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DO ECONOMIC POLICY UNCERTAINTY HAVE RAMIFICATIONS ON INFLATION AND STOCK MARKET PERFORMANCE? EVIDENCE FROM GLOBAL FRAMEWORK

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Abstract:

This pragmatic study aims to comprehensively examine the underlying impact of economic policy uncertainty (EPU) on both inflation and stock market performance across fifteen major global economies, employing the robust panel Autoregressive Distributed Lag (ARDL) model. The outcome reveals that there is a long-run nexus between the EPU, inflation, and the stock market across fifteen countries. The empirical consequences further show that, in the long run, EPU has an adverse impact on inflation. Additionally, outcomes affirm that the short-run impact of economic policy uncertainty is not uniform across countries. Finally, the result further confirms the positive long-run impact of economic policy uncertainty on the stock market's performance. The insights gleaned from this study hold valuable implications for policymakers, empowering them to devise more effective and informed policy strategies. Policymakers can effectively leverage these comprehensive findings to design well-targeted measures aimed at mitigating the adverse effects of economic policy uncertainty and fostering economic stability and growth.

Key words: *Economic policy uncertainty, Inflation, Stock market and panel ARDL*

1. Introduction

In the past couple of years, the world has been marked by a series of turbulent events, from the Asian financial crisis of 1997 to the subprime mortgage crisis of 2008, and more recently, the emergence of a pandemic and geopolitical conflicts like the Ukraine-Russia crisis. These uncertainties have reverberated on global platforms, encompassing economic policy uncertainty (EPU), political volatility, and ecological concerns. Among these factors, EPU has garnered considerable attention in the literature, prompting researchers worldwide to explore its far-reaching effects on various macroeconomic and financial variables, including financial markets, crude oil prices, monetary policy, and overall economic prosperity. The growing relevance of EPU has led to insightful studies examining its impact on crucial aspects like investment decisions, employment, interest rates, and risk premiums. Moreover, research has delved into the consequences of EPU on economic output, productivity, unemployment, and economic development, providing valuable insights into the interconnectedness of these complex dynamics. Notably, the

recent COVID-19 pandemic further amplified economic uncertainties, triggering dramatic shifts in global oil supply and disruptions in financial markets. Concurrently, the Russia-Ukraine crisis introduced unprecedented challenges, leaving its mark on the global supply chains and economic landscape. In this ever-changing and unpredictable environment, understanding the implications of economic policy uncertainty is of paramount importance. Researchers continue to explore and shed light on these intricate relationships, providing essential knowledge for policymakers and businesses alike to navigate and thrive in times of uncertainty. For instance, the growing unpredictability halts the investment process of firms since investment costs are irreversible, which further influences several macroeconomic variables such as employment, the output interest rate, and financial markets, Bernanke (1983). A few studies reveal that economic policy uncertainty may have a direct or indirect impact on asset values via a variety of routes. Furthermore, EPU may have ramifications on relevant macroeconomic variables such as interest rates, expected risk premiums, and the general price level, resulting in a decrease in output and employment (Pastor & Veronesi, 2013). On the other hand, much literature investigates the influence of EPU on overall economic output and productivity (see Romer, 1991; Abel and Eberly, 1996; Balcilar et al., 2016).

Additionally, studies such as Castelnuovo, Lim, & Pellegrino (2017) and Schmeling (2009) linked EPU with unemployment and economic development, respectively. Recently, the emergence of the current pandemic in 2020 led to the collapse of contracts between the Organisation of the Petroleum Exporting Countries (OPEC) and Russia, causing a constant reduction in the global oil supply and a breakdown in the US financial market. Alternatively, the current Russia and Ukraine crisis has created an unprecedented situation globally by hitting the global supply chain of food commodities, crude oil, and several other relevant commodities. The recent geopolitical uncertainty created a dilemma among policymakers and led to economic policy uncertainty. The surge in economic policy uncertainty, especially in the western and European countries, and the surge in price levels (constantly increasing volatility in the oil market due to EPU) have also drawn the attention of writers globally. In recent periods, growing precariousness has universally prompted negative outlooks in the global oil and capital markets (Albulescu, 2020a & 2020b; Donadelli et al., 2017, Mishra, 2019). Unpredictability at the macroeconomic level is one of the relevant factors leading to stock market volatility. Many researchers attempted to uncover the impact of EPU on stock market volatility after becoming aware of these facts (Malkiel & Fama, 2015). However, the number of studies in this aspect is limited and mostly confined to the developed nations, and the conclusions made by such research seem to be inconclusive. Most works of literature related to EPU confine themselves to revealing its impact on either the crude oil market or financial markets. Additionally, this group of literature focuses on developed economies to get insight on the impact of EPU on the stock and crude oil markets. In contrast, uncertainty is significantly associated with inflation. According to a contemporary theory of inflation, the expectation of an uncertain future economic outlook impacts the expected inflation, leading to a surge in the price index and an adverse real effect on the economy (Caggiano et al., 2014; Bloom, 2009, Mishra, 2019a; Mishra et al, 2023). Nevertheless, the inflationary reaction to an economic policy uncertainty shock remains equivocal. For example, Basu and Bundick (2017) argue

that uncertainty has a deflationary and negative influence on the economy's real production due to the population's cautious savings incentive. Furthermore, Leduc and Liu (2016) confirm a deflationary impact as a result of economic policy shocks. Mumtaz and Theodoridis (2018), conclude that the EPU had inflationary impacts after the Second World War. Examining previous studies, it becomes evident that the literature on economic policy uncertainty (EPU), oil markets, and other macroeconomic variables has been dominant, yet with inconclusive findings. Surprisingly, the bulk of this research has been focused on developed economies, leaving a notable gap in exploring the impact of EPU beyond the scope of oil prices. This glaring need compels us to investigate the influence of EPU on inflation and stock market return volatility across fifteen global economies, introducing a novel approach to the subject. The consequences of EPU are far-reaching, directly impacting the lives of the general public through surging inflation levels and significantly influencing investors due to heightened stock market volatility.

