention and volatility. These studies collectively suggest a positive association between investor attention and volatility, indicating that high investor attention tends to be accompanied by high volatility in financial markets. Therefore, the following hypothesis is being postulated.

H2(b): Investor attention has a positive impact on stock market volatility.

2.8 Role of Moderator Economic Policy Uncertainty on the Relationship of Market Microstructure factors with Stock Market Return

2.8.1 Liquidity, Economic Policy Uncertainty and Stock Market Return

In recent years, various geopolitical events and economic crises have contributed to the unpredictable operating environment of the stock market. These events include political unrest, the US-China trade war, conflicts in regions like Indo-Pak, Iran, and Afghanistan, as well as major financial crises such as the global financial crisis in 2007 and the European debt crisis. The significance of consistent economic policies has become increasingly apparent due to globalization, competitiveness, and interconnectedness (Al-Thaqeb and Algharabali, 2019). Scholars like Markowitz (1952), Roy (1952), and Tobin (1958) laid the early groundwork in the literature on uncertainty. Baker et al. (2016) developed the Economic Policy Uncertainty Index (EPU) based on media coverage frequency. Gulko (2002) noted that uncertainty peaks after stock market crashes, leading to doubts about future economic strategies and investor hesitancy. Further, the working of Bansal et al. (2005) and Ozoguz (2009), linked increased economic uncertainty to lower asset prices. The empirical

evidence proves that a regulatory economic factor has a strong link with stock prices.

In recent years, there has been a lot of interest in the concept of Economic Policy Uncertainty (EPU), and it has been interpreted as the ambiguity that economic policymakers create regarding the decisions they will make. Based on this, it is assumed that the lack of changes in existing economic policies, or even the speed of the agreed economic policy changes, can influence investors by generating a feeling of insecurity about their possible effects on the economy. As, earlier said, there is a shred of substantial evidence suggesting that financial markets are responsive to changes in aggregate uncertainty, which leads economic investors to postpone investment decisions (Istiak and Serletis, 2018; Phan et al., 2018; Zhang et al., 2019a,b; Nilavongse et al., 2020). Related to this Gulen and Ion, (2016) proposed a negative association between long-term investment and policy uncertainty, including potential policy and regulatory outcomes. This suggests that economic policy uncertainty may impact stock market performance, particularly during periods of heightened economic policy uncertainty. From a return perspective, studies by Sum (2012), Kang and Ratti (2013), Chang et al. (2015), Arouri et al. (2016), and Christou et al. (2017) have postulated a negative relationship between stock returns and economic Policy Uncertainty (EPU). Further Economic policy not only has substantial effects on stock market return but also impacts other activities of the stock market such as liquidity and volatility (Dash et al., 2021). Vianez et al., (2017) also confirms that EPU impacts liquidity. So economic uncertainty appears to act as a channel influencing stock market activity as economic uncertainties have an impact on the efficiency and performance of the stock market directly or indirectly. Moreover, emerging economies often face frequent and significant policy shifts compared to developed markets. During periods of high EPU, markets tend to become more susceptible due to uncertainty about economic policies and future regulatory changes. In line with that uncertainty can even make liquid markets riskier, subsequently making investors risk-averse. From prospect theory perspective, this risk-averse behavior of investors reduces the investor's alacrity to invest in the market even in liquid assets or high EPU may cause investors to take off from markets completely rather than selectively choosing liquid assets. Further,

based on the Adaptive Market Hypothesis during heightened EPU market players adjust by reallocating capital to low-volatile assets or withdraw their investment thereby reducing liquidity and ultimately affecting return.

So, it can be said that high EPU can delay or alter policy decisions, creating uncertainty about future economic conditions and affecting stock market activity i.e. return and liquidity. As EPU lowers overall trading activity, this reflects that EPU may weaken the positive relationship between market liquidity and stock market return. Therefore, it is necessary to empirically examine EPU as a moderator that interacts with liquidity and return by developing the following hypothesis.

H3(a): EPU as moderator weaken the positive relationship between market liquidity and stock market returns.

2.8.2 Investor Attention, Economic Policy Uncertainty and Stock Market Return

Economic policy uncertainty plays a significant role in shaping market fundamentals. During periods of high economic uncertainty, investors may adjust their investment strategies by delaying future investment decisions and adopting a wait-and-see approach to gain clarity on future policies and their implications, which can ultimately affect returns. Secondly, investors may adopt a risk-mitigation strategy to preserve capital during periods of high economic uncertainty (EPU), which can potentially limit the upside potential of returns. Kundu and Paul (2022) explore the impact of economic policy uncertainty (EPU) on stock market return and risk across a group of seven countries. Their findings suggest that an increase in EPU is associated with a decrease in stock return. In the emerging economy, Yang et al. (2023) offer evidence that during times of elevated EPU in China, investors, constrained by limited cognitive resources, tend to focus more on policy-related information and less on company and stock-specific information, thereby impacting overall stock market performance.

As, attention is a scarce cognitive resource, and attention due to having constraint issues, investors grab only that information that is of interest to them. Moreover, it also influences stock market activity i.e. return and volatility (Da et al., 2011; Tantaopas et al., 2016). As earlier literature empirically proven investor attention promulgates returns. But according to prospect theory, when uncertainty increases due to regulatory and policy changes, investors pay more attention to the fear or policy noise rather than fundamental news. According to the market microstructure concept, more attention might enhance volatility rather than value discovery if it is not accompanied by informed and fundamental trading (Madhavan, 2000). Further, AMH suggests that during uncertain times, market participants adjust their behavior, pay attention to more speculative attention. Because attention now reflects emotional reactions to uncertainty rather than indicating informed trade, EPU erodes the positive relationship between attention and return. The findings reveal that return is not only highly influenced by investor behavior but also by regulatory economic factors. In emerging economies, due to unstable economic and political situations, the EPU changes frequently and usually at an amplified level. Further high levels of EPU can also increase the perceived risks among investors and in such scenarios, investors divert their attention toward policy-related issues, and are less interested in stock investment, thereby reducing stock returns. Therefore, high EPU is likely to weaken the positive relationship between investor attention and stock market return. So, the following hypothesis is being developed based on the described literature.

H3 (b): EPU as a moderator weakens the positive relationship between investor attention and return.

2.8.3 Asymmetric Information, Economic Policy Uncertainty and Stock Market Return

The economic implications of Economic Policy Uncertainty (EPU) have garnered significant attention from scholars in economics and finance, as highlighted by Lei and Luo (2023). They posit that EPU not only influences business operations and capital inflows at the macro level, as indicated by studies such as Bloom (2009) and

Julio and Yook (2012) but also has adverse effects on investments in capital markets, as evidenced by research from Gulen and Ion (2016) and Jens (2017). Given the detrimental consequences of EPU on the stock market, researchers have begun to explore its relationship with information asymmetry. Based on the research findings of Lei and Luo (2023), which revealed a strong negative impact of Economic Policy Uncertainty (EPU) on asymmetric information in stock markets and asset pricing, as well as its effect on market efficiency, it is evident that EPU can exacerbate the presence of asymmetric information among investors in both heterogeneous and homogeneous settings. Additionally, Nagar et al. (2019) also confirmed the role of EPU in instigating information asymmetry among investors. **Especially in** times of heightened EPU, the market becomes more sensitive and prone to information divergences. Further in emerging economies where asymmetric information prevails strongly and policies are uncertain and changing suddenly, in such scenario the less-informed investors cannot interpret or anticipate these policy changes, causing mispricing and a robust negative impact on returns for less-informed investors. From theoretical background this study is based upon AMH theory. So, drawing from behavioral finance, policy shocks heighten fear and un-informed investors being risk-averse and could not distinction between informed and uninformed news due to noise, withdraw their investment from stock market, inhibit stock market activity and consequently return. Further According to AMH, markets adapt by becoming more risk-sensitive in uncertain conditions, punishing assets with lower informational transparency. Therefore, under high EPU, the return-negative effects of information asymmetry are magnified, resulting in a stronger negative association between asymmetric information and stock performance. Therefore, it is reasonable to infer that asymmetric information may become more pronounced in high-EPU economic environments, thereby influencing stock market returns, in heterogeneous and homogeneous settings. So, the following hypothesis can be posited to explore the moderating role of EPU on the relationship between asymmetric information and returns.

H3(c): EPU as a moderator strengthens the negative relationship between asymmetric information and the return of the stock market.

2.9 Role of Moderator Economic Policy Uncertainty on the Relationship of Market Microstructure Factors with Stock Market Volatility

2.9.1 Liquidity, Economic Policy Uncertainty and Stock Market Volatility

The empirical research on the relationship between political unpredictability and asset pricing has gained significant attention. Researchers have increasingly focused on understanding the impact of Economic Policy Uncertainty (EPU) on stock market return and risk. Pástor and Veronesi (2013) utilized the policy uncertainty index developed by Baker et al. (2016) to investigate the connection between uncertainty and volatility. They concluded that the introduction of a new policy with uncertain implications tends to increase volatility in the stock market. This highlights the relevance of political uncertainty as a determinant of market behavior and asset pricing. The findings of Antonakakis et al. (2013) indicate time-varying relationships between policy uncertainty, implied volatility, and U.S. stock market returns, suggesting that higher Economic Policy Uncertainty (EPU) leads to increased stock market volatility. This aligns with theoretical models proposed by Ozsoylev and Werner (2011) and Routledge and Zin (2009), which suggest that heightened uncertainty causes investors to halt trading, resulting in decreased liquidity and wider bid-ask spreads, ultimately leading to greater asset price fluctuations and volatility. Mbanyele (2023) examined the relationship between economic policy uncertainty and liquidity in the Brazilian stock market, particularly for companies with higher risk profiles.

The study found that during periods of heightened economic policy uncertainty, there is a noticeable increase in stock illiquidity. Debata and Mahakud (2018) similarly observed that economic policy uncertainty moderately affects liquidity under normal conditions but becomes more significant during major financial crises. Lu and Wang (2023) focused on the banking sector and investigated the impact

of bank liquidity on volatility, considering the moderating effect of EPU. Their empirical analysis proved that EPU acts as a moderator, strengthening the negative relationship between liquidity and risk.

These studies highlight the complex interplay between economic policy uncertainty, liquidity, and volatility in financial markets, underscoring the importance of considering EPU's moderating role in understanding the relationship between liquidity and risk. Through lab tests, Choi and Munro (2022) investigate how liquidity affects volatility. They find that investors of thin markets are concerned about uncertain news, as it affects stock returns. Uncertain news triggers a liquidation process, leading to a liquidity crunch and an escalation in volatility in the stock market. Moreover, Mupondo (2022) also ascertains that according to the policy-makers' and regulators' myopic view, the uncertain economic news is the possible cause of hinges on the market activity. From theoretical perspective This study draws on prospect, and the Adaptive Market Hypothesis (AMH) to conceptualize the moderating role of Economic Policy Uncertainty (EPU) in the relationship between market liquidity and stock volatility. Liquidity typically serves as a barrier against volatility by absorbing large trades without significant price abruption. As, Asian emerging economies are considered less deep, less resilient, and have low trading activity, under high EPU, according to prospect theory behavioral biases such as fear, herding and overreaction become dominant. Investors are more sensitive to liquidity conditions, and any uncertain economic news prone the investor to devise their investment strategy, may halt or limit their investment activity cause illiquidity and instigate volatility. Further AMH posited that markets adapt to changing environments during policy uncertainty, liquidity becomes a more significant determinant of stability. Therefore, EPU is likely to strengthen the negative relationship between liquidity and volatility as the stability of liquidity becomes more crucial under policy-driven conditions. In this regard considering the empirical work of Choi and Munro (2022) and Lu and Wang (2023), the moderating influence of EPU on the interaction between liquidity and volatility will be studied, to ascertain empirically the influence of uncertain economic news on the relationship between liquidity and volatility by proposing the following hypothesis.

H4 (a): EPU as a moderator strengthens the negative relationship between market liquidity and Volatility.

2.9.2 Investor Attention, Economic Policy Uncertainty and Stock Market Volatility

Empirical research provides substantial evidence supporting the impact of Economic Policy Uncertainty (EPU) on risk in financial markets. For instance, Liu and Zhang (2015) conducted empirical analysis to validate the Predictive Value (PV) hypothesis, examining whether incorporating EPU data improves the accuracy of forecasting stock market volatility. Their findings demonstrated that EPU possesses significant predictive power, effectively forecasting stock market volatility within the observed period (in-sample) and beyond (out-of-sample). This suggests that EPU data can enhance our ability to anticipate fluctuations in stock market volatility

However, Xiao and Wang (2021) expanded on this understanding by exploring the moderating influence of EPU on the relationship between investor attention and oil market volatility across G7 and BRIC countries. Their research revealed that economic policy uncertainty can amplify the positive association between investor attention and volatility. Particularly, they highlighted the sensitivity of this relationship to variations in economic policy uncertainty within the US and Canada. Generally, investors are more perceptive to news and economic cues when the EPU is high. This increased sensitivity may amplify the effect of investor attention on market volatility. Anything that grabs investors' attention during high EPU periods positive or negative can cause the market to respond more sharply, which raises volatility. For example, announcements on possible policy changes or the release of economic data, for instance, might quickly prompt investors to revise their expectations, resulting in abrupt market moves. As earlier said, behavioral finance suggests that during periods of high EPU, investor attention is driven more by anxiety, ambiguity, panic situation and policy noise than by rational framework, leading to exaggeration in price movements. Further, Market microstructure concept narrates that increase investor attention increases order flow and trading imbalance, and under uncertain policy environments attention

becomes more speculative and destabilizes the trading activity of stock market. From AMH perspective the notion that markets adapt by becoming hypersensitive to policy cues during uncertain times, reflects that even slight shifts in attention can trigger volatility. Thus, EPU strengthens the positive relationship between investor attention and volatility, making markets more reactive and unstable.

As previously mentioned, investors operate within constraints on their attention resources. When investors allocate their attention to monitoring economic policy uncertainty and subsequently adjust their investment strategies in response, the effects of EPU are likely to strengthen the relationship between investor attention and market volatility. This implies that shifts in economic policy uncertainty can alter the dynamics of investor attention and its impact on market volatility, particularly in emerging regions where policy uncertainty is more pronounced. So the following hypothesis is being postulated.

H4 (b): EPU as a moderator strengthens the positive relationship between investor attention and Volatility

2.10 Role of Moderator Interest Rate on the Relationship of Market Microstructure Factors with Stock Market Return

2.10.1 Liquidity, Interest Rate, and Stock Market Return

Stocks play a pivotal role in shaping the economic landscape of any nation, making the relationship between asset returns and macroeconomic variables a subject of increasing interest in financial circles. This interest stems from two primary reasons. Firstly, well-informed investors who possess knowledge of prevailing macroeconomic policies are better equipped to make investment decisions that mitigate their risk exposure. Secondly, heightened awareness of potential changes in the financial system or broader economy allows for proactive measures to be taken, reducing the impact of any ensuing shocks. Barakat et al. (2016) delve into this relationship,

examining the interplay between the stock market and key macroeconomic indicators such as interest rates, inflation rates, money supply, and exchange rates in two emerging economies, namely Egypt and Tunisia, over the period spanning January 1998 to January 2014.

The study conducted by Barakat et al. (2016) revealed a causal relationship between the market index and various macroeconomic indicators such as the consumer price index (CPI), exchange rate, money supply, and interest rate in Egypt's emerging economy. Similar findings were observed for Tunisia, except for CPI. These variables were identified as catalysts for fluctuations in stock prices. Expanding on this line of inquiry, Utomo et al. (2019) empirically investigated the relationship between macroeconomic variables specifically exchange rates, interest rates, and inflation and stock performance, focusing on blue-chip companies listed in the Indonesia Stock Exchange from 2015 to 2017. The study found a negative long-term relationship between selected macroeconomic factors and stock returns. However, in the short term, inflation and exchange rates exhibited a positive impact, while interest rates did not. Furthermore, proponents of the Macroeconomic Hypothesis School argue that stock prices are influenced by major macroeconomic variables such as interest rates, GDP, inflation rates, money supply, and exchange rates (Wilson-Oshilim et al.). In another study examining the relationship between market microstructure and stock market performance, Igbinedion and Irom, (2019) explored the connection between market microstructure utilizing ask-bid data and macroeconomic factors including interest rates, exchange rates, and inflation. Their empirical findings suggested a significant positive relationship between interest rates, exchange rates, inflation, and the market microstructure component. The stock market is often characterized by its volatile nature, where significant movements provide investors with both positive and negative signals regarding potential returns.

Empirical studies underscore the pivotal role of interest rates in influencing market dynamics. Primarily, interest rates wield considerable influence over investment, consumption, and overall economic activity. Indeed, the interest rate stands as a prominent macroeconomic variable with significant implications for both the broader economy and the stock market. An increase in interest rates typically translates to

higher borrowing costs and diminished profitability. Consequently, investors may be inclined to shift their allocations towards fixed-income securities such as bonds, which offer relatively higher expected returns compared to equities. This shift away from equities can exert downward pressure on stock prices. Conversely, a decrease in interest rates tends to stimulate capital inflows into the stock market, as the allure of higher returns outweighs the appeal of traditional savings accounts. This phenomenon underscores the inverse relationship between interest rates and stock market performance.

Numerous empirical studies have delved into the relationship between interest rates and stock market returns, yielding varied findings. Mukherjee and Naka (1995), Alam and Uddin (2009), and MUKTADIR (2013) all observe a negative long-run relationship between interest rates and stock market performance. Conversely, Lee (1997) suggests that while an initial negative correlation between interest rates and stock returns may exist, it eventually transitions into a positive relationship. Wilson-Oshilim et al. corroborate this perspective, demonstrating that fluctuations in interest rates inversely impact stock returns in the Nigerian capital market. However, Eldomiaty et al. (2020) present contrasting results, finding a positive association between interest rates and stock prices. Their study, focusing on non-financial firms listed in major stock exchanges, diverges from prior research. Similarly, Zia (2023) reports no discernible relationship between interest rates and stock returns, suggesting that the interplay between these variables may be contingent on specific market conditions or other contextual factors.

The theoretical underpinnings of market microstructure literature highlight a significant nexus between interest rates and market liquidity. Hasbrouck (2004) articulates the inventory theory of market microstructure, positing that the turnover of asset inventories and the risk associated with maintaining liquid asset inventories are two critical determinants influencing market liquidity. This theory rests on the premise that liquid assets entail minimal financing costs and pose negligible risks to holding. Consequently, any changes in interest rates are expected to impact on market liquidity, primarily due to the costs associated with maintaining these liquid stock attributes, including low turnover and maintenance costs. Empirical

studies further substantiate the link between interest rates and market liquidity. Gottfries and Söderberg (2008) found that short-term interest rates can predict market liquidity on the Stockholm exchange over a significant period. Similarly, Hoi and Cook, (2006) investigated the relationship between macroeconomic factors, including interest rates, and market liquidity in Japan. Their study revealed a strong association between interest rates and market liquidity. The existing literature provides ample evidence that interest rates, as a macroeconomic factor, significantly influence stock market activities, particularly liquidity and stock returns. From AMH perspective As interest rates rise, investors become more cautious and less willing to take on risk, according to the Adaptive Market The positive correlation between liquidity and stock returns may be weakened because of trading activity slowing down as for investors investment in bonds and other fixed-income assets become more viable options for investment than stocks when interest rates are high. This change in investor preferences or a shift may result in less demand for liquid assets such as stocks and consequently lower returns on those stocks. The appeal of various investment options is influenced by high interest rates. So, it can be said that interest rates influence capital flows and investment behavior as well as overall market dynamics. Therefore, it is plausible that interest rates may weaken the relationship between liquidity and returns in the stock market. So, the following hypothesis is being postulated.

H5(a): Interest rate as a moderator weakens the positive relationship between market Liquidity and the stock market's return.

2.10.2 Asymmetric Information, Interest Rate and Stock Market Return

Kyle (1985) seminal work delineates the prevalence of asymmetric information in the stock market, particularly in markets characterized as weak and semi-strong efficient. This phenomenon underscores disparities in information accessibility among market participants, with some possessing privileged insights while others remain uninformed. Empirical investigations, such as the study conducted by Vega and Wu (2006), have sought to elucidate the relationship between asymmetric information

and announcements about macroeconomic factors, particularly in the context of the United States. Vega and Wu (2006) empirically examined the dynamics of asymmetric information surrounding macroeconomic news announcements in the U.S. market. Their findings shed light on how asymmetric information intensifies during periods coinciding with the release of significant macroeconomic news, including announcements related to monetary policy expansions or contractions and shifts in fiscal policy. During these announcement windows, disparities in information availability become more pronounced, as market participants react to the newly disclosed information, leading to heightened levels of information asymmetry and influencing market outcomes.

Bauve and Cave's (2008) empirical investigation delves into the impact of asymmetric information within the realm of market microstructure, particularly focusing on how informed investors leverage their superior knowledge regarding interest-rate-related factors to influence U.S. equity market returns. Their findings suggest a discernible linkage between asymmetric information and fluctuations in equity market performance, with informed investors wielding significant influence over market dynamics. The study posits that in scenarios characterized by heightened levels of asymmetric information, informed investors possess valuable insights into interest-rate-related factors. As a result, they are better equipped to anticipate and capitalize on impending changes, thereby exerting downward pressure on U.S. equity market returns. This phenomenon underscores the pivotal role played by information differentials in shaping market outcomes.

Moreover, the empirical findings imply that as interest rates rise, the disparities in information become more pronounced, exacerbating the adverse impact on stock market returns. In such environments, informed investors tend to reallocate their investments towards alternative asset classes offering higher returns, such as bonds. This shift in investment preferences leads to a reduction in market activity and undermines the overall efficiency of the stock market.

Conversely, less-informed investors are at a disadvantage, as they lack timely access to critical information and are consequently unable to adjust their investment strategies accordingly. As a result, they may incur inventory costs and experience

diminished returns in comparison to their informed counterparts, further exacerbating the disparities in market outcomes. Overall, Bauve and Cave's (2008) study highlights the intricate interplay between asymmetric information, interest-rate dynamics, and equity market performance. These findings underscore the importance of information parity in fostering market efficiency and ensuring equitable outcomes for all market participants. Moreover, in emerging markets, higher interest rates amplify the negative effects of asymmetric information on stock market returns. For example, during periods of rising interest rates, a firm's stock with poor information transparency tends to underperform, compared to more transparent firms. This underperformance is more pronounced in emerging markets due to heightened sensitivity to interest rate changes and greater economic instability. Therefore, it is most likely that interest as a moderator strengthens the negative relationship of asymmetric information with return. So, the following hypothesis is being developed.

H5 (b): The interest rate as a moderator strengthens the negative relationship between asymmetric information and the stock market's return.

2.11 Role of Moderator Exchange Rate on the Relationship of Market Microstructure Factor with Stock Market Return

2.11.1 Investor Attention, Exchange Rate and Stock Market Return

Indeed, the relationship between exchange rates and stock prices has garnered significant attention from economists, financial investors, policymakers, and scholars alike. This relationship has been extensively explored in the economics literature and has been a focal point of policy discussions and research endeavors.The correlation between exchange rates and stock prices is interesting because it can signify how shocks or changes in one market can swiftly propagate to the other. Understanding this relationship is crucial for making

informed investment decisions related to capital budgeting, managing international portfolios, and formulating economic policies. The relationship between exchange rates and stock values underscores the interconnectedness of financial markets. A nation's investment climate, including political stability, legal frameworks, macroeconomic stability, and the openness of financial system, plays a crucial role in attracting or repelling capital flows. A stable and favorable investment environment can stimulate capital inflows, bolstering exchange rates and potentially supporting stock market performance. As earlier said, the relationship between the stock market and exchange rates has been a subject of interest in both academic and policy circles. Research conducted by Javangwe and Takawira (2022) sheds light on this connection by examining the relationship between South Africa's stock market and the exchange rate over a considerable period, from 1980 to 2020. Their findings reveal a negative relationship between changes in exchange rates and the stock market in the long run. This suggests that fluctuations in exchange rates can have a significant impact on stock market returns over extended periods. Moreover, fluctuations in exchange rates can directly influence market returns, particularly when there are changes in the value of the local currency compared to major currencies like the US dollar. For instance, when the local currency depreciates against the dollar, it may prompt both local and foreign investors to withdraw their capital from the domestic stock market. This capital outflow can result in lower market returns as investors seek alternative investment opportunities in foreign markets where their capital may yield higher returns.

The intersection of investor attention and exchange rates has also become a focal point in behavioral finance, especially given its implications for understanding market dynamics. Researchers such as Du and Ye, (2018) have delved into this area, examining how investor attention influences fluctuations in exchange rates. In their study focusing on the Chinese Renminbi (RMB), Du and Ye, (2018) discovered a significant positive relationship between investor attention and the exchange rate. This finding suggests that the level of investor attention can exert a notable impact on the movement of exchange rates, particularly in the context of the Chinese currency.

Building upon this research, Han et al., proposed that investor attention may wield even greater influence, surpassing that of macroeconomic variables, especially

when it comes to forecasting exchange rates out of sample. This underscores the importance of considering investor sentiment and attention alongside traditional economic indicators when analyzing currency movements.

The fluctuations in exchange rates, as influenced by investor attention, can have ripple effects on various aspects of financial markets, including stock market activity. According to the portfolio balance method, exchange rates are determined by market forces, like other commodities. For instance, a thriving stock market can attract capital inflows from international investors, leading to an increased demand for a nation's currency and potentially driving its exchange rate appreciation. Moreover, the increased attention of local and institutional investors in stock investment also enhances stock return. Conversely, a downturn in the stock market may lead to capital outflows and currency depreciation. However, in this study, the exchange rate can be viewed as a moderator that influences the relationship between investor attention and stock market returns. When exchange rates fluctuate significantly, they can disrupt the positive relationship between investor attention and returns. For instance, during periods of currency depreciation, heightened investor attention may not necessarily translate into increased stock market returns as investors become risk-averse and cautious due to exchange rate movements. On the other hand, variations in the exchange rate may create extra risk if investors are focusing on a stock that is valued in a foreign currency. For example, even when the stock price in the foreign currency rises, the returns from the stock may fall when converted back to the investor's home currency if the investor's home currency appreciates it versus the foreign currency. Further from prospect theory claims Investors are more sensitive to losses than to gains. Exchange rates are seen as a macroeconomic threat when they are unstable or declining, which heightens risk aversion and anxiety. Despite high attention levels, investors may react more cautiously or negatively to news, which can erode the positive correlation between investor attention and stock market returns. Because of this, even greater investment in investors might not result in higher profits in an environment of exchange rate instability. Therefore, it can be said theoretically and empirically that the exchange rate plays a crucial role in shaping the dynamics between investor attention and stock market returns, highlighting the need to consider its influence when analyzing stock market behavior. In conclusion, while investor focus can increase stock returns, exchange rate swings bring extra expenses

and costs that may weaken this beneficial relationship. So, the following hypothesis is being postulated.

H6: The exchange rate as a moderator weakens the positive relationship between investor attention and the stock market's return.

2.12 Role of Moderator Interest Rate on the Relationship of Market Microstructure Factor with Stock Market Volatility

2.12.1 Liquidity, Interest Rate and Stock Market Volatility

Literature highlights an intriguing aspect of market behavior during economic downturns versus upswings, emphasizing that macroeconomic shocks tend to have a more pronounced impact on market volatility during downturns. This phenomenon can be attributed to several factors, including the inherent vulnerabilities of the equity market and the sometimes-irrational behavior exhibited by market participants.

In times of economic downturn, the equity market becomes more susceptible to external shocks and disruptions. Market participants may become more risk-averse and prone to panic selling, leading to heightened volatility. Additionally, during economic downturns, investors may reassess their risk exposure and investment strategies, contributing to increased market volatility as they react to changing economic conditions.

Moreover, the behavior of market participants during economic downturns may not always align with rational expectations or market fundamentals. Emotions such as fear, uncertainty, and pessimism can drive investor decisions, causing exaggerated market movements and exacerbating volatility. During periods of economic stress, market participants may overreact to negative news or events, leading to sharper and more volatile price fluctuations.

Conversely, during economic upswings or periods of prosperity, market participants may exhibit a different set of behaviors. Optimism and confidence in the economy

may lead investors to overlook potential risks or downplay negative news, resulting in a more muted response to macroeconomic shocks. However, it's essential to note that even during upswings, market volatility can still occur, albeit to a lesser extent compared to downturns.

Overall, the relationship between macroeconomic shocks and market volatility is dynamic. Understanding these dynamics is crucial for investors and policymakers alike in navigating volatile market environments and managing risk effectively. To delve deeper into the dynamics of macroeconomic shocks, their impact differs depending on the phase of the economic cycle.

