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ON THE BRINK OF A NEW WORLD ORDER: TURKISH CAPITAL MARKETS FACING ASYMMETRIC SHOCKS OF UNCERTAINTY FACTORS[1]

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ABSTRACT

The economic and political instabilities have made the impact of uncertainties in capital markets more salient, and affected investors' decisions since the pandemic period. Turkish capital markets have been operating under the pressure of various uncertainties stemming from both domestic and foreign political or economic dynamics as well. Hence, it is quite crucial for policymakers and investors to reveal the effects of increasing uncertainties on the markets during this global transformation process in order to take the right steps in such an environment. In accordance with the aim of this study, the asymmetric effects of 10-year government bond yields, 5-year credit default swap (CDS) premiums for Türkiye, uncertainties in gold (ounce) and Brent crude oil prices besides the geopolitical uncertainty index (GPR), trade policy uncertainty index (TPU) and climate policy uncertainty index (CPU) on selected stock market indices are investigated by the Nonlinear Autoregressive Distributed Lag (NARDL) model for the 2015-2025 period. According to the findings, the selected uncertainty factors have asymmetric effects on stock market indices in different directions and to different magnitude. The findings are expected to provide not only a meaningful contribution to the existing literature but also provide a framework for the position of the Turkish stock markets during the transformation process.

Keywords: Global uncertainty factors, financial markets, asymmetric shocks, Borsa Istanbul, NARDL.

YENİ BİR DÜNYA DÜZENİNİN EŞİĞİNDE:
BELİRSİZLİK FAKTÖRLERİNİN ASİMETRİK ŞOKLARI KARŞISINDA TÜRK SERMAYE PİYASALARI

ÖZ

Dünyada özellikle pandemi döneminden itibaren yaşanan ekonomik ve politik istikrarsızlıklar sermaye piyasalarında da belirsizliklerin etkisini belirginleştirmekte ve yatırımcıların kararlarını etkilemektedir. Türk sermaye piyasaları ise son yıllarda hem kendi iç dinamikleri hem de yabancı politik veya ekonomik dinamiklerle bağlantılı birçok belirsizlik karşısında faaliyet göstermektedir. Dolayısıyla dünyadaki yeni dönüşüm sürecinde artan belirsizliklerin piyasalar üzerindeki etkilerinin ortaya koyulabilmesi, hem politika yapıcılar hem de yatırımcılar için böyle bir ortamda doğru adımların atılabilmesi açısından oldukça önemlidir. Bu amaç doğrultusunda, 10 yıllık tahvil faiz oranları, Türkiye için 5 yıllık kredi risk primleri (CDS), ons altın ve brent petrol fiyatlarındaki belirsizliklerin yanı sıra, jeopolitik belirsizlik endeksi (GPR), ticari politika belirsizlik endeksi (TPU) ve iklim politikası belirsizlik endeksi (CPU) verilerinin seçilmiş borsa endeksleri üzerine asimetrik etkileri 2015-2025 dönemi için doğrusal olmayan gecikmesi dağılmış otoregresif (NARDL) model ile incelenmiştir. Bulgulara göre, seçilen belirsizlik unsurlarının borsa endeksleri üzerinde farklı yön ve ölçüde asimetrik etkileri bulunmaktadır. Elde edilen bulguların literatür için anlamlı katkılar sağlamasının yanında, Türkiye borsalarının dönüşüm süreci içerisindeki duruşu açısından da bir çerçeve sunabilmesi beklenmektedir.

Anahtar Kelimeler: : Küresel belirsizlik unsurları, finansal piyasalar, asimetrik şoklar, Borsa İstanbul, NARDL.

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INTRODUCTION

The financial liberalization process and technological developments that followed events such as the breakdown of the Bretton Woods system and oil shocks have had significant effects on the global financial system as well. Although this process increased the diversity and quantity of institutions and instruments in financial markets, it also led to an increase in and diversification of uncertainties. In the 21st-century world, financial markets are now more integrated with each other, and capital flows, the magnitude of which far exceeds the volume of commercial operations, have become rapidly mobile. During this period, uncertainties have also increased, and the world is undergoing a significant transformation, accompanied by developments in climate, health, trade, political relations, and technology, particularly in artificial intelligence.

At the beginning of this transformation process, it can be said that the development whose impact was felt most clearly was the Covid-19 pandemic, leading to a subsequent transformation process. In the following period, the US-China-based trade wars reminiscent of the policy of harming the neighbor in the early 20th century, the Russia-Ukraine war, conflicts and political tensions in Türkiye's neighboring regions are among the first examples that can be given.

Capital flows, which are highly sensitive to risks and uncertainties, may have more certain effects, especially in economies with more weaker financial systems and, may drive investors to seek safe havens more. Therefore, analyzing how the increasing uncertainties in such a transformation environment are reflected on the markets of emerging economies such as Türkiye is of great importance in terms of investment management and making the right policy decisions.

Hence, this study investigates how capital markets in Türkiye respond to various uncertainty factors in a changing world order environment. For this purpose, seven different uncertainty factors are taken into account, and the effects of asymmetric shocks in these factors on the BIST100, BIST30, and BIST Sustainability indices, respectively are analyzed by the time series analysis methods for the period 2015-2025. To address the research objective, the Nonlinear Autoregressive Distributed Lag (NARDL) model is adopted. The empirical findings reveal statistically significant but different effects of uncertainty factors on the Turkish stock exchange. Findings of this research contribute to the literature by considering various uncertainty factors together and suggesting that Turkish financial markets do not price these factors in uniformly. Hence, it can provide proof that within the ongoing global transformation environment, the nature and source of uncertainty factors have a crucial role in shaping emerging markets such as Türkiye.

The distinctive contribution of this research to the existing literature on the relationship between uncertainty and financial markets arises in several points. First, it provides empirical evidence that political uncertainty is not a homogeneous concept by distinguishing between uncertainty factors and revealing that these dimensions can generate asymmetric and even opposing stock market responses. Second, by employing the nonlinear analysis methods, this study can indicate the asymmetric effects of uncertainty shocks, which cannot be identified through conventional linear models. Third, the analysis covers the period 2015–2025, which is a global transformation era that is characterized by intensive climate policies, trade disputes, geopolitical tensions, and pandemic-related shocks. Therefore, this can offer a comprehensive perspective on how financial markets respond to uncertainty in such an environment. Fourth, by examining three different Borsa Istanbul indices representing distinct market segments—broad market, large-cap firms, and sustainability-oriented firms—the study reveals whether uncertainty effects vary across certain equity indices. Finally, contrary to many existing studies, the inclusion of a broad set of global and country-specific uncertainty indicators provides a holistic evaluation of uncertainty transmission to equity markets in an emerging market context.

1. Literature Review

Due to the increasing and diversifying risks in the world, studies investigating the effects of these risks on the financial system have started to increase recently. According to the existing literature, there are many studies analyzing the potential effects of uncertainty factors on financial markets. Many of these research employ time series analysis methods such as NARDL, ARDL, VECM and VAR. The most commonly considered global uncertainty factors are GPR, EPU, OVX, VIX, CPUI, and a few other factors are considered together in the analysis. Besides stock markets, it is also seen that responses of exchange rates, cryptocurrencies, sectoral indices, commodity prices, and Islamic financial markets are investigated. Most of this research is seen to be conducted on developing countries. However, it is seen that despite there being significant effects, this effect can vary according to the different locations and time periods. It is also seen that the responses of geopolitically fragile economies to risk shocks are much more salient. The diverse findings obtained from the existing literature indicate that this subject requires in-depth research and is still open to research, especially in developing countries. Some of these studies can be summarized below.

Banerjee, Sensoy, and Goodell (2024) studied how geopolitical risk affects financial markets. Accordingly, the risk spillover across geopolitical risk, forex, gold, energy, stocks, and bonds markets are analyzed by the time-varying VAR method from long-term and crisis perspectives. Findings indicate that the bond market is significant in this network. Moreover, it is found that during military conflicts, there is more risk spillover compared to the COVID-19 pandemic.

Doğru (2024) investigated the causality interaction that may arise among the geopolitical risk (GPR), global economy policy uncertainty index (GEPU), and Borsa Istanbul which taking into account the BIST transportation index for the period 2013 and 2023 by the causality tests. The findings reveal that increases in risk variables trigger declines in both the transportation index and its constituent stocks. It is also found that the negative shocks in GEPU lead to positive and negative shocks in the transportation index.

Saka Ilgın (2024) investigated the effect of uncertainties on capital markets by comparing the USA and Turkiye stock exchanges and considering the climate policy uncertainty index (CPUI) and the energy uncertainty index (EUI) as new and different uncertainty indicators. The ARDL approach is applied on the series obtained for the BIST100 and S&P500 indices as the stock exchange indicators and the CPUI and EUI indices as the uncertainty indicators for the period 2014-2022. It is found that while both indices significantly affect S&P500, their effect on BIST100 is statistically insignificant. Also, it is found that the effect of CPUI on S&P is positive and the effect of EUI is negative, both in the short-run and long-run. Despite being insignificant, both indices are found to have a negative effect on BIST100.

Seçme (2024) investigated the asymmetric effect of global uncertainty factors on Borsa Istanbul sectoral indices by the NARDL method for the period 2014-2022. The monthly data was obtained for 16 different sector indices. Selected global uncertainty factors are the implicit volatility indices measuring economic (EPU), geopolitical (GPR), energy (OVX), and financial risks (VIX). According to the findings, BIST100 and all sector indices but the SME index are affected by global uncertainty factors.