Therefore, our aim is to deepen the existing knowledge by integrating EPU with relevant macroeconomic variables and uncover its underlying impact on inflation and stock market return volatility. This paper endeavours to contribute the existing notion in three crucial ways. Firstly, while most studies have contemplated solely on the nexus between economic policy uncertainty and crude oil prices, we go beyond and examine its effect on both inflation and stock market return performance. Secondly, our research adopts a sophisticated panel data econometric modeling approach, leveraging its advantages in terms of increased degrees of freedom and enhanced estimation efficiency. Lastly, we extend our investigation to encompass a heterogeneous economic outlook, spanning both advanced and emerging economies globally. This holistic approach provides policymakers with invaluable insights to devise effective strategies for navigating economic uncertainties. By bridging the gap in the literature and venturing into uncharted territory, our pragmatic research aspires to pave the way for a new horizon of wisdom concerning this demanding issue. We are driven by the motivation to fill the dearth of existing literature and shed light on the impact of EPU on inflation and stock market return volatility, especially in the context of diverse advanced and emerging economies simultaneously.

After this introduction, the paper proceeds as follows: Section 2 reviews the existing literature concerning the correlation between policy uncertainty, inflation, and volatility in stock returns. Section 3 outlines the relevant data and details the econometric modeling used. Section 4 presents the empirical results. Finally, Section 5 summarizes the conclusions drawn from the study and discusses its policy implications.

2. Literature Review

Acknowledging the utility of Baker et al. (2016)'s newspaper-based measure of policy uncertainty, many empirical studies investigate the relationship between stock price volatility and economic policy uncertainty, and the majority of pragmatic studies agree that EPU causes stock market volatility (Brogaard & Detzel, 2015; Sum, 2012; Pástor & Veronesi, 2013; Hoque & Zaidi, 2019, Mishra & Sakuja, 2023). However, there is a dearth of unanimity in the inferences drawn from existing studies regarding the impact of economic policy uncertainty on stock market returns. For example, Kang and Ratti (2013)

reveal that the growing level of EPU causes a fall in US equity market returns. Further, Brogaard and Detzel (2015) report a similar result, revealing that an increase in economic policy uncertainty leads to an increase in stock market volatility and a decrease in stock market returns. Other research confirms that EPU adjustments have adverse ramifications on stock returns (Pástor & Veronesi 2012). Furthermore, Bansal et al. (2004) demonstrate that increased uncertainty reduces asset pricing in financial markets. Specifically, the announcement of a change in economic policy causes a significant drop in stock values. EPU changes have a detrimental influence on stock market returns due to increased stock market volatility. Such circumstances emerge due to the undesirable impact of policy uncertainty on firms' financial flows and dividend payments (Campbell & Shiller, 1988, Mishra and Agarwal 2019). Furthermore, Bijsterbosch and Guerin (2013) confirm that a high level of policy ambiguity is associated with a significant decline in security pricing. Alternatively, several studies into the current subject confirm either an insignificant or favourable impact of policy uncertainty on stock market returns. For example, Rehman, Asghar, and Hussain (2019) investigate the elasticity of the United States stock market's return to EPU and confirm that telecommunications, utilities, industrials, and the IT sector exhibit no changes to US policy uncertainty. Similarly, Chang et al. (2015) investigate seven OECD economies to see if EPU is associated with their respective stock markets and crude oil prices and find that a significant level of policy uncertainty leads to higher stock prices in both the US and UK financial markets. Yang et al. (2021) use the time-varying parameter stochastic volatility VAR approach to explore the link between oil price, EPU, and stock market return volatility in the United States and China. The authors find in their study that significant volatility in crude oil prices contributes to economic policy uncertainty and stock market volatility in both nations. Additionally, Rehman et al. (2021) examine the asymmetrical relationship between EPU, investor sentiment, and stock market performance through a nonlinear approach. The vital outcome confirms an asymmetrical impact of EPU on stock returns and a symmetrical impact on stock market volatility, with the exception of the healthcare sector. Besides, the result also confirms that EPU does not have a significant impact on the stock market's return under bullish market sentiment. Moreover, Aydin et al. (2021) investigate the causal link between EPU and stock prices in BRICS countries. The outcome reveals that there is unidirectional permanent causality from positive components of EPU to positive components of stock prices for Brazil and India.

Additionally, EPU is one of the relevant variables that has a broader influence on regulating other macroeconomic variables such as unemployment, exchange rate, employment, and interest rate. is highly correlated with ambiguity about short-run inflation; furthermore, monetary policy uncertainty is most correlated with uncertainty about long-run inflation. This is logical, as short-run inflation uncertainty can lead to ambiguity in short-run aggregate demand, which can be influenced by many types of economic policies. Inflation is associated with and impacted by policy uncertainty, as it changes the outlook of aggregate demand and supply at a macroeconomic level. The impact of uncertainty shocks on inflation is an important study topic, Castelnuovo (2019). Furthermore, Istrefi and Piloiu (2013) study how inflation expectations react to uncertainty in economic policy. The empirical findings show that economic policy uncertainty affects both short-term and

long-term inflation expectations. Policy uncertainty shocks, according to agreement, have a negative actual effect on the economy (Caggiano et al., 2014; Bloom, 2009; Mishra, 2022). Consequently, inflation's reaction to an EPU shock remains ambiguous. In this context, Leduc and Liu (2016) use the VAR model to study the influence of EPU on the macroeconomic level. In their study, the authors confirm that policy uncertainty impacts aggregate demand, which further leads to increased unemployment and declining inflation. Basu and Bundick (2017), on the other hand, find that uncertainty has a deflationary and negative impact on the economy's real production due to the population's cautious savings incentive. Alternatively, Caggiano et al. (2020) reveal that ambiguity shocks prompt a provisional reduction in prices, which is empirically significant in the time contraction only and, further, insignificant in normal circumstances. Furthermore, Alessandri and Mumtaz (2019) indicate that ambiguity shocks are deflationary during economic downturns and inflationary during normal periods. The empirical research on economic policy uncertainty (EPU) and its impact has predominantly focused on stock market return volatility, leaving a significant gap when it comes to linking EPU with inflation. Moreover, the existing studies have primarily cantered on developed economies, overlooking the increasing importance of economic policy uncertainty in emerging economies. With uncertainty on the rise in these economies, understanding the interactions between EPU and stock market return volatility becomes imperative. Remarkably, despite the crucial implications for decision-making, no empirical study to date has explored the joint impact of EPU on both inflation and the stock market. This critical aspect warrants attention to formulate effective strategies.