During downturns, the timing of these shocks becomes more critical, while during upswings, their magnitude holds greater significance. This nuanced relationship was explored in the context of Turkey's monetary policy adjustments by Samour et al. (2020). Their study focused on the interplay between Turkey's monetary policy, specifically interest rates, and its stock market volatility. Spanning two significant financial crises, the study collected data from 1993 to 2016. The findings revealed several key insights. They find that interest rates exert a significant influence on Turkey's stock market returns across both short and long-term horizons. Moreover, increases in interest rates tended to precipitate volatility or declines in stock prices.

Similarly, Amata et al. (2016) also analyzed the relationship between interest rates with volatility in Kenya and found that sudden changes in the interest rate will always instigate volatility in the stock market. The literature reviewed suggests a strong link between interest rates and volatility in the stock market. Fluctuations in interest rates impact investor behavior decisions. In a low-interest-rate environment, investors often seek higher returns by investing in riskier assets, including equities in emerging markets. This risk-taking behavior increases market participation and subsequently increases liquidity, which can lead to lower volatility due to the increased volume of trading.

However, from theoretical perspective Adaptive Market Hypothesis (AMH) explains how interest rates moderate the link between market liquidity and volatility. Investors modify their actions in response to changing market conditions, claims by AMH.

A rise in interest rates causes borrowing costs to rise and risk appetite of investors falls, which makes traders more cautious and more dependent on liquidity conditions. High liquidity in this setting strengthens the inverse link between liquidity and volatility by absorbing shocks and lowering volatility more successfully. Therefore, it is plausible to posit empirically and theoretically that the interest rate strengthens the relationship between liquidity and volatility.

Considering these observations, the following hypothesis is proposed: As interest rates increase, the inverse relationship between liquidity and volatility in the stock market strengthens. So, the following hypothesis is being postulated.

H7: Interest rate as a moderator strengthens the negative relationship between market Liquidity and market volatility.

2.13 Role of Moderator Exchange Rate on the Relationship of Market Microstructure Factor with Stock Market Volatility

2.13.1 Investor Attention, Exchange Rate and Stock Market Volatility

The tumultuous events of the global financial crisis of 2007 and the Asian financial crisis of 1997–1998 serve as poignant reminders of the intricate interplay between local stock prices, currency rates, and their respective volatilities. These crises starkly highlighted how a substantial downturn in stock prices coupled with a significant depreciation of the local currency (often measured in terms of US dollars) could precipitate the collapse of developing markets.In a study by Lakshmanasamy (2021), the impact of fluctuations in domestic exchange rates on domestic stock market activity was investigated. The findings revealed that volatility in domestic exchange rates adversely affected the performance of the domestic stock market, resulting in lower returns and heightened levels of volatility.

These empirical observations underscore the interconnectedness of financial markets and the susceptibility of domestic stock markets to external shocks, particularly those stemming from currency fluctuations. The reverberations of such events are felt across multiple facets of the economy, influencing investor behavior, market sentiment, and ultimately, stock market performance. The fluctuations in stock prices and currency depreciation wield a profound influence on the future income and investment decisions of firms, as well as on both domestic and foreign investors. Lakshmanasamy (2021) underscores the increasing trend of global market integration, which not only heightens the portfolio risk of foreign investors in the face of local stock market volatility but also exacerbates fluctuations in exchange rates. Lakshmanasamy (2021) analyzed the Indian stock market from January 2010 to December 2015, and a positive relationship between exchange rate fluctuations and stock market volatility was observed. This suggests that changes in the exchange rate contribute to increased volatility in the Indian stock market. Moreover, emerging markets face considerable monetary policy changes, political unpredictability, and economic volatility, which cause considerable currency movements. In such a situation investor sensitivity to currency fluctuations increases when they focus more on stocks in these markets, perhaps leading to higher volatility. This can be said that exchange-rate fluctuation is also considered a significant risk factor in emerging economies. This risk factor increases investor attention and may result in reactive trading behavior, where investors quickly purchase or sell in response to fluctuations in the exchange rate, which would amplify the volatility.

From theory perspective The Adaptive Market Hypothesis (AMH) and Prospect Theory provide a clear explanation of how exchange rates moderate the relationship between investor attention and stock market volatility. According to AMH, investors adjust their strategy in response to shifting circumstances; as a result, during times of exchange rate volatility, focus turns to macroeconomic risks, which heightens susceptibility to news and increases volatility.

Investors are loss-averse, according to Prospect Theory, because they view exchange rate volatility as a threat that might cause emotional outbursts and exaggerated responses to information. When taken as a whole, these theories clarify how changes

in exchange rates amplify the effect of investors focusing on market volatility. So theoretically and empirically it is clear that whenever the exchange rate experiences fluctuations, investors, both local and foreign, are inclined to withdraw their investments from the equity market, thereby exacerbating fluctuations in returns, i.e., volatility.

Thus, it becomes evident that the exchange rate, acting as a moderator, can amplify the positive relationship between investor attention and volatility. The interconnectedness of these variables underscores the intricate dynamics at play within financial markets and the critical role played by external factors in shaping market behavior and performance. So, the following hypothesis is being postulated

H8: The exchange rate as a moderator strengthens the positive relationship between investor attention and volatility.

2.14 Role of Moderators Interest Rate and Economic Policy Uncertainty on the Relationship of Market Microstructure Factor with Stock Market Return

2.14.1 Liquidity, Economic Policy Uncertainty Interest Rate and Stock Market Return

The seminal work by Schwert (1989) introduced a time-varying relationship between stock market uncertainty and macroeconomic variables. Building upon this framework, Yesuf and Avcı (2018) analyzed the causal relationship between Economic Policy Uncertainty (EPU) and interest rates on stock indices in Russia and China from 1996 to 2016. Their findings suggest long-term associations between stock indices and EPU, as well as interest rates, indicating that macroeconomic uncertainty plays a significant role in shaping stock market movements.

Similarly, Hawa and Ahmet, (2018) examined the relationship between stock returns and various macroeconomic factors including interest rates, exchange rates, the Consumer Price Index (CPI), Industrial Production, and EPU in the Turkish stock market. Their empirical evidence revealed an inverse relationship between EPU, interest rates, and market returns. One possible explanation for this inverse relationship is that central banks may raise interest rates during periods of heightened EPU, thereby increasing borrowing costs. As a result, investment activities are discouraged due to rising interest rates and uncertainty, prompting investors to shift their allocations towards safer assets like bonds, crypto-currencies, or bitcoin, rather than equities. This shift in investment behavior negatively affects liquidity, particularly market depth and resilience, resulting in a bearish trend in stock markets. In such scenarios, the typically positive relationship between liquidity and returns may weaken. Consequently, it is plausible to suggest that EPU and interest rates act as joint moderators and may weaken the positive relationship between liquidity and stock return. Therefore, the following hypothesis is being postulated.

H9: The interest rate and EPU as a moderator weaken the positive relationship between liquidity and return.

2.15 Role of Moderators Exchange Rate and Economic Policy Uncertainty on the Relationship of Market Microstructure Factor with Stock Market Return

2.15.1 Investor Attention, Economic Policy Uncertainty Exchange Rate and Stock Market Return

Financial crises often escalate uncertainty, triggering stock market crashes as investors react with heightened anxiety and overreaction. During these turbulent times, the role of economic policy uncertainty becomes increasingly crucial. The

global financial crisis of 2008 serves as a poignant example, with a multitude of financial markets experiencing collapses driven in part by aggressive selling practices, which were fueled by economic policy uncertainties.

Various authoritative bodies, including the United States Federal Open Market Committee (2009) and the International Monetary Fund (2014), have attributed the primary cause of the 2008 global financial crisis to the uncertainties surrounding monetary, regulatory, and fiscal policies in both the United States and Europe. These policy uncertainties exacerbated market volatility and contributed significantly to the severity of the crisis.

Hussain (2022) conducted a comprehensive study on the impact of economic policy uncertainty (EPU), exchange rates, and economic growth on the returns of 12 emerging countries, including Argentina, Brazil, China, Indonesia, India, Mexico, Poland, Russia, South Africa, South Korea, Turkey, and Pakistan. The findings of the study revealed several key insights into the dynamics of these factors. Firstly, Hussain (2022) highlighted that increasing economic policy uncertainty exerts a significant negative effect on returns in these emerging markets.

This suggests that higher levels of uncertainty surrounding economic policies can dampen investor confidence and lead to decreased returns in the stock market. Additionally, the study delved into the influence of macroeconomic factors, such as exchange-rate and economic policies rate, on stock market performance.

It was found that the local exchange rate has a positive impact on stock market performance, while higher policy rates tend to diminish returns. This underscores the importance of considering currency dynamics and economic policy in assessing stock market returns.

Furthermore, Hussain (2022) proposed that in economies experiencing local currency fluctuation and heightened economic policy uncertainty, investors, both local and foreign, are likely to closely monitor news related to macroeconomic factors and policy-related issues. In response to unfavorable conditions, investors may opt to shift their investments from their home country to foreign markets perceived as having more stable exchange rates and lower economic policy uncertainty. Therefore,

exchange rate fluctuation combined with high EPU generates a highly uncertain environment.

In such scenarios investors may be overwhelmed by the dual risks, leading to greater caution and reduced willingness to invest, weakening the relationship between attention and returns. Moreover, analyzing how the exchange rate and EPU influence the market microstructure and stock return, could facilitate in revealing imperative behavioral dynamics. Given these reasons, it is suggested that economic policy uncertainty (EPU) and exchange rates may weaken the positive relationship between investor attention and returns in emerging markets by formulating the following hypothesis.

H10: The exchange rate and EPU as moderators weaken the positive relationship between investor attention and return.

2.16 Role of Moderators Interest Rate and Economic Policy Uncertainty on the Relationship of Market Microstructure Factor with Stock Market Volatility

2.16.1 Liquidity, Economic Policy Uncertainty Interest Rate and Stock Market Volatility

Volatility in financial markets poses significant challenges for both investors and policymakers alike. The heightened market turbulence and widespread panic induced by volatility can have detrimental effects, including limiting corporate investment and impeding overall economic growth. Therefore, it is imperative to gain a comprehensive understanding of how regulatory and economic factors interact and influence volatility, as highlighted by Ghani et al. (2022). In line with this perspective, Shaikh (2020) suggests that a high level of policy uncertainty is often associated with increased volatility in equity markets. This implies that

fluctuations in regulatory environments can significantly impact market stability and investor confidence, leading to heightened volatility.

Theoretical and empirical studies, such as those conducted by Fang et al. (2022), have also shed light on the role of regulatory and macroeconomic factors in driving financial market volatility. These studies have identified variables such as interest rates, exchange rates, and GDP growth rates as potential drivers of market volatility. Changes in these factors can introduce uncertainty and influence investor behavior, contributing to fluctuations in market volatility.

Overall, understanding the intricate relationship between regulatory policies, economic dynamics, and market volatility is crucial for effective risk management and policy formulation in financial markets. By identifying and addressing the underlying drivers of volatility, policymakers can work towards promoting stability and resilience in financial markets, ultimately fostering sustainable economic growth. Indeed, emerging financial markets often exhibit higher levels of volatility compared to developed markets, primarily due to factors such as short-run interest rates and regulatory uncertainty, as noted by Ghani et al. (2022). Their analysis underscores the significance of considering a combination of regulatory and macroeconomic factors, including Economic Policy Uncertainty (EPU), domestic interest rates, exchange rates, and Consumer Price Index (CPI), in understanding volatility in the Pakistan stock market. Ghani et al. (2022) find that these factors collectively contribute significantly to the instability observed in the Pakistan stock market. This suggests that regulatory economic factors and macroeconomic variables play crucial roles in shaping market volatility, particularly in emerging markets like Pakistan. The literature thus highlights the importance of recognizing the impact of both EPU and interest rates on market volatility, particularly in emerging stock markets. Increased interest rates and heightened regulatory uncertainty can exacerbate liquidity constraints by prompting shifts in investment behavior and reducing overall investment activity in the stock market.Therefore, it is plausible to hypothesize that both interest rates and EPU, acting as combined moderators, may strengthen the negative relationship between liquidity and volatility in the stock market. This underscores the need for policymakers and market participants

to carefully consider the implications of regulatory and macroeconomic dynamics for market stability and liquidity conditions.

H11: The interest rate and EPU as moderator strengthen the negative relationship between liquidity and volatility.

2.17 Role of Moderators Exchange Rate and Economic Policy Uncertainty on the Relationship of Market Microstructure Factor with Stock Market Volatility

2.17.1 Investor Attention, Economic Policy Uncertainty Exchange Rate and Stock Market Volatility

Volatile financial markets are indicative of significant uncertainty about both near-term and long-term prospects within the stock market of any emerging economy, as noted by Kennedy and Nourzad (2016). This heightened volatility often deters foreign investors, leading to reduced foreign investment inflows in high-volatile countries. Kennedy and Nourzad (2016) empirically examine various factors influencing volatility in the U.S. stock market, including the exchange rate. Their analysis, spanning from the first week of 1999 through the third week of 2010, demonstrates that exchange rate fluctuations contribute to increased market volatility. Similarly, Engle (2003) asserts that stock market volatility tends to escalate during periods of heightened news intensity, particularly concerning economic policies, central bank meetings, and geopolitical conflicts, which serve as triggers for financial volatility.

The findings of Kennedy and Nourzad (2016) and Engle (2003) underscore the multifaceted nature of macroeconomic factors that impact financial market volatility. Therefore, during periods of heightened Economic Policy Uncertainty (EPU) and significant fluctuations in exchange rates, investors are likely to become increasingly sensitive to economic news and information, leading to heightened investor attention. This surge in investor attention can introduce behavioral biases, which

may, in turn, exacerbate or attenuate stock market volatility. Additionally, the global interconnectedness of economies means that both domestic and international investors are affected by shifts in EPU and exchange rates. The combined influence of these factors can intensify uncertainty, influencing how investors allocate their attention and respond to market volatility.

2.18 Theoretical Framework

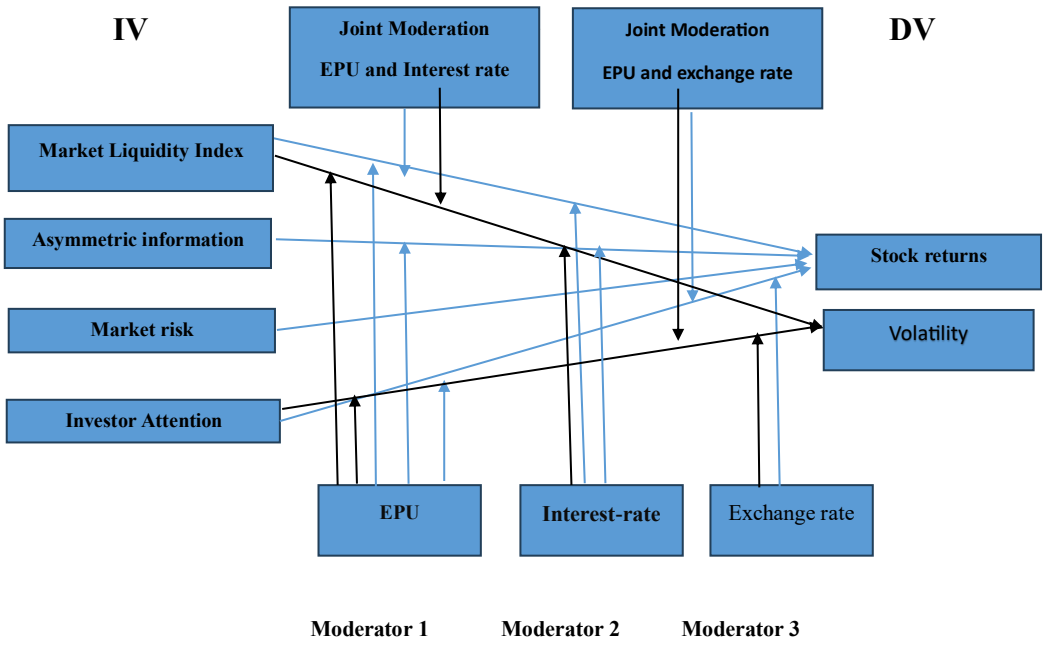

FIGURE 2.1: Theoretical Framework

TABLE 2.1: Description of Variables

There are 4 Independent Variables (IV)	There are three Moderators	There are two Dependent Variables (DV)
1.Market liquidity Index 2. Asymmetric information 3. Market risk 4. Investor attention	1. Economic policy Uncertainty (Macro policy factor) 2. Interest-rate (fundamental macro factor) 3. Exchange rate (fundamental macro factor	1.Stock market Return 2. Stock market volatility

Given the demonstrated effects of exchange rate movements and EPU on market volatility, it is plausible that these factors act as a moderator, amplifying the relationship between investor attention and stock market volatility. This hypothesis emphasizes the importance of considering both market microstructure factors and external macroeconomic forces when analyzing the dynamics of volatility in emerging economies

H12: The exchange rate and EPU as moderators strengthen the positive relationship between investor attention and volatility.

Chapter 3

Data Description and Methodology

This chapter includes a methodological and procedural description of the study comprised of, sample selection, measurements of the variable, sources of data collection, and econometric models used for testing the developed hypotheses

3.1 Population and Sample

3.1.1 Emerging Economies

The emerging market is related to economies that are going through a considerable economic growth phase and do not possess the characteristics of developed economies. Some of their salient features are: (1) Growth rates in emerging economies are generally higher than in developed economies. Urbanization, industrialization, and higher infrastructure spending are the main drivers of this expansion. (2) Emerging markets frequently broaden their economic base by incorporating manufacturing, services, and technology in addition to more conventional industries like agriculture. (3) Moreover, these economies' potential for growth and comparatively inexpensive labor and production costs draws significant foreign direct investment. (4) Foreign direct investment (FDI) is an important component of economic growth and technical progress. (5) As, compared to developed markets, emerging economies

are frequently characterized by greater political and economic volatility. Political unpredictability, volatile commodity prices, and immature financial institutions are some of the factors that cause instability. Further, from an investment perspective, emerging economies provide high returns to investors due to their fast growth. Unfavorably, an emerging market economy is evolving from a low-income, less developed, pre-industrial economy towards a modern, industrial economy with a higher merit of living.

The market micro-structure refers to the small structure of a market that deals with the internal functioning of the market. The emerging economies' micro-structure has major issues such as lack of transparency, market manipulation, liquidity, and over and under-reaction of investors that affect the efficiency of the stock market. Moreover, market microstructure factors affect the investment decision, asset return, and subsequently efficiency of the stock market. In contrast, to mature markets, emerging markets are still in their infancy and have had numerous micro-structure changes in recent decades, which makes them a prime avenue for research (Arjoon, 2016). Moreover, regional differences in emerging economies such as institutional quality, market maturity, and financial laws are substantial. By including nations from the Americas, Europe, and Asia, the study can (1) identify heterogeneity in microstructure of these regions (2) Cross-regional analysis to determine if the moderating effects of Economic Policy Uncertainty (EPU), interest rates, and exchange rates are region-specific or uniform across different contexts.(3) The inclusion of emerging economies from various regions is important from a theoretical and methodological standpoint. This methodology improves the findings' generalizability while accounting for regional variations in macroeconomic conditions, institutional development, and financial markets (Arjoon, 2016). So, due to these speculative reasons, the countries in Asia (China, Indonesia, India, Malaysia, Pakistan, South Korea, and Thailand), Europe (Greece, Qatar, South Africa, Saudi –Arabia, Turkey, and the United Arab Emirates), and American (Brazil, Chile, Mexico and Peru) emerging are being selected from the MSCI index for conducting this research.

European markets are investable frontier markets in the region. Though European

markets may be smaller in market capitalization as compared to the remaining global European universe, but embrace attractive long-term structural opportunities. The world is facing a tremendous sharp decline in growth due to the pandemic COVID-19. However, emerging markets in Asia remain a lightening spot on the investment horizon. These markers significantly outperformed other emerging markets during the past two decades. Though these countries offer significant investment doors, but prevalence of systematic risk is there.

Based on the MSCI Emerging Markets Index classification, 17 emerging markets from Asia, Europe, and the Americas are examined in this study. In academic literature and financial research, the MSCI (Morgan Stanley Capital International) Emerging Markets Index is commonly recognized as a standardized benchmark for classifying and recognizing emerging market nations. A globally accepted, uniform, and comparable basis for choosing nations with developing market characteristics is ensured by using this classification. The sample size comprised of 17 emerging stock markets from three emerging economies (Asia, America, and Europe). The sample consists of 7 Asian countries (China, Indonesia, India, Malaysia, Pakistan, South Korea, and Thailand), 6 European countries (Greece, Qatar, South Africa, Saudi –Arabia, Turkey, and the United Arab Emirates), and 4 American countries (Brazil, Chile, Mexico and Peru). Each selected country has many stock markets and indices.

TABLE 3.1: The list of representative samples 100 index for each country is given below

S.No	**Country**	**Representative Market Index**	**Acronym for Representative Index**	**Economies**
1.	Brazil	The Sao Paulo Stock Exchange	BVSP 100 Index	American
2.	China	The Shanghai Stock Exchange	CSI 100 Index	Asia
3.	Chile	Bolsa de Comercio de Santiago	SSE 100 Index	American
4.	Greece	Athens Stock Exchange	ASE 100 Index	European
5.	Indonesia	The Jakarta Stock Exchange Composite Index	JKSE Index	Asia

Continued on next page

S.No	Country	Representative Market Index	Acronym for Representative Index	Economies
6.	India	The National Stock Exchange	Nifty 100 index	Asia
7.	Malaysia	The Kuala Lumpur composite index	Malaysia KCLI 100 Index	Asia
8.	Mexico	The Mexican Stock Exchange	BIVA 100 Index	American
9.	Pakistan	Karachi stock exchange	KSE 100 Index	Asia
10.	Qatar	Qatar Stock Exchange	QSE 100 Index	Europe
11.	South Korea	Korea Composite Stock Price Index	KOSPI 100 Index	Asia
12.	South-Africa	The South Africa stock exchange	JTOPI 100 Index	Europe
13	Saudi –Arabia	Tadawul All Share. The Saudia Arabia Stock Exchange	TASI 100 Index	Europe
14.	Thailand	Thailand stock exchange	SET 100 Index	Asia
15.	Turkey	The Borsa İstanbul Stock Market	BIST 100 Index	Europe
16.	United Arab Emirates	Dubai Financial Market	DFM 100 Index	Europe
17.	Peru	Lima stock exchange	BVL 100 Index	American

3.2 Source, Type, and Period of Data

The study's data were sourced from several credible and trustworthy sources to guarantee the analysis's validity and robustness. Sources of stock market data include databases like www.investing.com which offer extensive financial data on international markets. These databases also include information on stock returns and volatility. These databases provide accuracy in recording daily market swings by providing high-frequency data on stock prices, returns, and market indices. The moderating variables of economic and regulatory considerations are sourced from foreign sources. The World Bank databank is used to extract macroeconomic statistics including GDP, interest rates, and exchange-rate rates. Furthermore, information on regulatory factors such as economic policy uncertainty (EPU) is obtained from the Economic Policy Uncertainty Index, a commonly used

indicator of uncertainty. The dataset covers important market microstructure factors, macroeconomic indicators, and regulatory actions. It consists of balanced panel data. This study is based upon the positivist research methodology. This methodology assumes that financial market behavior can be measured, quantified, and studied through observed available data. Moreover, the use of statistical and econometric techniques, such as GMM estimations, supports the positivist methodology that emphasizes quantification, objectivity, and replicability.

The 17-year study period spans from January 2004 to December 2020. This period is especially important since it includes periods of rising economic policy uncertainty globally, Global Financial Crisis of 2008, Europoen sovereign debt crisis, covid 2020 and significant regulatory revisions. Because the study spans monthly, it catches both short-term market swings and long-term trends, offering a thorough picture of how factors related to market microstructure affect stock returns and volatility over time. Furthermore, the incorporation of economic and regulatory moderators during this time frame enables a more thorough examination of their effects in different market scenarios.

3.3 Description of Variables

3.3.1 Dependent Variables

3.3.1.1 Volatility

Pagan (2009) defines volatility as a measure of uncertainty and the degree to which asset prices fluctuate. Time series modeling has been used in several recent studies to estimate the volatility of the stock market (Canarella and Pollard, 2007; (Floros, 2009); Floros and Vougas, 2006). Nevertheless, because they only consider closing prices, their analysis does not take into account the entire range of prices (high, low, open, and closing prices).

However, in this study, a simple measure of volatility is used and defined as the difference in logarithms between high and low prices. (Alizadeh, Brandt, and

Diebold, 1999; Gallant, Hsu, and Tauchen, 1999): The formula for calculating volatility is as follows.

$$\mathcal{V}_{it=(\ln \mathcal{H})_{it})-(\ln \mathcal{L})_{it}} \tag{3.3.1.1.1}$$

Where $\mathcal{V}$ stands for the volatility of the stock market $\imath$, $\mathcal{L}n(H_{it}$ stands for a log of high prices, and $\mathcal{L}n(\mathcal{L}_{it)}$stands for a log of low prices.

3.3.1.2 Market Return

Market return is defined as the sum of all investment returns in the economy, or it can be the profit or loss on an investment. Concerning stock investment, this expectation of profit is frequently referred to as a return. Return is the amount of money investors receive in exchange for their investment (Acheampong et al., 2014). Stock returns, according to Jogiyanto (2000), are the outcome of dividing the current stock price by the prior stock price, less the previous share price.

$$\mathcal{R}_{it} = \frac{\mathcal{P}_{it} - \mathcal{P}_{it-1}}{\mathcal{P}_{it-1}} \tag{3.3.1.2.1}$$

Where Pit is the price of the stock i on day t and Pit-1 is the price of stock i on day t-1.

3.3.2 Independent Variables

3.3.2.1 Market Liquidity

Market liquidity is an instinctive concept. It is known and widely used in the financial world. Liquidity is defined as the characteristic of a financial market whereby investors can buy or sell equity assets quickly without causing a drastic fluctuation in asset prices. Preferably a trade should ideally occur fast, fairly, and without incurring unnecessary expenses. During a boom period, investors do not pay much attention to market liquidity. While in the doom period, the liquidity

crunch occurs and it causes financial distress in the economy (Garabedian and Inghelbrecht, 2020).

Though market liquidity is populous still it is considered un-perceivable, and vague, and its behavioral perspective depends upon the state of the economy. According to Kyle (1985), market liquidity is a complicated and perplexing concept that cannot be studied using a single dimension. Kyle defines three important dimensions of market liquidity: depth, tightness, and resilience. Sarr and Lybek (2002) added two new factors to this paradigm, namely immediacy and market breadth. However, Liquidity will be examined in three dimensions in this study: market depth, market breadth, and market resilience. The choice of these dimensions is influenced by their low-frequency measure, which is generated from volume data and indicates strong liquidity Le and Gregoriou (2020). In this method, to aggregate market liquidity measures into an index that incorporates the different dimensions and their strengths. The index was developed by using Principle component analysis PCA for extracting weights to the respective liquidity dimensions from Eigenvalues and then applying the weighted average method for developing the market liquidity Index. The explanations of the selected liquidity dimensions are as follows:

3.3.2.1.1 Market Depth

Market depth as defined by Sarr and Lybek (2002), refers to the stock market's ability to survive against relatively large market orders without causing significant price impacts on the asset. It reflects the relationship between movements in price and large trade volume. The stock considered to be a deep market if it can be traded in bulk without generating any significant impact on its price. Market depth is also termed as liquidity inside the security, Saeed and Hassan (2018) so it is a crucial component in the explanation of market liquidity (Muranaga et al., 1999).

Market depth is measured by the market turnover ratio. The formula for the market turnover rate is.

$$MTO_{it} = \frac{\mathcal{ST}}{\mathcal{MC}} \tag{3.3.2.1.1.1}$$

MTO stands for market turnover of ith stock market at time t. ST stands for shares traded and MC stands for market capitalization.