Shiblu and Kayser (2023) investigated the effect of political uncertainties on financial markets for the case of general parliamentary elections. The analysis is conducted by the event study and GJR-GARCH model considering the four elections held in 2001, 2008, 2014, and 2018 in Bangladesh and their effect on the return, volatility, and trade volume in the Dhaka Stock Exchange. It is found that election periods cause positive abnormal returns and Daily trade volume in the stock exchange. It is also found that volatility in returns is significantly affected by the election periods.

Simran and Sharma (2023) also used the NARDL approach and investigated the asymmetric effects of economic policy uncertainty (EPU) on financial markets. Different from the other studies, they analyzed the effect of the EPU on the cryptocurrency market between 2017 and 2022. The study has taken into account the returns of Ethereum, Bitcoin, Tether, Ripple, and Binance coin. Their findings indicated that EPU has a negative effect on all the cryptocurrencies aside from Tether. Hence, they conclude that it hardens the cryptocurrencies' safe hedge quality. On the other hand, it is also found that in the short-run, Ethereum, Bitcoin, Ripple, and Binance coin have positive interaction with the EPU's positive changes, indicating their safe haven attributes for shorter periods.

Wafi and Merlinda (2023) analyzed whether economic policy uncertainty (EPU) and macroeconomic factors significantly affect Indonesian Islamic Capital Markets. The macroeconomic factors taken into account are inflation, exchange rate,and GDP. The monthly data obtained for the period January 2018 and September 2022 is analyzed by the vector error correction model (VECM). They found out that GDP has a persistent effect on the Jakarta Islamic Index (JII). Furthermore, it is also found that JII responds in a positive way to exchange rates and reacts in a negative way to GDP of the United States and the EPU.

Camgöz (2022) also analyzed whether global uncertainty factors have asymmetric effects on Borsa Istanbul stock prices by the NARDL method for the period 2011-2021. The global economic policy uncertainty index (GEPU), Volatility Index (CBOE VIX), Crude Oil ETF Volatility Index (OVX), and Geopolitical Risk Index (GPR) are selected uncertainty factors. Analysis findings of monthly data revealed that uncertainty factors have different significant asymmetric effects on Borsa Istanbul stock prices.

Erdoğan, Ceylan, and Abdul-Rahman (2022) is another study analyzing the real oil prices, country-specific geopolitical risk, and global economic policy uncertainty on real stock returns in Turkiye by the NARDL method. They considered monthly data for the variables for the period 1997-2019. The study reveals that global economic policy uncertainty has a negative effect on stock returns. The country-specific geopolitical risk has a positive effect in the long-run on the market.

Li et al. (2022) also investigated the asymmetric effect of oil price, news-based uncertainties, and Covid-19 pandemic on the stock price index (SPI) by the Quantile Autoregressive Distributed Lag (QARDL) method. The daily data is obtained for the period January 2020 and June 2021. Research findings indicated that the relationship of oil

is positive and significant, news-based uncertainty is negative and signigificant across all of the quantiles of the SPI. However it is also found that the effect of Covid-19 is negative and significant only during the stable market conditions accompanied by a downward trend.

Pei (2022) is another research investigating the effect of economic policy uncertainty (CEPU) on financial markets for China. However, contrary to other studies examine the effect of CEPU on the correlation between stock prices and renminbi exchange rates in China. The monthly data obtained for the period August 2005 and August 2021 is analyzed by the DCC-MGARCH and TVP-SV-VAR methods. According to the analysis findings, there is a time-varying and positive relationship between the renminbi exchange rates and the Chinese stock markets. It is also found that the CEPU has a positive effect on the correlation between the variables in the short-run.

Özbay (2022) aimed to investigate the relationship between uncertainties arising from Covid-19 pandemic and companies listed in BIST100 from the auditing perspective. Accordingly, the 2019 and 2020 auditing reports and the parts providing evaluations regarding risks being exposed in the reports are compared. The study classified the issues reported in the key audit matters part of the reports to 18 different groups and set forth that "revenue recognition", "financial instruments", and "property, plant and equipment" were the most frequently reported topics in the reports. Moreover, it is also found that the share of accounting estimates that was expected to be the most affected by uncertainties has also increased in the key audit matters part of the auditing reports.

Syed, Fatima, and Zaheer (2022) aimed to examine the effect of Covid-19 on both uncertainty in the exchange rate and the stock market in Pakistan by the vector autoregressive model (VAR) for the period from February 2020 to May 2021. By using daily observations, their findings set forth that the effect of Covid-19 is positive for the uncertainty in both variables, yet it is a short-term effect. They concluded that these findings may arise from the fact that the risk-averse behavior of Pakistani investors and the timely policy responses.

Long, Pei, Tian & Lang (2021) investigated whether bitcoin and gold can serve as a safe-haven asset when faced with various uncertainty factors such as global economic policy uncertainty (GEPU), volatility index (VIX), and crude oil ETF volatility index (OVX). The NARDL method is applied to the data in order to investigate the asymmetric effects. According to the findings, contrary to bitcoin, gold can hedge against uncertainties to varying degrees. It is also found that the decrease of uncertainties has a greater impact on bitcoin price than the increase. In addition, the increase in uncertainties has a greater impact on the gold price than the decrease.

Punwong, Kaewsompong and Tansuchat (2021) searched for the effect of economic policy uncertainty on the Stock Exchange of Thailand by conducting a DCC-GARCH model on the monthly data obtained from January 2004 to December 2018. They found that economic policy uncertainty has a negative effect on the selected sectoral indices.

Özyeşil (2020) analyzed the effect of ten different economic and political uncertainty factors on the Athens stock exchange index and also the volatility in the Athens stock exchange index in Greece for the period from January 2005 to November 2019 by applying the ARDL model. Findings indicate that there is a negative relationship between the indicators in the long-run. It is also found that uncertainty factors do not have a significant effect on the price volatility of the stock exchange despite having an effect on the index itself.

Sulehri and Ali (2020) investigated the effect of political uncertainty on the Pakistani Stock Exchange between 1990 and 1999 by the event study since Pakistan has problems regarding economic growth and investor trust as a result of political instabilities and terrorist acts. Considering 18 political events in which they coded 10 of them as negative and the rest as positive, they found evidence that political events have an effect on the stock exchange and cause abnormal returns.

Mora and Sethapramote (2019) also searched for the spillover effect of global financial uncertainty (VIX) and global economic policy uncertainty (GEPU) on the Stock Exchange in Thailand by applying the GARCH model on the monthly data ranging from January 2004 to July 2018. It is seen that while VIX is the most important factor in explaining the spillover effect, GEPU can also have spillover effects when it moves in the same direction as the VIX index.

Zanjani & Mehregan (2018) analyzed the effect of currency shocks on the stock market in Iran in order to reveal the effect of exchange rate fluctuations arising from exchange policies. The asymmetric effect of dollar shockwaves on chemical and basic metals industry indices are investigated by the NARDL method on the weekly data obtained for the period 2006-2016. Findings reveal that the impact of positive shocks is positive and significant, while it is negative and nonsignificant for the negative shocks.

Examining the existing literature, this study is expected to make a significant contribution to the literature by taking into account a wide variety of uncertainty factors in the hope that the issue can be evaluated from a holistic point of view. Besides, by considering three different indices as the indicator of the general stock market group (BIST100), high performance group (BIST30) and sustainability theme group (BIST sustainability) in Borsa Istanbul, this research is also expected to make a significant contribution by revealing how different market segments respond to different sources of uncertainty. Additionally, this study can also contribute since it examines the relationship

between variables from a nonlinear perspective so as to set forth how the market reacts to positive and negative changes in the uncertainty factors. Finally, since the research covers monthly data from 2015 to 2025, it can provide an up-to-date perspective for global developments ranging from pandemic to transformations in climate policies and regional conflicts. Therefore findings of this research can hopefully shed light for not only researchers but also the investors and policymakers.

2. Data & Methodology

The aim of this study is to investigate the sensitivity of the Turkish stock exchange, Borsa Istanbul, to the selected global and local risk factors via the non-linear Autoregressive Distributed Lag (NARDL) method. In line with the aim of this study, the analysis is conducted for the period 2015-2025, which is a global transformation era that is characterized by intensive climate policies, trade disputes, geopolitical tensions, and pandemic-related shocks. Considering the existing literature, research questions for this study are determined as follows:

- Is the Turkish stock exchange sensitive to asymmetric shocks in global and local uncertainty factors?
- If so, how do Turkish capital markets react to asymmetric shocks of uncertainty factors?
- Can certain themed stock exchange indices respond differently to asymmetric shocks?

It can be said that the observations of asymmetric reactions in financial markets can be traced back to the 1970s. For example, in his study, Black (1976) proposes the idea that negative shocks are more powerful and defines this as the leverage effect. According to this, negative shocks increase volatility in financial markets more than positive shocks. Similarly, studies like Christie (1982), Schwert (1989), and Duffee (1995) also address the leverage effect and examine the behavior of volatility in financial markets in response to negative returns. Veronesi (1999) also conducted a remarkable study on the behavior of financial markets in the face of uncertainty and risk. The study establishes a pricing model for the effects of uncertainty on pricing and volatility. Veronesi (1999) thus shows that asset prices are affected by uncertainties and news, and bad news has a more severe impact on prices, especially during good times. The study conducted by Bloom (2009) is one of the prominent studies in this field as well, examining the effects of uncertainty shocks on economic activities and volatility. It demonstrates that uncertainty increases significantly, particularly following major macroeconomic and political shocks, and that these shocks also lead to strong real-option effects, influencing the dynamics of investment and employment behavior. It even shows that uncertainty shocks create a strong insensitivity to other economic stimuli and that monetary or fiscal policies, in particular, may become ineffective. Therefore, as these theoretical considerations put forward that increases and decreases in uncertainty may not generate the same responses in financial markets, it is reasonable to decompose explanatory variables into their positive and negative components within the NARDL framework. Uncertainty factors can exert asymmetric effects on stock markets because of their differential impact on investment timing and expectations. For example, Iqbal et al. (2024), states that increases and decreases in climate policy uncertainty may affect asset prices due to a risk-return trade-off. In addition, Nalban and Smădu (2021) asserts that uncertainty shocks also asymmetrically affects economy in terms of size and direction during normal and distressed financial conditions.