To address these critical gaps in the literature, this paper sets out to investigate the impact of EPU on inflation and the stock market on a global scale, encompassing both developed and developing countries. By shedding light on this unexplored landscape, our research endeavours to make a meaningful contribution to the current understanding of the subject. In an ever-evolving economic landscape, gaining insights into the intricate relationships between economic policy uncertainty, inflation, and stock market dynamics is vital for informed decision-making. This study aspires to bridge the divide between theory and practice, providing policymakers with invaluable tools to navigate the complexities of economic uncertainty in both developed and emerging economies.

3. Data and Methodology

Current research investigates the impact of EPU on inflation and the stock market from a global perspective, based on monthly data for 25 years from January 1997 to May 2022. Specifically, we examine the monthly time series data of 15 countries (i.e. **Australia, Brazil, Canada, China, France, Germany, India, Ireland, Japan, Mexico, Netherlands, South Korea, Spain, United Kingdom, and United States)**. Economic policy uncertainty data for each country is derived from Baker et al. (2016)'s economic uncertainty index (EPU) https://www.policyuncertainty.com/. To measure policy-related economic uncertainty, Baker et al. (2016)'s construct an index from three types of underlying components[1]. The first and most flexible component quantifies newspaper coverage of policy-related

[1] https://www.policyuncertainty.com/methodology.html

economic uncertainty[1]. This newspaper-based approach is also used for the majority of other country- and topic-specific indexes hosted on this site[2]. Furthermore, the current study approximates inflation by using the consumer price index of respective countries obtained from the Organisation for Economic Co-operation and Development (OECD) database, which can be accessed at https://data.oecd.org/price/inflation-cpi.htm. Finally, we apply the monthly value of relevant stock indices to represent the stock market's return volatility. For example, the Australian Securities Exchange (Australia), the B3 Brasil Bolsa Balco (Brazil), the Toronto Stock Exchange (Canada), the Shanghai Stock Exchange (China), the CAC 40 (France), the Deutsche Börse AG (Germany), the Bombay Stock Exchange (India), the ISEQ (Ireland), the Japan Exchange Group (Japan), the IPC MEXICO (Mexico), the AEX-Index (Netherlands), the Korea Exchange (South Korea), FTSE 100 (United Kingdom) and The Dow Jones Industrial Average (United States). The closing prices of the stock indices are collected from the Yahoo Finance database, which is freely available at https://finance.yahoo.com/portfolios.

Table 1. Result of Panel Unit Root test

Variable	LLC Test	IPS Test	ADF- Fisher Test
Inflation	0.15	-4.74***	85.70***
Economic Policy Uncertainty	-1.78***	-5.64***	104.50***
Stock Market	1.83	1.10	25.06
	At First Difference		
Inflation	-11.08***	-20.89***	498.07***
Economic Policy Uncertainty	-4.192***	-39.78***	1211.34***
Stock Market	-8.00***	-24.78***	632.57***

Levels of significance: * 1%, ** 5%, and * 10%; Source: Author's calculation**

The outcome of panel unit root documents that inflation and economic policy uncertainty are stationary at level, while stock indexes exhibit the attribute of unit root at level (See table 1). Alternatively, the outcome of the first difference reveals that all the variables are stationary at the 1 percent level of significance, including the stock market.

Table 2. Result of Cross-correlation test

Variable	Inflation	Economic Policy Uncertainty	Stock Market
Inflation	1***		
Economic Policy Uncertainty	-0.036**	1***	
Stock Market	0.28***	-0.023**	1***

Levels of significance: * 1%, ** 5%, and * 10%; Source: Author's calculation**

[1] https://www.policyuncertainty.com/methodology.html
[2] https://www.policyuncertainty.com/methodology.html

The results of cross-correlation document that inflation has negative associations with economic policy uncertainty. On the other hand, the outcome also reveals that the stock market index has a positive relationship with the level of inflation. Finally, we also find that stock market index value is inversely related to economic policy uncertainty. The ramifications of summarised cross-correlation outcomes validate the general notion of policy uncertainty and its impact on the stock market and the level of inflation, as it becomes clear that the stock index plunged due to a high level of economic policy uncertainty, as these two variables are significantly correlated with each other.