3.3.2.1.2 Market Breadth

Market breadth: The market breadth defined by Kyle (1985) the bullish and bearish trend of the stock market by analyzing the comparative change in the advance movement of stocks to declining stocks. Market breadth refers to the direction of the market. By comparing the percentage of growing companies to the percentage of falling enterprises, one can determine the general trend of the market. Advancing companies exhibit an increasing trend in their prices, whilst declining companies exhibit a negative trend in their prices. The market will have a positive market breadth or width if there are more advancing companies than declining companies in it. A bullish market sector is indicated by positive market breadth. A bearish trend in the market is confirmed by a negative market breadth, which is made up of more decreasing companies than advancing companies. Additionally, breadth suggests a tight market. Spreads are small and prevent greater price movement in a liquid market (Sarr and Lybek, 2002). The market breadth will be gauged by the Amivest liquidity ratio. The formula of the Amivest liquidity ratio is. *ALR* Presents market breadth, V_t denotes volume at time t, and l r_t l represents absolute return.

$$ALR = \frac{\mathcal{V}_{it}}{l\ \gamma_{it}\ l} \tag{3.3.2.1.2.1}$$

3.3.2.1.3 Market Resilience

Kyle (1985) defines market resilience as the rate or speed at which prices can rebound after a random, uninformative shock. These uninformative shocks are frequently caused by high trading volume or stock-related news. The market is deemed to be resilient when prices quickly revert to fair levels. The market resilience will be measured by the conventional liquidity ratio Gharaibeh et al. (2019). The formula of the conventional liquidity ratio is. *CLR* presents market resilience, P_t

stands for today's price, V_t stands for volume, and P_{t-1} stands for the previous month's price.

$$CLR = \frac{P_t V_t}{|P_t - P_{t-1}|} \tag{3.3.2.1.3.1}$$

3.3.2.1.4 Development of Market Liquidity Index

To develop the Market Liquidity index, first, the Principle component Analysis is applied to the three selected dimensions of liquidity i.e. Market depth, Market breadth, and market resilience for generating weights. Principal Component Analysis (PCA) is a statistical technique aimed at reducing the dimensionality of a dataset comprising numerous connected variables while preserving a significant portion of the dataset's variation (Mishra et al., 2017). The purpose of applying PCA is to generate weights from the Eigen-value and assign weights to each liquidity dimension. After generating corresponding weights for each dimension from Eigen-values, combine them into a single index that will reflect the status of the market liquidity Index of a particular emerging economy. Previously, Khatwani and Aanand (2017) applied the weighted-average methodology. So, Khatwani and Aanand (2017) weighted arithmetic methodology will be applied to developing the market liquidity index. The following formula of the weighted arithmetic mean will be applied.

$$\mathcal{ML}_{it} = (\mathcal{MD} * \mathcal{W}_1) + (\mathcal{MB} * \mathcal{W}_2) + (\mathcal{MR} * \mathcal{W}_3) / \mathcal{W}_1 + \mathcal{W}_2 + \mathcal{W}_3 \tag{3.3.2.1.4.1}$$

$$\mathcal{ML}_{it} = \sum_{i=1}^{3} LD * W$$

$\mathcal{ML}_{it}$ Presents market liquidity at ith month at time t.$\mathcal{MD}$ Presents market depth,MB presents the market breadth and $\mathcal{MR}$ presents market resilience.

3.3.2.2 Market Risk

Market risk is defined as the risk of loss that occurs due to some factors that affect the asset class or market. It's a systematic risk in nature that cannot be mitigated and unpredictable. JP Morgan (1991) was the first person who take the initiative and develop a risk-metric methodology for the assessment of risk which is called Value at risk (VaR). VaR is the first probabilistic statistical approach that measures an x percent probability that losses will exceed this amount given a distribution of all possible daily returns over some recent past period.

3.3.2.3 Asymmetric Information

Asymmetric information is a term that pertains to when one party possesses more information than another part in a transaction. However, in some cases, it is observed that in most financial transactions the seller has more information than the buyer. The reverse possibility also exists. The following proxy will be used for measuring asymmetric information. In this study, idiosyncratic volatility is used as a proxy of asymmetric information. In this study, the asymmetric information is measured by using the residual value of the Capital asset pricing model equation, where $\mathcal{R}_{it}$ is the return of the country i at time t. $\mathcal{R}_m$ is the world index market return (S& P index used as the world index return for calculating market return, $\mathcal{R}_f$ is the risk rate of a country that is T-bills rate, e_i is the residual value. The residual value used was based on the residual value (IDVOL σe 2).

$$Rit = \alpha_i + \beta_{it}(Rm - Rf) + ei \tag{3.3.2.3.1}$$

3.3.2.4 Investor Attention

According to Khaeman (1973), attention as a behavior is the cognitive resource of the human being. Furthermore, related to the investment individuals pay little attention to the amount of information provided. If an investor pays little attention to a piece of important information, he might miss the opportunity of investment

and too much attention to information can lead to a noisy state. Barber and Odean (2013). Google search index (GSI) is a common and new approach in literature for measuring investor attention. It is considered a better proxy for measuring investor attention developed by Da et al. (2011) as it can impact stock return Ayaz et al. (2021). Furthermore, when people are interested in investing in a stock and pay attention to it, they search for a specific stock and stock market. For collecting data on GSI the Google Trends tools facilitate downloading the past search terms. Google Trends is used as a tool in their research by researchers (Gharaibeh and Al-Qudah, 2019; Carneiro and Mylonakis, 2009) As Google records all the search data for the search terms, Google Trends tools help to download the past search terms. Google Trend normalizes and scales that data range from 0 to 100 Akarsu and Süer (2022). Google Trends tells us about the total number of searches for a specific stock market name over time. In this study, the country-wise data of investor attention was collected by using the stock exchange names of each country.

3.4 Control Variables

According to García-Sánchez (2020), control variables are important since they reduce the bias in the outcomes. Adding the control factors serves the primary purpose of mitigating the biases caused by any missing data (Nguyen et al., 2015). To reduce the study's biases, country-specific factors are also used to control the dependent variables, Market returns, and volatility.

3.4.1 Macro-Economic Variables

Whether an economy is developed or emerging, macroeconomic indicators play a foremost and dominant role in the financial circular. According to the efficient market principle, pricing should include all available information (Fama, 1970). Therefore, alteration in the macroeconomic indicators will reflect changes in stock valuations and, consequently, stock returns, as well as cause volatility. Two macroeconomic variables, the GDP and the inflation rate are employed in this study as country-level control variables.

3.4.1.1 Inflation

According to financial theory, the inflation rate measured by CPI (consumer price index) shows an upward trend in the prices of goods and services. Inflation means an increase in the prices of goods or other words more money is required in the hands to buy the goods (Geetha et al., 2011). In most Asian emerging markets inflation rate reduces return and instigates volatility. Inflation impacts the economy through income, wealth, and changes in the level and efficiency of production (Geetha et al., 2011).

3.4.1.2 Gross Domestic Product

GDP is an economic indicator that measures the monetary value of goods and services produced and bought by the user in a country. It also includes non-market products such as defense or education services provided by the government. The Gross Domestic Product (GDP) level of any country may influence stock returns through the channel of corporate profitability (Kirui et al., 2014). Similarly, Attari and Safdar (2013) postulate the positive relation of GDP with stock return in the Pakistani stock market. In this study, the GDP growth rate will be used to measure GDP (Rasyad et al., 2020).

3.4.1.3 Foreign Direct Investment

Foreign direct investment is an important feature of globalization and is considered a central source of economic growth for many countries. It facilitates the transfer of capital, technology, and skills between countries leading to increased productivity and innovation. Foreign direct investment scaled by GDP is also an important economic factor to boost the economy (Lu et al., 2017).

3.4.1.4 Market Size

The actual number of shares existing in a market, or the bid and offering, is known as the market size. The ability of the market to mobilize capital and disperse risk

across the economy is thought to be positively connected with the total market size. As a stand-in for the size of the stock market, this metric is employed (Ovat, 2012).

3.5 Moderators

This study will study the following macroeconomic indicators as moderators.

3.5.1 Exchange Rate

The exchange rate is the cost incurred when converting one nation's currency into another (Singh et al., 2011). The exchange rate affects the trade and the movement of money between two countries. The value of both the home currency and the foreign currency is affected by the exchange rates.

An acronym for the national currency that an exchange rate represents is frequently used when quoting it. In this study the indirect quote of exchange-rate is used. Related to the relationship of exchange rate with return (Kirui et al., 2014) analyze the positive relationship between exchange rate and return.

3.5.2 Interest Rate

The interest rate is defined as the cost of, borrowing, depositing, and lending an amount. The amount of interest is due per period (Wikipedia). Interest is an important factor in any monetary policy of a country.

The central bank of any country may reduce interest rates or increase interest rates. Mostly when central banks are inclined towards more investment and consumption in the economies of one country, they reduce the interest rate.

Furthermore, low interest rates as a macroeconomic policy could be a risk factor and cause the creation of an economic bubble (Wikipedia). Attari and Safdar (2013) postulate a positive relationship between interest rate and return. For measuring interest rate, the lending rate uses a proxy to measure interest rate Malik et al. (2014) used the lending rate as a proxy for interest-rate.

TABLE 3.2: Summary of Measurement Variables

Sr.No	Variables	Abbreviations	Explanations	Source of data
Dependent Variables				
1	Market Return	Re	Stock market returns, according to Jogiyanto (2000), are the outcomes of dividing the current stock price by the prior stock price, less the previous share price	www.investing.com
2	Volatility	Vol	A simple measure of volatility is used as the difference in logarithms between high and low prices. (Alizadeh, Brandt, and Diebold, 1999; Gallant, Hsu, and Tauchen, 1999)	www.investing.com
Independent Variables				
1	Market Liquidity	MLI	Market liquidity is measured by developing a market liquidity index by using PCA and weighted average index. MLI index is developed by three dimensions of liquidity: Market depth; defined by Sarr and Lybek (2002), Market breadth; defined by Kyle (1985) and market resiliency defined by Kyle (1985)	www.investing.com
2	Asymmetric Information	AI	Asymmetric information is measured by idiosyncratic volatility.	www.investing.com
3	Market Risk	MR	Market risk is measured by using VaR. JP Morgan (1991)	www.investing.com
4	Investor attention	IA	Google search index is a common and new approach in the literature for measuring investor attention. It is considered a better proxy for measuring investor attention developed by Da et al. (2011).	www.google.trends.com
Moderators				

Continued on next page

Sr.No	Variables	Abbreviations	Explanations	Source of data
1	Economic Policy Uncertainty	EPU	Economic policy uncertainty reflects the unsuspected changes that occur in a country due to the changes in the government policies of a country. EPU is measured by the EPU index, developed or constructed by Baker et al. (2013).	www.epu.com
2.	Interest-Rate	IR	The interest rate will be measured by using the lending rate Malik et al. (2014) and data collected from the World Bank database	World bank database
3.	Exchange-rate	ER	The effective exchange rate is measured by using $ as the standard currency against each currency (Singh 2011). and the data collected from the World Bank database	World bank database
Control variables				
1.	Inflation	INF	Inflation is measured by using the Consumer Price Index (Geetha et al., 2011). and data collected from the World Bank database	World Bank database
2.	Gross Domestic Product	GDP	The GDP is measured by the growth rate of GDP (Rasyad et al., 2020). and data collected from the World Bank database	World Bank database
3.	Foreign Direct Investment	FDI	Foreign direct investment is scaled by GDP.(Lu et al., 2017). Data collected from the World Bank Database	World Bank database
4.	Size	Size	The size is measured by using the market capitalization (Ovat 2012).	www.investing.com

3.5.3 Economic Policy Uncertainty

Economic policy uncertainty reflects the unsuspected changes that occur in a country due to the changes in the government policies of a country that affect the economic system of the world. It can be said that it depicts the fluctuation in government policies related to political and regulatory, policies.

EPU index incorporates previous measures of uncertainty and expands upon them. Since this index aims to capture all economic sources of uncertainty, academics from a variety of disciplines have found it interesting and frequently reference it (Al-Thaqeb and Algharabali, 2019).

In this study, the EPU index developed or constructed by Baker et al. (2016) will be used as a measure of the EPU.

The EPU index measurement track is comprised of three dimensions of economic policy uncertainty: (a) the frequency of references to economic uncertainty and policy in 10 leading newspapers; (b) the number of federal tax code provisions set to expire in future years; (c) the extent of disagreement among economic forecasters over future federal, state, and local government purchases a. They developed an index that covered the newspaper coverage of 10 newspapers that have the following triple i.e. economic" or "economy"; "uncertain" or "uncertainty"; and one or more of "congress", "deficit", "Federal Reserve", "legislation", "regulation." (Adjei et al., 2020).

3.6 Research Model

The following regression models have been reported in the form of regression to capture the impact of micro-structure factors on return and volatility and to identify the moderating effect of regulatory macroeconomic factors. i.e. EPU and two macro-economic factors i.e. interest-rate and exchange rate. These micro-structure factors are the Market Liquidity Index, Market risk, Asymmetric information, and investor attention.

3.6.1 Impact of Market Microstructure Factors on Stock Market Return

$$\mathcal{R}_{it} = \beta_0 + \beta_1 \mathrm{M}LI_{it} + \beta_2 \mathrm{M}R_{it} + \beta_3 \mathrm{AI}_{it} + \beta_4 \mathrm{IA}_{it} + \beta_4 GDP_{it} + \beta_5 INF_{it} + \beta_6 FDI_{it} + \beta_7 Size_{it} + \mu_{it} \quad (3.6.1.1)$$

In this model the impact of microstructure factors (Market liquidity index, market risk, asymmetric information and investor attention) on return will be tested. In the subscript of each variable *(it)* represents the economy *(i)*, at year *(t)*. The $\mathcal{R}_{it}$ presents the market return which is a dependent variable in a year *(t)*. MLI presents a market liquidity index in a year *(t)*. According to Kyle (1985), liquidity could not be captured by a single dimension. So, in this study, market liquidity was measured by using three dimensions of liquidity i.e. depth, breadth, and resilience. After measuring liquidity from the abovementioned dimensions Market Liquidity index was developed (Garabedian and Inghelbrecht, 2020) and it's an independent variable. MR presents a market risk, it also an independent variable. AI presents asymmetric information, and IA presents Investor Attention in a year *(t)* and both are independent variable. GDP, Inflation, FDI, and size are used as control variables in a year *(t)*. Afterward, the system GMM technique was applied to test the hypotheses H1(a), H1(b), H1 (c), H1(d).

3.6.2 Impact of Market Microstructure Factors on Stock Market Volatility

$$\mathcal{VOL}_{it} = \beta_0 + \beta_1 \mathrm{M}LI_{it} + \beta_2 \mathrm{IA}_{it} + \beta_3 GDP_{it} + \beta_4 \mathrm{INF}_{it} + \beta_5 \mathrm{FDI}_{it} + \beta_5 \mathrm{Size}_{it} + \mu_{it} \quad (3.6.2.1)$$

In this model the impact of microstructure factors (Market liquidity index and investor attention) on volatility will be tested. The $\mathcal{VOL}_{it}$ presents the volatility

which is used as the dependent variable in equation 3.6.2.1 MLI presents a market liquidity index. According to Kyle (1985), liquidity could not be captured by a single dimension. So, in this study, liquidity was measured by using three dimensions of liquidity i.e. depth, breadth and resilience. After measuring liquidity from these respective dimensions, Liquidity index was developed (Garabedian and Inghelbrecht 2020), and it's an independent variable in a year *(t)*, IA presents Investor Attention it's an independent variable in a year*(t)*. GDP, Inflation FDI and size are used as control variables in a year *(t)*. Afterward, the system GMM technique was applied to test the hypotheses H2(a), H2(b).

3.6.3 Moderating Impact of Economic Policy Uncertainty in a Relationship of Marker Microstructure Factors with Stock Market Return

$$\mathcal{R}_{it} = \beta_0 + \beta_1 \mathrm{MLI}_{it} + \beta_2 \mathrm{IA}_{it} + \beta_3 \mathrm{AI}_{it} + \beta_4 (MLI \times EPU)_{it} + \tag{3.6.3.1}$$
$$\beta_5 (IA \times EPU)_{it} + \beta_6 (AI \times EPU)_{it} + \beta_7 GDP_{it} + \beta_8 INF_{it} + \beta_9 FDI_{it} +$$
$$\beta_{10} Size_{it} + \mu_{it}$$

The following regression model will capture the impact of market microstructure factors (Market liquidity index, asymmetric information and investor attention) on the stock market return with the moderating role of the regulatory economic factor i.e. EPU. The Economic Policy Uncertainty Index (EPU) is measured by an Index developed by Baker et al. (2016). The interaction term is created by multiplying the independent variables (Market liquidity index, asymmetric information and investor attention) with The Economic Policy Uncertainty Index (EPU). There are three independent variables (1) MLI presents the market liquidity index at time *(t)*, (2) IA presents the Investor Attention at time *(t)* (3) AI presents the asymmetric information at time (t). The three interaction terms have been established by taking the product of (Market Liquidity Index * EPU), (Asymmetric Information * EPU), and (Investor Attention * EPU). Afterward, the system GMM technique

was applied to test the hypotheses H3(a), H3(b), H3(c). GDP, Inflation, FDI, and size are used as control variables in a year *(t)*.

3.6.4 Moderating Role of Economic Policy Uncertainty in a Relationship of Marker Microstructure Factors with Stock Market Volatility

$$\mathcal{VOL}_{it} = \beta_0 + \beta_1 \mathrm{MLI}_{it} + \beta_2 \mathrm{AI}_{it} + \beta_3 \mathrm{EPU}_{it} + \beta_4 (MLI \times EPU)_{it} + \beta_5 (IA \times EPU)_{it} + \beta_6 GDP_{it} + \beta_7 INF_{it} + \beta_8 FDI_{it} + \beta_9 Size_{it} + \mu_{it} \quad (3.6.4.1)$$

The following regression model will capture the impact of market microstructure factors (Market liquidity index and investor attention) on the market volatility and the moderating role of the regulatory economic factor i.e. EPU. The interaction term is created by multiplying the independent variables (Market liquidity index and investor attention) and The Economic Policy Uncertainty Index (EPU). In this model there are two independent variables (1) MLI presents the market liquidity index at time (t), and (2) IA presents Investor Attention at time (t). The two interaction terms have been established by taking the product of the (Market Liquidity Index * EPU), and (Investor Attention * EPU). Afterward, the system GMM technique was applied to test the hypotheses H 4(a), H4(b). GDP, Inflation, FDI, and size are used as control variables in a year *(t)*.

3.6.5 Moderating Role of Interest Rate in a Relationship of Marker Microstructure Factor with Stock Market Return

$$\mathcal{R}_{it} = \beta_0 + \beta_1 \mathrm{MLI}_{it} + \beta_2 \mathrm{AI}_{it} + \beta_3 \mathrm{IR}_{it} + \beta_4 (MLI \times IR)_{it} + \beta_5 (AI \times IR)_{it} + \beta_6 GDP_{it} + \beta_7 INF_{it} + \beta_8 FDI_{it} + \beta_9 Size_{it} + \mu_{it} \quad (3.6.5.1)$$

In this model the impact of microstructure factors (Market liquidity, asymmetric information) on return will be tested on the market return and the moderating role of the fundamental economic factor i.e. interest rate. In this model there are two independent variables

(a) MLI presents the market liquidity index, and

(b) AI presents Asymmetric Information. The two interaction terms have been established by taking the product of the (Market Liquidity Index * Interest rate), and (Asymmetric Information* interest rate). Afterward, the system GMM technique was applied to test the hypotheses H 5(a), H5(b). GDP, Inflation, FDI, and size are used as control variables in a year *(t)*.

3.6.6 Moderating Role of Interest Rate in a Relationship of Marker Microstructure Factor with Stock Market Volatility

$$\mathcal{VOL}_{it} = \beta_0 + \beta_1 \mathrm{MLI}_{it} + \beta_2 \mathrm{IR}_{it} + \beta_3 (MLI \times IR)_{it} + \beta_4 GDP_{it} + \beta_5 INF_{it} + \beta_6 FDI_{it} + \beta_7 Size + \mu_{it} \quad (3.6.6.1)$$

The following regression equation 3.6.6.1 is used to capture the influence of market microstructure factor (market liquidity index) on the market volatility with the moderating role of the fundamental economic factor i.e. interest rate. In this model there is one independent variable (1) MLI presents the market liquidity index. The one interaction terms have been established by taking the product of the (Market Liquidity Index * Interest rate). Afterward, the system GMM technique was applied to test the hypotheses H6. GDP, Inflation, FDI, and size are used as control variables in a year *(t)*.

3.6.7 Moderating Role of Exchange Rate in a Relationship of Marker Microstructure Factor with Stock Market Return & Stock Market Volatility

$$\mathcal{R}_{it} = \beta_0 + \beta_1 \mathrm{IA}_{it} + \beta_2 \mathrm{ER}_{it} + \beta_3 (IA \times ER)_{it} + \beta_4 GDP_{it} + \beta_5 INF_{it} + \beta_6 FDI_{it} + \beta_7 Size_{eit} + \mu_{it} \quad (3.6.7.1)$$

$$\mathcal{VOL}_{it} = \beta_0 + \beta_1 \mathrm{IA}_{it} + \beta_2 \mathrm{ER}_{it} + \beta_3 (IA \times ER)_{it} + \beta_4 GDP_{it} + \beta_5 INF_{it} + \beta_5 FDI_{it} + \beta_7 Size_{eit} + \mu_{it} \quad (3.6.7.2)$$

The following regression equations 3.6.7.1 and 3.6.7.2 used to capture the influence of investors' attention on the market return and volatility with the moderating role of the fundamental economic factor i.e. exchange- rate. In this model, there is one independent variable IA presents Investor Attention. The one-interaction terms have been established by taking the product of the (Investor Attention * exchange rate). Afterward, the system GMM technique was applied to test hypotheses H7. GDP, Inflation, FDI, and size are used as control variables in a year *(t)*.

3.6.8 The Joint Effect of Interest Rate and Economic Policy Uncertainty in a Relationship of Marker Microstructure Factor with Stock Market Return and Stock Market Volatility

$$\mathcal{R}_{it} = \beta_0 + \beta_1 \mathrm{ML}_{it} + \beta_2 \mathrm{IR}_{it} + \beta_3 EPU_{it} + \beta_4 (ML \times IR \times EPU)_{it} + \beta_5 GDP_{it} + \beta_6 INF_{it} + \beta_7 FDI_{it} + \beta_8 Size_{it} + \mu_{it} \quad (3.6.8.1)$$

$$\mathcal{VOL}_{it} = \beta_0 + \beta_1 \mathrm{MLI}_{it} + \beta_2 \mathrm{IR}_{it} + \beta_3 EPU_{it} + \tag{3.6.8.2}$$
$$\beta_4 \left(ML \times IR \times EPU\right)_{eit} + \beta_5 GDP_{it} + \beta_6 INF_{it} + \beta_7 FDI_{it} + \beta_8 Size_{\ it} + \mu_{it}$$

Regression equations 3.6.8.1 and 3.6.8.2 are employed to capture the joint effect of two moderating variables i.e interest-rate and EPU on stock market and volatility. In this model, there is one independent variable MLI presents market liquidity index. The one-interaction terms have been established by taking the product of the (Market liquidity index * interest-rate* economic Policy Uncertainty). Afterward, the system GMM technique was applied to test the hypotheses H9 and H11. GDP, Inflation, FDI, and size are used as control variables in a year *(t)*.

3.6.9 The Joint Effect of Exchange Rate and Economic Policy Uncertainty in a Relationship of Market Microstructure Factor with Stock Market Return and Stock Market Volatility

$$\mathcal{R}_{it} = \beta_0 + \beta_1 \mathrm{ML}_{it} + \beta_2 \mathrm{ER}_{it} + \beta_3 EPU_{it} + \beta_4 \left(ML \times ER \times EPU\right)_{it} + \tag{3.6.9.1}$$
$$\beta_5 GDP_{it} + \beta_6 INF_{it} + \beta_7 FDI_{it} + \beta_8 Size_{it} + \mu_{it}$$

$$VOL_{it} = \beta_0 + \beta_1 \mathrm{ML}_{it} + \beta_2 \mathrm{ER}_{it} + \beta_3 EPU_{it} + \tag{3.6.9.2}$$
$$\beta_4 \left(ML \times ER \times EPU\right)_{it} + \beta_6 GDP_{it} + \beta_7 INF_{it} + \beta_8 FDI_{it} + \beta_9 Size_{it} + \mu_{it}$$

The regression equations 3.6.9.1 and 3.6.9.2, used to capture joint effect of two moderating variables, are employed i.e. The EPU and exchange rate. In this model, there is one independent variable Investor attention presents

market liquidity index. The one-interaction terms have been established by taking the product of the (Investor attention * exchange-rate* economic Policy Uncertainty). Afterward, the system GMM technique was applied to test the hypotheses H10 and H12. GDP, Inflation, FDI, and size are used as control variables in a year *(t)*.

3.7 Statistical Techniques

To conduct this research the balanced panel data has been used for 17 years (monthly data) (2004-2020) in three emerging economies (Asia, Europe, and America). The study conceded the following techniques to analyze the data and test the hypothesis.

3.8 Descriptive Statistics

Before testing the hypothesis, the descriptive statistics for each variable have been presented for each country and panel data of each economy. The descriptive statistic presents the quantitative description of data. The average value measured by mean and variation in the data of all variables has been shown by standard deviation. The minimum and maximum are also presented in descriptive statistics. The average value (mean value) is measured by taking the sum of all values and dividing it by the number of all observations.

$Arthimetic\ Mean = \sum \mathcal{X}/n \sum \mathcal{X}$ depicts the sum of all variable values, and n is the number of observations.

The standard deviation is being used for measuring the variation of the data. By dividing the sum of the squares of the deviations from the mean by the total number of observations, one can determine the standard deviation. Lastly, the square root is extracted from the output

S.D= $\sqrt{\Sigma\ (\mathrm{X} - mean)2/n}$

In addition, in descriptive statistics, the minimum and maximum values of all variables have also been demonstrated to show the range of the series.

3.9 The Generalized Model of Moments

In the study, data on the above-discussed variables have been collected and calculated by using the above-mentioned measures. In econometrics, there are two kinds of analysis static and dynamic. In static panel data analysis, the time dimension is considered. Moreover, static panel data does not include lagged dependent variables. On the other hand, dynamic panel data includes lagged dependent variables and it's more complicated and complex due to endogeneity issues and past values of lagged variables. So in this study, First, a regression analysis (OlS) test has been applied, afterward, the endogeneity issue is observed by Durbin–Wu–Hausman (DWH) Test. The results of the Durbin–Wu–Hausman (DWH) Test confirm the presence of endogeneity. This confirmed that the data of this study is dynamic panel but not static. Therefore, the application of panel OLS like Fixed effect or Random effect models is not appropriate as these tests do not address the issue of endogeneity.

A variable's association with its historical values is referred to as serial correlation, sometimes called autocorrelation. It particularly refers to the correlation of residuals (errors) with time in the context of regression analysis. Inaccurate statistical conclusions and inefficient estimators can result from serial correlation. Accurate econometric modeling requires an understanding of serial correlation's assumptions and implications. Therefore, in this study, the Durbin-Watson test is applied to identify the presence of first-order no autocorrelation. The Durbin-Watson test reflects the presence of first-order correlation and thus rejects the null hypothesis. Therefore, the application of panel OLS like Fixed effect or Random effect models is not appropriate as these tests do not address the issue of auto-correlation.

When modeling, any regressor can have an endogenous correlation with the responsiveness of stock return and volatility to various market microstructure factors, or there could be a joint endogeneity of the regressor. So, the measurement error or omission bias could also become a problem. These issues reflect the application of the generalized method of moment (GMM) estimation approach. By using dynamic panel analysis, commonly known as the generalized method of moments (GMM),

one can manage the endogeneity issue in panel data (Ullah et al., 2018; Tzouvanas et al., 2020). In GMM model the lagged dependent variable and endogenous variables with appropriate lags as instrumental variables employed to addresses the endogeneity problem (Çoban and Topcu, 2013). There are two varieties of the generalized method of moments: difference GMM and system GMM (Tzouvanas et al., 2020). The main difference between two approaches is that difference and level equations are considered in system GMM, whereas differenced equations are considered in different GMM. Further, in this study the System GMM instruments are used to obtain consistent, unbiased, and efficient estimates when explanatory variables are endogenous, predetermined, or linked with the error term. To remove endogeneity Instruments employed as proxies for those endogenous regressors variables that are correlated with the regressors but uncorrelated with the error term. In this study Lagged values of liquidity, market risk, investor attention and asymmetric information are employed as instruments. Furthermore, macroeconomic variables EPU, interest rate, and exchange rate act as external instruments. These instruments produce variation that is not contaminated by simultaneity or omitted variables, allowing the model to identify the true causal effect. The Sargan test is used to determine whether the system GMM is valid, also validates the model's and the instruments' specifications (Ullah et al., 2018). After adding AR (1) and AR (2) to the model, it was discovered that each model has AR (1) that is significant with a p-value less than 0.05, while in each model (AR) 2 is insignificant indicating that the model had no serial correlation at lag-1 and lag-2. The results of the Sargan test in all study models have a probability greater than 0.05, which validates the instrumental over-identifying restrictions (Said et al., 2024).