In line with these considerations, both global policy uncertainty factors as the indicators of geopolitical risk, trade policy uncertainty, and climate policy uncertainty; CDS premiums of Türkiye as the indicator of credit default risk; 10-year USA bond yields as the indicator of global economic expectations and risk perception; and the uncertainties calculated in selected commodities are considered for the investigation of asymmetric effects in this study. Three stock exchange indices are also included as the dependent variable. BIST100 index, BIST30, and BIST Sustainability indices are preferred as the indicators of a general overview of the stock market, high-performance stock group in the market, and sustainability theme stock group, respectively. The monthly data obtained for the period 2015:02 – 2025:03 are first examined for seasonality effects. Since it is found that the whole series has seasonality, the necessary conversion is conducted with Census x-13 in all series. Later, the analysis is carried out by taking logarithms of the series. The research scope consists of the series that are regularly available so as to get the optimum amount of observations (Table 1).

Table 1: Variables Used in the Analysis

Code	Type	Definition	Source
LNBIST100	Dependent	Logarithm of BIST100 index	tr.investing.com
LNXUSRD	Dependent	Logarithm of BIST Sustainability index	tr.investing.com
LNXU30	Dependent	Logarithm of BIST30 index	tr.investing.com
LNCDSTR	Independent	Logarithm of 5-year CDS premiums for Türkiye	tr.investing.com
LNGPR	Independent	Logarithm of geopolitical risk index	matteoiacoviello.com

Table 1: Variables Used in the Analysis (*cont.*)

Code	Type	Definition	Source
LNTPU	Independent	Logarithm of trade policy uncertainty index	matteoiacoviello.com
LNCPU	Independent	Logarithm of climate policy uncertainty index	policyuncertainty.com
LNABD10	Independent	Logarithm of 10-year USA bond yields	tr.investing.com
LNXAUUNC	Independent	Logarithm of uncertainty in ounce gold prices	tr.investing.com
LNBRENTUNC	Independent	Logarithm of uncertainty in Brent crude oil prices	tr.investing.com

Note: trinvesting.com is a data aggregation platform that compiles financial data from primary and authoritative sources, including stock exchanges and official market institutions. Hence, it has been frequently used in the empirical finance literature, particularly in studies focusing on financial markets. Its use in this study is limited to data collection and harmonization purposes.

The ounce gold price uncertainty (XAUUNC) and Brent oil price uncertainty (BRENTUNC) variables used in the analysis are calculated based on weekly data for the period 2015:02-2025:03. The GARCH (1,1) volatility model is constructed with the return series calculated for the variables, and then the uncertainty series are obtained with the residuals.

The generalized ARCH model (GARCH), which is an extension of the ARCH model, was introduced by Bollerslev (1986) and can be represented as equation (1) for the GARCH (1,1) model.

$$\sigma_t^2 = \alpha_0 + \alpha_1 \varepsilon_{t-1}^2 + \beta_1 \sigma_{t-1}^2$$
$$0 \leq \alpha_1 ; \beta_1 \leq 1 ; (\alpha_1 + \beta_1) < 1 \quad (1)$$

As seen in equation (1), unlike the ARCH model, lags of the conditional variance are also included in the conditional variance equation. ε_t , represents the shock at time t, α is the ARCH parameter, β is the GARCH parameter, and σ_t^2 indicates the conditional variance for the GARCH(1,1) model. After generating series according to this model, the annual averages of these series are also calculated and included in the research model as the proxy of uncertainty in ounce gold price and Brent crude oil prices. The models to calculate the uncertainty series are shown in Table 2.

Table 2: Findings for GARCH (1,1) Model Variance Equation

	Model: XAUUNC	Model: BRENTUNC
Variable		
C	0.000125***	0.000409*
RESID(-1)^2	0.111647*	0.207284*
GARCH(-1)	0.551414**	0.634179*
R-square	0.006078	0.001347
Log likelihood	1348.497	866.2061
Durbin-Watson stat.	1.994766	1.959091

Note: *, ** and *** represent 1%, 5% and 10% statistical significance levels, respectively.

In order to reveal the responses of stock market indices to asymmetric shocks in uncertainty factors, the method applied in this research is the nonlinear ARDL approach. The ARDL (autoregressive distributed lag) bounds test models were first developed by Pesaran, Shin, and Smith (2001). These models include both the current and lagged values of the explanatory variables as well as the lagged values of the dependent variable. They have advantages in explaining the long-run relationships between the variables, such as the cointegration interaction can be determined independently of the stationary levels of the variables taken into account. Moreover, it can provide better findings for smaller samples and estimate both long-run and short-run parameters. Exogeneity problem is also considered since this test is based on ARDL estimation (Pesaran, Shin, and Smith, 2001: 293-294).

A standard ARDL bounds test model in estimating the dynamic relationships between the variables, given the null hypothesis of H_0: $\pi_{yy} = 0$, $\pi_{yx.x} = 0$ can be shown as in equation (2) (Pesaran, Shin, and Smith, 2001):

$$\Delta y_t = c_0 + c_1 t + \pi_{yy} y_{t-1} + \pi_{yx.x} x_{t-1} + \sum_{i=1}^{p-1} \Psi_i \Delta z_{t-i} + \omega' \Delta x_t + \theta w_t + \varepsilon_t \quad (2)$$

According to equation (2), π_{yy} and $\pi_{yx.x}$ indicate the long-run multipliers, c_0 represents the autonomous parameter, t is the trend variable, w_t is the vector of complete independent variables, and ε_t is the error term. Also, the lagged values of Δy_t and the current and lagged values of Δx_t in the model estimated by the least squares method represent the short-run dynamic structure of the variables.

On the other hand, the Nonlinear Autoregressive Distributed Lag (NARDL) method, which was developed by Shin, Yu, and Greenwood-Nimmo (2013), does not assume that the relationships between variables are only linear and symmetric in the search for a cointegration relationship, unlike the ARDL method. The NARDL method, as an extension of the linear ARDL framework, also allows for the estimation of short and long-run asymmetric coefficients through a nonlinear error correction representation (Shin et al., 2013).

Hence, the final representation of a NARDL (p,q) model developed by Shin et al. (2013) can be given as in equation (3).

$$y_t = \sum_{j=1}^{p} \phi_j y_{t-j} + \sum_{j=0}^{q} (\theta_j^{+\prime} x_{t-j}^{+} + \theta_j^{-\prime} x_{t-j}^{-}) + \varepsilon_t, \quad (3)$$

Here, x_t is a multi-variable k x 1 vector which is defined as $x_t = x_0 + x_t^+ + x_t^-$. $\phi$is the autoregressive parameter, $\theta_j^+ \text{and} \theta_j^-$ are the asymmetrically distributed lag parameters, and ε_t is an independent and uniformly distributed process with zero mean and constant variance (σ_ε^2).

According to Shin et al. (2013), this model is useful and can provide accurate findings only when variables are stationary at different integration orders of I(0) and I(1) except I(2) as well.

Given this model and the research questions of this study, the null hypothesis for each stock market index and the selected uncertainty factor is constructed as follows:

H_0: Asymmetric shocks in the selected uncertainty factor (x) do not have a statistically significant effect on the stock market index (y).

In the context of the research questions, only the findings regarding the existence of asymmetrically cointegration relationship are taken into account in the evaluation.

Although the bounds test approach does not require a preliminary test for the unit root properties of the variables, it is still important to determine the stationarity levels of the variables. Because the critical values of the F statistic generated for the test will be invalid if the variables are integrated at I(2). On the other hand, since the test implicitly requires no serial correlation in the residuals, the serial correlation test should also be performed for the bounds test (Pesaran, Shin, and Smith, 2001). Therefore, Augmented Dickey-Fuller, Phillips-Perron, and Zivot-Andrews structural break unit root tests are applied to the variables in order to determine the appropriate analysis method and to avoid the problem of spurious regression. The null hypothesis of the unit root test is that there is a unit root problem in the related variable. After the NARDL model findings are obtained, the Breusch-Godfrey serial correlation test, Breusch–Pagan heteroskedasticity test, Jarque-Bera normality test, Ramsey Regression Equation Specification Error Test (RESET), and CUSUM stability test are also applied in order to check for potential assumption violations, and consider necessary revisions if any are detected.

3. Findings

Descriptive statistics are given in Table 3. Considering the variables regarding Borsa İstanbul, it is seen that both LNBIST100, LNXUSRD, and LNXU30 are not normally distributed for the Jarque-Bera test significance level p<0.05 with a right-skewed tendency. Among these series, LNXUSRD is the one with the highest skewness level (1.032581) which indicates that there may be higher values and outliers causing the mean of the variable to increase. This is also supported by its mean value (7.696682) and the standard deviation (0.910238) compared to other indices. Considering the uncertainty and global and local economic indicators, all of the series but LNCDTR and LNCPU are not normally distributed. Skewness values are also mostly right-skewed except for LNCPU (-0.354610) and

LNABD10 (-0.714717). The most notable point for these series is that the LNXAUUNC and LNBRENTUNC have quite high skewness and kurtosis values compared to other series, indicating a rather dense outliers.