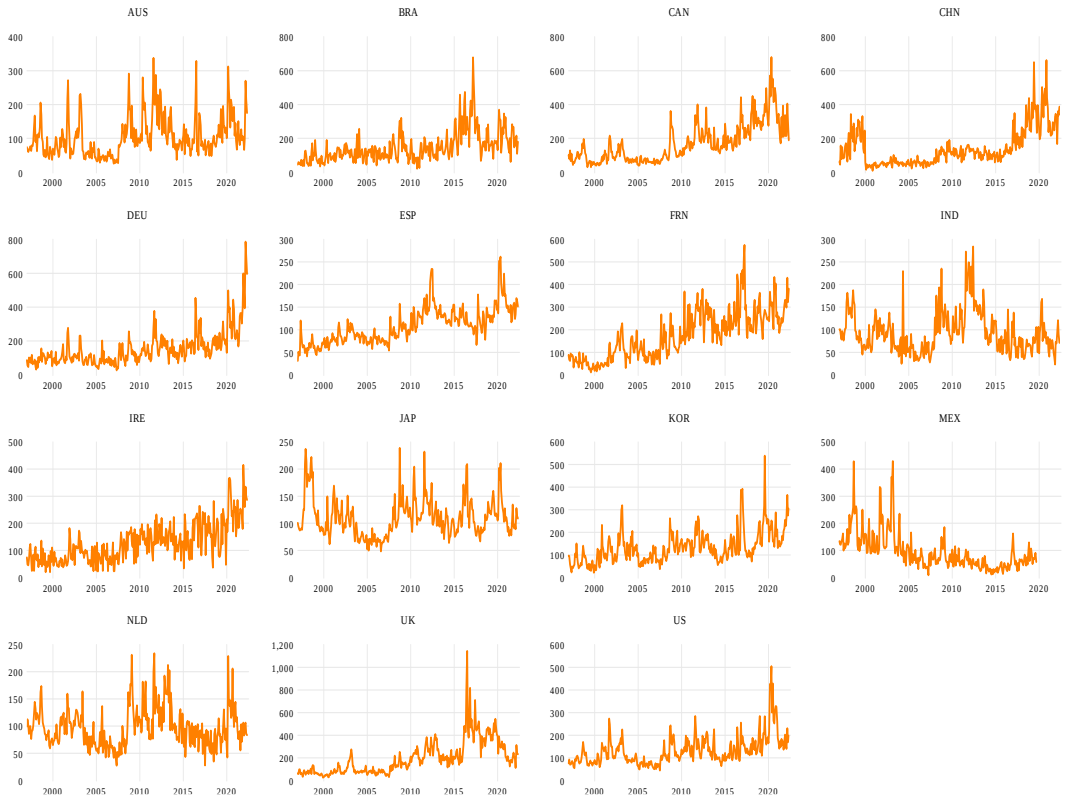

Figure 1. Level of Economic policy uncertainty in respective countries from 1997 to 2022