Chapter 4

Results and Discussion

In this chapter, we delve into the results obtained through the application of the System GMM technique to test our hypotheses. We begin by presenting the descriptive statistics of each country individually, followed by an analysis of panel-wise descriptive statistics for each emerging economy under consideration. Subsequently, we transition to discussing the results derived from our analysis. We meticulously examine the findings, considering the implications of each variable and its impact on our hypotheses. Through a comprehensive discussion, we elucidate the significance of the observed outcomes, shedding light on their relevance within the context of our research objectives. Moreover, we delve into the nuances of the results, providing insights into the intricacies of the relationships between different variables and their implications for the broader economic landscape. Through a systematic exploration of the findings, we offer a nuanced understanding of the dynamics at play within each emerging economy and their implications for the global financial system. Overall, this chapter serves as a crucial component of our research, offering valuable insights derived from rigorous analysis and providing a foundation for further exploration and discussion.

Table 4.1: Descriptive Statistics of Panel Data of Asian Emerging Economies

Variables	**Mean**	**Std.Dev**	**Maximum**	**Minimum**	**Skewness**	**Kurtosis**
Return	0.018	0.069	0.273	-0.14	1.4	5.46
Volatility	0.013	0.003	0.017	0.006	-1.25	2.78
MLI	3.883	0.281	4.57	3.56	1.24	3.91

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Variables	Mean	Std.Dev	Maximum	Minimum	Skewness	Kurtosis
IA	3.006	0.782	4.56	0.89	-0.35	2.99
MR	-0.25	0.071	-0.017	-0.514	-2.25	9.01
AI	0.012	0.008	0.068	0.002	1.35	6.89
IR	0.078	0.035	0.167	0.011	0.57	2.01
ER	0.069	0.098	0.326	0.007	2.03	5.15
EPU	4.701	0.509	6.086	3.493	0.25	3.22
INF	4.464	0.276	5.036	3.57	-1.09	4.25
GDP	0.057	0.02	0.239	-0.028	0.79	5.04
FDI	2.13	1.205	5.04	0.323	0.33	2.54
Size	11.197	4.193	15.56	4.007	0.42	2.53

This table 4.1 presents the descriptive statistics of the following variables— Dependent Variables: Volatility, Return; Independent Variables: Market Liquidity Index (MLI), Investor Attention (IA), Market risk (MR), Asymmetric information (AI); Moderator, interest rate (IR), exchange rate (ER), Economic Policy Uncertainty(EPU) and control variables General domestic product (GDP), Inflation (INF), size and foreign direct investment (FDI) of panel data. The descriptive statistics include mean, standard deviation, maximum,minimum, skewness and kurtosis.

Table 4.1 presents the descriptive statistics for the balanced panel data encompassing seven Asian economies from 2004 to 2020 summarized in Table 4.1. The countries included in the Asian economy are China, India, Indonesia, Pakistan, Malaysia, South Korea and Thailand. The average return on investment across the panel is 4.20%, with a slight deviation of 3.50%. However, the range of monthly returns is considerable, spanning from a minimum of 0.01% to a maximum of 26%. This variability suggests that the stock markets of these Asian economies experienced significant fluctuations in returns, particularly during periods of economic crises such as the COVID-19 pandemic and the 2008-2009 financial crises. The skewness value of 1.11 and a kurtosis value of 5.46, indicating that the return data depict a deviation from normal data range. The positive skewness reflects that that the distribution of return data is asymmetrically skewed to the right side, showing that occasional large positive returns are present in the sample. Moreover, the kurtosis value 5.46 reflects that the return series is highly leptokurtic. Leptokurtic indicate the presence of fat tails and a sharper peak, further supporting extreme average returns.

Similarly, volatility exhibits notable variability, with an average value of 1.3% and a standard deviation of 0.3%. The range of monthly volatility extends from 0.6% to 1.7%, reflecting the impact of economic shocks on market stability but not at extreme level. Further and a kurtosis is 2.78, these values depict near to mesokurtic, and skewness value is -1.25 shows negatively skewed distribution. Overall, the descriptive statistics highlight the dynamic nature of these Asian economies' stock markets and the significant impact of external economic factors on market behavior and stability.

The descriptive statistics for additional variables in the balanced panel data for Asian economies from 2004 to 2020 reveal several important insights. Firstly, the Market Liquidity Index (MLI) shows a relatively stable behavior, with a range spanning from 4.57 to 3.560 and an average mean of 3.883. This stability is likely attributed to the adoption of hedging and risk management strategies by institutional and local investors. The Market Liquidity Index shows a positively skewed and moderately leptokurtic distribution with a skewness of 1.24 and a kurtosis of 3.91. Further, the positive skewness indicates that the market liquidity index occasionally shows significant increase in liquidity. Investor Attention (IA) plays a significant role in stock market activities, with an average mean value of 3% and notable fluctuations ranging from 4.56 to 0.89. The investor attention displays a skewness of -0.35 and a kurtosis of 2.99, show a data distribution is moderately left-skewed and approximately mesokurtic. So it can be said that investor attention is relatively symmetric and normally distributed in Asian economy. Meanwhile, Market Risk fluctuates widely, with a range from 1.70% to a staggering 51.4%, indicating prevalent downside risk in the Asian emerging stock market. The market risk shows a highly leptokurtic and left-skewed distribution with a skewness of -2.25 and a kurtosis of 9.01. The strong negative skewness indicates that extremely bad market risk occurrences in the selected time.

Asymmetric Information (AI) exhibits relatively high levels of fluctuation, with a mean value of 1.2% and an extreme standard deviation of 0.08%, particularly during significant events such as the COVID-19 pandemic and the 2008-2009 financial crises. The asymmetric information series skewness value of 1.35 and a kurtosis

value of 6.89 of asymmetric information implied that data distribution positively skewed and extremely leptokurtic. Economic Policy Uncertainty (EPU) shows moderate variability, with a standard deviation of 0.509 and a mean value of 4.701, reflecting changes in policy climates over the study period. Moreover, the skewness of Economic Policy Uncertainty (EPU) series shows **0**.25 and a kurtosis of 3.22, indicate distribution of EPU series is moderately positively skewed and slightly leptokurtic. The positive skewness recommends a mild tendency towards upward deviations of EPU**,** reflecting unexpected spike in uncertainty. Overall, the EPU data distribution seems stable, with frequent surges in EPU. Interest Rate fluctuations range from 1.10% to 16.7%, with a standard deviation of 3.50% and a mean value of 7.80%, indicating variability in interest rates over time. Finally, Exchange Rate variability is pronounced, with a standard deviation of 9.80% and a mean value of 6.90%, reflecting fluctuations in currency values throughout the study period, ranging from 0.07% to 32.7%. These descriptive statistics provide valuable insights into the characteristics and dynamics of additional variables influencing the Asian economies' stock markets, shedding light on factors such as liquidity, investor attention, market risk, asymmetric information, economic policy uncertainty, interest rates, and exchange rates.

TABLE 4.2: Descriptive Statistics of Individual Countries of Asian Emerging Economies

Variables	**Mean**	**Std.Dev**	**Maximum**	**Minimum**
Descriptive Statistics of China				
Return	0.068	0.018	0.115	0.043
Volatility	0.102	0.061	0.308	-0.027
MLI	4.477	0.174	4.57	3.75
IA	3.306	0.728	4.543	2.303
MR	-0.18	0.099	-0.066	-0.314
AI	0.014	0.007	0.036	0.0027
IR	0.054	0.007	0.075	0.044
ER	0.145	0.013	0.165	0.12
EPU	5.342	0.345	6.493	4.951
GDP	0.092	0.02	0.142	0.069
INF	4.411	0.129	4.616	4.185
FDI	2.961	1.052	4.508	1.4

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Variables	Mean	Std.Dev	Maximum	Minimum
SIZE	14.677	0.54	15.75	13.283
Descriptive Statistics of India				
Return	0.05	0.04	0.312	0.01
Volatility	0.09	0.055	0.324	-0.027
MLI	3.691	0.113	3.94	3.46
IA	2.199	1.053	4.605	0.693
MR	-0.097	-0.065	-0.027	-0.356
AI	0.018	0.012	0.068	0.006
IR	0.098	0.024	0.133	0.011
ER	0.02	0.003	0.025	0.013
EPU	4.79	0.09	4.95	4.64
GDP	0.074	0.019	0.157	0.034
INF	4.543	0.355	5.068	3.952
FDI	1.84	0.606	3.23	0.78
SIZE	16.31	0.438	17.18	15.57
Descriptive Statistics of Indonesia				
Return	0.041	0.035	0.184	0.001
Volatility	0.082	0.051	0.29	-0.024
MLI	3.897	0.064	4.08	3.76
IA	3.056	0.739	4.419	1.792
MR	-0.086	0.05	-0.033	-0.315
AI	0.011	0.007	0.052	0.003
IR	0.128	0.016	0.167	0.097
ER	0.009	0.0017	0.0066	0.00125
GDP	0.055	0.006	0.086	0.047
INF	4.297	0.271	4.658	3.736
FDI	1.959	0.576	2.785	0.294
SIZE	14.371	0.517	15.109	13.399
Descriptive Statistics of Malayasia				
Return	0.003	0.029	0.053	-0.066
Volatility	0.047	0.027	0.15	-0.015
MLI	3.811	0.048	3.908	3.712
IA	3.105	0.482	4.454	2.302
MR	-0.041	-0.019	-0.016	-0.223
AI	0.007	0.007	0.027	0.002
IR	0.052	0.007	0.065	0.043
ER	0.277	0.032	0.332	0.224

Continued on next page

Variables	Mean	Std.Dev	Maximum	Minimum
GDP	0.047	0.014	0.069	0.012
INF	4.649	0.113	4.437	4.807
FDI	3.381	0.832	4.758	1.921
SIZE	12.655	0.12	12.87	12.408
Descriptive Statistics of Pakistan				
Return	0.05	0.044	0.262	0.002
Volatility	0.09	0.048	0.266	0.024
MLI	3.876	0.047	4.06	3.73
IA	2.721	0.501	4.277	1.946
MR	-0.085	0.048	-0.265	-0.241
AI	0.015	0.008	0.06	0.005
IR	0.114	0.023	0.158	0.073
ER	0.011	0.003	0.017	0.006
EPU	4.47	0.111	4.64	4.243
GDP	0.042	0.02	0.075	-0.028
INF	4.309	0.418	4.95	3.53
FDI	1.142	0.818	3.112	0.357
SIZE	14.516	0.329	15.309	13.94
Descriptive Statistics of South Korea				
Return	0.038	0.032	0.155	0.002
Volatility	0.078	0.046	0.287	0.026
MLI	3.563	0.032	3.69	3.5
IA	3.272	0.345	4.522	2.565
MR	-0.087	0.06	-0.0278	-0.37
AI	0.012	0.007	0.05	0.004
IR	0.05	0.016	0.071	0.029
ER	0.000912	0.0000817	0.00107	0.0006592
EPU	3.95	0.23	4.26	4.26
GDP	0.042	0.037	0.239	0.013
INF	4.531	0.104	4.662	4.318
FDI	2.109	0.175	2.417	1.805
SIZE	13.144	0.181	13.499	12.783
Descriptive Statistics of Thailand				
Return	0.021	0.004	0.029	-0.015
Volatility	0.076	0.04	0.178	0.026
MLI	3.866	0.055	3.99	3.78
IA	3.378	0.671	4.263	2.303

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Variables	**Mean**	**Std.Dev**	**Maximum**	**Minimum**
MR	-0.076	0.037	-0.031	-0.166
AI	0.01	0.004	0.022	0.004
IR	0.048	0.006	0.061	0.035
ER	0.029	0.002	0.033	0.024
GDP	0.047	0.02	0.089	0.01
INF	4.504	0.097	4.605	4.299
FDI	2.623	1.183	5.418	0.117
size	14.1	0.47	14.742	13.406

This table 4.2 presents the descriptive statistics of the following variables— Dependent Variables: Volatility, Return; Independent Variables: Market Liquidity Index, Investor Attention, Market, Asymmetric information; Moderators interest rate, exchange-rate and EPU (Economic Policy Uncertainty) and control variables include General domestic product (GDP), Inflation, market size and Foreign direct investment (FDI) of individual countries of Asian emerging economies. The descriptive statistics include mean, Stdev, maximum, and minimum.

The descriptive data provided in Table 4.2 offers insights into the individual countries comprising the Asian emerging economies. Across these nations, the average return values fall within the range of 2% to 5%, with Malaysia exhibiting the lowest return at 0.3%. However, the standard deviation for returns across all economies remains relatively consistent, ranging between 0.04 % to 4%. This suggests a great fluctuation in returns of individual countries from a mean. In terms of volatility, all countries demonstrate mean values ranging from 4% to 10%, with Malaysia showing the lowest volatility trend and a standard deviation of 4.7%. This indicates that Malaysia may have been less impacted by financial debt crises and the COVID-19 pandemic compared to other countries. Notably, China, India, Indonesia, Pakistan, South Korea, and Thailand exhibit standard deviations ranging from 6% to 5%, suggesting higher variability in volatility compared to Malaysia.

The mean values of market liquidity in stock markets across all countries follow a relatively normal trend, with minimum values ranging from 3.78 to maximum values of 4.08. The average liquidity value ranges from 4.497 to 3.7, indicating that despite being significantly affected by financial and pandemic crises, these countries have managed to maintain adequate liquidity levels. This suggests that governments

may have substantial cash reserves or investments in highly liquid instruments, enabling them to mitigate risk factors to some extent and ensure market stability during turbulent periods. The mean values of investor attention (IA) across all countries' stock markets range from approximately 3% to 4%, except for India and Pakistan, where investor attention appears slightly lower. This suggests that investors in these countries may be less concerned with investment news compared to others. In contrast, investors in India and Pakistan are still attentive, albeit to a slightly lesser extent.

Market risk values indicate significant variability across countries, with India, China, Pakistan, South Korea, Indonesia, and Thailand exhibiting notably high market risks ranging from 7% to 18%. In contrast, Malaysia displays relatively lower market risks. However, the maximum potential loss for investors at a 5% confidence level varies from -6.6% to -1.50%, while the minimum loss ranges from -37% to -16%. The mean values of asymmetric information content (AI) range from 1% to 4% across all countries, except Malaysia, which has a lower AI mean value of 0.07%. Standard deviation values for AI are approximately 0.07% to 1.20% across most countries, indicating relatively consistent levels of asymmetric information.

Interest rate mean values vary, with Indonesia and Pakistan reporting the highest values at 12.8% and 11%, respectively, and India displaying average interest rates ranging from 9.80%. The maximum interest rate range spans 16.7%, while the minimum falls as low as 1.5%, highlighting the diverse interest rate landscapes across these economies.

The interest rates in China, Malaysia, South Korea, and Thailand are comparatively lower, ranging from 4.80% to 6.40%. In addition, the mean value of the exchange rate in Malaysia is the highest at 28%, accompanied by a standard deviation of 3.2%. China exhibits exchange-rate mean values of 14.5%, with a standard deviation of 1.4%, ranging from a maximum of 16% to a minimum value of 13%. Meanwhile, Pakistan, India, Thailand, and South Korea report relatively lower exchange-rate mean values, ranging from 0.009% to 4%, with an extreme deviation of 0.03%. Additionally, the average value of the Economic Policy Uncertainty (EPU) in China is notably higher at 5.34, with a standard deviation of 0.34, compared to other

countries. The average EPU values in other countries range from 3.58 to 4.49, suggesting that economic uncertainty is more pronounced in China than in other countries in the dataset.

TABLE 4.3: Descriptive Statistics of Panel Data of European Emerging Economies

Variables	Mean	Std.Dev	Maximum	Minimum	Skewness	Kurtosis
Return	0.02	0.063	0.273	-0.16	0.32	4.86
Volatility	0.015	0.002	0.02	0.013	1.413	2.23
MLI	3.235	0.08	3.404	0.012	1.65	6.21
MR	-0.086	0.0612	-0.006	-0.398	-1.35	6.3
ER	0.478	0.423	1.501	0.064	1.15	2.81
GDP	0.065	0.089	0.816	-0.01	2.94	6.75
INF	4.868	0.692	7.347	4.069	2.23	7.12
FDI	1.555	1.426	8.583	-0.259	2.04	3.3
SIZE	12.736	0.885	14.494	10.817	1.7	2.22

This table presents the descriptive statistics of the following variables— Dependent Variables: Volatility, Return; Independent Variables: Market Liquidity Index (MLI), Investor Attention (IA), Market risk (MR), Asymmetric information (AI); Moderator, exchange rate (EXCH-RATE), and control variables General domestic product (GDP), Inflation, Foreign Direct Investment FDI and size of panel data of European emerging economies. The descriptive statistics include mean, standard deviation, maximum, minimum, skewness and kurtosis.

Table 4.3 provides the descriptive statistics of balanced panel data encompassing six European emerging economies, namely Greece, Qatar, Saudi Arabia, South Africa, Turkey, and the United Arab Emirates. The study period spans from monthly data recorded between 2004 and 2020.The return of the panel data exhibits an average value of 2 % with a considerable deviation of 7.2%. However, the range of monthly return data fluctuates from a maximum of 27.3% to a minimum of -15.5%. This disparity highlights the significant turbulence experienced by European emerging economies' stock markets, particularly during the COVID-19 pandemic and the financial crisis of 2008-2009. Nonetheless, stability in returns is observed during other periods.

The return series' skewness is 0.13 and a kurtosis of 3.93, which reflects that data distribution is slightly deviates from normal and somewhat symmetric, suggests an equal distribution of positive and negative returns indicating a distribution that is

approximately symmetric, however, kurtosis is leptokurtic as it values 3.93 exceed the benchmark. Similarly, the range of monthly data for volatility extends from 2% to 1.3%, with an average value of 1.5% and a total deviation of 0.2%. The heightened volatility, attributed to the financial crises and the global pandemic, underscores the challenges faced by these economies during the specified period. The skewness value of volatility series for the European economy is 1.41 and and kurtosis is 2.23, reflects that data distribution that is strongly positively skewed and little bit platykurtic. The significant positive skewness reflect a greater frequency of upward movements in volatility, might be due to financial stress, market uncertainty, or systemic shocks.The maximum and minimum range of monthly data of the Market Liquidity Index (MLI) spans from 3.404 to 2.973, with an average mean of 3.235 and a standard deviation of 0.080. This indicates that the liquidity trends in the European economy's stock markets exhibit a somewhat normal but bearish trend. The bearish trend may result in reduced trading activities and a lack of hedging strategies adopted by institutional and local investors, contributing to lower liquidity.

The market liquidity index left-skewed moderately and display platykurtic distribution with a skewness of -0.49 and a kurtosis of 2.13. This indicate that Liquidity appears to dry up more quickly during market stress, as indicated by the negative skewness. Investor attention (IA) has an average value of 3.702, with a slightly extreme deviation of 0.371. The range of Investor Attention values varies from 4.605 to 2.995, highlighting the significant role of investor attention in stock market activities. With a skewness of -0.19 and a kurtosis of 2.03, the investor attention distribution in the European economy shows that the series is roughly symmetric with a little left skew and displays platykurtic behavior. This indicates the normal of data distribution and is more stable and less susceptible to extreme values.Market risk fluctuates between a maximum of -0.6% and -39.8%, with an average mean value of -8.6% and a standard deviation of 6.12%. This suggests that the downside risk is predominant in European emerging stock markets. On the other hand, the market risk series exhibits a high leptokurtosis and a strong negative skew, with a kurtosis of 6.30 and a skewness of -1.35. The negative value of skewness reflects

Extreme events or tail risk, which indicates a greater chance of abrupt and dramatic spikes in market risk.

TABLE 4.4: Descriptive Statistics of Individual Countries of European Emerging Economies

Variables	**Mean**	**Std.Dev**	**Maximum**	**Minimum**
Descriptive Statistics of Greece				
Return	0.075	0.061	0.273	0.012
Volatility	-0.122	0.084	-0.589	-0.006
MLI	3.158	0.047	3.318	3.048
IA	3.89	0.28	4.605	3.044
MR	-0.137	0.078	-0.023	-0.436
ER	1.26	0.121	1.576	1.053
GDP	0.146	1.164	16.47	0.02
INF	4.571	0.075	4.649	4.387
FDI	1.182	0.562	2.511	0.562
Size	11.982	0.268	12.609	11.35
Descriptive Statistics of Qatar				
Return	0.016	0.067	0.168	0.01
Volatility	-0.088	0.058	-0.26	-0.01
MLI	3.181	0.061	3.315	3.098
IA	3.887	0.272	4.406	3.295
MR	-0.034	0.036	-0.006	-0.125
IR	0.057	0.01	0.073	0.042
ER	0.282	0.01	0.296	0.272
GDP	0.139	0.158	0.816	0.006
INF	5.755	1.068	7.347	4.236
FDI	2.435	2.482	6.844	0.021
Size	11.872	0.706	13.248	10.818
Descriptive Statistics of Saudia Arabia				
Return	0.051	0.074	0.178	0.001
Volatility	-0.098	0.07	-0.438	-0.019
MLI	3.234	0.088	3.404	2.973
IA	3.935	0.232	4.605	3.583
MR	-0.092	0.068	-0.02	-0.398
ER	0.266	0.02	0.269	0.265
GDP	0.059	0.041	0.253	0.011
INF	4.61	0.168	4.81	4.337

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Variables	Mean	Std.Dev	Maximum	Minimum
FDI	0.915	0.725	2.915	-0.12
Size	13.124	0.594	13.82	12.29
Descriptive Statistics of South-Africa				
Return	0.035	0.042	0.098	0.001
Volatility	-0.08	0.038	-0.214	-0.036
MLI	3.301	0.027	3.358	3.247
IA	3.401	0.304	4.174	2.999
MR	-0.085	0.035	-0.041	-0.178
AI	0.022	0.01	0.051	0.011
IR	0.105	0.017	0.145	0.086
ER	0.11	0.033	0.164	0.064
GDP	0.026	0.016	0.056	0.005
INF	4.679	0.267	5.088	4.29
FDI	1.407	0.718	0.48	2.927
Size	13.124	0.549	12.29	13.82
Descriptive Statistics of Turkey				
Return	0.06	0.036	0.143	0.07
Volatility	-0.116	0.049	-0.277	-0.055
MLI	3.243	0.04	3.327	3.171
IA	2.888	0.253	3.526	2.397
MR	-0.111	0.04	-0.053	-0.214
AI	0.026	0.009	0.058	0.014
ER	0.471	0.266	0.836	0.125
GDP	0.053	0.033	0.107	-0.022
INF	4.726	0.397	5.426	4.062
FDI	1.816	0.677	3.403	1.06
Size	13.859	0.258	14.24	13.35
Descriptive Statistics of U.A.E				
Return	0.01	0.076	0.205	0.001
Volatility	-0.12	0.054	-0.387	-0.036
MLI	3.207	0.073	3.361	3.103
MR	-0.101	0.05	-0.045	-0.21
IA	2.899	0.266	3.806	2.097
ER	0.464	0.239	0.2	0.272
GDP	0.053	0.033	0.116	0.002
INF	4.84	0.273	5.461	4.033
FDI	3.612	1.597	6.706	2.024

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Variables	**Mean**	**Std.Dev**	**Maximum**	**Minimum**
Size	12.733	0.533	13.581	11.986

This table presents the descriptive statistics of the following variables— Dependent Variables: Volatility, Return; Independent Variables: Market Liquidity Index, Investor Attention, Market, Asymmetric information; Moderators interest rate, exchange rate, and EPU and control variables General domestic product (GDP), Inflation, (FDI) foreign direct investment and Size of individual European Emerging countries. The descriptive statistics include mean, Stdev, maximum, and minimum.

The descriptive data of individual countries within the European emerging economies, as presented in Table 4.4, indicates that the return values for all six countries fall within the range of 1% to 7.5%, with standard deviations close to 3.6% to 7.6%. The maximum return values range from 10% to 27%, while the minimum return values range from 0.01% to 7%. Similarly, the mean volatility value across all European countries ranges from 8% to 12%, with standard deviations from 3.8% to 8%.

The mean value of market liquidity for stock markets across all European countries follows a normal trend, ranging from a minimum of 3 to a maximum of 2.97. The average liquidity value for all countries falls within the range of 3.15 to 3.20. The liquidity trend suggests that the impact of pandemic crises was significant, particularly for countries like Saudi Arabia, which appears to have maintained a high cash reserves ratio or highly liquid instruments.

This will facilitate in mitigating volatility to some extent, keeping it within normal momentum. The mean values of investor attention (IA) for all economies range between 2.88 and 3.89, Regarding market risk, Greece, Saudi Arabia, South Africa, and Turkey exhibit remarkably high levels of market risk, ranging from 9% to 14%, whereas Saudi Arabia shows a lower market risk at 3%. However, the maximum loss borne by investors at a 5% confidence level in a single day of investment varies between 1% to 5%, with minimum losses ranging from -43% to -22%.

Regarding the exchange rate, Greece has the highest mean value at 1.26, with a notable standard deviation of 12%. Turkey, on the other hand, exhibits a significantly higher mean value for the exchange rate at 47%, with a standard deviation of 26.6% and a wide range from 12.5% to 83.6%.

For South Africa, Saudi Arabia, Qatar, and the U.A.E., the mean values of the exchange rate range from 11% to 29%, with deviations of 1% to 3%. The (FDI) of all countries ranges from 3.93 to 1.407 with a maximum deviation shown by Qatar i.e. 2.482 then shown by U.A.E i.e..1. 597.However, Greece, turkey, south Africa, and Saudi Arabia's FDI deviation range from 0.67 to 0.72.

TABLE 4.5: Descriptive Statistics of Panel Data of American Emerging Economies

Variables	**Mean**	**Std.Dev**	**Maximum**	**Minimum**	**Skewness**	**Kurtosis**
Return	0.06	0.059	0.168	-0.168	1.11	3.93
Volatility	0.009	0.003	0.012	0.004	-1.63	2.88
MLI	4.197	0.306	4.57	3.79	-0.5	2.01
MR	-0.097	0.075	-0.015	-0.397	-1.53	6.3
AI	0.025	0.023	0.109	0.004	1.5	5.38
IA	4.016	0.494	5.082	2.89	-0.19	2.18
ER	0.524	0.43	0.319	0.049	-0.38	1.59
IR	0.156	0.166	0.603	0.035	2.08	0.88
EPU	4.588	0.734	6.019	3.074	0.3	2.44
GDP	0.0495	0.029	0.133	0.008	0.37	2.14
INF	4.869	2.166	16.842	0.058	2.5	6.4
FDI	3.835	2.148	10.971	1.437	1.56	3.4
Size	13.029	1.688	15.664	9.52	0.1	1.89

This table presents the descriptive statistics of the following variables— Dependent Variables: Volatility, Return; Independent Variables: Market Liquidity Index (MLI), Investor Attention (IA), Market risk (MR), Asymmetric information (AI); Moderators interest rate (INT-RATE), exchange rate (EXCH-RATE), Economic Policy Uncertainty(EPU) and control variables General domestic product (GDP) and Inflation, FDI and size of panel data of American Emerging economies. The descriptive statistics include mean, standard deviation, maximum, and minimum.

Table 4.5 presents the descriptive statistics of American emerging economies, focusing on Brazil, Chile, Mexico, and Peru. The study period spans from 2004 to 2020, comprising balanced panel data. For the return of the panel data, the average value is 8.1% with a slight deviation of 3.81%. The range of monthly return data varies from 22% to 18.4%, indicating relatively low returns on equity investment

in these economies, with minimal deviation. The return series shows skewness of 1.13 reflecting that the data distribution is positively skewed on the right tail and skewness value is 3.93 which shows leptokurtic.

Volatility, on the other hand, has an average value of 0.9% with extreme deviation of 0.03%. The extreme variation in volatility is notable, ranging from 1.2% to 0.04%, suggesting extreme fluctuations in the stock market's volatility across the study period. The skewness result of the American economy' volatility shows data distribution is negatively skewed and mesokurtic distribution as kurtosis value is 2.88. This shows the presence of large spikes in volatility and a higher likelihood of extreme fluctuations compared to a normal distribution. The Market Liquidity Index (MLI) maximum to minimum range from 4.570 to 3.790, with an average mean of 4.197 and a standard deviation of 30%. This indicates an extreme bearish trend in the Emerging American stock market liquidity, possibly influenced by factors such as the COVID-19 pandemic. The skewness value of liquidity series in the American economy is -0.50 that reflect distribution of data is moderately left skewed, whereas value of kurtosis of 2.01 represents that data distribution is platykurtic meaning thinner tails and a flatter peak. The negative skewness suggests that relatively more sharp declines in liquidity than sharp increases. The liquidity data distributional pattern shows relative stability in liquidity conditions in normal times, but with a negative tendency toward liquidity disruptions.