Table 3: Descriptive Statistics

	LNBIST100	LNXUSRD	LNXU30	LNCDSTR	LNGPR
Mean	7.477830	7.696682	7.626077	5.814705	4.641657
Median	7.031740	7.228565	7.203466	5.787440	4.618639
Maximum	9.353613	9.675491	9.431234	6.675969	5.680531
Minimum	6.538895	6.776769	6.741840	5.022104	4.133089
Std. Dev.	0.896664	0.910238	0.851116	0.382419	0.264064
Skewness	0.955965	1.032581	1.009270	0.244011	0.570481
Kurtosis	2.339390	2.504578	2.424751	2.299307	4.029292
Jarque-Bera	20.80041	22.92757	22.39421	3.706440	12.00294
Probability	0.000030	0.000011	0.000014	0.156732	0.002475
Sum	912.2952	938.9951	930.3814	709.3940	566.2822
Sum Sq. Dev.	97.28474	100.2525	87.65221	17.69552	8.437275
Observations	122	122	122	122	122

	LNTPU	LNCPU	LNABD10	LNXAUUNC	LNBRENTUNC
Mean	4.309221	5.152652	0.816013	0.000369	0.002687
Median	4.122579	5.214697	0.849271	0.000354	0.002223
Maximum	6.259989	6.155323	1.557114	0.000863	0.020367
Minimum	2.994250	3.866248	-0.492337	0.000286	0.001029
Std. Dev.	0.646630	0.433190	0.500584	7.37E-05	0.002444
Skewness	0.782656	-0.354610	-0.714717	3.411351	5.056673
Kurtosis	3.402627	3.252931	3.199054	20.43418	31.94581
Jarque-Bera	13.27923	2.882083	10.58809	1781.708	4779.045
Probability	0.001308	0.236681	0.005021	0.000000	0.000000
Sum	525.7249	628.6236	99.55362	0.044966	0.327812
Sum Sq. Dev.	50.59376	22.70612	30.32067	6.58E-07	0.000723
Observations	122	122	122	122	122

Graphical illustrations of the variables are given in Figure 1. For the stock exchange indices, it is seen that the series have a tendency to increase notably, especially starting from 2020. Despite the general overview of the series are similar, the series for the LNXUSRD follows a smoother pattern. Considering the independent variables, it is seen that all the series have quite a volatile pattern. LNCDSTR has salient peak values in 2020-2021 and 2023, which may be a signal of being fragile to global, political, and economic shocks. As the indicator of global political risk, LNGPR increases sharply following the Covid-19 period and shows certain jumps in periods corresponding to global and regional changes and political conflicts. As the indicator of trade policy uncertainty, it is seen that LNTPU has generally a volatile pattern, which is notably in an increasing trend after 2022. Despite being volatile, LNCPU shows a rather consistent trend compared to other dependent variables. On the other hand, the increase in this series, which is the indicator of climate policy uncertainty, is noteworthy for the last years. Following a sharp decline in the Covid-19 pandemic period, the LNABD10 is increasingly getting higher by the time, which can indicate that it is sensitive to monetary policy shocks. LNXAUUNC and LNBRENTUNC have similar patterns with sharp jumps and salient outliers. However, with a higher volatility, the sensitivity of the LNXAUUNC seems to be higher to certain shock periods.

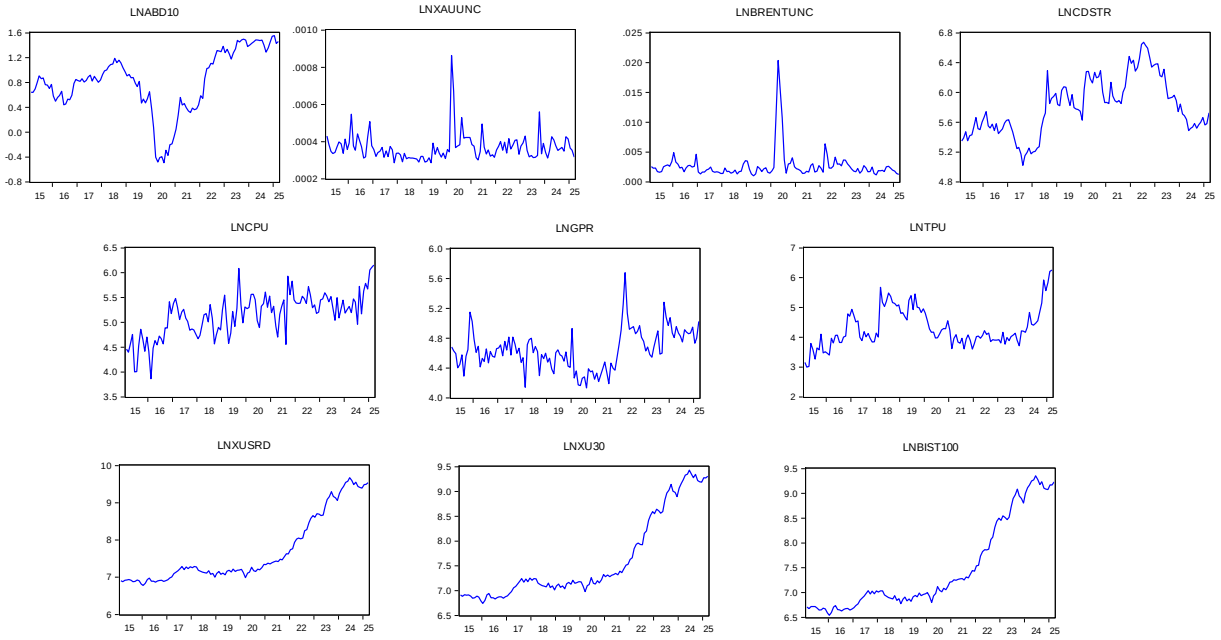

Figure 1: Graphical Illustration of the Variables

Table 4 presents the correlation coefficients between the variables. There are mostly significant and positive, yet relatively weak correlations between the dependent variables and uncertainty indices. Considering the correlations between the uncertainty indices, it is seen that although the statistically significant correlations between the variables decrease, the direction and magnitude of these relationships have begun to diversify and show variability. On the other hand, none of these coefficients signals a strong correlation between the variables.

Table 4: Correlation Coefficients

	A	B	C	D	E	F	G	H	I	J
A	1.00									
B	0.997*	1.00								
C	0.999*	0.999*	1.00							
D	0.225**	0.188**	0.199**	1.00						
E	0.491*	0.504*	0.501*	0.047	1.00					
F	0.183**	0.206**	0.204**	-0.067	0.065	1.00				
G	0.531*	0.522*	0.522*	0.404*	0.182**	0.445*	1.00			
H	0.650*	0.671*	0.672*	-0.135	0.611*	0.254*	0.134	1.00		
I	0.020	0.011	0.010	0.172***	-0.030	-0.211**	0.076	-0.325*	1.00	
J	-0.128	-0.143	-0.136	0.339*	-0.078	-0.243*	0.059	-0.424*	0.484*	1.00

Note: A = LNBIST100; B = LNXUSRD; C = LNXU30; D = LNCDSTR; E = LNGPR; F = LNTPU; G = LNCPU; H = LNABD10; I = LNXAUUNC; J = LNBRENTUNC.

Findings regarding the three unit root tests are given in Table 5. These tests are Augmented Dickey Fuller (ADF) (Said and Dickey, 1984), Phillips Perron (PP) (1988) and Zivot-Andrews (ZA) (1992) structural break unit root tests. Null hypothesis for all these tests is that the series contain a unit root, and they are not stationary. As seen from the findings, each variable is stationary at I(0) or I (1) levels, and no variable has a stationary level of I(2). Therefore, it is determined that the data can meet the requirements of the NARDL approach.