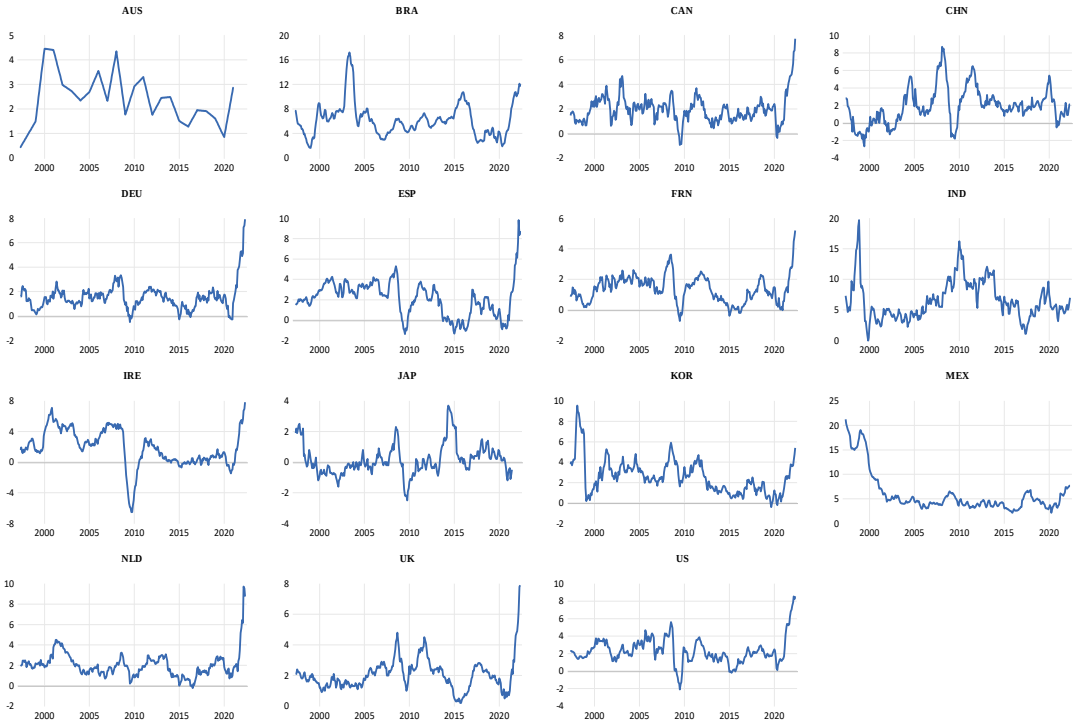

Figure 2. Inflation rate in respective countries from 1997 to 2022

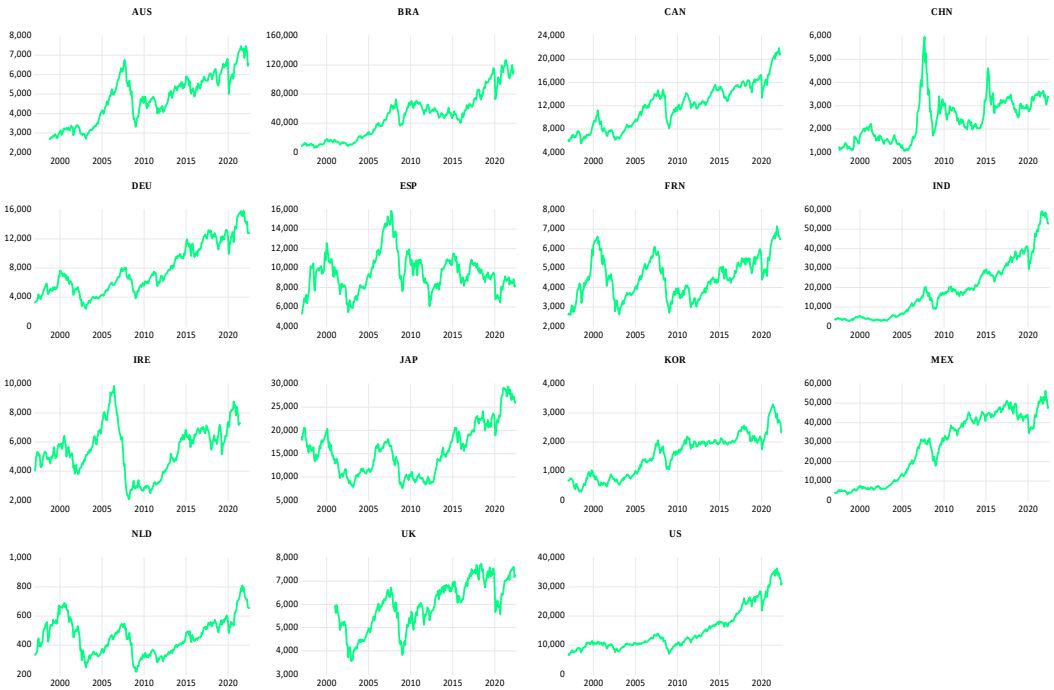

Figure 3. Stock market level in respective countries from 1997 to 2022

Econometric Modelling

We contemplate above mentioned counties in order to reveal the influence of economic policy uncertainty on inflation and stock market return volatility. Hence, to accomplish the vital objectives, current pragmatic research employs a panel autoregressive distributed lag model (ARDL)-based framework with the pooled mean-group (PMG) estimator introduced by Pesaran and Shin (1999), Pesaran and Smith (1995). The rationale for using panel autoregressive distributed lag instead of cointegration, due to its associated benefits. Though the conventional cointegration technique estimates the long-term relationship within the system of equations. However, the panel ARDL approach exerts an individual directed form of equation that is more sophisticated than the conventional cointegration technique. The exerted ARDL (k, l) model is exhibited below (see equation 1).

$$Inf_{it} = a_{it} + \sum_{j=1}^{k} m_{i,j} Inf_{i,t-1} + \sum_{j=0}^{l} \tau_i \Delta Epu_{i,t-j} + \epsilon_{it1} \quad (1)$$

$$\Delta Inf_{it} = a_i + \sum_{j=1}^{k-1} m_{i,j} \Delta Inf_{i,t-1} + \sum_{j=0}^{l-1} \tau_i \Delta Epu_{i,t-j} + \varphi_i Inf_{i,t-1} + \rho_i Epu_{i,t-j} + \epsilon_{it2} \quad (2)$$

$$Stock_{it} = b_{it} + \sum_{j=1}^{k} n_{i,j} Stock_{i,t-1} + \sum_{j=0}^{l} q_i \Delta Epu_{i,t-j} + u_{it1} \quad (3)$$

$$\Delta Stock_{it} = b_i + \sum_{j=1}^{k-1} n_{i,j} \Delta Stock_{i,t-1} + \sum_{j=0}^{l-1} q_i \Delta Epu_{i,t-j} + \lambda_i Stock_{i,t-1} + \xi_i Epu_{i,t-j} + u_{it2} \quad (4)$$

To estimate the long-term nexus among the inflation and economic policy uncertainty, the pertinent hypothesis is shaped:

$H_0: \varphi_i = \rho_i = 0$

$H_a: \varphi_i \neq \rho_i \neq 0$

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$H_0: \lambda_i = \xi_i = 0$

$H_a: \lambda_i \neq \xi_i \neq 0$

The above-mentioned null hypothesis postulates the idea of no long run relationship between the inflation and economic policy uncertainty, stock market volatility and economic policy uncertainty. In contrast, the alternative hypothesis argument the significant long run nexus among the mentioned variables. The relevant conclusion about the long run relationship is accomplished based on the outcome of Pedroni residual co-integration test. If the indication of a long run relationship of EPU with Inflation and EPU with Stock market EPU with is found empirically significant, we further proceed for estimation of long run and short run coefficient based following models.

$$Inf_{it} = \beta_i + \sum_{j=1}^{k-1} f_{i,j} Inf_{i,t-1} + \sum_{j=0}^{l-1} m_i Epu_{i,t-j} + \varepsilon_{it3} \quad (5)$$

$$\Delta Inf_{it} = \theta_i\left(Inf_{i,t-1} - p_i Epu_{i,t}\right) + \sum_{j=1}^{k-1} q_{i,j}\Delta Inf_{i,t-1} + \sum_{j=0}^{l-1} \tau_i \Delta Epu_{i,t-j} + \sigma_i + \epsilon_{it}$$
(6)

$$\Delta Inf_{it} = \beta_i + \sum_{j=1}^{k-1} n_{i,j}\Delta Inf_{i,t-1} + \sum_{j=0}^{l-1} r_i \Delta Epu_{i,t-j} + £_i Ect_{i,t-1} + \varepsilon_{it4}$$
(7)

In the above general **ARDL (k l)** model, where, **i** specifies cross-section group (i.e., countries in the present case), **t** represent the time length in month. Additionally, $\boldsymbol{Inf}$ and $\boldsymbol{Epu}$ represent the vector of **inflation** and **economic policy uncertainty** respectively (see equation 5). On the other hand, above ARDL model can be modified further in the equation 6, where**,** $\boldsymbol{\sigma}$ specifies a constant term, **p** represents the long-run elasticities, $\boldsymbol{\theta}$ is the error correction term while τ and **q** represent coefficients of short-run dynamics. Furthermore, $\boldsymbol{k}$ and $\boldsymbol{l}$ designates lag of dependent and independent variables correspondingly, while $\boldsymbol{\epsilon}$ is error term (Equation 6). Moreover, equation 6 is further advanced in the form of error correction, which is presented in the equation 7, where $£_i$ represent the coefficient of error correction term, more specifically the speed of adjustment. The prerequisite criteria are, the coefficient of error correction term should be negative and significant. In same fashion, following equation represents the ARDL model of stock market and the economic policy uncertainty.

$$Stock_{it} = \delta_i + \sum_{j=1}^{p-1} g_{i,j} Stock_{i,t-1} + \sum_{j=0}^{q-1} n_i Epu_{i,t-j} + u_{it3}$$
(8)

$$\Delta Stock_{it} = \omega_i\left(Stock_{i,t-1} - f_i Epu_{i,t}\right) + \sum_{j=1}^{k-1} l_{i,j}\Delta Stock_{i,t-1} + \sum_{j=0}^{l-1} \vartheta_i \Delta Epu_{i,t-j} + \mu_i + \epsilon_{it}$$
(9)

$$\Delta Stock_{it} = \omega_i + \sum_{j=1}^{p-1} d_{i,j}\Delta Stock_{i,t-1} + \sum_{j=0}^{q-1} x_i \Delta Epu_{i,t-j} + \aleph_i Ect_{i,t-1} + \varepsilon_{it4}$$
(10)