Investor attention (IA) has an average mean value of 4.016, with a notable deviation of 49%. The range of Investor Attention maximum and minimum range lies in the range of 5.082 to 2.890, highlighting a significant impact on stock market activities in American emerging economies. With a skewness of -0.19 and a kurtosis of 2.13, the investor attention series for the American emerging economy shows a distribution that is roughly symmetric, platykurtic, and slightly left skew. Market risk in the American stock market varies from a maximum of 1.5% to 39.7%, with an average mean value of 9.707% and a standard deviation of 7.50%. This suggests that while downside risk prevails, it is not at an extreme level. The market risk series for the American economy skewness is positively skewed, and a kurtosis reflects that marker risk is highly leptokurtic. The mean value of asymmetric information (AI) is 2.50%,

with a standard deviation of 2.30%, indicating moderate fluctuation in asymmetric information content across the study period. The maximum and minimum values of asymmetric information (AI) range from 10.9% to 0.04%, indicating relatively high fluctuation in asymmetric information within the American emerging stock market. The American economy's asymmetric information series has a skewness of 1.50 and a kurtosis of 5.38, which suggests a positively skewed and leptokurtic distribution. According to the high positive skewness, there is highly increase in asymmetric information such as abrupt fall in transparency or spikes in information disparity. Moreover, there is a chance of severe informational inefficiencies indicated by the kurtosis value. The standard deviation of interest rates is 16.6%, with a mean value of 15.6% and a range of interest rates spread from 3.5% to 60.3%. This suggests significant variability in interest rates over the study period, with some periods experiencing considerable fluctuations. The exchange-rate mean value is 52.4%, with a great fluctuation in the exchange rate from 4.90% to 31.9%. This indicates the unstable exchange rate observed during the study period. The standard deviation of Economic Policy Uncertainty (EPU) is 73.4%, with a mean value of 4.588, and a range of dispersion from 3.074 to 6.019. This suggests extreme variability in economic policy uncertainty, with some periods experiencing higher uncertainty levels than others. The American economy's Economic Policy Uncertainty (EPU) skewness 0.30 and a kurtosis of 2.44 indicating a mildly positively skewed and platykurtic distribution. This reflects that EPU increases are either slightly more frequent or more noticeable than decreases, as indicated by the slight positive skewness, which also suggests a modest tendency for larger upward deviations in policy uncertainty. The kurtosis flatter peak and have thinner tails.

TABLE 4.6: Descriptive Statistics of Individual Countries of American Emerging Economies

Variables	**Mean**	**Std.Dev**	**Maximum**	**Minimum**
Descriptive Statistics of Brazil				
Return	0.049	0.037	0.144	0.003
Volatility	-0.105	0.04	-0.213	-0.05
MLI	3.232	0.057	3.351	3.141
IA	3.388	0.285	4.11	2.89

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Variables	Mean	Std.Dev	Maximum	Minimum
MR	-0.114	0.04	-0.061	-0.23
AI	0.009	0.004	0.021	0.004
ER	0.823	0.115	1.049	0.671
IR	0.436	0.08	0.621	0.3
EPU	4.79	0.374	5.442	4.005
GDP	0.033	0.015	0.072	0.014
INF	4.716	0.271	5.131	4.289
FDI	3.185	0.663	4.405	1.939
Size	13.066	0.566	14.123	12.453
Descriptive Statistics of Chile				
Return	0.036	0.027	0.106	0.003
Volatility	-0.071	0.036	-0.187	-0.031
MLI	3.033	0.063	3.158	2.889
IA	4.511	0.355	5.082	3.781
MR	-0.065	0.03	-0.031	-0.145
AI	0.06	0.02	0.098	0.027
ER	1.047	0.134	1.31	0.893
IR	0.071	0.022	0.118	0.043
EPU	3.919	0.133	4.127	3.61
GDP	0.042	0.179	0.068	-0.014
INF	5.278	0.301	5.89	3.353
FDI	6.565	2.596	11.094	2.632
Size	12.204	1.602	14.536	9.034
Descriptive Statistics of Mexico				
Return	0.035	0.027	0.105	0.002
Volatility	-0.076	0.035	-0.172	-0.029
MLI	3.315	0.032	3.386	3.251
IA	3.986	0.24	4.454	3.5
MR	-0.033	0.015	-0.015	-0.08
AI	0.018	0.009	0.045	0.008
ER	0.073	0.016	0.1	0.046
IR	0.064	0.017	0.093	0.035
EPU	4.094	0.523	5.107	2.911
GDP	0.032	0.011	0.056	0.016
INF	4.656	0.195	4.971	4.338
FDI	2.689	0.397	3.563	2.046
Size	14.056	0.26	14.358	13.513

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Variables	Mean	Std.Dev	Maximum	Minimum
Descriptive Statistics of Peru				
Return	0.073	0.059	0.214	0.01
Volatility	-0.116	-0.088	-0.896	0.005
MLI	4.477	0.175	4.579	3.73
IA	3.811	0.175	4.454	3.322
MR	-0.098	0.072	-0.017	-0.503
AI	0.01	0.003	0.014	0.005
ER	0.646	0.254	2.392	1.579
IR	0.528	0.197	0.77	0.354
EPU	4.497	0.569	5.433	3.419
GDP	0.085	0.011	0.056	0.013
INF	4.256	0.195	4.789	3.89
FDI	2.689	0.397	3.563	2.046
Size	14.056	0.26	14.358	13.513

The table 4.6 presents the descriptive statistics of the following variables— Dependent Variables: Volatility, Return; Independent Variables: Market Liquidity Index (MLI), Investor Attention (IA), Market risk (MR), Asymmetric information (AI); Three Moderators interest rate (Int-rate), an exchange rate (EXCH-RATE), and Economic Policy Uncertainty EPU and four control variables General domestic product (GDP), Inflation, FDI and market size of individual countries of American emerging Economies. The descriptive statistics include mean, standard deviation, maximum, and minimum.

The return exhibits a mean value range from 3.50% to 7.3%, indicating below-average return of American emerging economies. The mean values of volatility for all countries fall within the range of 7% to 10%, indicating moderate levels of volatility across the board. Standard deviations of volatility range from 4% to 8%, suggesting variability in volatility levels among the countries. The market liquidity of all American countries exhibits a normal trend, with mean values ranging from 3.00 to 3.31. This suggests that liquidity conditions in these markets remain relatively stable, with minor fluctuations observed. The liquidity trend suggests a relatively normal pattern in the stock markets of American emerging economies, with slight variations observed.

Overall, the descriptive data indicates that while there are variations in return, volatility, and liquidity levels among the American emerging economies, they generally exhibit similar trends and patterns in their stock market characteristics.

The mean values of investor attention (IA) for all economies fall within a relatively narrow range, indicating a consistent level of investor interest across the selected countries. Market risk is observed to be high in all three countries, with variations in the magnitude of risk ranging from 3% to 11%. The maximum and minimum potential losses experienced by investors also vary across the countries, with Brazil and Colombia exhibiting higher levels of potential loss compared to Mexico and Chile. Asymmetric information content (AI) shows varying levels across the selected countries, with mean values ranging from 10% to 0.09%. Standard deviations of AI are relatively low, indicating consistent levels of information asymmetry within each country's stock market. The mean values of interest rates are notably high in Brazil and Colombia as compared to Mexico and Chile, suggesting differences in monetary policy and economic conditions among the countries. Exchange rate mean values also vary, with Chile exhibiting the highest mean value and Mexico showing the lowest among the selected countries. These differences may reflect varying levels of economic stability and currency strength across the countries.

TABLE 4.7: Impact of Market Micro-structure Factors on Stock Market Return

Variables	**Asian Emerging Economies**	**American Emerging Economies**	**Combined Economies**
	Coefficients	Coefficients	Coefficients
	P>[z]	P>[z]	P>[z]
Return (-1)	0.196	-0.15	-0.121
	0.000**	0.000**	0.000**
MLI	0.08	-0.014	0.03
	0.000**	0.000**	0.000**
IA	0.05	0.06	0.07
	0.000**	0.000**	0.000**
AI	-0.21	-0.23	0.15
	0.000**	0.000**	0.000**
MR	-0.04	-0.07	-0.03
	0.000**	0.000**	0.000**
INF	-0.0716	-0.001	Nil
	0.000**	0.000**	
GDP	0.046	0.24	0.07
	0.000**	0.000**	0.000**

Continued on next page

Variables	**Asian Emerging Economies**	**American Emerging Economies**	**Combined Economies**
	Coefficients	Coefficients	Coefficients
	P>[z]	P>[z]	P>[z]
FDI	Nil	0.07	0.02
		0.000**	0.000**
Size	Nil	0.3	-12.85
		0.000**	0.000**
Constant	0.1528	0.082	0.19
	0.000**	0.000**	0.000**
A(1)	0.000**	0.000**	0.000**
A(2)	0.08	0.1323	0.3492
Sargan Test	Chi2= 203	Chi2=203	Chi2=203
P-value	0.073	0.098	0.1273
No of Instruments	189	187	191

Note: Return (-1) =lag value of return,MLI=Market liquidity Index, IA=Investor Attention, Asymmetric Information=AI, MR=market risk, INF=inflation, GDP=Gross Domestic, FDI= Foreign direct investment, Parenthesis= (P-value, significance $***P < 0.01$, $**P < 0.05$, $*P < 0.1$*)*

The findings from Table 4.7 suggest a significant positive relationship between market liquidity and returns in both Asian economies by running GMM on eq 3.6.1in the Asian economy, the coefficient for market liquidity (MLI) is (ß=0.08 with a p-value of 0.000), indicating a strong statistical significance. Moreover, the combined results of MLI are also positive and significant (ß=0.03 with a p-value of 0.000). These results imply that higher levels of market liquidity are associated with increased returns in both Asian and combined emerging economies. A positive coefficient indicates that as market liquidity improves, trading activity strengthens, leading to a bullish trend in the stock markets of Asia. This suggests that not only individual investors, but also institutional and foreign investors are actively engaged in trading, contributing to the overall market stability and bullish sentiment.

The negative and significant coefficient observed in the American economy (ß=0.014, p-value 0.000) suggests a different dynamic compared to the Asian. This negative relationship between market liquidity and returns implies that despite active trading, the stock markets in the American economy may not be translating

liquidity into positive returns for investors. One possible explanation for this negative relationship could be the relatively smaller and thinner nature of the stock markets in the American emerging economy. Additionally, political instability and coalition dynamics may contribute to market volatility and uncertainty, which could further dampen investor returns. Unlike the Asian, the American economy may lack sufficient internal reserves or effective risk management techniques to mitigate these challenges and translate liquidity into positive returns for investors. Overall, while market liquidity appears to positively influence returns in Asian emerging economy, the American economy presents a contrasting scenario where liquidity does not necessarily translate into favorable returns for investors. However, the contrasting result in the American economy highlights the unique challenges and dynamics present in that market, where liquidity may not necessarily translate into favorable returns for investors.

The acceptance of hypothesis H1(a) in the Asian and combined economies, but not in the American economy, aligns with previous research findings from various studies including Bekear et al.,(2001), Jun et al.,(2003), Batten & Vo, (2015), Litchewski and Voronkowa,(2012), Hartigan and Sitorus,(2015), ARTIKIS (2018), Oslo (2018), Bhattacharya et al.,(2019), Altay and Calgici,(2019), Khang (2021), Miralles-Quiros et al.,(2017), KAHUTHU (2017), Liu et al., (2020), Akhunzada et al.,(2023), and Fuenzalidda et al.,(2017). This consistent alignment with previous studies suggests that liquidity's impact on returns is indeed multifaceted and may vary across different economic contexts. The positive relationship between market liquidity and returns observed in Asia underscores the importance of active trading and thick markets in driving positive investor returns. Overall, the empirical findings of this study contribute to a deeper understanding of the complex relationship between market liquidity and returns, emphasizing the need for a multi-dimensional perspective when analyzing liquidity dynamics in different economic contexts. However, the result of this analysis contradicts the studies of Amihud and Mendelson, (1986), Brennan and Avanidhar (1996), Fama and French, (1993), Pastor and Stambaugh, (2001), Hasbrouck (2002) and Goyenko et al., (2009), Leirvik et al., (2017) Ma et al.,(2018) analyzed market liquidity and stock returns and their findings indicated that liquidity negatively and significantly

affects stock returns. Thus, H1(a) is accepted in Asia, and combined economies. The empirical result depicts heterogeneity and uniformity of market liquidity as microstructure factors across emerging markets.

Similarly, by running the system GMM model on equation 3.6.1.1, the outcome of the result shows that Investor attention has a positive relation with return as the coefficient is positive and significant (ß=0.05, p-value 0.000 in Asia; ß=0.073 and ß=0.06 and p-value 0.000 in America, ß=0.073 and ß=0.07 and p-value 0.000 in the combined effect) at the level 5%. The acceptance of hypothesis H1(b) in both economies and combinations indicates a consistent positive relationship between investor attention and stock returns. The positive coefficients observed in emerging economies of the world indicate that higher levels of investor attention are associated with increased stock returns. This implies that investors actively seek information about stocks through online searches, and their interest and attention contribute significantly to driving market movements. As a result, heightened investor attention may lead to increased trading activity and market liquidity, ultimately impacting stock returns positively.

These findings underscore the importance of investor sentiment and attention in shaping market dynamics and influencing investor behavior. By acknowledging the impact of investor attention on stock returns, market participants and policymakers can better understand market movements and make informed decisions. The alignment of the result with previous studies provides further support for the significance of investor attention as a behavioral factor influencing stock returns. The findings of Chemmanur & Yan, (2009), Da et al.,(2011), Fink & Johann, (2012), Vozlyublennaia (2014), Adachi et al., (2017), Akarsu & Suer, (2021), Peng et al.,(2016), Tan and Tas, (2019), Ekinci and Bulut, (2021), Yang et al.,(2017), Chi & Liang, (2022), and Carlsson (2020) collectively reinforce the understanding that investor attention, driven by emotional responses and social news impact, significantly and positively affects stock market outcomes. This suggests that investors' attention to stocks, influenced by various factors such as media coverage, social media trends, and market sentiment, plays a crucial role in determining market movements and stock returns. The rationale for these positive relations

could be (1) emerging markets are less proficient than developed markets due to low regulatory monitoring, liquidity issues, and a less knowledgeable investor base. So, in such situations, the focus of investor attention may facilitate correcting in-efficiencies. As investors give more attention, critically analyze, and trade on new information, prices are adjusted more rapidly and accurately, which results in short-term price increases and higher returns. (2) Investor attention can also amplify positive sentiment. In emerging markets, where the investor base might be more prone to herd behavior, increased attention can lead to a positive feedback loop. As more investors focus on the market, positive sentiment can drive up prices, leading to higher returns. (3) News and trends have a greater impact on investor behavior in emerging markets than in developed ones. Momentum trading, in which investors purchase assets that have recently performed well, can result from increased attention and return increases. So, in summary, the positive relationship between investor attention and returns in emerging economies can be attributed to the correction of market inefficiencies, increased capital inflows, amplified market sentiment, and behavioral factors. These factors collectively enhance market performance and lead to higher returns when investor attention increases. By incorporating investor attention into their analyses, researchers and practitioners gain valuable insights into the behavioral aspects of financial markets and can better understand the underlying mechanisms driving stock price movements. In cross-sectional analysis the result depicts uniformity across all regions and investor attention being market microstructure factor contributes significantly towards market efficiency and facilitates to make this region semi-strong form. So, this hypothesis contributes to EMH theory.

The results from Table 4.7 highlight the significant relationship between asymmetric information (AI) and stock returns across different emerging economies by run the system GMM on equation 3.6.1.1. In Asia and America, the negative beta coefficient (ß= -0.21, p-value 0.000 in Asia; and ß= -0.23, p-value 0.000) signifies a negative association between asymmetric information and returns, indicating that higher levels of asymmetric information lead to lower stock returns. The results from the Asian and American economies confirm the acceptance of hypothesis H1(c), indicating that asymmetric information negatively impacts returns. Conversely, the

positive coefficient ß= 0.15, p-value 0.000 in Combined effect suggests a positive relationship between asymmetric information and stock returns in the European and overall emerging economies. Thus, hypothesis H1(c), is rejected in overall emerging economies. The rationale for the positive interaction between asymmetric information and return could be the stock market inefficiencies considered common in emerging markets because of immature financial infrastructure, unsophisticated investors, and regulatory gaps. By taking advantage of pricing flaws and arbitrage possibilities resulting from asymmetric information, investors with access to better information can profit from these inefficiencies and earn higher returns. Therefore, comprehending and managing asymmetric information is crucial for investors and policymakers seeking to improve market efficiency and investor outcomes.

The result of this analysis aligns with previous research by Khavari et al., (2022), Pirayesh and Mozaffari, (2018), and Yassin et al., (2015), which have also found a negative relationship between asymmetric information and returns. The presence of asymmetric information can lead to mispricing of assets, potentially causing less knowledgeable investors to bear most losses, subsequently affecting investor returns and reducing overall market returns. However, the result of this study contradicts Kyle (1985), Stoll (2003), Easley et al.,(2002) and Levi and Zhang, (2008). The rationale for the positive correlation between asymmetric information and stock return is the uneven distribution of information among investors. In such a scenario when some investors have better information than others, they can exploit this advantage by earning higher returns. In cross-sectional analysis the result depicts asymmetric information as market microstructure factors across Asia and America.

Similarly, the analysis in Table 4.7 indicates a significant correlation between market risk and return. In Asia, America, and the combined economies, the interaction between market risk (MR) and returns is negative and significant with the following coefficients and p-values (ß= -0.04, p-value 0.000 in Asia; ß=-0.07, p-value 0.000 in America; ß=-0.03, p-value 0.000 in Combined effect) at the level 5%.These findings suggest that investors in Asia, America, and overall emerging economies are risk-averse, willing to accept lower returns in exchange for lower risk or vice versa. The acceptance of hypothesis H1 (d) underscores the importance of market

risk as a key factor in the market microstructure of Asian and American economies and the whole emerging economies. This finding is consistent with prior research by Mehrar et al., (2014), Rezagholizadeh et al., (2020), Pamane and Vikpossi, (2014), Karwitha et al.,(2020), and Hikouatcha et al., (2022), which have also identified market risk as a significant determinant of market dynamics.

Furthermore, the significant p-values of the variables Market Liquidity Index (MLI), Investor Attention (IA), Asymmetric Information (AI), and Market Risk (MR) indicate their influential roles as market microstructure factors across Asia and American emerging economies. These findings address a gap in the literature identified by Easlye (2002), Hikouatcha et al., (2022), Karwitha et al. (2020), and Said et al. (2024), highlighting the importance of considering these factors in understanding market behavior and returns of the emerging markets and do significant empirical contributions in the field of behavioral finance, market microstructure. Moreover, the active participation of investors in investment activities, coupled with efforts to enhance liquidity provision, mitigate asymmetric information, and manage market risk through effective risk-management techniques, can contribute to improving market structure and efficiency. These efforts align with the principles of the Efficient Market Hypothesis (EMH), suggesting that markets reflect all available information and are efficient in pricing assets.

The results presented in Table 4.7 indicate that the J-statistic (Sargan-test) p-value is insignificant in Asian, European, American, and combined economies (p-values=0.1373 in Asia, p-values=0.1635 in Europe, p-values=0.098 in America and combined effect p-values= 0.1273), indicating the acceptance of the null hypothesis H0, which validates the over-identifying restrictions. This suggests that the model's additional restrictions are consistent with the data. Autocorrelation is addressed using the AR (1) and AR (2) tests, with significant values observed at AR (1) (p-value=0.000 in Asia; p-value=0.000 in Europe, p-value=0.000 in America and p-value = 0.000 in combined effect) indicating the presence of autocorrelation at lag 1. However, the insignificant values AR (2) were also found in all three economies (p-value=0.231 in Asia, p-value=0.1323 in America, and p-value = 0.3492 in combined effect), suggesting that autocorrelation is also resolved at AR (1 & 2) in

all three economies as well as the combined effect. Moreover, four control variables, inflation, GDP, FDI, and market size have been incorporated into the model at the economy level. The p-values associated with these control variables are significant, indicating that they have a significant effect on the model. This implies that inflation, GDP, FDI, and market size exert influence on the relationship between market microstructure factors (market liquidity, investor attention, asymmetric information, and market risk) and market return, highlighting the importance of considering these macroeconomic factors in the analysis.

TABLE 4.8: Impact of Market Micro-structure Factors on Stock Market Volatility

Variables	**Asian Emerging Economies**	**European Emerging Economies**	**American Emerging**	**Combined Economies**
	Coefficients	Coefficients	Coefficients	Coefficients
	P>[z]	P>[z]	P>[z]	P>[z]
volatility (-1)	0.252	0.193	-0.15	(-0.048)
	0.000**	0.000**	0.000**	0.000**
MLI	0.08	-0.026	-0.014	0.0574
	0.000**	0.000**	0.000**	0.000**
IA	0.05	0.036	0.06	-0.034
	0.000**	0.000**	0.000**	0.000**
INF	-0.0716	-0.121	-0.001	0.084
	0.000**	0.000**	0.000**	0.000**
GDP	0.046	-0.267	0.24	0.67
	0.000**	0.000**	0.000**	0.000**
FDI	Nil	0.042	0.1	-0.045
		0.000**	0.000**	0.000**
Size	Nil	Nil	0.08	0.062
			0.000**	0.000**
Constant	0.1528	0.26	0.082	0.337
	0.000**	0.000**	0.000**	0.000**

Continued on next page

Variables	**Asian Emerging Economies**	**European Emerging Economies**	**American Emerging**	**Combined Economies**
	Coefficients	Coefficients	Coefficients	Coefficients
	P>[z]	P>[z]	P>[z]	P>[z]
A(1)	0.000**	0.000**	0.000**	0.000**
A(2)	0.0875	0.2156	0.075	0.5184
Sargan Test	Chi2= 203	Chi2= 203	Chi2=203	Chi2=203
P-value	0.1877	0.0815	0.1076	0.2197
No of Instruments	191	181	186	191

*Note: Volatility (-1) =lag value of volatility , MLI=Market liquidity Index, IA=Investor Attention, Asymmetric Information=AI, MR=market risk, INF=inflation, GDP=Gross Domestic, FDI= Foreign direct investment, Size * *P < 0.01, * * P < 0.05, *P < 0.1 Parenthesis= (P-value, significance)*

The regression results presented in Table 4.8 shed light on the relationship between market microstructure factors (Market liquidity and investor attention) and volatility in Asian, European, and American emerging economies. Running the system GMM model on equation 3.6.2 yielded significant findings, with the MLI coefficient showing a negative and significant relationship (ß=-0.026, p-value=0.000 in Europe; ß=-0.014, p-value=0.000 in America) at the 5% level. Thus hypothesis H2(a) is accepted, proving that there is a negative association between market liquidity and volatility in American and European emerging economies. These results align with previous studies such as Pástor and Stambaugh (2001), Foster and Viswanathan (1990), Sojika and Kilber (2018), Gharaibeh and Al-Qudah (2019), Al-Yahyaee et al. (2020), Zhu et al. (2022), Fakunmoju (2020), and Mupondo (2022), which also employed the system GMM to examine the relationship between liquidity and volatility. The negative relationship observed implies that as market liquidity decreases, volatility tends to increase. This phenomenon may occur because fund providers become more cautious and reduce their participation in the stock market during periods of bearish trends, leading to higher levels of volatility of these two stock markets.

The cautious approach observed in periods of reduced market liquidity often leads to a withdrawal of funds through share sales, contributing to an increase in market volatility. This withdrawal of funds results from market participants becoming more risk-averse during uncertain times, which can further exacerbate fluctuations in asset pricing. Particularly in emerging economies with less robust markets and lower resilience to market volatility, the ease with which buyers and sellers can adjust prices plays a significant role in determining liquidity levels, which in turn influences asset price volatility.

Regarding market liquidity, the empirical findings suggest a negative correlation between the multidimensional aspect of liquidity and volatility. However, in the Asian region and combined effect, the analysis reveals a positive and significant MLI coefficient (ß=0.08, p-value=0.000 in Asia and ß=0.0574 and p-value=0.000 in combined effect). The positive correlation between liquidity and volatility in Asian economies may be attributed to impulsive liquidity shocks experienced by countries in this region, such as sudden surpluses or shortages of liquidity. These shocks can amplify volatility in financial markets, leading to a positive relationship between liquidity and volatility. In cross-sectional analysis the result is region specific, and solely in America and Europe Market liquidity as market microstructure can impact market volatility.

The positive relationship between investor attention (IA) and volatility, as indicated by the significant coefficients in Table 4.8, (ß= 0.05 and a p-value of 0.000 in Asia, ß= 0.037 and a p-value of 0.000 in Europe, ß=0.06 and p-value =0.000 in America) at a 5% significant level, and thus hypothesis H2(b) is accepted in all three economies. The analytical analysis's finding aligns with previous empirical studies such as Ruan and Zhang (2016), Said et al. (2024), Aouadi et al. (2013), Vlastakis and Markellos (2012), Andrei and Hasler (2015), and Ouadghiri et al. (2022). The rationale behind this positive relationship lies in the dynamics of investor attention and its impact on information dissemination. When investor attention increases for a particular asset class, it tends to attract more media coverage and discussions on financial platforms. Consequently, there is a greater influx of news and information related to that asset class. As investors react to this fresh information by adjusting

their positions either buying or selling the increased trading activity may lead to heightened volatility and amplified price swings in the market. Thus, the positive correlation between investor attention and volatility suggests that fluctuations in attention levels can influence market dynamics and contribute to increased market volatility. Moreover, behavioral biases, such as overreaction and under-reaction to news and events, play a significant role in shaping investor attention levels. When investors become more attentive to a specific asset class, they may exhibit tendencies towards overreaction, where they amplify the significance of news and events, leading to exaggerated price movements and increased volatility. Conversely, under-reaction may occur when investors fail to adequately adjust their perceptions and trading behaviors in response to new information, causing delayed or muted market reactions. Moreover, heightened investor attention may also lead to increased momentum trading strategies, where investors capitalize on short-term price movements driven by the collective actions of other market participants paying attention to the same assets. This momentum trading behavior can further amplify volatility in the market. Therefore, the acceptance of hypothesis H2 (b) in the Asian, American, and European economies underscores the importance of investor attention as a key driver of market volatility, influenced by both information dissemination dynamics and behavioral biases. However, the beta coefficient of the combined effect shows a significant negative value (p-value= 0.000 and ß= -0.034.

The results from Table 4.8 provide valuable insights into the relationships between market microstructure factors, such as market liquidity (MLI) and investor attention (IA), with volatility in Asian, European, and American emerging economies. The insignificant J-statistic (Sargan-test) p-values are (p-values=0.1877 in Asia, p-values=0.0815 in Europe, p-values=0.1076 in America and p-values=0.2177 in Combined Effect), show the acceptance of the null hypothesis H_0 i.e. validation of the over-identifying restrictions across all three regions and in combination. The issue of autocorrelation is addressed at AR (1) with a significant value (p-value=0.000 in Asia; p-value=0.000 in Europe, p-value=0.000 in America, and p-value=0.000 in combination). Moreover, the problem of serial autocorrelation was also analyzed at lag level 2 AR (2), reflecting insignificant p-values in all three economies and combinations (p-value=0.0875 in Asia; p-value=0.2156 in Europe,

p-value=0.075 in America, and p-value=0.5184 in combination). This suggests that the models effectively accounted for serial correlation in the data, enhancing the reliability of the results. Furthermore, the inclusion of control variables such as inflation, GDP, FDI, and at the country level bolstered the models' explanatory power. The significant p-values (p-value 0.05) of these control variables underscore their importance in influencing volatility within the selected economies.

Moreover, the p-values of MLI and IA being less than 0.05 demonstrate the significance of these market microstructure factors in influencing volatility. This indicates that variations in market liquidity and investor attention have a meaningful impact on the level of volatility observed in the financial markets of the economies analyzed. Overall, the findings of this study empirically make a major contribution in market microstructure by highlighting the importance of considering market microstructure factors in understanding and predicting volatility dynamics in emerging economies.