Table 5: Unit Root Test

Variable	Level	Deterministic Chosen	ADF	PP	ZA (break date)
LNBIST100	I(0)	Constant	1.3709	1.2581	-3.9189 (2022:03)
		Trend	-1.3517	-1.3599	-3.0025 (2018:04)
	I(1)	Constant	-9.9279*	-9.9470*	-7.0714*(2020:04)
		Trend	-10.2365*	-10.2216*	-7.8732* (2022:01)
LNXUSRD	I(0)	Constant	1.5319	1.4173	-3.3726 (2022:03)
		Trend	-1.1018	-1.1236	-3.1406 (2019:10)
	I(1)	Constant	-10.1105*	-10.1543*	-10.9115*(2020:04)
		Trend	-10.4840*	-10.4750*	-11.2489* (2022:01)
LNXU30	I(0)	Constant	1.2991	1.2291	-4.0065 (2022:08)
		Trend	-1.2658	-1.2749	-3.0580 (2019:10)
	I(1)	Constant	-10.4942*	-10.5291*	-6.9491* (2021:10)
		Trend	-10.8224*	-10.8220*	-7.7199* (2022:01)
LNCDSTR	I(0)	Constant	-2.0783	-2.0439	-3.766865 (2023:06)
		Trend	-2.0035	-2.0035	-3.815391 (2021:09)
	I(1)	Constant	-11.6431*	-11.6555*	-11.9445* (2022:08)
		Trend	-11.6365*	-11.6667*	-12.0130* (2017:09)
LNGPR	I(0)	Constant	-3.2597**	-4.2486*	-5.9185 (2021:11)
		Trend	-4.6857*	-4.7075*	-5.8695 (2021:11)
	I(1)	Constant	-14.6102*	-17.4838*	-10.2214* (2022:04)
		Trend	-14.5601*	-17.4554*	-10.2221* (2022:04)
LNTPU	I(0)	Constant	-2.2015	-1.9090	-3.1718 (2020:02)
		Trend	-2.3662	-2.1084	-3.0016 (2023:09)
	I(1)	Constant	-14.1128*	-14.1572*	-14.5977* (2018:08)
		Trend	-14.0698*	-14.0698*	-14.6581* (2019:09)
LNCPU	I(0)	Constant	-3.1426**	-4.0981*	-7.5296* (2016:09)
		Trend	-6.6713*	-6.7852*	-7.3037* (2017:01)
	I(1)	Constant	-11.7832*	-25.9451*	-7.7062* (2017:04)
		Trend	-11.7405*	-25.4794*	-7.8281* (2023:07)
LNABD10	I(0)	Constant	-0.8818	-1.2307	-3.2031 (2022:03)
		Trend	-1.2241	-1.5388	-4.6479 (2020:01)
	I(1)	Constant	-9.1160*	-9.0946*	-7.0617* (2020:08)
		Trend	-9.1076*	-9.1076*	-7.0192* (2020:08)
LNXAUUNC	I(0)	Constant	-7.3670*	-7.4101*	-8.6232* (2020:03)
		Trend	-7.3479*	-7.3913*	-8.5903* (2020:03)
	I(1)	Constant	-9.5147*	-34.8024*	-9.9929* (2020:05)
		Trend	-9.4695*	-34.4820*	-9.9617* (2020:05)
LNBRENTUNC	I(0)	Constant	-6.1643*	-3.1871**	-7.0838* (2020:02)
		Trend	-6.1371*	-3.1635***	-7.5545* (2020:03)
	I(1)	Constant	-8.0634*	-12.2279*	-8.7170* (2020:05)
		Trend	-8.0340*	-12.4250*	-8.6858* (2020:05)

Note1: *, ** and *** represent 1%, 5% and 10% statistical significance levels respectively.
Note2: For Zivot-Andrews test, critical test values are as follows: for constant model, -5.34 (1%), -4.93 (5%) and -4.58 (10%); for trend model -5.57 (1%), -5.08 (5%) and -4.82 (10%).
Note3: The maximum lag length considered in the tests is 12 and the information criteria used is the Akaike information criterion (AIC).

As a nonlinear unit root test, the Kapetanios-Shin-Snell (KSS) (2003) test is also applied to the series. According to this test, the null hypothesis states the existence of a unit root. The alternative hypothesis for this test indicates a nonlinear stationary mean-reverting smooth transition autoregressive (STAR) process. Findings reveal that all the variables but LNGPR and LNCPU are nonlinear and nonstationary. LNGPR and LNCPU exhibit nonlinear stationary at the 10% statistically significance level under the demeaned and detrended specifications, respectively (Table 6).

Table 6: KSS Nonlinear Unit Root Test

	Raw Data (Case 1)	Demeaned Data (Case 2)	Detrended Data (Case 3)
LNBIST100	3.4383	0.5116	-2.0292
LNXUSRD	3.5932	0.6660	-1.6385
LNXU30	3.2331	0.7953	-1.7724
LNCDSTR	-0.1475	-1.6237	-2.0931
LNGPR	-0.3014	-2.7465***	-2.8070
LNTPU	0.6194	0.0864	-0.7107
LNCPU	1.3683	-0.9263	-3.1991***
LNABD10	-0.1762	-1.9246	-1.4962
LNXAUUNC	-0.1154	0.3498	0.3501
LNBRENTUNC	0.2462	0.8872	0.8939
Critical Values:			
1%	-2.82	-3.48	-3.93
5%	-2.22	-2.93	-3.40
10%	-1.92	-2.66	-3.13

Note1: *, ** and *** represent 1%, 5% and 10% statistical significance levels respectively.
Note2: The maximum lag length considered in the tests is 12 and the information criteria used is the Akaike information criterion (AIC).

After having the NARDL model findings for the whole series, the diagnostic tests are applied to the models in order to check for assumptions. The tests applied to the models are the Jarque Bera (JB) Normality test, Breusch-Godfrey Serial Correlation LM (BG LM) Test, White Test for heteroskedasticity, Ramsey Regression Equation Specification Error Test (Ramsey Reset), and Cusum stability test. In the Jarque Bera (JB) test, the null hypothesis states that the error terms are normally distributed. In the Breusch-Godfrey serial correlation LM test (BG LM), the null hypothesis states that there is no serial correlation in the error terms. In the Breusch-Pagan-Godfrey heteroskedasticity test (White), the null hypothesis states that the error terms are homoskedastic, and in the Ramsey Reset test, the null hypothesis states that there is no specification problem in the model. If the CUSUM stability tests are within the 5% confidence limits, it is denoted by "yes" in the table, indicating that the estimated parameters are stable over the estimation period. Findings of these tests are presented in Table 7. Accordingly, there are not any normality and serial correlation problems in the models. On the other hand, there is heteroskedasticity problem in many of the models as seen in Table 7. Therefore, NARDL models are applied to these models again by White robust estimators. Final robust NARDL findings are given in Table 8 and Table 9, respectively.

Table 7: Diagnostic Tests

	JB Normality	BG LM Serial Corr.	Heteroskedasticity (White)	Ramsey Reset	CUSUM
LNCDSTR:					
LNBIST100	0.0046	1.307460	54.36868**	2.097689**	yes
LNXUSRD	0.0740	2.031815	35.21304**	1.553820	yes
LNXU30	0.1669	3.528187	30.06876***	1.346462	yes
LNGPR:					
LNBIST100	0.3647	2.286684	28.48424***	1.241477	yes
LNXUSRD	0.6871	1.933704	26.04274	1.171937	yes
LNXU30	0.6481	2.031951	29.08887***	0.891076	yes
LNTPU:					
LNBIST100	1.2124	0.103412	39.62383	1.246702	yes
LNXUSRD	0.8071	0.132676	40.17692	1.402237	yes
LNXU30	0.2371	1.358323	21.05473	1.113582	yes
LNCPU:					
LNBIST100	2.0862	1.186502	47.83047***	0.087684	yes
LNXUSRD	0.2156	1.306749	24.46160**	1.094706	yes
LNXU30	0.6065	1.728703	24.80449**	0.857849	yes
LNABD10:					
LNBIST100	2.1274	2.406584	40.54224**	1.408678	yes
LNXUSRD	0.8802	1.416863	24.19230**	0.499886	yes
LNXU30	1.2993	2.499929	28.21440	0.859451	yes

Table 7: Diagnostic Tests (*cont.*)

	JB Normality	BG LM Serial Corr.	Heteroskedasticity (White)	Ramsey Reset	CUSUM
LNXAUUNC:					
LNBIST100	0.00013	1.061746	38.90438***	0.217687	yes
LNXUSRD	1.1250	2.251352	21.31980	2.051664**	yes
LNXU30	1.6026	2.139234	21.53021	1.806431***	yes
LNBRENTUNC:					
LNBIST100	1.2253	1.545284	30.01881*	0.480513	yes
LNXUSRD	0.3855	1.696707	23.77487*	1.424933	yes
LNXU30	0.6142	2.328988	21.91566*	1.319823	yes

Note: *, ** and *** represent 1%, 5% and 10% statistical significance levels respectively.

Findings on the long-run impacts of risk factors on each stock market index are given in Table 8. Accordingly, there is statistically significant asymmetric cointegration only between LNCDSTR and LNBIST100. However, none of the coefficients are found to be statistically significant. LNGPR and all the stock market indices are in a statistically significant asymmetric cointegration relationship. Both positive and negative shocks have a statistically significant and positive effect on the stock exchange indices. Both positive (2.586547) and negative (2.262764) shocks in LNGPR affect LNXUSRD the most. There is also statistically significant asymmetric cointegration between LNTPU and all of the stock market indices. Negative and positive shocks of LNTPU have a statistically significant and negative effect on the indies. However, none of the coefficients are statistically significant. Both positive (-2.328004) and negative (-2.864840) shocks from LNTPU affect LNXUSRD the most. LNCPU and all of the indices are in a statistically significant asymmetric cointegration relationship, but the coefficients are not significant, and they are all positive. LNABD10 is in a statistically significant asymmetric cointegration relationship only with LNXUSRD and LNXU30. Only positive shocks from LNABD10 have a positive (0.907502) and significant effect on LNXUSRD. Both positive and negative shocks from LNABD10 have a statistically significant effect on LNXU30, and these effects are 0.921182 and 0.381215, respectively. LNXAUUNC is in a statistically significant relationship only with LNBIST100. On the other hand, the coefficients for this variable are not statistically significant. Finally, there is a statistically significant asymmetric cointegration relationship between LNBRENTUNC and all of the indices but LNBIST100. However, none of the estimated coefficients are statistically significant.