In the above general **ARDL (p q)** model, where, **i** specifies cross-section group (i.e., countries in the present case), **t** represent the time length in month. Conversely, $\boldsymbol{Stock}$ and $\boldsymbol{Epu}$ represent the vector of **stock market volatility** and **economic policy uncertainty** respectively (see equation 8). On the other hand, above ARDL model can be modified further in the equation 9, where**,** $\boldsymbol{\mu}$ specifies a constant term, **f** represents the long-run elasticities, $\boldsymbol{\vartheta}$ is the coefficient of error correction term while $\boldsymbol{\omega}$ and $\boldsymbol{f}$ represent coefficients of short-run dynamics. Furthermore, $\boldsymbol{p}$ and $\boldsymbol{q}$ designates lag of dependent and independent variables correspondingly, while $\boldsymbol{\epsilon}$ is error term (Equation 9). Finally, equation 9 is further advanced in the form of error correction, which is presented in the equation 10, where $\aleph_i$ represent the coefficient of error correction, which actually exhibit the speed of adjustment in short run. However, for a robust model, the coefficient of error correction term should be negative and significant.

The primary rationale for employing the PMG estimator technique lies in its ability to capture the long-term relationships among the variables of interest while simultaneously delineating the long-run and short-run linkages among them. It also helps mitigate endogeneity issues associated with long-run coefficients through an autoregressive distributed lag approach. Moreover, the results of the Hausman test (presented in Table 1)

demonstrate the superiority of the PMG model over other models. Additionally, the PMG estimator is capable of handling variables with mixed-order integration properties, such as I(1) and I(0). This estimator requires specifying a response variable as a function of the explanatory variables.

The MG estimation model treats each distinct group (e.g., nations in the current study) differently. In contrast, the Dynamic fixed effects technique allows intercepts to vary across different groups while keeping all other coefficients and error variances identical. The PMG estimator serves as an intermediary between the MG and Dynamic fixed effects approaches, incorporating both pooling and averaging, and is thus considered the most reliable and efficient one (Pesaran and Shin 1999; Pesaran and Smith 1995; Pesaran et al., 1999).

In this study, economic policy uncertainty is regarded as the explanatory variable, influencing the dependent variables such as inflation and the stock market performance of the countries under examination.

4. Result Analysis

Hausman test for testing the suitability of PMG method over MG and DFE

We utilize the Hausman test to determine the most appropriate econometric technique, choosing between the pooled mean group (PMG) and mean group (MG) estimation methods. This is crucial as the test helps identify the long-run specifications that are better suited for the present panel data model. The null hypothesis under the present scenario postulates that there is long-run homogeneity among the different groups of the panel. However, alternative hypotheses assume heterogeneity among the different applied techniques of estimation. Additionally, the null hypothesis claims that the pooled mean group model is consistent, while the alternative hypothesis claims the inconsistency of PMG over the other model (see table 3.)

Table 3. Result of Hausman test

	EPU on Inflation	EPU on Stock Market
Chi-Square	1.98	6.85
P-value	0.921	0.362

The Hausman test, presenting chi-square statistics for each scenario, fails to achieve significance at the 5% level. This suggests that the null hypothesis of long-run homogeneity across the different groups in the panel cannot be rejected. In other words, it implies that the pooled mean group (PMG) estimation technique is more suitable compared to the other two methods described in the methodology section. The outcome of the Hausman test strongly supports the use of the pooled mean group estimation method over the other two. Therefore, in the entire results section, this paper exclusively presents the results obtained using the pooled mean group estimation technique.

Long run and short run impact of EPU on inflation and stock market return, Pooled mean group (PMG) Method.

The long-run association between EPU and inflation level is depicted in table 4. The relevant result demonstrates the existence of a significant long-run relationship between EPU and inflation, as the long-run coefficient is significant at a 5% level of significance. The empirical outcomes further show that, in the long run, economic policy uncertainty has a negative impact on inflation. However, the impact of EPU on inflation is negligible, as a one-point value increase in EPU leads to a fall in inflation of 0.0037 percent. The long-run results imply that economic policy uncertainty plays an important role in the inflation level. A surge in EPU leads to a negative economic outlook in the long run. This further impacts the sentiment of industry and corporations, leading to a fall in investment, economic activity and triggering a recession. The recessionary outlook due to the rise in EPU finally leads to a fall in income, employment, and general price levels. The relevant conclusion is consistent with some contemporary findings. In this context, Leduc and Liu (2016) confirm that policy uncertainty impacts aggregate demand, which further leads to increased unemployment and falling inflation. Additionally, Basu and Bundick (2017), Caggiano et al. (2020) also conclude that uncertainty leads to a deflationary and negative impact on the real output of the economy due to the precautionary savings motive of the population. After confirming the long-run impact of EPU on inflation, we also examine the country wise short-run outcome. The present study reveals the country's specific short-run impact of the EPU on inflation (See, table 5).

Table 4. Long run impact of Economic Policy Uncertainty on inflation

Variable	Coefficient	t-Statistics	P-value
Economic Policy Uncertainty (EPU)	-0.0037**	-1.975	0.05