TABLE 4.9: Impact of Moderator Economic Policy Uncertainty on the relationship of Market Micro-structure Factors with Stock Market Return

Variables	**Asian Emerging Economies**	**American Emerging Economies**	**Combined Economies**
	Coefficients	Coefficients	Coefficients
	P>[z]	P>[z]	P>[z]
Return (-1)	-0.067	-0.16	0.363
	0.000**	0.000**	0.000**
MLI	0.04	-0.02	-0.1056
	0.000**	0.000**	0.000**
IA	-0.065	0.057	-0.06
	0.000**	0.000**	0.000**
AI	0.28	0.53	0.89
	0.000**	0.000**	0.000**
EPU	-0.06	-0.021	0.04
	0.000**	0.000**	0.000**
MLI*EPU	-0.08	-0.036	-0.22
	0.000**	0.000**	0.000**
IA* EPU	0.015	0.03	0.02
	0.000**	0.000**	0.000**

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Variables	**Asian Emerging Economies**	**American Emerging Economies**	**Combined Economies**
	Coefficients	Coefficients	Coefficients
	P>[z]	P>[z]	P>[z]
AI*EPU	-0.05	0.062	-0.17
	0.000**	0.000**	0.000**
INF	0.05	-0.009	-0.001
	0.000**	0.000**	0.000**
GDP	0.039	0.51	0.24
	0.000**	0.000**	0.000**
FDI	-0.02	0.05	Nil
	0.000**	0.000**	
Size	0.17	0.2	Nil
	0.000**	0.000**	
Constant	0.052	0.073	0.24
	0.000**	0.000**	0.000**
A(1)	0.000**	0.000**	0.000**
A(2)	0.4651	0.2321	0.1609
Sargan Test	Chi2= 203	Chi2= 203	Chi2=203
P-value	0.1265	0.1921	0.2118
No of Instruments	194	186	196

*Note: Return(-1)=lag value of return ,MLI=Market liquidity Index, IA=Investor Attention, AI= Asymmetric Information, INF=inflation, GDP=Gross Domestic Product, FDI=Foreign direct Investment, Size, EPU=Economic Policy Uncertainty, MLI*EPU=(Market liquidity Index* Economic Policy Uncertainty), IA*EPU=(Investor Attention * Economic Policy Uncertainty), AI*EPU=(Asymmetric Information * Economic Policy Uncertainty)* $**P < 0.01$, $** P < 0.05$, $*P < 0.1$ *Parenthesis= (P-value, significance)*

The findings of Table 4.9 demonstrated how microstructure factors (market liquidity, investor attention, and asymmetric information) impact market returns through the moderating role of Economic policy uncertainty in Asian, and American emerging economies and in combined effect. In Table 4.9 the results of eq 3.6.3 are presented by running the system GMM model. The outcome of the interaction term MLI*EPU's coefficient is negative and significant at 5% (ß=-0.08 and p= 0.000) in Asian emerging economies. This negative interaction term weakens the positive association between liquidity and thus acceptance of the H3 (a) hypothesis in this region. There is a shred of clear evidence that EPU as a moderator in Asian economies weakens

the positive relationship between liquidity and return. This suggests that Asian emerging markets are somewhat thin, so during periods of heightened uncertainty, often triggered by sudden shifts in economic policies, the stock market tends to undergo decreased liquidity and subsequently decreased return as investors either shift their investment to secured instruments or halt their investment decision being risk averse Gulko (2002). Moreover, it is also proved that EPU hinges on the stock market activity i.e. liquidity, volatility, and return (Dash et al., 2019). However, in the American economy, the interaction term MLI*EPU is also negative and significant (ß= -0.036 and p= 0.000) which shows that it weakens the relationship between liquidity and return but negative relation between the two (ß= -0.02 and p= 0.000).In addition, the interaction term MLI*EPU is also negative and significant (ß=-0.22 and p= 0.000) in combined effect, this reflects that it weakens the relationship between liquidity and return but the negative relation between the two (ß= -0.1056 and p= 0.000) which is not hypothesized. The negative association between liquidity and return demonstrates investors in the American economy value liquidity and are alacritous to accept lower returns on highly liquid investments. Moreover, the increase in EPU triggered a flight to quality, meaning that investors prefer to increase their investment in more liquid stocks, which ultimately increases the prices of highly liquid stocks and causes a reduction in their returns. So, it can be said that hypothesis H3 (a) is fully accepted in the region of the Asian economy and rejected in the American and combined effect. Further from cross-sectional analysis perspective the result of this hypothesis is region-specific and heterogenic and contributes empirically in AMH and prospect theory.

The outcome of the second interaction term IA*EPU's coefficient is positive and significant at a 5% level (ß=0.015 and p= 0.000 in Asia; ß=0.03 and p= 0.000 in America; ß=0.03 and p= 0.000 in combined effect). Thus H3(b) is rejected in all three regions and thus depict homogeneity with respect to cross-regional wise. This positive interaction term amplified a relationship between investor attention and return only in the American economy as the relation of return with investor attention is positive and significant (ß=0.05 and p= 0.000 in America), whereas in Asia and combined effect the correlation between investor attention and return is negative (ß=0.067 and p= 0.000 in Asia, ß=0.06 and p= 0.000 in combined). The

reason could be that whenever EPU is announced, the investor of Latin America is prompted to give more attention and invest in a high-return stock, instead of halting their investment. Moreover, investor attention's elevated, whether because of important economic events, governmental announcements, or media coverage, frequently indicates heightened interest or optimism in particular sector. More purchasing pressure, price momentum, and eventually stronger short-term returns can result from increased attention in Latin American markets, which are frequently influenced by sentiments. The negative relation between investor attention and return is due to market inefficiency, speculative behavioral in Asian economy.

Table 4.9 also showcased the result of the third interaction term AI*EPU's. The coefficient value is negative and significant (ß=-0.015 and p= 0.000 in Asia; ß=-0.17 and p=0.000 in combined effect) at a 5% level. The coefficient value presents that EPU as a moderator weakened the positive relationship of asymmetric with return in Asian and combined, whereas in the American region interaction term, AI*EPU is significant and positive (ß=0.062 and p= 0.000) at 5%. Moreover, the GMM result posits a positive relationship between asymmetric information and returns as the beta coefficient is significant (ß=0.28 and p-value= 0.000 in Asia; ß=0.53 and p-value= 0.000 in the American economy; ß=0.89 and p=0.000 in combined effect). Therefore, hypothesis H3(c) is rejected in all three regions due to the positive coefficient between asymmetric information and return, so cross-sectional analysis depicts uniformity across all three regions. The rationale of positive correlation between asymmetric information and return could be that asymmetric information may occasionally be favorably connected with returns, especially in emerging economies. This can occur when more knowledgeable institutions or insiders take advantage of confidential information to generate disproportionate profits, while less knowledgeable participants encounter obstacles to successful competition. There is a positive correlation between information asymmetry and returns in this context, as asymmetric information seems to favor the knowledgeable. Moreover, by reducing the value of informational advantages, Economic Policy Uncertainty (EPU) in emerging economies reduces the positive relationship between asymmetric information and stock returns. Firm-specific insights have less of an effect on returns during high EPU periods since investor attention is focused on macro-level issues.

Table 4.9 also shows that the issue of serial autocorrelation is addressed at AR (1) and AR(2) as its p-value is significant (p-value 0.000 in Asia, p-value 0.000 in America, and, p-value 0.000 in combined) at AR (1) and insignificant at AR(2) as p-value= 0.4651 in Asia, p-value= 0.2312 in America and p-value= 0.1609 in combined. Moreover, the J-statistic's (Sargan-test) insignificant values are (p-value =0.1265 in Asia, p-value =0.1921 in America, and p-value =0.2118 in combined effect), showing the validation of the over-identifying restrictions and H_0 the null hypothesis is accepted. Moreover, four control variables i.e. inflation, GDP, FDI, and size have been added to each economy in the model to test the moderating role of EPU in the relationship of microstructure factors (market liquidity, investor attention, and asymmetric information) with the market return. The significant p-values (p-value 0.05) of these control variables underscore their importance in influencing return and EPU within the selected economies. By highlighting the role that market microstructure variables play in determining returns, the study can make a major contribution to the growth of the financial markets of developing nations. It may result in initiating increased investor awareness, reducing information asymmetry, and increasing liquidity. Moreover, from a market-efficient perspective, microstructure factors such as asymmetric information and liquidity are essential. Further emerging economies' stock markets are considered to be have feeble financial infrastructure and laxer regulatory frameworks, that makes them less efficient. This empirical analysis sheds light on how EPU as a moderator influences these variables and offers suggestions for how increasing openness and decreasing uncertainty can boost market efficiency and consequently increased local and foreign investment may result in promoting economic expansion.

Table 4.10: Impact of Moderator Economic Policy Uncertainty on the relationship of Market Microstructure Factors with Stock Market Volatility

Variables	**Asian Emerging Economies**	**American Emerging Economies**	**Combined Economies**
	Coefficients P>[z]	Coefficients P>[z]	Coefficients P>[z]
Volatility (-1)	0.109 0.000**	-0.02 0.000**	0.09 0.000**
MLI	-0.22	-0.02	-0.1148

Continued on next page

Variables	**Asian Emerging Economies**	**American Emerging Economies**	**Combined Economies**
	Coefficients	Coefficients	Coefficients
	P>[z]	P>[z]	P>[z]
	0.000**	0.000**	0.000**
IA	-0.038	0.05	0.025
	0.000**	0.000**	0.000**
EPU	-0.196	-0.015	-0.072
	0.000**	0.000**	0.000**
MLI*EPU	0.0524	-0.036	0.03
	0.000**	0.000**	0.000**
IA* EPU	-0.09	0.03	0.04
	0.000**	0.000**	0.000**
INF	0.054	0.05	Nil
	0.000**	0.000**	
GDP	0.1	0.16	0.9
	0.000**	0.000**	0.000**
FDI	-0.02	0.1	Nil
	0.000**	0.000**	
Size	-0.02	-0.07	Nil
	0.000**	0.000**	
Constant	0.58	0.1038	0.32
	0.000**	0.000**	0.000**
A(1)	0.000**	0.000**	0.000**
A(2)	0.417	0.2718	0.4003
Sargan Test	Chi2= 203	Chi2= 203	Chi2=203
P-value	0.0813	0.1003	0.2317
No of Instruments	181	186	198

*Note: Volatility (-1) lag value of volatility, MLI=Market liquidity Index, IA=Investor Attention, INF=inflation, GDP=Gross Domestic Product, FDI-foreign direct Investment, Size, EPU=Economic Policy Uncertainty, MLI*EPU= (Market liquidity Index* Economic Policy Uncertainty), IA*EPU=(Investor Attention * Economic Policy Uncertainty),* $*P < 0.01$, $** P < 0.05$, $*P < 0.1$ Parenthesis= (P-value, significance).*

The findings of Table 4.10 demonstrated how market liquidity and investor attention impact volatility through the moderating role of Economic policy uncertainty in Asian and American emerging economies. In Table 4.10 the results of eq. 3.6.3 are presented by running the system GMM model. The outcome of the product MLI*EPU coefficient is positive (ß=0.0524 and p-value = 0.000 in Asia, and in combination ß=0.03 and p-value = 0.000) at the level of 5%. This positive interaction term amplifies the identified negative association between liquidity and

volatility and acceptance of the H4 (a) hypothesis. This is evident from the result that EPU in Asian economies heightens the negative relationship between liquidity and volatility. This suggests that in efficient markets, the announcement of any economic policy, or sudden changes in economic policies, impact the stock market activities, i.e. liquidity tends to undergo a decreasing trend or show a bearish trend, and subsequently increased volatility as high volatility is associated with high EPU during a bearish trend (Paule-Vianez et al., 2020). Admittedly, the EPU being a moderator significantly affects the relationship of financial variables (Mupondo, 2022). The empirical results of this study are consistent with the previous work of Kundu and Paul (2022), Choi and Munro (2022), and Lu and Wang (2023). Further, this study provides empirical evidence that Asian emerging stock markets, under the condition of EPU, become more volatile followed by low liquidity, and supports the theoretical models of Ozsoylev and Werner (2011); Routledge and Zin (2009), and empirical findings of Choi and Munro (2022) and Lu and Wang (2023). This further proves that Asian emerging economies are not well efficient in assimilating such information into prices and financial and economic shocks play a vital role in affecting stock market efficiency. The financial variables of the Asian region are also responsive to changes in aggregate uncertainty. This empirical research on the pivotal function of liquidity and the influence of EPU on the volatility guides for constructing stronger financial markets in developing nations. To lessen the effect of EPU on volatility, policymakers and market regulators should concentrate on measures that deepen and strengthen the market. Examples of these include enhancing trading platforms, boosting market participation, and minimizing information asymmetry. However, the interaction term MLI*EPU is negative and significant (ß=-0.037 and p= 0.000) at a 5% level in the American economy. The rationale of weakening the negative correlation between liquidity and volatility is the behavior of actions of foreign investors, who are important players in the capital markets of Latin America. Their susceptibility to local risks is increased by high EPU, which frequently causes capital flight to occur quickly at the first indication of instability. These outflows cause abrupt spikes in volatility, even when domestic liquidity seems to be robust. In these situations, liquidity does not lessen volatility; rather, it either coexists with or even encourages it. Therefore,

by undermining liquidity's ability to act as a stabilizing force, EPU moderates the liquidity volatility link and, in the end, lessens the negative correlation between the two. Thus, hypothesis H4 (a) is accepted in the Asian region and combination but rejected in the American region.

The outcome of the second interaction term IA*EPU's coefficient is also positive and significant (ß=0.03 and p-value =0.000 in America, and ß=0.04 and p-value =0.000 in combination) at a level of 5%. By running GMM this positive interaction term amplifies the identified positive association between investor attention and volatility, whereas the negative association identified between investor attention and volatility in the Asian economy (ß = -0.05, p-value = 0.000). Thus, hypothesis H4 (b) is accepted in America and combination, whereas rejected in Asia. Moreover, this study proves that institutional and individual investors in America and overall emerging economies pay attention and are sensitive to the news and developments related to economic policy. High economic policy accentuates market volatility as the stock market environment becomes unpredictable. In such uncertain situations, the investors increase trading activity and divert towards panic selling or overacting to news events, causing large fluctuations in asset pricing. Further, the findings of this study are consistent with the result of Xiao and Wang (2021). The empirical result of this model aligns with the AMH theory (Adaptive market hypothesis). Moreover, this research contributes to the understanding of the precise causes of market volatility in developing nations. The research presents a deeper view of volatility dynamics by examining the links between liquidity, investor attention, and volatility, as well as how these relationships are regulated by EPU. This is especially helpful in emerging economies, where economic instability and regulatory uncertainty can lead to higher and more unpredictable volatility. This study emphasizes the necessity of policy measures that can stabilize stock markets by showcasing the moderating function of EPU on the effects of market microstructure issues. This might involve measures to improve market liquidity and lessen uncertainty surrounding economic policy, which would draw in more foreign investors to these markets.

Table 4.10 tests the impact of Market liquidity on volatility with the moderating role of EPU, and the impact of Investor attention on volatility with the moderating role

of EPU, the J-statistic (Sargan-test) value is insignificant (p-value= 0.08813 in Asia, p-value =0.1003 in America and, p-value =0.2317 in combination), showing the validation of the over-identifying restrictions. However, the serial autocorrelation is addressed at AR (1) (p-value= 0.0012 in Asia, p-value=0.000 in America and p-value=0.000 in combination), and AR (2) as the p-value is insignificant (p-value= 0.4170 in Asia, p-value=0.2718 in America and p-value=0.4003 in combination). Moreover, four control variables i.e. inflation, GDP, FDI, and size have been added at the country level, to the model to test the moderating role of EPU between the relationship of Market liquidity and volatility and to test the moderating role of EPU between the relationship of investor attention and volatility and their p-values are less than 5% indicate the influence of control variables on the model.

TABLE 4.11: Impact of Moderator Interest Rate on the relationship of Market Microstructure Factors with Stock Market Return

Variables	**Asian Emerging Economies**	**American Emerging Economies**	**Combined Economies**
	Coefficients	Coefficients	Coefficients
	P>[z]	P>[z]	P>[z]
Return (-1)	0.13	0.189	0.378
	0.000**	0.000**	0.000**
MLI	-0.026	-0.027	0.09
	0.000**	0.000**	0.000**
AI	-0.57	0.24	-0.18
	0.000**	0.000**	0.000**
IR	-0.73	0.7	-0.71
	0.000**	0.000**	0.000**
ML*IR	0.2	0.41	-0.07
	0.000**	0.000**	0.000**
AI*IR	-0.47	-0.4	0.48
	0.000**	0.000**	0.000**
INF	-0.01	-0.008	-0.1
	0.000**	0.000**	0.000**
GDP	-0.027	0.1	-0.09
	0.000**	0.000**	0.000**
FDI	0.0237	0.03	Nil

Continued on next page

Variables	**Asian Emerging Economies**	**American Emerging Economies**	**Combined Economies**
	Coefficients P>[z]	Coefficients P>[z]	Coefficients P>[z]
	0.000**	0.000**	
Size	Nil	Nil	-0.1 0.000**
Constant	0.133 0.000**	0.082 0.000**	0.26 0.000**
A(1)	0.000**	0.000**	0.000**
A(2)	0.204	0.090	0.3249
Sargan Test	Chi2= 203	Chi2=203	Chi2=203
P-value	0.2018	0.098	0.138
No. of Instruments	198	187	191

*Note: Return (-1) lag value of return, MLI=Market liquidity Index, AI=Asymmetric Information, IR=Interest-rate,INF=inflation, GDP=Gross Domestic Product, FDI-foreign direct Investment, Size, EPU=Economic Policy Uncertainty, MLI*EPU= (Market liquidity Index* Economic Policy Uncertainty), AI*EPU=(Asymmetric Information* Economic Policy Uncertainty),∗ ∗P < 0.01, ∗ ∗ P < 0.05, ∗P < 0.1 Parenthesis= (P-value, significance).*

The findings of Table 4.11 demonstrated the impact of market liquidity and asymmetric information on return through the moderating role of interest rates in Asian and American emerging economies and the combined effect by running the system GMM model on the equation 3.6.6 The outcome of the product MLI*IR coefficient is negative and significant (ß= -0.07 in the combined effect and p-value=0.000) at a level of 5%. This negative interaction term weakens the positive association between market liquidity and returns and thus hypothesis H5 (a) is accepted in combined effect. This shows that whenever interest rate increases the investors of these whole economies shift their investment to the bond markets causing a liquidity crunch in the stock market and lowering the returns. The rationale of shifting investment strategy is to reduce inventory costs that arise due to increases in interest rates (Hasbrouck, 2004). However, the interaction term MLI*IR coefficient value is positive and significant (ß= 0.41, p-value = 0.000 in America, ß= 0.20 p-value = 0.000 in Asia) and therefore hypothesis H5 (a) is rejected in America

and Asia. This positive coefficient value signifies that an increase in interest rate does not cause a liquidity crunch in the stock market and lower market returns in this region as an investor may have a risk-taking appetite, and thus not be willing to shift their investment strategy.

The outcome of the second interaction term AI*IR's coefficient is positive and significant (ß=0.48 and p-value=0.000 in combined effect) at a 5% confidence level. This positive interaction term amplifies the negatively identified association between asymmetric information and returns in the combined effect. This reflects that overall emerging economies in the world, the informed investors contained superior information related to macroeconomic factors such as interest rate, and whenever interest rates increase, they take the first-mover advantage and divert their investment towards other asset classes by selling shares at a desirable rate. As a result, the hefty movements in equity prices will instigate liquidity constraints in the stock market and make it difficult for uninformed investors to trade and access capital, subsequently lower overall market returns. Further it is a possibility that in emerging economies information asymmetry is high, monetary signals are interpreted or comprehend inconsistently across investors, and this disparity of information during high interest-rate may reduce return. Therefore, it can be said that higher interest rates can reduce market efficiency and further amplify the negative relation of asymmetric information with market returns. The empirical findings of this study are consistent with the findings of (Bauve and Cave, 2008). However, the term AI*IR's coefficient is negative and significant at (ß= -0.45 and p-value=0.00 in Asia, and ß=-0.40 and p-value=0.000 in America) at the confidence level of 5%. The coefficient values prove that hypothesis H5 (b) is accepted in combined effect, whereas in America and Asia, it is rejected. The J-statistics are insignificant (Sargan-test), (p=0.2018 in Asia,p= 0.098 in America and p=0.1380 in combined effect) which indicates that instrumental over-identifying restrictions are valid (Asimakopoulos and Fernandes, 2019) in all three economies. Moreover, autocorrelation at AR (1) and AR (2) order has been tested in Asia, America, and the combined effect. It is resolved at AR (1) with a p-value less than 0.05 in both economies (p-value=0.204 in Asia,p-value=0.090 in America, and p-value=0.3249 in the combined effect). The four control variables i.e. inflation, GDP, FDI, and

size have been added at the country level, to the model to test the moderating role of interest-rate between the relationship of Market liquidity and return and to test the moderating role of interest-rate between the relationship of asymmetric information and market return, as their p-values are less than 5% which indicate the influence of control variables on the model.

The above-mentioned model demonstrates how the relationship between returns and market microstructure characteristics is moderated by interest rates. It has been proven empirically that in emerging economies, low liquidity and high asymmetric information reduce return, especially when the interest rate is high. So, this model provides new insight that monetary policy as a moderator also influences market behavior in emerging nations and may impact market efficiency. The empirical result of this model also makes a major contribution in the Adaptive Markets Hypothesis (AMH) and the working of Santosa et al. (2011) who advocate for the incorporation of macroeconomic indicators into the AMH framework to better assess market efficiency.

TABLE 4.12: Impact of Moderator Exchange-Rate on the relationship of Market Micro-structure Factor with Stock Market Return

Variables	**Asian Emerging Economies**	**European Emerging Economies**	**American Emerging Economies**	**Combined Economies**
	Coefficients P>[z]	Coefficients P>[z]	Coefficients P>[z]	Coefficients P>[z]
Return (-1)	0.02	-0.044	-0.16	-0.04
	0.000**	0.000**	0.000**	0.000**
IA	0.11	-0.09	0.07	-0.05
	0.000**	0.000**	0.000**	0.000**
ER	0.154	-0.4	-0.12	-0.073
	0.000**	0.000**	0.000**	0.000**
IA*ER	-0.023	0.112	0.03	-0.021
	0.000**	0.000**	0.000**	0.000**
INF	-0.02	-0.05	-0.04	Nil
	0.000**	0.000**	0.000**	
GDP	-0.04	0.51	0.32	Nil
	0.000**	0.000**	0.000**	

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Variables	**Asian Emerging Economies**	**European Emerging Economies**	**American Emerging Economies**	**Combined Economies**
	Coefficients P>[z]	Coefficients P>[z]	Coefficients P>[z]	Coefficients P>[z]
FDI	0.012	0.01	0.018	0.024
	0.000**	0.000**	0.000**	0.000**
Size	Nil	0.02	-0.025	-0.017
		0.000**	0.000**	0.000**
Constant	0.048	0.05	-0.2	-0.04
	0.000**	0.000**	0.000**	0.000**
A(1)	0.000**	0.000**	0.000**	0.000**
A(2)	0.3681	0.5372	0.085	0.1901
Sargan Test	Chi2= 203	Chi2= 203	Chi2=203	Chi2=203
P-value	0.1168	0.1626	0.1066	0.24
No. of Instruments	189	195	187	198

*Note: Return (-1)=lag value of return ,IA=Investor Attention, ER= exchange-rate, INF=inflation, GDP=Gross Domestic, FDI=foreign direct investment, Size, ER= exchange-rate, IA*ER=(Investor Attention* exchange-rate), $*P < 0.01$, $** P < 0.05$, $*P < 0.1$ Parenthesis= (P-value, significance)*

The findings of Table 4.12 present the moderating impact of the exchange rate on the relationship between investor attention (IA) and market return. The system GMM run on equation 3.6.7 The coefficient value of the interaction term IA* ER is negative and significant (ß= -0.023 and p-value of 0.000 in Asia, ß= -0.021 and p-value of 0.000 in the combined effect) showing that the exchange rate as moderator weakens the positive relationship between return and investor attention in the countries of Asia and whole emerging regions significantly. This coefficient value shows that local and foreign investors in these economies are concerned and pay close attention to the news and policy related to the weakening and strengthening of the home currency. When the home currency weakens the investors start selling the shares abruptly, withdrawing capital from the stock market and the country respectively, lowering stock market returns, and dampening future investment activity in a home country. Furthermore, the product of the interaction term IA*ER is positive and significant in America (ß=0.03 and p-value of 0.000) which

signifies that countries of this economy are situated near the borders of America have some strategic advantages, such as (1) their stock markets returns are less adversely affected by the appreciation of U.S.A dollar against their home currency (2), it might possible government intervention between American emerging and U.S.A facilitate in keeping the currency stable against the dollar. This could be a reason the exchange rate strengthens the positive relationship between investor attention and return. However, the product of the interaction term IA*ER is also positive and significant in Europe (ß=0.11 and p-value of 0.000 in Europe), Hence H6 is accepted in Asia and all emerging economies of the world, whereas hypothesis H6 is rejected in America and Europe. Moreover, the serial auto-correlation issue is resolved at AR (1), as its significant value is less than 0.05, (p-value= 0.000 in Asia, p-value= 0.000 in Europe, and p-value= 0.000 in America, and p-value =0.000 in the combined effect). In addition to that, the serial auto-correlation issue is resolved at AR (2), as the insignificant value is greater than 0.05 (p-value= 0.3681 in Asia, p-value= 0.5372 in Europe, and p-value= 0.085 in America, and p-value =0.1901 in the combined effect). The insignificant value of the J-test (Sargan-test) (p=value 0.1168 in Asia, p=value 0.1626 in Europe, p=value 0.1066 in America, and p=value 0.240 in the combination), reflects that the validation of the over-identified instrument is valid. The four control variables, i.e. inflation, GDP, FDI, and size have been added at the country level, to the model to test the moderating role of interest rate between the relationship of investor attention and return, as their p-values are less than 5% which indicate the influence of control variables on the model. By incorporating the exchange rate as a moderator, this model can offer a more nuanced view of how external macroeconomic factors affect the relationship between investor attention and return. As Lo (2004) argued in AMH efficiency could not be acquired in isolation, macroeconomic factors, and behavioral factors play a predominant role in this regard. So, this study contributes to the existing literature on AMH. In addition, this model's result also makes a major contribution to behavioral finance by showing how macroeconomic factors affect investor attention. It implies that risk-averse investors are greatly concerned that exchange rate fluctuations can impact their decision-making processes and subsequently influence market returns. These theories are consistent with the idea

that investor psychology is an important component of financial markets. This study also provides a comprehensive perspective on how external and internal market dynamics influence investor attention. Further, the Cross-regional analysis also determines that the moderating role of exchange-rate are region-specific and also uniform across economies. Changes in exchange rates amplify the positive correlation between stock market performance and investor interest in emerging and Asian nations. An exchange rate that is favorable or stable boosts investor confidence, draws in foreign capital, and supports macroeconomic narratives, all of which increase the return-generating impact of increased attention.

TABLE 4.13: IImpact of Moderator Interest Rate on the relationship of Market Micro-structure Factors with Stock Market Volatility

Variables	**Asian Emerging Economies**	**American Emerging Economies**	**Combined Economies**
	Coefficients P>[z]	Coefficients P>[z]	Coefficients P>[z]
Volatility (-1)	0.44 0.000**	-0.39 0.000**	-0.066 0.000**
MLI	-0.08 0.000**	-0.1 0.000**	-0.08 0.000**
IR	0.58 0.000**	-0.76 0.000**	-0.33 0.000**
ML*IR	-0.11 0.000**	0.47 0.000**	-0.28 0.000**
INF	Nil	-0.03 0.000**	-0.1 0.000**
GDP	-0.05 0.000**	0.39 0	0.12 0.000**
FDI	Nil	0.02 0.000**	-0.012 0.000**
Size	Nil	-0.067 0.000**	0.05 0.000**
Constant	0.046 0.000**	0.082 0.000**	0.26 0.000**
A(1)	0.000**	0.000**	0.000**

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Variables	**Asian Emerging Economies**	**American Emerging Economies**	**Combined Economies**
	Coefficients P>[z]	Coefficients P>[z]	Coefficients P>[z]
A(2)	0.0731	0.067	0.0892
Sargan Test	Chi2= 203	Chi2=203	Chi2=203
P-value	0.0675	0.1043	0.1296
No. of Instruments	181	186	190

*Note: Volatility (-1) =lag value of volatility, IA=Investor Attention, INF=inflation, GDP=Gross Domestic, IR= interest-rate, FDI=foreign direct investment, Size, IA*ER=(Investor Attention * exchange-rate),* $*P < 0.01$, $** P < 0.05$, $*P < 0.1$ *Parenthesis = (P-value, significance)*

The findings of Table 4.13 illustrate how the moderator (interest rate) moderates the relationship of market liquidity with volatility. The system GMM runs on equation 3.6.6 The outcome of the interaction term MLI* IR beta coefficient value is positive and significant only in America (ß=0.47 with a p-value of 0.000 in America). The positive interaction term shows that in America, the interest rate strengthens the negative relation of the market liquidity with volatility, and therefore hypothesis H7 is accepted in the American region. The rationale behind this relationship is that when interest increases in an economy, an incredible shift occurs from the stock to bond, which will not only amplify liquidity constraints but also instigate volatility as investors may be more concerned about changes in the cost of capital. Moreover, the American emerging economies are subject to great political turmoil, which further causes economic and financial instability. However, the negative coefficient (ß=-0.11 a p-value of 0.000 in Asia, and ß=-0.28 with p-value of 0.000 in the combined effect) presents that hypothesis H7 is rejected in Asian and all emerging regions. The reasons could be that countries of this region are reluctant or not interested in bond investment when interest rates increase. In addition, the insignificant value of the J-test (Sargan-test), (p-value= 0.0675 in Asia,p-value=0.1043 in America, and p-value=0.1296 in combined effect) which reflects the validation of the over-identifying restrictions. Further, the issue of serial auto-correlation is resolved at AR(1) order having a significant value of less than

0.05 in all three economies and the combined effect and also resolved at lag level 2 i.e. AR (2), AR (2) insignificant values are as follows (p-value= 0.0731 in Asia, p-value=0.067 in America, and p-value=0.0892 in combined effect). The empirical result of this analysis demonstrates that in American economy interest rates play a significant and influential moderator role in impacting the stock market conditions in terms of volatility in. The result reflects that changes in interest rates amplify the established negative relationship between liquidity and volatility. Further, the Cross-regional analysis also determines that the moderating role of interest rates are region-specific and not uniform across different contexts. The countries of these regions might face high interest rates which makes investors averse, as they tend to do investment in more liquid assets.Further, it is empirically proven that in American region the negative association between liquidity and volatility is strengthened when interest rates rise because liquidity becomes more crucial for maintaining price stability.

