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The Relationship between Climate Policy Uncertainty and Inflation: The Case of the USA

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İklim Politika Belirsizliği ve Enflasyon İlişkisi: ABD Örneği

Öz

Bu çalışmada, ABD'de 1990-2021 döneminde iklim politikası belirsizliği ile enflasyon arasındaki ilişki, Reel GSYİH, toplam işgücü ve karbon emisyonları kontrol değişken olarak kullanılarak ARDL sınır testi yardımıyla incelenmiştir. Çalışmada iklim politika belirsizliğini ölçmekte kullanılan iklim politika belirsizlik endeksi Gavriilidis (2021)'den ve diğer değişkenlere ait veriler ise, "Dünya Bankası" ve "Our World in Data" veri tabanlarından elde edilmiştir. Çalışmanın bulguları, incelenen dönemde ABD'de iklim politikası belirsizliği ve enflasyon arasında pozitif ve istatistiki olarak anlamlı bir ilişkinin olduğunu göstermektedir. Ayrıca, karbon emisyonları ve GSYİH enflasyon üzerinde olumlu bir etkiye sahiptir ve katsayılar istatistiksel olarak anlamlıdır. Ancak toplam işgücü değişkeni enflasyonu pozitif yönde etkilemesine rağmen istatistiksel olarak anlamsız bulunmuştur.

Anahtar Kelimeler: İklim Politika Belirsizlik Endeksi, Enflasyon, ARDL, Karbon Emisyonları

JEL Kodları: C32, E31, Q54

The Relationship between Climate Policy Uncertainty and Inflation: The Case of the USA

Abstract

In this study, the relationship between climate policy uncertainty and inflation in the 1990-2021 period in the USA was examined with the help of the ARDL Bound test, using Real GDP, total labor force, and carbon emissions as control variables. The climate policy uncertainty index used to measure climate policy uncertainty in the study was obtained from Gavriilidis (2021), and data on other variables were obtained from "the World Bank" and "Our World in Data" databases. The study's findings show a positive and statistically significant relationship between climate policy uncertainty and inflation in the USA in the period under review. Also, carbon emissions and GDP positively affect inflation, and the coefficients are statistically significant. However, although the total labor force positively affected inflation, it was found to be statistically insignificant.

Keywords: Climate Policy Uncertainty Index, Inflation, ARDL, Carbon Emissions

JEL Codes: C32, E31, Q54

Araştırma ve Yayın Etiği Beyanı	Bu çalışma bilimsel araştırma ve yayın etiği kurallarına uygun olarak hazırlanmıştır.
Yazarların Makaleye Olan Katkıları	Yazar 1'in makaleye katkısı %100'dür.
Çıkar Beyanı	Yazarlar açısından ya da üçüncü taraflar açısından çalışmadan kaynaklı çıkar çatışması bulunmamaktadır.

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1. Introduction

For nearly 30 years, climate change has been recognized as the most important global problem. Climate change, which is perhaps one of the most critical problems of this age, is defined in the United Nations Framework Convention on Climate Change (UNFCCC) as 'the change that occurs as a result of natural changes observed in the climate over a long period of time and directly or implicitly from human activities and that disrupts the combination of the global atmosphere'. (UNFCCC, 1992). The negativities arising from the intensive use of fossil fuels created by the mass production increase that emerged with the Industrial Revolution for years are also the leading causes of global warming and the resulting climate change (Türkeş, 2022).

The fact that human activities are the leading cause of climate change, which was emphasized with 95% certainty for the first time in the 5th Assessment Report of the Intergovernmental Panel on Climate Change (IPCC), was also reiterated in the 6th Assessment Report Working Group I Report published in August 2021. In this context, climate change is defined as "human-induced" (IPCC, 2014; 2021; Tuğaç, 2022).

Again, in the IPCC's Climate Change 2022: Impacts, Adaptation and Vulnerability Report published in the Sixth Evaluation Period of Working Group II, climate change caused by increasing greenhouse gas (GHG) emissions due to human behavior, killing societies and the nature of the world, people, harming food production, Losses and harms caused by climate change will increase rapidly with further warming, exposing them to intolerable and irreversible risks, including destroying nature and slowing economic growth, and that in many cases people and nature adapt It has been stated that current emissions policies and commitments will put the world on a higher-than-planned (about 2,3-2,7°C)warming path (IPCC, 2022).

As expressed in global initiatives, climate change is thought to cause negative effects in many sectors, both indirectly and directly. In this context, to minimize the negativities that may arise, urgently determining the measures that can be taken in all areas of life comes to the fore. Undoubtedly, one of these areas is the economy. The negative impact of global climate change caused by environmental deformation in the economy has started to show itself in all countries.