Levels of significance: * 1%, ** 5%, and * 10%; Source: Author's calculation**

The findings presented in Table 5 indicate that the error correction term for each nation is both negative and statistically significant at the one percent level of significance. This suggests that any short-term deviations from the long-term equilibrium in the model are corrected over time.The empirical result also reveals that, in the short run, EPU raises general price levels in Australia, China, France, Germany, India, Ireland, Japan, Mexico, South Korea, the United Kingdom, and the United States, these outcome are consistant with previous studies such as . Alessandri and Mumtaz (2019), The relevant outcome indicates that in the short run, EPU leads to inflation outlooks due to adverse supply shocks. A fall in supply due to economic uncertainty coupled with constant demand fuels inflation from a macroeconomic perspective. Recently, the global platform conflict between Russia and Ukraine created a blockage in the supply of many food commodities, which led to a surge in their price. For example, in the short run, many countries experienced sudden increases in the price of edible oil because of adverse supply shocks due to the Ukrainian conflict. The high rate of inflation in March "is primarily due to the rise in prices of crude petroleum and natural gas, mineral oils, and basic metals owing to the disruption in (the)

global supply chain caused by the Russia-Ukraine conflict," Government of India[1]. Based on the above short run outcome we can infer that among all the nation, inflation level in Germany is substantially impacted by the EPU, as one-point index advancement of EPU leads to 0.0077 percent surge in inflation level, which is consistent with the findings of Mumtaz and Theodoridis (2018); Alessandri and Mumtaz (2019). On the other hand, the empirical result documents that countries such as Brazil, Canada, the Netherlands, and Spain, experience a drop in the general price level as a result of economic policy uncertainty, which is consistent with the earlier studies of Basu and Bundick (2017) as well as Caggiano et al. (2020), which argue that uncertainty results in a deflationary effect, negatively affecting the actual output of the economy because people tend to save more as a precautionary measure. However it is essential to note that the negative impact of EPU on inflation level in these countries is marginal.

Table 5. Short run impact of Economic Policy Uncertainty on inflation

Countries	Error correction terms	ΔEPU
Australia	-0.013***	0.0014***
Brazil	-0.031***	-0.005***
Canada	-0.048***	-0.0005***
China	-0.056***	0.0001**
France	-0.0389***	0.004***
Germany	-0.009***	0.0077***
India	-0.0498***	0.0017***
Ireland	-0.026***	0.0007***
Japan	-0.069***	0.0001***
Mexico	-0.016***	0.0001***
Netherland	-0.017***	-0.0004***
South Korea	-0.052***	0.003***
Spain	-0.025***	-0.007***
United Kingdom	-0.008***	0.00002**
United States	-0.017***	0.0001***

Levels of significance: * 1%, and ** 5%; Source: Author's calculation**

Long run and short run impact of EPU on stock market return, Pooled mean group (PMG) Method.

This research also looks into the influence of EPU on the stock market return of 15 studied countries. The result of table 6 documents the estimated outcome. The relevant result shows that EPU has a long-run impact on the stock market, since the long-run coefficient is significant at the one percent level of significance. The empirical result demonstrates that, in the long run, economic policy uncertainty benefits the stock market return. The

[1]Government of India, dated 18 April 2022. https://www.hindustantimes.com/business/march-high-inflation-rate-due-to-russia-ukraine-conflict-says-government-101650269104026.html#:~:text=Click%20here%20X-,March%20high%20inflation%20rate%20due%20to%20Russia%2DUkraine%20conflict%2C%20says,according%20to%20the%20official%20figures.

outcome of current reaserach is inconsistent with various studies, for example, Kang and Ratti (2013) reveal that the growing level of EPU causes a fall in US equity market returns. Further, Brogaard and Detzel (2015) report a similar result, revealing that an increase in economic policy uncertainty leads to an increase in stock market volatility and a decrease in stock market returns. Other research confirms that EPU adjustments have adverse ramifications on stock returns (Pástor & Veronesi 2012). Furthermore, Bansal et al. (2004) demonstrate that increased uncertainty reduces asset pricing in financial markets. Specifically, the announcement of a change in economic policy causes a significant drop in stock values. EPU changes have a detrimental influence on stock market returns due to increased stock market volatility. However, as per the outcome of current research the influence of EPU on the stock market is modest, since a one-point increase in EPU results in a six-unit gain in stock indexes. Long-run results show that economic policy uncertainty is critical in financial markets. Nevertheless, this pragmatic evidence can theoretically be elucidated by the fact that a surge in economic policy uncertainty may lead to a fall in interest rates (Grisse, 2023) which finally leads to an upsurge in stock prices given the well-accepted hypothetical inverse relationship between interest rates and stock returns (see, Chang et al., 2015; Hashemzadeh and Taylor, 1988). Such phenomena can also be justified as uncertainty creates opportunity, which has been experienced during the COVID-19 pandemic globally. The emergence of COVID-19 created an opportunity for investors around the world due to the short-term fall in stock prices. In the recent era of uncertainty, many countries' stock exchanges have reached their all-time high mark. For example, the Dow's all-time high is 36,799.65 points, reached on Jan. 4, 2022. Similarly, the Indian stock exchange, the SENSEX, reached an all-time high of 62245.43 in October of 2021 during the second wave of COVID-19. This is because investors do not expect the economic policy uncertainty to continue at a high level. They are likely to continue with the investment process in equities in the present time period and to make profits in the near future when the uncertainty disappears. Current research also looks at the impact of EPU on the stock market in the short run. Additionally, we document the country-specific short-run impact of EPU on the stock market (See, table 7).

Table 6. Long run impact of Economic Policy Uncertainty on Stock market return

Variable	Coefficient	t-Statistics	P-value
Economic Policy Uncertainty (EPU)	6.598***	3.5188	0.0004

Levels of significance: * 1%; Source: Author's calculation**

The result of table no. 7 shows that the error correction term across the country is negative and significant at the one percent level of significance, implying that any divergence in the short run is rectified with the passage of time. The relevant finding also demonstrates that EPU generates a significant impact on the Australian, Chinese, German, Netherland, South Korean and British stock exchanges, however in the short run EPU do not have any substantial impact on the other countries stock exchanges, that is consistent with research of Rehman et al. (2019), which reveals that the telecommunications, utilities, industrials, and information technology sectors show no changes in response to US policy uncertainty.

The relevant outcome further suggests that EPU leads to surge in the return of German and the United Kingdom stock exchanges. Moreover, one index point advancement of EPU leads to 0.44 and 0.14 percent increase in the return of German and British stock exchanges, which is also advanced by the previous studies of Chang, Chen, Gupta, and Nguyen (2015),

The finding, besides, indicates that one index point advancement of EPU leads 0.32%, 0.26% 0.028% and 0.075% fall in the return of Australian, Chinese, the Netherlands, and South Korean stock exchanges. Financial market changes caused by EPU have a negative influence on stock market return due to excessive stock market volatility. These circumstances stem from the adverse effects of policy uncertainty on companies' financial health and their ability to pay dividends (Campbell & Shiller, 1988). Conversely, Bijsterbosch and Gu'erin (2013) find consistent findings, indicating that increased levels of policy uncertainty are linked to notable decreases in security prices.