TABLE 4.14: Impact of Moderator Exchange rate on the relationship of Market Micro-structure Factor with Stock Market Volatility

Variables	**Asian Emerging Economies**	**European Emerging Economies**	**American Emerging Economies**	**Combined Economies**
	Coefficients P>[z]	Coefficients P>[z]	Coefficients P>[z]	Coefficients P>[z]
Volatility (-1)	0.11	0.1	-0.18	-0.0351
	0.000**	0.000**	0.000**	0.000**
IA	0.19	-0.02	0.087	-0.14
	0.000**	0.000**	0.000**	0.000**
ER	0.034	0.46	0.22	-0.2
	0.000**	0.000**	0.000**	0.000**
IA*ER	-0.17	0.13	0.05	-0.056
	0.000**	0.000**	0.000**	0.000**
INF	-0.1	0.1	-0.04	Nil
	0.000**	0.000**	0.000**	
GDP	-0.02	0.49	0.106	0.81
	0.000**	0.000**	0.000**	0.000**
FDI	0.015	Nil	-0.03	0.081

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Variables	**Asian Emerging Economies**	**European Emerging Economies**	**American Emerging Economies**	**Combined Economies**
	Coefficients	Coefficients	Coefficients	Coefficients
	P>[z]	P>[z]	P>[z]	P>[z]
	0.000**		0.000**	0.000**
Size	0.05	Nil	0.045	Nil
	0.000**		0.000**	
Constant	0.048	-0.16	-0.19	0.02
	0.000**	0.000**	0.000**	0.000**
A(1)	0.000**	0.000**	0.000**	0.000**
A(2)	0.4348	0.6673	0.1118	0.2131
Sargan Test	Chi2= 203	Chi2= 203	Chi2=203	Chi2=203
P-value	0.1093	0.1519	0.1918	0.1743
No. of Instruments	188	189	186	196

*Note: Volatility (-1) =lag value of volatility, IA=Investor Attention, INF=inflation, GDP=Gross Domestic, ER= exchange-rate, FDI=foreign direct investment, Size, IA*ER=(Investor Attention * exchange-rate),* $*P < 0.01$, $** P < 0.05$, $*P < 0.1$ *Parenthesis= (P-value, significance)*

The findings of Table 4.14 depict the moderating impact of the exchange rate on the relationship between volatility and investor attention. The system run on equation 3.6.7The coefficient value of the interaction term IA*ER is positive and significant (ß= 0.05, p-value=0.000 in America, ß= 0.13, a p-value of 0.000 in Europe) reflecting that the exchange rate strengthens the identified positive relationship between volatility and investor attention only in the American economy but not in Europe, as in Europe the regression output depict negative correlation between investor attention, which is not hypothesized. This shows that when the home currency depreciates, foreign or domestic investors pull out their investments in the American equities markets, causing abruption in price movements that instigate volatility. However, the interaction term IA*ER is negative and significant (ß=-0.17 and p-value 0.000 in Asia, ß= -0.056, p-value=0.000 the combined effect). Hence, hypothesis H8 is accepted in American region, whereas hypothesis H8 is rejected in Asia, Europe and combined effect. Moreover, the auto-correlation issue is resolved at AR (1), as its significant value is less than 0.05, in all three economies

and in combination, and also resolved at AR (2), as its value is insignificant (p-value=0.4348 in Asia, (p-value=0.6673 in Europe, p-value=0.1118 in America, and p-value=0.2131 in the combined economies). The over-identifying instruments are valid as the J-statistics value is insignificant (Sargan-test) (p-value=0.1093 in Asia, p-value= 0.1519 in Europe, p-value=0.1918 in America, and p-value=0.1743 in the combined economies). To test this model four control variables are employed Inflation, GDP, FDI, and size at a country level and their p-value is less than 0.05. The study adds depth to the area of market microstructure concept by showing how external factors like exchange rates impact the relation of investor attention with volatility. This suggests that exchange rate movements can influence volatility by altering investor attention levels. Moreover, the result of this model suggests that investor behavior, which is often influenced by sentiment and information flow, does not operate in a vacuum. Instead, it is interconnected with global economic conditions, such as fluctuations in exchange rates. Further, the Cross-regional analysis also determines that the moderating role of exchange rate is region-specific and inconsistent. The countries of these regions might have free floating exchange rates, which makes it difficult for international investors to do financial investment and thus impedes financial activity as well as financial development of stock markets.

TABLE 4.15: Impact of Moderators' Interest rate and Economic Policy Uncertainty on the relationship of Market Micro-structure Factor with Stock Market Return

Variables	**Asian Emerging Economies**	**European Emerging Economies**	**American Emerging Economies**	**Combined Economies**
	Coefficients	Coefficients	Coefficients	Coefficients
	P>[z]	P>[z]	P>[z]	P>[z]
Volatility (-1)	0.11	0.1	-0.18	-0.0351
	0.000**	0.000**	0.000**	0.000**
IA	0.19	-0.02	0.087	-0.14
	0.000**	0.000**	0.000**	0.000**
ER	0.034	0.46	0.22	-0.2
	0.000**	0.000**	0.000**	0.000**
IA*ER	-0.17	0.13	0.05	-0.056
	0.000**	0.000**	0.000**	0.000**

Continued on next page

Variables	**Asian Emerging Economies**	**European Emerging Economies**	**American Emerging Economies**	**Combined Economies**
	Coefficients	Coefficients	Coefficients	Coefficients
	P>[z]	P>[z]	P>[z]	P>[z]
INF	-0.1	0.1	-0.04	Nil
	0.000**	0.000**	0.000**	
GDP	-0.02	0.49	0.106	0.81
	0.000**	0.000**	0.000**	0.000**
FDI	0.015	Nil	-0.03	0.081
	0.000**		0.000**	0.000**
Size	0.05	Nil	0.045	Nil
	0.000**		0.000**	
Constant	0.048	-0.16	-0.19	0.02
	0.000**	0.000**	0.000**	0.000**
A(1)	0.000**	0.000**	0.000**	0.000**
A(2)	0.4348	0.6673	0.1118	0.2131
Sargan Test	Chi2= 203	Chi2= 203	Chi2=203	Chi2=203
P-value	0.1093	0.1519	0.1918	0.1743
No. of Instruments	188	189	186	196

*Note: Return (-1)=lag value of return, MLI = Market Liquidity Index, INF=inflation, GDP=Gross Domestic Product, IR= interest rate, EPU=Economic Policy Uncertainty. MLI*IR= (Market Liquidity Index * interest rate), MLI*EPU = (Market Liquidity Index * Economic policy uncertainty), $P < 0.01$, $** P < 0.05$, $*P < 0.1$ Parenthesis= (P-value, significance).*

Table 4.15 illustrates the combined effect of EPU and IR as moderators in weakening the market microstructure factor (Market Liquidity) relationship with market return in Asian and American and combined economies. The system GMM was run on the equation 3.6.8 The outcome of the interaction terms MLI*IR*EPU depicts a negative coefficient and significance value (ß= -0.03 and p-value=0.000 in Asia, ß= -0.20 and p-value= 0.000 in America; ß= -0.33 and p-value=0.000 in combined effect) at a level of 5%. The beta coefficient sign shows that hypothesis H9 is accepted in Asia, the American region, and combined economies. Therefore, it is proven that in emerging economies macro-economic fundamental and regulatory factors weaken the positive relationship between market liquidity and return. The

rationale behind low returns is that an increase in the interest rate and heightened EPU, by interacting together play a foremost role in intensifying market liquidity constraints, simultaneously investment activity declines in the stock markets in Asia and America as well in combined economoy, as domestic and foreign investors become risk-averse to this region. Moreover, interest rates and EPU easily penetrate in the stock market of the American and Asian regio

ns. This analysis also confirmed that EPU and macroeconomic factor (interest rate) are significantly correlated to return as Yesuf and Avcı (2018) suggested and can abrupt the stock market's normal operation individually and collectively. The insignificant value of J-statistics (Sargan-test) (p-value=0.1627 in Asia p-value=0.1537 in America, and p-value= 0.1168 in combined effect) indicates that instrumental over-identifying restrictions are valid and thus H0 is accepted. The issue of autocorrelation is resolved at level AR (1) with a (p-value =0.0125 in Asia, p-value =0.000 in America, and p-value=0.000 in combined effect) and also at level AR(2) (p-value =0.1175 in Asia,p-value=0.077 and p-value=0.1981 in combined impact. Further, to test this model four control variables are employed; Inflation, GDP, FDI, and size at a country level and their p-values are less than 0.05. Further, the p-value of the constant and return's lagged value is also less than 0.05. The study combines macroeconomic theory with micro-level market behavior by examining the effects of interest rates and EPU. The empirical results demonstrate the significant impact of macroeconomic factors (EPU and interest rate) on the market microstructure elements like liquidity and how they relate to returns. This study fills the gap in market microstructure and macroeconomic policy analysis, and this combined moderation method contributes to a more comprehensive knowledge of the dynamics of emerging economies' markets. This study empirically demonstrates that in the stock markets of emerging economies liquidity's impact on returns is not static but is significantly affected by macroeconomic uncertainties as proposed by AMH theory. Cross-regional analysis determined the moderating effects of Economic Policy Uncertainty and interest-rates are uniform across different contexts. These emerging economies, macro-economic and microeconomic conditions are somewhat the same.

TABLE 4.16: Impact of Moderators' Exchange rate and Economic Policy Uncertainty on the relationship of Market Micro-structure Factor with Stock Market Return

Variables	**Asian Emerging Economies**	**American Emerging Economies**	**Combined Economies**
	Coefficients P>[z]	Coefficients P>[z]	Coefficients P>[z]
Return (-1)	-0.02	0.22	0.018
	0.000**	0.000**	0.000**
IA	-0.05	0.11	-0.02
	0.000**	0.000**	0.000**
EPU	0.02	0.2	-0.013
	0.000**	0.000**	0.000**
ER	0.08	-0.04	-0.02
	0.000**	0.000**	0.000**
IA*ER*EPU	-0.156	-0.03	0.07
	0.034**	0.000**	0.000**
INF	0.042	-0.07	Nil
	0.000**	0.000**	
GDP	Nil	0.67	Nil
		0.000**	
FDI	-0.05	-0.014	Nil
	0.000**	0.000**	
Size	0.28	0.15	Nil
	0.000**	0.000**	
Constant	0.4	0.108	0.078
	0.000**	0.000**	0.000**
A(1)	0.000**	0.000**	0.000**
A(2)	0.3701	0.1232	0.087
Sargan Test	Chi2= 203	Chi2= 203	Chi2=203
P-value	0.0857	0.1761	0.1071
No. of Instruments	184	192	189

*Note: Return (-1)=lag value of return ,IA = Investor Attentio,INF=inflation, GDP=Gross Domestic, ER= exchange rate,EPU=Economic Policy Uncertainty. IA*ER=(Investor Attention * exchange-rate), IA*EPU =(Investor Attention * Economic policy uncertainty), $*P < 0.01$, $** P < 0.05$, $*P < 0.1$ Parenthesis= (P-value, significance).*

Table 4.16 illustrates GMM result of equation 3.6.9 that how the moderator's ER and EPU joint effect impacts the relationship between market microstructure factors (investor Attention) and return in American and Asia economies. The interaction terms IA*ER*EPU show a negative coefficient (ß= -0.156 and p-value=0.034 Asia,

ß= -0.03 and p-value=0.000 in America, whereas positive coefficient in ß= 0.07 and p-value=0.000 in combined effect) at a confidence level of 5%. Hence H11 is accepted in the American region. However, In the Asian region and in combined effect hypothesis H11 is rejected as their results postulate that investor attention has a negative relation with return, as a beta coefficient of IA is negative (ß= -0.05 in Asia with p-value=0.000 and ß= -0.02 in combined effect with p-value=0.000) at a confidence level of 5%. The negative coefficient of IA*ER*EPU shows that amplified EPU and adverse fluctuation in the exchange rate can divert investors' attention from stock investment in American emerging countries. Consequently, there is a decreasing correlation between investor attention and returns for specific assets as investor attention gets more widespread and diverted. In addition, Investors may prioritize capital protection over maximizing returns due to increased risk aversion brought on by uncertain economic policies and exchange rate fluctuation. Investors may take a more defensive stance for their investments during times of high uncertainty, concentrating on safe-haven assets or techniques that provide downside protection. It is evident that American investors prioritize stability and risk avoidance over high-return prospects and may be less sensitive to returns due to risk-averse behavior and thus empirically do major contribution in prospect theory. It seems that the distraction of investor attention can lower returns through EPU and exchange rates in the American economy. From theory perspective this study makes major contributions in AMH and thus proves that major reason of inefficiency in the stock market caused by EPU and exchange-rate rate in American region. Empirical result also identifies heterogeneity of investor attention as market microstructure factor across American and Asian region. Further, the Cross-regional analysis also determines that the joint moderating effects of Economic Policy Uncertainty (EPU) and exchange rates are region-specific and not uniform across different contexts. It seems that trading mechanism, transparency of information and liquidity issues of American stock market are relatively underdeveloped and instable, which further instigate by unpredictable macro fundamental and policy related issues.In Asia, investor attention and return have a context-dependent combined effect that varies greatly depending on exchange rate flexibility and central bank independence. The stronger the institutions and more credible central bank policies, will less effect

the stock markets, whereas there are such Asian economies which have weaker macrostructures that why react negatively to investor attention more strongly

The insignificant value of J-statistics (Sargan-test (p=0.0857 in Asia, p=0.1761 in America, and p-value=0.1071 in combined economies) indicates that instrumental over-identifying restrictions are valid. However, the issue of autocorrelation is resolved at levels AR (1) with a (p-value of 0.000 in Asia, a p-value of 0.000 in America, and combination p-value = 0.000 at AR 1), and at AR(2) with a (p-value of 0.3701 in Asia, p-value of 0.1232 in America and combined economies p-value = 0.087. To test this model four control variables are employed i.e. Inflation, GDP, FDI, and size at the country's level. Further, the p-value of lagged value of return and constant is also less than 0.05.

TABLE 4.17: Impact of Moderators' Interest rate and Economic Policy Uncertainty on the relationship of Market Micro-structure Factors with Stock market Volatility

Variables	**Asian Emerging Economies**	**American Emerging Economies**	**Combined Economies**
	Coefficients	Coefficients	Coefficients
	P>[z]	P>[z]	P>[z]
Volatility (-1)	0.15	0.39	0.28
	0.000**	0.000**	0.000**
MLI	-0.12	0.4	-0.3
	0.000**	0.000**	0.000**
IR	-0.377	0.3	0.82
	0.000**	0.000**	0.000**
EPU	-0.073	0.29	-0.2
	0.000**	0.000**	0.000**
MLI*IR*EPU	0.03	-0.3	-0.19
	0.000**	0.000**	0.000**
INF	0.0267	-0.036	Nil
	0.000**	0.000**	
GDP	0.37	0.37	Nil

Continued on next page

Variables	**Asian Emerging Economies**	**American Emerging Economies**	**Combined Economies**
	Coefficients	Coefficients	Coefficients
	P>[z]	P>[z]	P>[z]
	0.000**	0.000**	
FDI	-0.014	-0.02	Nil
	0.000**	0.000**	
Size	0.144	0.2	Nil
	0.000**	0.000**	
Constant	0.17	0.108	0.81
	0.000**	0.000**	0.000**
A(1)	0.000**	0.001**	0.000**
A(2)	0.2736	0.2021	0.2648
Sargan Test	Chi2= 203	Chi2=203	Chi2=203
P-value	0.0745	0.1421	0.1631
No. of Instruments	182	193	195

*Note:Volatility (-1) =lag value of volatility, MLI = Market Liquidity Index, INF=inflation, GDP=Gross Domestic Product, IR= interest rate, EPU=Economic Policy Uncertainty. MLI*IR= (Market Liquidity Index * interest rate), MLI*EPU = (Market Liquidity Index * Economic policy uncertainty), $*P < 0.01$, $** P < 0.05$, $*P < 0.1$ Parenthesis= (P-value, significance).*

Table 4.17 illustrates how the joint effect of EPU and IR as moderators influences the relationship of market microstructure factor (market liquidity) with volatility in Asian and American emerging economies. The system GMM was run on the equation 3.6.8 The outcome of the interaction terms MLI*IR*EPU depicts a positive and significant coefficient (ß= 0.03 with a p-value= 0.05 in Asia, whereas in America the interaction term has a negative significant MLI*IR*EPU effect as coefficient (ß= -0.30 with a p-value 0.000) and in combined economies, the interaction term has a negative significant effect as coefficient ß=- 0.19 with a p-value= 0.000, at a level of 5%. The negative beta coefficient and p-value of the joint interaction effect prove that interest rate and EPU as joint interaction terms strengthen the negative relationship between market liquidity and volatility in the combined emerging

economies. This reflects interest rate and EPU collectively are the potential drivers in intensifying market liquidity constraints and amplifying volatility in America and the combined emerging economy. Further, the joint moderating influence of interest rates and EPU may amplify the market dynamic. It means variations in one element intensify the effects of other changes, increasing the volatility of the market. For instance, a sudden policy change amidst a time of increased interest rates and high EPU can rapidly alter market sentiments and cause significant swings in asset values. Further hypothesis H10 is being accepted in combined effect. However, H10 was rejected in America, as the interaction term of EPU and IR though weakens the positive relation between liquidity and volatility, not the negative one as hypothesized. So, Hypothesis H10 was rejected in America and Asia. As hypothesis H10 is accepted in combined effect, therefore the result of this model is consistent with the findings of Fang et al., (2018); Hsu et al., (2019); and Ghani et al., (2022)) who stated that emerging economies are more volatile than developed economies and the cause of volatility is the interest rate and EPU. The autocorrelation is resolved at level (AR1) with a (p-value=0.000 in Asia, p-value=0.000 in America, and p-value=0.000 in the combined effect) and also at AR (2) with insignificant (p-value=0.2736 in Asia , p-value=0.2021 in America and p-value=0.2648 in the combined effect). To test this model four control variables are employed; Inflation, GDP, FDI, and size at a country level and their p-values are less than 0.05.

In the past, empirical work confined to market microstructure theory, mostly concentrated on the internal dynamics of the market, such as order flow and market depth. However, in this study, external macroeconomic factors such as interest rates and EPU are incorporated as joint moderators in the Microstructure models. This integration provides a comprehensive perspective, recognizing the important role that policy uncertainty and outside economic conditions play in influencing market volatility and liquidity in emerging economies. It emphasizes how macroeconomic circumstances and micro-trade behavior are intertwined. From theory perspective this study makes major contributions in AMH and thus proves that major reason of inefficiency in the stock market caused by EPU and interest-rate rate in emerging nations.

TABLE 4.18: Impact of Moderators' Exchange rate and Economic Policy Uncertainty on the relationship of Market Micro-structure Factors with Stock Market Volatility

Variables	**Asian Emerging Economies**	**American Emerging Economies**	**Combined Economies**
	Coefficients P>[z]	Coefficients P>[z]	Coefficients P>[z]
Volatility (-1)	0.14	0.3	0.07
	0.000**	0.000**	0.000**
IA	0.027	0.02	0.011
	0.000**	0.000**	0.000**
ER	0.05	-0.58	0.028
	0.000**	0.000**	0.000**
EPU	0.03	0.05	-0.08
	0.000**	0.000**	0.000**
IA*ER*EPU	-0.07	-0.05	0.1
	0.000**	0.000**	0.000**
INF	0.17	0.19	Nil
	0.000**	0.000**	
GDP	-0.66	-0.7	0.4
	0.000**	0.000**	0.000**
FDI	0.08	0.068	0.08
	0.000**	0.000**	0.000**
Size	0.017	0.025	0.037
	0.000**	0.000**	0.000**
Constant	-0.074	0.108	0.05
	0.000**	0.000**	0.000**
A(1)	0.000**	0.001**	0.000**
A(2)	0.3417	0.164	0.087
Sargan Test	Chi2= 203	Chi2=203	Chi2=203
P-value	0.087	0.1945	0.1913
No. of Instruments	184	192	196

*Note: volatility (-1) =lag value of volatility, IA = Investor Attention, INF=inflation, GDP=Gross Domestic Product, ER= exchange-rate, EPU=Economic Policy Uncertainty. IA*ER= (Investor Attention * exchange-rate), IA*EPU =(Investor Attention * Economic policy uncertainty), $*P < 0.01$, $** P < 0.05$, $*P < 0.1$ Parenthesis= (P-value, significance).*

Table 4.18 illustrates the GMM result of equation 3.6.9.1 how the joint effect of ER and EPU as moderators impacts the relationship between market microstructure factor (Investor Attention) and volatility. The interaction terms IA*ER*EPU depict

a negative coefficient ß= -0.07 at a significant level p-value=0.000 in Asia, ß= -0.05 and p-value=0.000 in America; whereas in combined effect its positive ß= 0.10 and p-value=0.000 at a confidence level of 5%. The empirical analysis shows that during high EPU, exchange-rate fluctuation and any unusual market development, divert investors' attention to the macro and policy-related news in America and Asian economies. Consequently, such an uncertain prevailing situation can increase investor perception of risk in the stock markets and closely monitor stock price movements. Therefore, there is a stronger correlation between investor attention and volatility during high EPU and exchange rate fluctuation as this can increase investors' concentration on market movements. Moreover, it seems that investor adopts information-seeking behavior and pay more attention to market volatility as they try to determine how macro-economic indicators and policy-related events may affect their investment portfolios. It is evident now that investor attention can affect volatility through EPU and exchange rate and both as moderators collectively strengthen the positive relationship between investor attention and volatility in combined economies. Hence, hypothesis H12 is accepted in combined effect, whereas rejected in individual Asia and American economies. The results of this analysis are consistent with the findings of Kennedy & Nourizad, (2016) and Engle (2003) that macroeconomic regulatory and fundamental factors exhibit volatility.

The result of this model enhanced the scope of market microstructure by taking exchange rates and EPU into account as combined moderators and providing a more comprehensive framework. Moreover, it is empirically proven that Investor attention typically peaks during times of economic uncertainty combined with exchange-rate fluctuation, magnifying the effect of investor attention on volatility. In line with that, this study adds depth to the understanding of how volatility and investor behavior are driven by external economic factors. Moreover, the result of this model reflects that emerging economies investors give more attention to the economic policy related news and macroeconomic factors, as investors have to take investment decisions in times of uncertainty and risk evaluating results in relation to a reference point, as they fear losses more than they appreciate similar gains, proposed by prospect theory. From theory perspective this study makes major contributions in AMH and thus proves that major reason of inefficiency in the stock market

caused by EPU and exchange rate in emerging nations. Further, it also proves that investors of emerging economies being loss aversion can lead to exaggerated price fluctuations and excessive volatility, as investors overreact to negative signals, and this contributes to prospect theory. The Cross-regional analysis determined the moderating effects of Economic Policy Uncertainty and exchange rates are uniform across different contexts. These emerging economies, macro-economic and microeconomic conditions are somewhat the same. The positive correlation between investor activity and market volatility is exacerbated in emerging nations by both exchange rate volatility and the uncertainty surrounding economic policy. These two moderators decrease market depth, promote herding, and stimulate speculative activity. As a result, investor reactions become more volatile and reactive, which increases their role in market volatility

The insignificant value of the J-statistics (Sargan-test), (p-value =0.087 in Asia, p-value 0.1945 in America, and p-value =0.1943 in combined effect) indicates that instrumental over-identifying restrictions are valid. In addition, the issue of serial autocorrelation is resolved at lag 1 (AR1) with a (p-value= 0.000 in Asia, p-value= 0.000 in America, and p-value= 0.000 in the combined effect) and also at lag level 2 i.e. AR (2) (p-value= 0.3417 in Asia, p-value= 0.1640 in America, and p-value= 0.4190 in the combined effect). To test this model four control variables are employed i.e. Inflation, GDP, FDI, and size at the country level. Further, the p-value of the lagged value of volatility is constant and less than 0.05.

Chapter 5

Conclusion and Recommendations

This final chapter presents the study's conclusion and recommendations. Additionally, it outlines the study's limitations and suggests directions for future research.

5.1 Conclusion

The study's main objective is to capture the influence of market microstructure on stock market returns and volatility. For that purpose, four market microstructure factors have been selected by reviewing the literature. These factors are market liquidity, investor attention, asymmetric information, and market risk. Additionally, another objective is to pinpoint the moderating role of regulatory economic factor Economic Policy Uncertainty (EPU) and fundamental economic factors such as interest rates and exchange rates in the relationship between market microstructure factors and stock market return and volatility. Moreover, the study aims to determine the joint effect of moderators, such as EPU and interest rates, as well as EPU and exchange rates, on the relationship between market microstructure factors and stock market risk and return.

Based on a thorough review of theories and past literature, the study established specific objectives and corresponding hypotheses. To conduct the study, stock market returns were measured using the holding period formula, and volatility was assessed by calculating the difference in logarithms between high and low prices.

A market liquidity index was developed using a weighted-average methodology, with weights for each liquidity dimension extracted from Eigen-values via Principal Component Analysis (PCA).

The index incorporates three low-frequency, volume-based liquidity dimensions: market depth, market breadth, and market resilience.

The EPU index, developed by Baker et al. (2016), was employed to measure EPU. The study used the lending rate to represent the interest rate and the effective exchange rate for the exchange rate.

Additionally, four control variables, GDP, FDI, inflation, and size, were included, with GDP measured using the GDP growth rate, FDI scaled , inflation assessed via the consumer price index (CPI), and size measured by market capitalization.

The hypotheses have been tested in the context of three emerging economies: Asia, Europe, and America. The selection of these economies is based on the presence of adverse asymmetric information and trader behavior issues at the micro-level, which are expected to impact the market efficiency of these stock markets.

Hikouatcha et al. (2022), Said et al. (2024), and Easley and O'hara (1992) also emphasized the importance of investigating the relationship between returns and microstructure factors, as it establishes a new foundation for measuring stock market efficiency. This is a particularly neglected area in emerging economies, as highlighted by Goel et al. (2021).

Therefore, the study selected 17 stock indexes from three regions, focusing on stock trading activities that occur daily. Data was gathered from 7 countries representing Asian emerging economies, 6 countries from European economies, and 4 countries from American economies. Monthly data spanning 17 years (2004 to 2020) was collected from these 17 countries for the analysis.

To test the hypotheses, descriptive statistics and the system (GMM) were applied. This comprehensive approach enabled a thorough examination of the relationship between market microstructure factors and stock market returns, considering the unique characteristics and challenges of each region.

5.2 Main Findings of the Study

As described earlier, the study's objectives are as follows and on the same lines, the research questions and hypotheses have been established.

i. To examine the impact of market micro-structure factors on stock market return.

ii. To examine the impact of the market micro-structure factors on stock market volatility

iii. To investigate the moderating role of the EPU on the relationship of the market micro-structure factors with stock market return

iv. To investigate the moderating role of The EPU on the relationship of the market micro-structure factors with stock market volatility

v. To analyze the moderating role of the interest rate and exchange rate on the relationship of the market micro-structure factors with stock market return.

vi. To analyze the moderating role of the interest rate and exchange rate on the relationship of the market micro-structure factors with stock market volatility.

vii. To check the joint moderating role of the interest rate and the EPU on the relationship of the market micro-structure factors with stock return

viii. To check the joint moderating role of the exchange rate and the EPU on the relationship of the market micro-structure factors with stock market return

ix. To check the joint moderating role of the interest rate and the EPU on the relationship of the market micro-structure factors with stock market volatility

x. To check the joint moderating role of the exchange rate and the EPU on the relationship of the market micro-structure factors with stock market volatility

By following the objectives, hypotheses have been developed and tested by using the system GMM. The following main findings of the study have been obtained in

the scenario of all three emerging economies. These main findings elaborate on the status of the hypotheses, which further discuss the achievements of the objectives of the study.