Table 8: Long-run Impacts of Risk Factors

	LNBIST100	LNXUSRD	LNXU30
LNCDSTR+	-27.36898	87.27851	24.47789
LNCDSTR-	-26.01593	78.62456	22.62013
F-bound / LNCDSTR	3.606630***	3.336407	3.045609
Wald / LNCDSTR	0.025733	0.131190	-
LNGPR+	2.285154*	2.586547*	2.364878*
LNGPR-	1.968871*	2.262764*	2.075569*
F-bound / LNGPR	7.542860*	7.225315*	7.173654*
Wald / LNGPR	11.57453*	10.09734*	10.95562*
LNTPU+	-1.338456	-2.328004	-0.947589
LNTPU-	-1.735523	-2.864840	-1.281953
F-bound / LNTPU	4.163672**	4.720378**	4.833838**
Wald / LNTPU	6.255440**	5.358328**	4.664254**
LNCPU+	0.663147	0.758956	0.681210
LNCPU-	0.387766	0.436925	0.408580
F-bound / LNCPU	4.057025**	5.299360**	4.942914**
Wald / LNCPU	3.444910***	2.659304	2.739433
LNABD10+	0.868954*	0.907502*	0.921182*
LNABD10-	0.284844	0.277168	0.381215**
F-bound / LNABD10	2.736834	9.076488*	4.733170**
Wald / LNABD10	12.09936*	10.51801*	16.37476*
LNXAUUNC+	3.556475	2.199342	1.482001
LNXAUUNC-	3.031714	1.469112	0.848566
F-bound / LNXAUUNC	4.279338**	3.038694	2.456750
Wald / LNXAUUNC	3.553861***	4.532095**	4.339560**

Table 8: Long-run Impacts of Risk Factors (*cont.*)

	LNBIST100	LNXUSRD	LNXU30
LNBRENTUNC+	0.678050	0.583197	0.714113
LNBRENTUNC-	0.421802	0.275803	0.441139
F-bound / LNBRENTUNC	2.846516	5.383095**	4.877455**
Wald / LNBRENTUNC	4.383201**	5.644632**	5.444136**

Note1: *, ** and *** represent 1%, 5% and 10% statistical significance levels respectively.
Note2: Test statistics for F-bounds test are as follow: for 1% significance level, 4.358 (I(0)) and 5.393 (I(1)); 5% significance level, 3.235 (I(0)) and 4.053 (I(1)); 10% significance level, 2.713 (I(0)) and 3.453 (I(1)).
Note3: Model selection method is the Akaike information criterion (AIC), and maximum dependent lags are set automatically to 8.

Findings on the short-run impacts of risk factors on stock market indices are given in Table 9. Accordingly, LNCDSTR has a statistically significant effect only on LNBIST100, and both positive and negative shocks have negative effects. LNGPR has a statistically significant effect on all of the indices. Positive shocks from LNGPR have negative effects on all of the indices. LNTPU has statistically significant and positive shocks on all of the indices. Only negative shocks have statistically significant and positive effects. Positive shocks from LNCPU have statistically significant and negative effect on all of the indices. On the other hand, lagged values have the most effect on LNBIST100. While negative shocks from LNABD10 have a positive effect on only LNXUSRD and LNXU30, positive shocks have a statistically significant and negative effect only on LNXU30. For LNXAUNC, only positive shocks in the variable have a statistically significant and negative effect on LNBIST100. LNBRETUNC does not have a statistically significant effect on any of the indices. Error correction terms, on the other hand, are found to be negative and statistically significant for the whole models but the one established for the relationship between LNCDSTR and LNBIST100. Accordingly, deviations from short-term equilibrium can return to equilibrium in the long term. But, the positive and significant cointegration coefficient in the model established for LNDSTR and LNBIST100 is statistically unexpected and indicates that a stable equilibrium relationship cannot be established and deviations are not being corrected between the variables in the long-run. Although there is not a significant cointegration relationship between the variables in the long term, the finding regarding LNCDSTR suggests that short-term shocks to the LNBIST100 may have destabilizing effects on the market.

Table 9: Short-run Impacts of Risk Factors

	LNBIST100	LNXUSRD	LNXU30
D(LNCDSTR_NEG)	-0.243047*	-	-
D(LNCDSTR_POS)	-0.181548**	-	-
D(LNGPR_POS(-1))	-0.162568*	-0.159485*	-0.160587*
D(LNGPR_POS(-2))	-0.163991*	-0.154769*	-0.160355*
D(LNTPU_NEG(-1))	0.079521***	0.089019**	0.077219***
D(LNTPU__NEG(-6))	0.169491*	0.168386*	0.170653*
D(LNCPU_POS(-2))	-0.062181**	-0.053033***	-0.056573***
D(LNCPU_POS(-3))	-0.053397***	-	-
D(LNABD10_NEG)	-	0.284700*	0.280024*
D(LNABD10_POS(-3))	-	-	-0.275381*
D(LNXAUUNC_POS)	-0.167442*	-	-
CointEq(-1) (LNCDSTR)	0.001881*	-0.000436*	-0.001695*
Wald LNCDSTR	0.211315	-	-
CointEq(-1) (LNGPR)	-0.063191*	-0.054973*	-0.064122*
Wald LNGPR	13.00522*	11.48367*	12.09219*
CointEq(-1) (LNTPU)	-0.023361*	-0.016811*	-0.023278*
Wald LNTPU	17.49270*	18.18980*	15.56357*
CointEq(-1) (LNCPU)	-0.032402*	-0.021966*	-0.026274*
Wald LNCPU	5.668354**	2.863120***	3.258913***
CointEq(-1) (LNABD10)	-0.072783*	-0.054463*	-0.084153*
Wald LNABD10	-	11.53536*	17.36991*
CointEq(-1) (LNXAUUNC)	-0.026159*	-0.019612*	-0.022290*
Wald LNXAUUNC	11.08153*	-	-
CointEq(-1) (LNBRENTUNC)	-0.026818*	-0.021289*	-0.023483*
Wald LNBRENTUNC	-	-	-

Note: *, ** and *** represent 1%, 5% and 10% statistical significance levels respectively.

SUMMARY & CONCLUSION

The aim of this study is to reveal how Turkish stock markets respond to asymmetrical shocks from selected uncertainty factors from a holistic point of view. Accordingly, besides global risk factors such as geopolitical risk index, trade policy uncertainty index, and climate policy uncertainty index, 5-year CDS premiums for Turkiye are also considered so as to indicate the credit risk of the country, and 10-year USA bond yields are taken into account as the indicator of global economic conjuncture and expectations. Moreover, uncertainty in commodity prices, such as ounce gold prices and Brent crude oil prices, are also considered. The asymmetric effects of these factors are investigated for the 2015:02 and 2025:03 period by the NARDL method. The effect of risk factors is examined on three different indices as, BIST100, BIST30, and BIST Sustainability indices, in order to identify whether different theme groups respond differently to the asymmetrical shocks. Analysis findings indicate that the indices can respond significantly and to varying degrees to asymmetrical shocks.

Long-run effects can be summarized as follows:

- Asymmetric effects can be seen clearly for geopolitical risk, trade policy uncertainty, 10-year USA bond yields, and uncertainty in commodity prices.
- 5-year CDS premiums for Türkiye are in asymmetric cointegration relationship only with BIST100, yet having non-significant coefficients. This indicates that investors respond similarly to asymmetrical shocks from CDS premiums.
- Of all the risk factors, the most salient, consistent and strong effects stem from geopolitical risk factors.
- Both positive and negative shocks of geopolitical risks have positive effects on all of the indices, and mostly on the BIST Sustainability index. There is also an asymmetric effect from this risk factor. This finding may indicate that during the periods geopolitical risks increase, investors behave in a “risk-off” pattern and tend to move towards local markets they consider less risky.
- Increases in the trade policy uncertainty index cause decreases in all of the indices. While the highest effects are seen on the Bist Sustainability index, the lowest effects are seen on the Bist30 index. In the long-run there is an asymmetric cointegration relationship between variables.
- Increases in climate policy uncertainty cause an increase in all of the indices. While the highest effect is seen on the Bist Sustainability index, the lowest effect is seen on the BIST100.
- On the other hand, the coefficients estimated both for trade policy uncertainty and climate policy uncertainty factors are nonsignificant may mean that investors may not be pricing such factors.
- 10-year USA bond yields have positive effects on all of the indices. However asymmetric cointegration relationship is seen only for the Bist Sustainability index and the BIST30 index. Effects of positive shocks are higher and significant compared to negative shocks. This finding may reveal that the increases in the USA bond yields interestingly effect the investors in Borsa Istanbul in a positive way, and investors are more sensitive to increases than the decreases.
- Uncertainty in ounce gold prices has positive effects and there is an asymmetric cointegration relationship between the variables only for BIST100. This may indicate that the volatility in gold prices cause investors to move towards stocks because, as seen, Borsa Istanbul is positively affected by these changes.
- There is an asymmetric cointegration relationship between the uncertainty in crude oil prices and all the stock indices except for BIST100. Uncertainty in Brent crude oil prices has positive but nonsignificant effects on the indices. Despite being nonsignificant, the highest effects are seen in the BIST30 index. This may indicate that uncertainty in this factor causes the BIST30 to increase mostly because this index includes many firms from the energy sector, yet investors cannot price such volatilities significantly.
- It can be concluded that the Turkish stock market indices are highly sensitive to geopolitical changes, the USA interest rates, and volatility in crude oil and ounce gold prices. Therefore, steps taken towards increasing the predictability in these areas may be in favor of market stability.

Short-run effects can be summarized as follows:

- The most salient short term risk factors are the geopolitical risk and trade policy uncertainty.
- Lagged effects of risk factors indicate the investors in Borsa Istanbul have some kind of reaction time to uncertainties in the short-run.
- An increase in CDS premiums reduces confidence in the Turkish economy, which causes the BIST100 to decrease.
- Increases in geopolitical risks affect the Turkish stock market negatively in the short-run, and investors prefer safe havens.
- Trade policy uncertainty has lagged effects on the indices, and these effects are all positive only for the negative shocks. Positive shocks do not have an effect on the stock market in the short-run.