Table 7. Short run impact of Economic Policy Uncertainty on Stock market return

Countries	Error correction terms	ΔEPU
Australia	-0.012***	-0.329***
Brazil	-0.004***	-4.72
Canada	-0.058***	-0.536
China	-0.026***	-0.263**
France	-0.022***	-0.036
Germany	-0.015***	0.445**
India	-0.00498***	0.597
Ireland	-0.017***	0.059
Japan	-0.069***	-3.81
Mexico	-0.0037***	-2.087
Netherland	-0.0124***	-0.028***
South Korea	-0.0152***	-0.075***
Spain	-0.042***	0.971
United Kingdom	-0.0418***	0.1462**
United States	-0.0257***	1.184

Levels of significance: * 1%, and ** 5%; Source: Author's calculation**

5. Discussion, Conclusion and Policy Implication

The increasing significance of Economic Policy Uncertainty (EPU) has prompted in-depth investigations into its effects on critical areas like investment choices, employment rates, interest rates, and risk premiums. Additionally, research has examined how EPU impacts economic output, productivity, unemployment rates, and overall economic development, providing valuable insights into the intricate connections between these factors. The recent COVID-19 pandemic and the Russia-Ukraine crisis have further heightened economic uncertainties, leading to significant disruptions in global oil supply and financial markets. In this dynamic and uncertain environment, understanding the

ramifications of EPU is crucial. Researchers continue to explore these complex relationships, offering essential insights for policymakers and businesses to navigate and prosper amidst uncertainty. For example, heightened unpredictability can stall firms' investment decisions due to the irreversible costs involved, subsequently influencing various macroeconomic indicators such as employment levels, output, interest rates, and financial markets, as observed by Bernanke (1983). Some studies indicate that EPU can directly or indirectly impact asset values through various channels.

Numerous studies have explored the impact of economic policy uncertainty (EPU) on crude oil prices and other macroeconomic variables, but the focus has predominantly been on developed economies. This study aims to address this gap by examining the influence of economic policy uncertainty beyond the context of developed economies. Specifically, we seek to investigate the impact of economic policy uncertainty on general price levels and stock market returns from a global perspective, considering fifteen countries worldwide. This research enriches the existing literature in three significant ways. Firstly, we intend to unveil the effects of EPU on inflation and stock market return volatility, broadening the scope from the commonly studied response of crude oil prices to EPU. Secondly, to contribute to the methodological diversity, we employ panel data econometric modeling, providing a novel approach compared to the conventional time series analysis often utilized in previous research. Lastly, by expanding this inquiry to encompass a diverse range of economies, including both advanced and emerging ones, this study offers valuable insights to policymakers seeking effective strategies in response to economic policy uncertainty.

The relevant empirical insights from this pragmatic examination can be summarised as follows: At the outset, based on the panel ARDL technique, it can be concluded that there is a long-run nexus between EPU, inflation, and the stock market performance across fifteen countries. The empirical result further shows that, in the long run, economic policy uncertainty has a negative impact on inflation. The long-run results imply that economic policy uncertainty leads to recessionary outlook, fall in income, employment, and general price levels. The relevant outcome is consistent with some contemporary findings by Leduc et al. (2016) and Basu et al. (2017). The result, furthermore, shows that in the short run, EPU causes a rise in the general price level in Australia, China, France, Germany, India, Ireland, Japan, Mexico, South Korea, the United Kingdom, and the United States. These outcomes affirm that the short-term impact of EPU is not uniform across countries. The research thus designates the need for all the strategies to reduce the economic policy uncertainty, which might be helpful to control inflation in the short run. Furthermore, the relevant result confirms that EPU has a significant long-term impact on the stock market. The empirical result confirms that, in the long run, economic policy uncertainty benefits the stock market. Nevertheless, this pragmatic evidence can theoretically be elucidated by the fact that a surge in economic policy uncertainty may lead to a fall in short-term interest rates, which finally leads to an upsurge in stock prices given the well-accepted hypothetical inverse relationship between interest rates and stock returns (see, Chang et al., 2015; Hashemzadeh and Taylor, 1988). Finally, based on the short-run outcome, it can be inferred that in the short run, EPU leads to the advancement of stock indices in Germany and the United Kingdom while having a

negative impact on the Australian, Chinese, Netherlands, and South Korean stock markets. Alternatively, a similar conclusion is found by Bijsterbosch and Gu´erin (2013). They confirm that a high level of policy ambiguity is linked to a substantial decline in security pricing. Finally, the result confirms the short-run, non-significant impact of EPU on the stock markets of Brazil, Canada, France, India, Ireland, Japan, Mexico, Spain, and the United States. Finally, our empirical conclusions have several vital consequences for both economic policymakers and stock market participants. Our findings reveal a concerning trend wherein economic policy uncertainty (EPU) appears to drive the advancement of the British and German stock exchanges. However, this could have negative implications for these countries, as it might divert funds from real investment to equities and the stock market, potentially impeding genuine growth in the future. Policymakers must urgently implement measures to redirect funds from the stock market to the real economy, fostering sustainable economic development. For investors, exercising caution is essential, as our results indicate that in the short run, EPU often leads to stock market declines in most countries. This caution is especially pertinent for short-term investors, but long-term investors need not worry. Nonetheless, prudent decision-making is crucial for all investors given the dynamic impact of EPU on global markets. Despite providing logical insights, this pragmatic research does acknowledge certain limitations. Specifically, our conclusions are drawn from an examination of fifteen global economies; however, a more comprehensive approach encompassing a broader range of countries could yield even more robust results. Additionally, the findings might be constrained by data limitations, as we relied on monthly data spanning a few years. Despite these limitations, our research undoubtedly paves the way for further exploration and deeper understanding of the complex relationship between EPU, stock markets, and real economic growth.

6. References

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