5.2.1 Impact of Market Micro-structure Factors on Stock Market Return

The examination across all three emerging regions illuminated the significant relationship between market microstructure factors comprising the market liquidity index, investor attention, market risk, and asymmetric information with stock market return. Market liquidity exhibited a positive and statistically significant correlation in Asian economy, contrasting with the negative association observed in the American context. Consequently, hypothesis H1(a) finds full acceptance in Asian regions as well as in combined economies but rejected in America. The empirical investigation underscores the pivotal role of market liquidity as a market microstructure factor influencing stock market returns.

The findings align closely with previous research conducted by Jedidiah (2020), EHIEDU and AKUNOMA (2023), and Said et al. (2024), lending further credence to the identified relationships between market microstructure factors and stock returns. Notably, investor attention emerges as another influential factor, exhibiting a positive impact on stock returns across all Asia and American economies. This outcome unequivocally confirms the acceptance of hypothesis H1(b) in all regions, consistent with the conclusions drawn by EHIEDU and AKUNOMA (2023). However, the impact of asymmetric information presents a nuanced picture, showcasing a negative effect on stock returns in Asian and American economies. This nuanced relationship echoes the empirical findings of EHIEDU and AKUNOMA (2023) and underscores the complex dynamics at play in different economic environments. Additionally, market risk demonstrates a negative correlation with returns in American and Asian economies, mirroring the conclusions drawn by Jedidiah (2020) and further corroborating the findings of hypothesis H1(d).

The findings of the first objective shed light on the intricate relationship between market microstructure factors and stock returns in two regions. Notably, market

liquidity, investor attention, asymmetric information, and market risk exhibit discernible influences on stock returns in Asian economies, validating their status as key market microstructure factors. However, the American context presents a slightly different scenario, with investor attention, market risk, and asymmetric information demonstrating significant impacts on stock returns, while market liquidity fails to exhibit a significant relationship as hypothesized.

This nuanced distinction suggests that while market liquidity may not play as prominent a role in influencing stock returns in the American economy, whereas investor attention, market risk, and asymmetric information emerge as crucial determinants of stock market dynamics. Hence, it can be concluded that asymmetric information, investor attention, and market risk are indeed pivotal market microstructure factors in the American economy, despite the differential impact observed for market liquidity.

In the Asian economy, the findings align closely with the hypotheses H1(a) and H1(d), the result proposed that only investor attention and market liquidity exert a significant positive influence on stock returns, in line with the expected outcomes. However, the other two factors, namely asymmetric information and market risk, do not exhibit a discernible impact on market returns as proposed by the hypothesis H1(b) and H1(c). Consequently, while the empirical model fully addresses the identified gaps identified by Jedidiah (2020), Hikouatcha et al. (2022), Batten and Vo (2014), EHIEDU and AKUNOMA (2023), Anifowose et al. (2020) in the Asian economy, it only partially fills the gaps in American economies.

Nevertheless, the findings underscore the critical role played by these four factors, market liquidity, investor attention, asymmetric information, and market risk in shaping the efficiency of stock markets. Reducing asymmetric information, influencing trader behavior, facilitating liquidity, and mitigating downward risk contribute significantly to the overall effectiveness of stock markets in emerging economies at the micro-level.

Furthermore, enhancement of stock market efficiency in emerging economies holds the potential to facilitate a transition from weak to semi-strong, and eventually to

strong efficient markets, thereby fostering greater investor confidence and market stability.

This study significantly contributes to EMH and prospect theory with respect to Asian region whereas partially contributed in American regions. Therefore, the results of first objective signify the importance of market microstructure in assessing returns pattern in the stock market of Asian whereas partially in American economy.

5.2.2 Impact of Micro-structure Market Factors on Stock Market Volatility

The analysis conducted across all three regions indicates a significant relationship between market microstructure factors, specifically the market liquidity index and investor attention, and volatility. Notably, the market liquidity index exhibits a significant negative correlation in American and European economies, while demonstrating a positive relationship in the Asian context. Consequently, H2(a) is validated in American and European regions, but not in Asia, where the results deviate from the hypothesized expectation. Conversely, the impact of investor attention on volatility has been observed across all three regions.

Indeed, H2(b) is confirmed across all three regions, signifying that investor attention and the market liquidity index significantly influence stock market volatility. The outcomes of the second objective underscore that these factors play a crucial role in shaping volatility trends, particularly in American and European economies. This finding aligns with prior research and contributes to filling gaps identified by Easley and O'hara (1992), Mupondo (2022), and Gabaix et al. (2006).

Notably, investor attention emerges as a significant driver of volatility across all regions, causing disruption in the efficiency of stock market. So, it is empirically proven that the result of this objective challenge i the EMH theory, whereas it contributes to the prospect theory by postulating that in times of limited liquidity the behavioral biases of an investor can lead to exaggerated price fluctuations and excessive volatility in American and European economies.

5.2.3 Impact of Moderator Economic Policy Uncertainty on the Relationship of Market Micro-structure Factors with Stock Market Return

The analysis focused on two economies, namely Asian and American, due to the unavailability of Economic Policy Uncertainty (EPU) data for European countries. Within this analysis, the study examined the moderating role of EPU in the relationship between market microstructure factors (Market liquidity index, asymmetric information, and investor attention) and stock market returns.

The findings revealed that the interaction term (Market liquidity * Economic Policy Uncertainty) weakened the positive association between market liquidity and return in the Asian economy while contradicting the expected outcome in the American economy. Thus, H3(a) is fully accepted in Asia but not in America. However, the interaction term (Investor attention * Economic Policy Uncertainty) was rejected in both regions as hypothesized by H3 (b).

Similarly, the results of the interaction term (asymmetric information * Economic Policy Uncertainty) are also rejected in Asia and America, so the result of this model is contrary to hypothesis. Additionally, EPU moderated the positive relationship of asymmetric information with return, rather than the anticipated negative relationship. Consequently, H3(c) is rejected in both Asia and America. The study concludes that while EPU moderates the relationship between market liquidity and return in Asia, its impact in America differs from the hypothesized expectations.

It is observed that EPU partially plays a significant role in influencing the connection between market microstructure factors and returns, thereby partially addressing the identified gaps in existing literature, as highlighted by Easley and O'hara (1992) and Said et al. (2024).

The empirical result of this research question significantly contributes to the AMH theory and prospect theory, as stock market of these economies reflect efficiency in some scenario and inefficient in certain time due to macro-economic factor and investor biases and thus depart of EMH theory.

5.2.4 Impact of Moderator Economic Policy Uncertainty on the Relationship of Market Micro-Structure Factors with Stock Market Volatility

This analysis addresses the fourth objective, focusing on the American and Asian economies. It aims to examine the moderating role of Economic Policy Uncertainty (EPU) in the relationship between market microstructure factors (specifically market liquidity and investor attention) and volatility. The findings reveal a significant interaction effect between (Market liquidity* Economic Policy Uncertainty) in Asia, where it strengthens the negative relationship between market liquidity and volatility.

Conversely, this interaction term is rejected in the American economy. These empirical results suggest that market liquidity exerts a more profound impact on volatility during periods characterized by heightened economic uncertainty. This underscores the intricate interplay within financial markets, emphasizing a discernible negative relationship between market liquidity and volatility, which is further influenced by the moderating effect of EPU.

The observed negative association between market liquidity and economic policy uncertainty stems from several contributing factors. Economic policy uncertainty introduces ambiguity into the market environment, heightening investor apprehension and hesitation. This uncertainty can lead to a reduction in market liquidity as investors become more cautious and reluctant to engage in trading activities. Additionally, the uncertainty surrounding economic policy decisions can amplify market reactions, resulting in increased volatility as investors react to perceived risks and uncertainties.

Understanding these dynamics is crucial for making well-informed decisions in financial markets. The insights provided by the study offer valuable considerations for policymakers and market participants navigating these intricate relationships. By recognizing the impact of economic policy uncertainty on market liquidity and volatility, stakeholders can develop more robust strategies to mitigate risks and capitalize on opportunities.

The comprehensive liquidity index, encompassing market resilience, market depth, and market breadth, offers a nuanced understanding of liquidity conditions in financial markets.

This information is invaluable for researchers, policymakers, investors, and risk managers seeking to make informed decisions and manage risks effectively. By incorporating a multi-dimensional perspective on liquidity, stakeholders can better assess market conditions and tailor their strategies, accordingly, ultimately enhancing market efficiency and stability.

The analysis reveals a significant positive influence of the regulatory economic factor Economic Policy Uncertainty (EPU) as a moderator on the relationship between investor attention and volatility in the American regions but not in the Asian regions. This empirical evidence underscores the pivotal and influential role played by EPU in shaping the dynamics between market microstructure factors and volatility.

By fulfilling the fourth objective, the study addresses a critical gap identified by Easley and O'hara (1992), who underscored the importance of incorporating economic factors as moderators in understanding the relationship between market microstructure factors and stock return volatility. The result of the fourth objective also contributes to the prospect theory.

This study contribution aligns with the Adaptive Market Hypothesis (AMH) theory and is consistent with findings from Santosa et al. (2011), further enriching our understanding of the complex interactions within financial markets.

The study underscores the necessity for policymakers to comprehend the intricate dynamics of regulatory economic factors alongside other macroeconomic indicators.

The empirical evidence presented in this study highlights how regulatory economic factors can act as impediments to market efficiency in emerging economies. By recognizing the influence of EPU on market dynamics, policymakers can adopt more informed and targeted strategies to promote stability and efficiency in financial markets.

5.2.5 Impact of Moderator Interest Rate on the Relationship of Market Micro-Structure Factors with Stock Market Return

In this analysis, the moderating effect of interest rates is investigated in the relationships between market microstructure factors, namely asymmetric information and market liquidity, with return across three regions: Asia, and America. The findings indicate that the interaction term (market liquidity * interest rate) strengthens the positive relationship between market liquidity and return in America and Asia. Consequently, hypothesis H5 (a) is being rejected in America and Asia.

Moreover, the interaction term (asymmetric information * interest rate) amplifies the negative association between asymmetric information and return in Asia, while being disregarded in America. Consequently, H5 (b) is confirmed in Asia but refuted in America. These empirical findings underscore the significant role of interest rates as moderators in shaping the relationship between market microstructure factors (specifically, market liquidity and asymmetric information) and return, particularly within the Asian economy, while rejected in America economy. This highlights the fulfillment of the fifth objective, addressing the identified gap. Furthermore, this study contributes to the adaptive market hypothesis, advocating for the integration of macroeconomic and microstructure factors for a comprehensive understanding of market dynamics of Asian market. Moreover, the result of this objective also advocates departure from EMH.

5.2.6 Impact of Moderator Interest Rate on the Relationship of Market Micro-Structure Factor with Stock Market Volatility

This analysis delves into the moderating influence of interest rates on the relationship between the market microstructure factor (specifically, market liquidity) and volatility across Asian & American economies. Notably, interest rates augment the negative correlation between market liquidity and volatility only in the

American regions and in the combined economy. Consequently, H7 is affirmed in American economies but rejected in the Asian region. These results illustrate the potential of interest rates as a moderator within the framework of market microstructure, particularly in American countries. The result of objective 6 is in line with the adaptive market hypothesis (AMH), which states that interest-rate as a macroeconomic indicator disrupt the efficiency of American stock market. By comprehensively understanding how interest rates influence volatility by affecting liquidity at the micro-level, stakeholders can make informed decisions to mitigate risks and optimize market performance.

5.2.7 Impact of Moderator Exchange rate on the Relationship of Market Micro-Structure Factor with Stock Market Return and Volatility

In this empirical investigation, the focus is on the moderating influence of the exchange rate on the relationship between investor attention and returns across all three economies. The findings indicate that the exchange rate diminishes the positive correlation between investor attention and returns in the Asian region. However, this relationship is notably rejected in the American and European context. These results underscore the significance of macroeconomic factors, particularly exchange rates, on investor behavior and market efficiency in the Asian region. Investors in these regions are attentive to dynamic changes in key macroeconomic indicators at the micro-level, recognizing their potential impact on investment returns and overall market performance.

Therefore, hypothesis H6 is affirmed in the Asian context. This empirical confirmation suggests that akin to interest rates, exchange rates can indeed function as effective moderators between microstructure factors and returns. Furthermore, the exchange rate, as a pivotal macroeconomic factor, holds considerable sway over market efficiency. As such, it is imperative for government officials, policymakers, and financial analysts to diligently monitor exchange rate fluctuations and endeavor

to mitigate abrupt shifts. Doing so can contribute to fostering a more stable and efficient market environment conducive to sustainable economic growth.

Moreover, hypothesis H8 finds support in American contexts, indicating that the exchange rate significantly diminishes the positive correlation between investor attention and volatility. Conversely, this relationship remains unaffected in the Asian and European regions, leading to the rejection of the hypothesis in this context. The findings underscore the pivotal role of the exchange rate in exacerbating volatility within American markets, where investors closely monitor exchange rate news, potentially leading to panic situations and undermining market efficiency. This observation aligns with the principles of the Adaptive Market Hypothesis (AMH), highlighting the impact of macroeconomic factors on market efficiency. Moreover, from the perspective of prospect theory, investors in American economies exhibit a strong aversion to losses and a desire for comprehensive financial and macroeconomic information to optimize their investment gains.

5.2.8 Impact of Moderators Interest Rate and Economic Policy Uncertainty on the Relationship of Market Micro-Structure Factor with Stock Market Return and Volatility

In this analysis, the interaction between two moderators, namely interest rate and Economic Policy Uncertainty (EPU), is examined in the context of the relationship between market liquidity and the stock market in Asia and the American economy. The European economy is excluded from this analysis due to the unavailability of EPU and interest rate data for European emerging countries. The results indicate that the combined effect of interest rate and EPU weakens the positive relationship between market liquidity and return in both economies and in combined effect. As a result, hypothesis H9 is supported in America and Asia. This indicates that the interaction between interest rate and EPU has a significant impact on the impeding stock market efficiency of whole emerging economies

Moreover, this analysis underscores the intricate dynamics within financial markets by considering the combined effect of interest rates and Economic Policy Uncertainty (EPU)

as moderators on the relationship between market liquidity and volatility. It emphasizes the importance of comprehending the complexities of these variables to evaluate market conditions and make informed decisions. Fluctuations in interest rates and elevated levels of uncertainty (EPU) can amplify investors' risk-taking behavior or risk aversion, thereby influence liquidity and instigate liquidity. Consequently, investors and regulators alike must grasp the implications of these factors to navigate financial markets effectively and mitigate potential risks. Moreover, liquidity constraints manifest as challenges in completing transactions or finding willing counterparties, leading to increased bid-ask spreads and reduced market depth.

5.2.9 Impact of Moderators Exchange Rate and Economic Policy Uncertainty on the Relationship of Market Micro-Structure Factor with Stock Market Return and Volatility

In this analysis, the focus shifts to examining the joint influence of two moderators, (1) exchange rate and Economic Policy Uncertainty (EPU), on the relationship between investor attention and the stock market in Asian and American economies. Notably, the European economy is excluded from this investigation due to the unavailability of EPU data for emerging European countries. The findings reveal that the interaction between the exchange rate and EPU significantly diminishes the positive effect of investor attention on stock return in the American economy, but this effect is not observed in the Asian economy. This outcome suggests that during periods of high EPU and exchange rate fluctuations, market participants in America economies may display a preference for safer investment options, triggering a flight-to-quality phenomenon. Consequently, there could be reduced trading activity as investors seek refuge in stable markets perceived to be less susceptible to macroeconomic instability.

Indeed, during periods of heightened uncertainty, investors often tend to divert their attention towards well-established and liquid markets, thereby potentially diminishing the relationship between investor attention and returns for riskier

stocks. This phenomenon is particularly pronounced in today's globalized financial landscape, where investors have access to a diverse array of investment options spanning various locations and asset classes, including crypto-currencies and international blue-chip company stocks. As a result of this global integration, investors may opt to diversify their portfolios by allocating their attention to a broader spectrum of foreign markets rather than solely focusing on domestic stock markets. Consequently, this diversification strategy could serve to dilute the correlation between investor attention and returns for individual stocks, as attention becomes more dispersed across multiple investment opportunities.

The results of the analysis conducted on the combined moderation of (exchange rate and EPU) between the relation of investor attention with volatility is being rejected significantly in both the regions, i.e. America and Asia whereas significantly accepted in whole emerging economies. This reflects that under such circumstance's investors of the whole emerging economies may react by adopting a selling approach driven by prevailing market sentiments. Alternatively, some investors may opt for a flight-to-safety strategy, directing their attention towards investments in stable countries or other asset classes perceived as safer, such as crypto-currencies, international bonds, or Islamic bonds. In line with the Adaptive Market Hypothesis (AMH) theory, this empirical study underscores the significant impact of macroeconomic policy i.e. EPU, and microeconomic indicators such exchange rates and interest rate on stock market activities in the whole emerging economies. This emphasizes the importance of analyzing both macro-fundamental and regulatory indicators alongside microstructure financial variables to enhance the efficiency of these stock markets.

Additionally, drawing from prospect theory, the study suggests that domestic and institutional investors in the whole emerging economies prioritize maximizing gains over minimizing losses in their investments. Consequently, during periods of high EPU, elevated interest rates, and exchange rate fluctuations, investors tend to shift their focus towards safer investment options, resulting in flight-to-safety and flight-to-quality behaviors. These shifts in investor sentiment contribute to abrupt movements in the stock market and can impact market efficiency accordingly.

The insight attain from this empirical study is that Stock market movements are significantly influenced by market microstructure, which is the platform that facilitates trading, information flow, liquidity provision, and price discovery. Due to structural weakness of stock markets like shallow markets, greater information asymmetry, and retail investor domination, these effects are even more viisble in emerging nations. The stock return and volatility dynamics are strongly impacted by important microstructure factors including liquidity, and information transparency. Moreover, thin trading increases price movements even to small orders, causing lower market liquidity to amplify volatility.

Further relaxed disclosure regulations and insufficient analyst coverage cause information asymmetry to be more severe in these markets, resulting in prices incorporating new information more abruptly and frequently inefficiently. As earlier said emerging economies generally exhibit macroeconomic instability such as exchange-rate swings, high interest-rate volatility, and higher policy uncertainty further empirically proven that microstructure impacts on return and volatility further strengthen with economic factors. During periods of high EPU, liquidity dries up quickly, spreads widen, and informed traders dominate the market, producing sharper price swings. As a result, compared to developed markets, stock movements in emerging markets typically show higher volatility, greater vulnerability to liquidity shocks.

Table 5.1: Summary of Testing of Hypothesis

HYPOTHESIS	**Asian**	**European**	**American**	**Combined**
H1(a): Liquidity a market microstructure factor has a positive relation with a return	Accepted	Not applicable	Not Accepted	Accepted
H1(b): Investor attention a market microstructure factor has a positive relation with a return.	Accepted	Not applicable	Accepted	Accepted
H1(c): Asymmetric Information a market microstructure factor has a negative relation with a return.	Accepted	Not applicable	Accepted	Not Accepted

Continued on next page

HYPOTHESIS	**Asian**	**European**	**American**	**Combined**
H1(d): Market risk a market microstructure factor has a negative relation with a return	Accepted	Not applicable	Accepted	Accepted
H2(a): Market liquidity as a market microstructure factor has a negative relation with volatility	Not Accepted	Accepted	Accepted	Not Accepted
H2(b): Investor attention as a market microstructure factor has a positive relation with volatility	Accepted	Accepted	Accepted	Not Accepted
H3(a): EPU as a moderator weakens the positive relationship between market liquidity and stock market returns.	Accepted	Not applicable	Not Accepted	Not Accepted
H3(b): EPU as a moderator weakens the positive relationship between investor attention and stock market return	Not Accepted	Not applicable	Not Accepted	Not Accepted
H3(c): EPU as a moderator strengthens the negative relationship between asymmetric information and the return of the stock market	Not Accepted	Not applicable	Not Accepted	Not Accepted
H4(a): EPU as a moderator strengthens the negative relationship between market liquidity and Volatility of the stock market	Accepted	Not applicable	Not Accepted	Accepted
H4(b)**:** EPU as a moderator strengthens the positive relationship between investor attention and volatility..	Not Accepted	Not applicable	Accepted	Accepted
H5(a): Interest rate as a moderator can weaken the positive relationship between market Liquidity and the stock market's return	Not Accepted	Not applicable	Not Accepted	Accepted
H5(b): The interest rate as a moderator can strengthen the negative relationship between asymmetric information and the stock market's return.	Not Accepted	Not applicable	Not Accepted	Accepted

Continued on next page

HYPOTHESIS	**Asian**	**European**	**American**	**Combined**
H6: The exchange rate as a moderator can weaken the positive relationship between investor attention and the stock market's return	Accepted	Not Accepted	Not Accepted	Not Accepted
H7: Interest rate as a moderator strengthens the negative relationship between market Liquidity and market volatility.	Not Accepted	Not applicable	Accepted	Not Accepted
H8: The exchange rate as a moderator can strengthens the positive relationship between investor attention and the stock market's volatility	Not Accepted	Not Accepted	Accepted	Not Accepted
H9: The interest rate and EPU as a moderator weaken the positive relationship between liquidity and return.	Accepted	Not applicable	Accepted	Accepted
H10: The exchange rate and EPU as a moderator strengthen the positive relationship between investor attention and stock return.	Not Accepted	Not applicable	Accepted	Not Accepted
H11: The interest rate and EPU as a moderator strengthen the negative relationship between liquidity and volatility.	Not Accepted	Not applicable	Not Accepted	Accepted
H12: The exchange rate and EPU as a moderator weaken the positive relationship between investor attention and volatility.	Not Accepted	Not applicable	Not Accepted	Accepted

5.3 Summary of the Testing of Hypothesis

This table provides a comprehensive summary of the hypotheses tested in the context of three emerging economies: Asia, Europe, and America. The empirical

status of each hypothesis indicates whether it was accepted, not accepted, or not applicable in each region based on the analysis conducted in the study.

5.4 Recommendations for the Study

Based on the study's findings, several comprehensive recommendations are proposed for market microstructure factors which are being taken as independent variables in this study

The study underscores the significant impact of market liquidity on the stock market movements i.e. returns and volatility. To address this, policymakers and financial markets need to focus on boosting trading volumes and reducing transaction costs. By enhancing market infrastructure, such as trading platforms and settlement systems, volatility spikes can be minimized, leading to more stable returns for investors. Regular evaluations and updates of regulatory frameworks are also crucial to maintaining favorable liquidity conditions and ensuring robust market operations.

Another critical insight from the study is the role of asymmetric information in causing market inefficiencies and affecting stock returns. Regulators should prioritize increasing transparency by mandating regular disclosures of financial performance, governance practices, and risk factors. Governments should work to enhance the availability of public financial data, and financial institutions should support comprehensive analyst coverage of smaller or lesser-known firms. These measures will help bridge information gaps, reduce mispricing, and improve overall market transparency.

The study also highlights the importance of strengthening market infrastructure to mitigate market risk. In emerging economies, where financial systems can be susceptible to instability and reliance on foreign investment, governments and regulatory bodies need to enhance trading platforms, settlement systems, and regulatory frameworks. Such improvements will reduce market risk, bolster investor confidence, and contribute to a more stable and resilient market environment.

Investor behavior, particularly investor attention, significantly influences stock market returns and volatility. To manage extreme price fluctuations driven by changes in investor attention, emerging market stock exchanges should implement volatility management tools like price bands, circuit breakers, and trading halts. Additionally, policymakers should encourage greater involvement of institutional investors, such as insurance firms and pension funds, which can help stabilize market returns and reduce volatility. Regulatory authorities should also incorporate insights from behavioral finance to address irrational investor behavior that can arise from attention shifts.

Economic Policy Uncertainty (EPU) plays a crucial role in moderating the relationship between market microstructure factors and stock market outcomes. Policymakers should ensure that financial markets remain liquid during periods of high EPU by introducing measures such as circuit breakers and liquidity injections from central banks. Efforts to reduce policy uncertainty through predictable, transparent, and consistent economic policies are essential. Regular communication about long-term economic objectives can help mitigate information asymmetry and stabilize market conditions. Additionally, trading platforms should be equipped to handle increased volatility and trading volumes during times of policy uncertainty.

Interest rates also influence the relationship between market microstructure factors and stock market performance. Central banks in emerging economies should provide clear and comprehensive guidance on interest rate changes to help investors anticipate and adjust their strategies accordingly. During periods of high interest rates and volatility, regulatory bodies should take proactive measures to stabilize the market, such as providing temporary liquidity support or adjusting reserve requirements to buffer against fluctuations.

Finally, the study highlights the need for effective management of exchange rate risks, which can exacerbate volatility when investor attention fluctuates. Investors should consider adopting hedging strategies, such as currency futures and options, to manage the risks associated with exchange rate movements. Regulators should implement macro-prudential policies aimed at stabilizing exchange rates and reducing their impact on market volatility. Regulations that minimize speculative

currency trading can also help alleviate additional volatility resulting from changes in investor attention during fluctuating exchange rates.

These recommendations aim to enhance market stability, efficiency, and performance by addressing both microstructure factors and macroeconomic variables affecting emerging economies' financial markets.

5.5 Limitations of the Study

The study has made significant strides in exploring the influence of market microstructure factors on stock market return and volatility, while also considering the moderating role of economic policy uncertainty, interest rates, and exchange rates. However, several limitations warrant attention for future research endeavors. Firstly, the study focuses exclusively on emerging economies, namely Asia, Europe, and America, and only includes countries within the selected sample data range. This limits the generalizability of findings to other regions and economies outside the scope of the study. Secondly, the construction of the market liquidity index solely relies on volume dimensions, omitting cost dimensions due to the unavailability of intraday data. Consequently, the study may not fully capture the comprehensive liquidity profile of the markets under analysis. Thirdly, the examination of economic policy uncertainty (EPU) as a moderator is confined to a limited number of countries within the Asian and American regions, excluding European emerging economies due to data unavailability. This restricts the broader applicability and comparative analysis across regions. Addressing these limitations in future research efforts will contribute to a more comprehensive understanding of the complexities surrounding market microstructure dynamics and their implications for stock market behavior.

5.6 Future Aspects of the Study

Future research endeavors could explore various avenues to enhance our understanding of market microstructure dynamics and their impact on different asset classes and economies. Firstly, extending the analysis to other asset classes such as

bonds, commodities, and cryptocurrencies would provide a more holistic view of market behavior and interactions. Moreover, conducting similar studies in other economies such as frontier economies, Pacific developed economies, N-11 countries, and BRICS nations would offer valuable insights into regional variations and global market dynamics.

Additionally, future research could adopt more dynamic modeling techniques such as vector autoregression (VAR) or dynamic conditional correlation (DCC) models to capture the evolving nature of market variables over time. With the growing importance of Environmental, Social, and Governance (ESG) factors in investment decision-making, investigating their interaction with market microstructure factors, return, and volatility could shed light on their influence on market dynamics.

Furthermore, exploring market microstructure factors at the company level, including thin and thick trading, high-frequency data, and block trading, could provide deeper insights into firm-specific market behavior. The scope of analysis could also be expanded to incorporate other macroeconomic indicators such as foreign direct investment, industrial production, and money supply (M2) to better understand their interplay with market microstructure factors.

From a statistical perspective, employing co-integration analysis could help analyze the long-term and short-term integration between market factors, return, and volatility, providing a comprehensive understanding of their relationships. Finally, conducting comparative studies on the microstructure of Islamic and conventional banks could offer valuable insights into the unique characteristics and dynamics of different banking systems. Overall, these future research directions hold the potential to enrich our understanding of market microstructure dynamics and inform more effective decision-making in financial markets.

Even while previous studies have looked at the effects of market microstructure elements such market risk, investor attention, liquidity, and asymmetric information on stock returns and volatility, there are still several important empirical and methodological gaps. A large number of current research examines these variables separately or concentrate on a single moderating component, like economic policy uncertainty (EPU), which is frequently restricted to certain nations or limited

regional contexts. Additionally, a large portion of the literature uses static panel methodologies, which might not fully account for endogeneity and the dynamic character of financial markets.

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