- Climate policy uncertainty has also lagged effects on the indices, but its effects are all negative only for the positive shocks. This may reflect the risk averse behavior of the investors in the short-run. Also, it is notable that the effects are the highest for the Bist Sustainability index.
- Negative shocks from USA bond yields cause the Bist Sustainability index and the Bist30 index to increase in the short-run. Positive shocks cause a decrease only in the Bist30 index. Accordingly, a decrease in USA bond yields causes capital movements to move towards developing markets in the short-run, which can support markets like Borsa Istanbul.
- Only increases in uncertainty of ounce gold prices cause a decrease in the BIST100 index. This may indicate that because of the increasing uncertainty, investors seek for safe havens and leave stock markets such as Borsa Istanbul that can be considered risky as well. On the other hand, this effect can not be seen on the Bist Sustainability and the Bist30 indices in the short-run.

While there are non-strong but mostly positive correlations between the uncertainty indices, it is seen that their asymmetric effect on the stock market indices varies in terms of magnitude and direction. These findings can indicate that the effects of uncertainty factors on stock market indices take place through different transmission mechanisms. In addition, it is also seen that the effects regarding policy uncertainty indices occur in different ways. This situation may arise from the fact that policy uncertainty factors are not homogeneous. Hence, it can be said that uncertainties regarding different policy areas lead to different risk perceptions and expectations in Turkish financial markets.

As seen, the findings of this research are compatible with most of the studies examined in the literature review. Erdoğan et al. (2022) also found that CDS like country risk indicators have an effect on Türkiye in the long-run. They considered country-specific geopolitical risk factors. Similarly, studies like Banerjee et al. (2024) found significant and increasing effects of geopolitical risk factors on financial markets as well. For the effect of climate policy uncertainty, Saka Ilgın (2024) found nonsignificant effects on the Bist100 index as well. For crude oil findings, Li et al. (2022) also found a positive interaction between the variables.

For future research, alternative risk factors can also be considered, and sectoral or firm-level effects of uncertainty factors can be investigated.

REFERENCES

Banerjee, A.K., Sensoy, A. and Goodell, J.W. (2024). Volatility connectedness between geopolitical risk and financial markets: Insights from pandemic and military crisis periods, International Review of Economics & Finance, 96(C), 103740.

Black, F. (1976). Studies of stock price volatility changes. *Proceedings of the 1976 Meetings of the Business and Economic Statistics Section*, American Statistical Association, 177-181.

Bloom, N. (2009). The impact of uncertainty shocks. *Econometrica*, 77(3), 623–685.

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

Camgöz, M. (2022). Global belirsizlik faktörlerinin BIST hisse senedi fiyatlarına asimetrik etkilerinin NARDL modeliyle analizi, *Maliye ve Finans Yazıları*, 36(118), 71-100.

Christie, A.A. (1982). The stochastic behavior of common stock variances: Value, leverage, and interest rate effects, *Journal of Financial Economics*, 10: 407-432.

Climate Policy Uncertainty Index, https://www.policyuncertainty.com/climate_uncertainty.html, Accessed: 20.04.2025.

Doğru, E. (2024). Belirsizliklerin finansal piyasalara simetrik ve asimetrik etkisi: BIST ulaştırma endeksi üzerine bir araştırma, *Journal of Transportation and Logistics*, 9(1), 97-111.

Duffee, G.R. (1995). Stock returns and volatility: A firm-level analysis, *Journal of Financial Economics*, 37, 399-420.

Erdoğan, L., Ceylan, R., & Abdul-Rahman, M. (2022). The impact of domestic and global risk factors on Turkish stock market: Evidence from the NARDL approach. *Emerging Markets Finance and Trade*, 58(7), 1961–1974.

Historical Geopolitical Risk Index, https://www.matteoiacoviello.com/gpr.htm, Accessed: 20.03.2025.

Investing.com, Dünya ve Sektör Endeksleri, https://tr.investing.com/indices/world-indices, Accessed: 20.03.2025.

Iqbal, N., Bouri, E., Shahzad, S.J.H. & Alsagr, N. (2024). Asymmetric impacts of Chinese climate policy uncertainty on Chinese asset prices. *Energy Economics*, 133, 107518.

Kapetanios, G., Shin, Y., & Snell, A. (2003). Testing for a unit root in the nonlinear STAR framework. *Journal of econometrics*, 112(2), 359-379.

Li, C., Lin, S., Sun, Y., Afshan, S. And Yaqoob, T. (2022). The asymmetric effect of oil price, news-based uncertainty, and COVID-19 pandemic on equity market, *Resources Policy*, 77, 102740.

Long, S., Pei, H., Tian, H. & Lang, K. (2021). Can both Bitcoin and gold serve as safe-haven assets? — A comparative analysis based on the NARDL model, *International Review of Financial Analysis*, 78, 101914.

Mora, A. & Sethapramote, Y. (2019). Spillover effects of global financial uncertainty and economic policy uncertainty on stock exchange of Thailand. *Chiang Mai University Journal of Economics*, 23(2), 1-26.

Nalban, V. & Smădu, A. (2021). Asymmetric effects of uncertainty shocks: Normal times and financial disruptions are different. *Journal of Macroeconomics*, 69, 103331.

Özbay, D. (2022). COVID-19 pandemi döneminde artan belirsizlik ortamı ve kilit denetim konuları açıklamaları üzerindeki etkisi: BİST 100 şirketleri incelemesi. *Muhasebe Enstitüsü Dergisi*, 66, 49-63.

Özyeşil, M. (2020). Investigation of the relationship between economic and political uncertainty and general economic outlook: An econometric analysis on Athens Stock Exchange. *Adam Academy Journal of Social Sciences*, 10(1), 73-104.

Pei, B. (2022). Does economic policy uncertainty affect the correlation between stock price and rmb exchange rate?: Analysis based on DCC-MGARCH and TVP-SV-VAR models, *Journal of Global Economy, Business and Finance (JGEBF)*, 4(4), 15-20.

Pesaran, M. H., Shin, Y., & Smith, R. J. (2001). Bounds testing approaches to the analysis of level relationships. *Journal of Applied Econometrics*, 16(3), 289–326.

Phillips, P.C. B and Perron, P. (1988). Testing for a unit root in time series regression, *Biometrika*, 75(2), 335 346.

Punwong, S., Kaewsompong, N. & Tansuchat, R. (2021). Impact of economic policy uncertainty on the stock exchange of Thailand: Evidence from the industry-level stock returns in Thailand. In: Sriboonchitta, S.,

Kreinovich, V., Yamaka, W. (eds) *Behavioral Predictive Modeling in Economics. Studies in Computational Intelligence*, vol 897. Springer, Cham, pp.393-406.

Said, S.E., & Dickey, D.A. (1984). Testing for unit roots in autoregressive-moving average models of unknown order. *Biometrika*, 71(3), 599-607.

Saka Ilgın, K., (2024). Analysis of the impact of climate policy and energy uncertainties on the stock exchange: The case of Turkiye and America. *PressAcademia Procedia (PAP)*, 20: 34-40.

Schwert, G.W. (1989). Business cycles, financial crises, and stock volatility, *NBER Working Paper Series*, Working Paper No: 2957.

Seçme, Z.O. (2024). Global belirsizlik faktörleri ile BİST sektör endeksleri arasındaki kısa ve uzun dönem ilişkisi, *BMIJ*, 12(1), 93-115.

Shiblu, K.A. & Kayser, M.S. (2023). Ballot boxes and stock market: The influence of parliamentary election uncertainty on Dhaka Stock Exchange (DSE) returns, volatility, and trading volume. *Jahangirnagar University Journal of Business Research (JUJBR)*, 23: 93-110.

Shin, Y., Yu, B. and Greenwood-Nimmo, M. (2013). Modelling asymmetric cointegration and dynamic multipliers in a nonlinear ARDL framework, *Festschrift in Honor of Peter Schmidt, W.C. Horrace and R.C. Sickles, eds., Forthcoming*, http://dx.doi.org/10.2139/ssrn.1807745, Accessed: 22.05.2025.

Simran and Sharma, A.K. (2023). Asymmetric impact of economic policy uncertainty on cryptocurrency market: Evidence from NARDL approach. *The Journal of Economic Asymmetries*, 27: e00298.

Sulehri, F.A. & Ali, A. (2020). Impact of political uncertainty on Pakistan Stock Exchange (1990-1999), an event study approach, *MPRA Paper*, No: 104623, University Library of Munich, Germany.

Syed, A., Fatima, K., & Zaheer, M. (2022). The impact of COVID-19 on stock market and exchange rate uncertainty in Pakistan. *Business Review*, 16(2), 96-108.

Veronesi, P. (1999). Stock market overreaction to bad news in good times: A rational expectations equilibrium model. *The Review of Financial Studies*, 12(5), 975–1007.

Wafi, F.M. & Merlinda, S. (2023). An empirical study on effect of macroeconomic and United States economic policy uncertainty on Jakarta Islamic Index movement in the Indonesian Islamic capital market. *Al-Amwal: Jurnal Ekonomi dan Perbankan Syariah*, 15: 139-158.

Zanjani, M.S. & Mehregan, N. (2018). asymmetric effect of exchange rate risk on the stock index of export-oriented industries using the NARDL model, *JEMR*, 9 (33) :89-116.

Zivot, E. & Andrews, W.K. (1992). Further evidence on the great crash, the oil-price shock, and the unit root hypothesis. *Journal of Business and Economic Statistics*, 10(3), 251-270.

EXTENDED ABSTRACT
GENİŞLETİLMİŞ ÖZET

YENİ BİR DÜNYA DÜZENİNİN EŞİĞİNDE: BELİRSİZLİK FAKTÖRLERİNİN ASİMETRİK ŞOKLARI KARŞISINDA TÜRK SERMAYE PİYASALARI

Bu çalışmanın amacı, Türk sermaye piyasalarında seçilmiş belirsizlik faktörlerinin asimetrik şoklarının etkilerini ortaya koymaktır. Pandemi döneminden beri dünyada artan bölgesel ve küresel belirsizlikler hem yatırımcıları hem politika uygulayıcıları ne tür belirsizliklere maruz kaldıklarını tespit etmeye ve bu doğrultuda yatırım kararlarına ilişkin doğru adımlar atmaya itmektedir. Bu doğrultuda, araştırma için 10 yıllık tahvil faiz oranları, ons altın ve brent petrol fiyatlarındaki belirsizliklerin yanı sıra, jeopolitik belirsizlik endeksi (GPR), ticari politika belirsizlik endeksi (TPU) ve iklim politikası belirsizlik endeksi (CPU) gibi bölgesel ve küresel faktörler dikkate alınmıştır.

Son dönemde, hem ulusal hem yabancı literatürdede belirsizlik faktörleri ve finansal sistem arasındaki etkileşimi irdeleyen çalışmaların artış kaydettiği görülmektedir. Bu çalışmaların çoğunda, zaman serisi yaklaşımları kullanılırken en çok jeopolitik, ekonomik, iklim politikaları ve petrol fiyatlarındaki belirsizlikler ile finansal korku endeksi gibi faktörler araştırma konusu olmaktadır. Finansal sistemde ise hisse senetleri dışında, döviz kurları, kripto paralar, sektör endeksleri, emtia fiyatları ve ayrıca İslami finansal ürünlere yönelik etkilerin araştırıldığı görülmektedir. Diğer yandan, anlamlı etkileşimler tespit edilse de bu etkilerin farklılıklar gösterdiği bu yüzden de konunun farklı örneklem ve farklı dönemler bağlamında hala araştırmaya açık olduğu anlaşılmaktadır. Bu yüzden, bu çalışmada da bütüncül bir yaklaşımla geniş bir yelpazede seçilmiş olan farklı belirsizlik faktörlerinin etkilerinin araştırılmasının yanı sıra Türk sermaye piyasaları özelinde ve farklı alanları temsilen üç farklı endeksin dikkate alınmasıyla literatüre anlamlı bir katkı sağlanması hedeflenmektedir. Bu endeksler; genel olarak piyasayı temsil etmek üzere, BIST100; yüksek performans gösteren firmaları temsil etmek üzere BIST30 ve son olarak, sürdürülebilirlik temalı firmaları temsil etmek üzere, BIST sürdürülebilirlik endeksleridir. İncelenen literatür dikkate alınarak, bu araştırmada yanıt aranan araştırma soruları şunlardır:

- Türk sermaye piyasaları küresel ve bölgesel belirsizlik faktörlerinin asimetrik şoklarına duyarlı mıdır?
- Böyle bir etkileşim varsa Türk sermaye piyasalarının belirsizlik faktörlerinin asimetrik şoklarına tepkisi nasıl olmaktadır?
- Farklı temalara sahip borsa endeksleri asimetrik şoklara farklı tepkiler verebilir mi?

Analiz için geleneksel ve doğrusal zaman serisi yaklaşımların aksine hem pozitif hem de negatif şokların etkilerini ayrı ayrı ortaya koymayı amaçlayan, doğrusal olmayan gecikmesi dağıtılmış otoregresif (NARDL) yaklaşımı benimsenmiştir. 2015 : 02 – 2025 : 03 dönemi dikkate alınarak aylık frekansa sahip değişkenler incelenmiştir. Böylece bölgesel çatışmalardan küresel dönüşümlere kadar değişen birçok olayı kapsayan bir zaman aralığının elde edilmesi amaçlanmıştır. Aylık seriler dikkate alındığından, mevsimsellik incelemesi yapıldıktan sonra census x-13 ile gerekli dönüşümler yapılmış ve seriler doğal logaritmaları alınarak analize dahil edilmiştir. Etkisi araştırılan belirsizlik faktörleri ise, Türkiye için 5 yıllık CDS primleri, 10 yıllık ABD tahvil faiz oranları, ons altın fiyatlarındaki belirsizlik, Brent petrol fiyatlarındaki belirsizlik, jeopolitik risk endeksi, ticaret politikalarındaki belirsizlik endeksi ve iklim politikalarındaki belirsizlik endeksidir. Altın ve petrol fiyatlarındaki belirsizlik serileri analiz dönemi için getiri serilerine GARCH(1,1) modeli kurularak hesaplanan kalıntı serilerinden elde edilmiştir.

Bulgular, endekslerin belirsizlik faktörlerine anlamlı ve farklı düzeylerde tepkiler verdiğini göstermektedir. Buna göre analiz döneminde etkisi uzun dönemde en belirgin ve güçlü olan faktör jeopolitik risk endeksidir. Buna ilaveten, jeopolitik risk, ticaret politikası belirsizliği, 10 yıllık ABD tahvil getirileri ve emtia fiyatlarındaki belirsizlik için asimetrik etkiler açıkça görülmektedir. Türkiye için 5 yıllık CDS primleri, yalnızca BIST100 ile asimetrik koentegrasyon ilişkisi içindedir, ancak katsayıları anlamlı değildir. Bu durum, yatırımcıların CDS primlerinden kaynaklanan asimetrik şoklara benzer şekilde tepki verdiklerini göstermektedir. Jeopolitik risklerin hem olumlu hem de olumsuz şokları tüm endeksler üzerinde, özellikle de BIST Sürdürülebilirlik endeksi üzerinde olumlu etkilere sahiptir. Bu risk faktörünün asimetrik bir etkisi de bulunmaktadır. Bu bulgu, jeopolitik risklerin arttığı dönemlerde yatırımcıların "riskten kaçınma" eğilimi göstererek, daha az riskli gördükleri yerel piyasalara yönelme eğiliminde olduklarını gösterebilir. Ticaret politikası belirsizlik endeksindeki artışlar, tüm endekslerde düşüşlere neden olmaktadır. En yüksek etkiler BIST Sürdürülebilirlik endeksinde görülürken, en düşük etkiler BIST30 endeksinde görülmektedir. Uzun vadede değişkenler arasında asimetrik bir eşbütünleşme ilişkisi bulunmaktadır. İklim politikası belirsizliğindeki artışlar, tüm endekslerde artışa neden olmaktadır. En yüksek etki BIST Sürdürülebilirlik endeksinde görülürken, en düşük etki BIST100 endeksinde görülmektedir. klim politikası belirsizliğindeki artışlar tüm endekslerde artışa neden olmaktadır. En yüksek etki BIST Sürdürülebilirlik endeksinde görülürken, en düşük etki BIST100 endeksinde görülmektedir. Öte yandan, ticaret politikası belirsizliği ve iklim politikası belirsizliği faktörleri için tahmin edilen katsayıların anlamlı olmaması, yatırımcıların bu faktörleri fiyatlandırmayabileceği anlamına gelebilir. 10 yıllık ABD tahvil getirileri tüm endeksler üzerinde olumlu etkiye sahiptir. Ancak asimetrik koentegrasyon ilişkisi sadece BIST Sürdürülebilirlik endeksi ve BIST30 endeksi için görülmektedir. Pozitif şokların etkileri negatif şoklara kıyasla daha yüksek ve anlamlıdır. Bu bulgu, ABD tahvil getirilerindeki artışların Borsa İstanbul'daki yatırımcıları ilginç bir şekilde olumlu yönde etkilediğini ve yatırımcıların düşüşlerden çok artışlara daha duyarlı olduğunu ortaya koyabilir. Ons altın fiyatlarındaki belirsizlik olumlu etkiler yaratmaktadır ve değişkenler arasında sadece BIST100 için asimetrik bir eşbütünleşme ilişkisi bulunmaktadır. Bu durum, altın fiyatlarındaki oynaklığın yatırımcıları hisse senetlerine yönelttiğini gösterebilir, çünkü görüldüğü gibi Borsa İstanbul bu değişikliklerden olumlu etkilenmektedir. Ham petrol fiyatlarındaki belirsizlik ile BIST100 hariç tüm hisse senedi endeksleri arasında asimetrik bir eşbütünleşme ilişkisi bulunmaktadır. Brent ham petrol fiyatlarındaki belirsizlik, endeksler üzerinde olumlu ancak anlamlı olmayan etkiler yaratmaktadır. Anlamlı olmamasına rağmen, en yüksek etkiler BIST30 endeksinde görülmektedir. Bu durum, bu faktördeki belirsizliğin BIST30 endeksinin yükselmesine neden olduğunu gösterebilir, çünkü bu endeks enerji sektöründen birçok şirketi içermektedir, ancak yatırımcılar bu tür dalgalanmaları önemli ölçüde fiyatlayamamaktadır. Türk borsa endekslerinin jeopolitik değişikliklere, ABD faiz oranlarına ve ham petrol ve ons altın fiyatlarındaki dalgalanmalara karşı oldukça duyarlı olduğu sonucuna varılabilir. Bu nedenle, bu alanlarda öngörülebilirliği artırmaya yönelik adımlar atılması piyasa istikrarı açısından olumlu olabilir. Kısa dönemde ise, etkisi en belirgin gözlemlenen faktörler ise, jeopolitik risk endeksi ile ticaret politikalarındaki belirsizlik endeksidir. Gelecek çalışmalarda konu, güçlü etkilerinin olduğu tespit edilen endekslerin sektörel etkilerinin incelenmesiyle geliştirilebilir.

KATKI ORANI BEYANI VE ÇIKAR ÇATIŞMASI BİLDİRİMİ

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