Table 1 represents the summary of the impact of climate change on selected vital macroeconomic variables. The implications of risks arising from climate change and mitigation of this change's effects on macroeconomic variables may differ.

For this reason, extreme weather events, gradual global warming, and transition period risks have been evaluated differently (Karagöl, 2022: 82).

Table 1: The Impact of Global Climate Change on Selected Base Macro-economic Indicators

Variables	Types of climate risk and Timing of Effects		
	Physical risk: Intensely changing weather events In the short term- medium term	**Physical risk:** Progressive warming, increasing and variable observed temperatures, and precipitation patterns In the medium-term and long term	**Transition risk:** Transition to low-carbon economies In the short and long term
Output	Crop shortages caused by physical destruction, damage to infrastructure, delayed supply chains, and adverse tourism impact	Lower due to lower labor productivity, investment being diverted to mitigation, and arable land losses.	Reallocating capital and labor can create friction between sectors due to erratic fiscal transition policies and/or insufficient and inefficient investment. The mitigated impact is dependent on the use of revenues from transition policies financially.
Consumption	Lower due to increased uncertainty, e.g., housing wealth and future income prospects. Higher due to increased household demand to replace destroyed goods or hoarding behavior.	Higher volatility due to shifts in sectoral demand.	The shift to lower, greener goods and/or services may require sectoral changes, possibly due to increased sustainability awareness, such as the circular economy preference. Still, the impact on total consumption is unknown.
Investment	Diversion of investment away from productivity-enhancing investment and towards mitigation. Lower due to increased uncertainty, volatility, and direct destruction of the capital stock. It may pick up following an extreme event, but the effective or useful stock of capital may well be lower.	Shifts in investment toward climate adaptation technologies	Higher as investment shifts toward climate mitigation technologies. Lower because of higher uncertainty surrounding future policies, the rise in stranded assets, and reduced productivity gains from the international division of labor.
Employment	Lower because of the destruction of physical assets and the dislocation of people from the immediate vicinity of a disaster area. Potential frictional unemployment, which can be mitigated if labor mobility is sufficient.	Reduction in labor supply in exposed industries such as construction and agriculture, where it becomes less desirable to work in higher temperatures. Increased international migration might raise the labor supply in less affected regions.	Changes in the sectoral composition of the labor market might trigger a rise in structural unemployment.
Inflation	Impact on inflation expectations. Increased inflation volatility, especially regarding food, housing, and energy prices. Heterogeneous effects on headline inflation, with the result being more robust and more persistent in developing countries.	Relative price changes due to shifting consumer demand or preferences and changes in comparative cost advantages.	Energy prices are most affected by climate-related transition policies such as carbon taxes. Inflation pressure is likely to arise from the impact of policy uncertainty on investment, demand, and inflation expectations. Inflationary pressures can be reduced by technological changes that increase productivity, prioritize resilience, or gradually shift consumer preferences towards environmentally friendly products and services that should enter the consumer basket.

Source: Network for Greening the Financial System (NFGS), "Climate Change and Monetary Policy Initial Takeaways," *Central Banks and Supervisors NGFS Technical Document*, (2020); Karagöl, V. 2022).

As Table 1 suggests, it is difficult to precisely estimate the intensity and timing of the economic impacts of climate change. In addition, another reason this estimation is problematic is the uncertainties faced by the fields of politics and science. Uncertainty affects the companies' investment determination negatively on the one hand. On the other hand, it causes a change in the consumption behaviors of the most essential segment of society, such as households. This study examines whether there is an empirical relationship between climate policy uncertainty and inflation, one of the leading macroeconomic indicators in the USA. In this context, the Climate Policy Uncertainty (CPU) Index, improved by Gavriilidis (2021), represents climate policy uncertainty. The mentioned index is published in eight leading US newspapers (Wall Street Journal, Los Angeles Times, Boston Globe, Chicago Tribune, New York Times, Tampa Bay Times, Miami Herald, USA Today) "uncertainty, global climate risk, CO_2, GHG emissions, global warming, climate change, clean energy, politics, and law, etc." It was created by scanning articles containing the terms (Gavriilidis, 2021).

As it is known today, one of the universal problems that the world is trying to find a solution to is climate change, while the other is inflation, which is addressed specifically to countries. This study examines the relationship between the policies implemented in solving a problem evaluated on a global scale and inflation, which is one of the most important macroeconomic indicators. On the other hand, this study is critical because it is one of the first to address the relationship between climate policy uncertainty and inflation empirically. The next part of the study is a literature review consisting of selected studies in both national and international areas. Secondly, the data set and the method are introduced. Then, the findings, including the ARDL Bound Test method, are given, and last, the study's empirical results are shown.

2. Literature

It can be mentioned that climate change, which has emerged as the most crucial problem of this century for the world, has many social, political, and economic multidimensional effects on humanity. Since climate change causes disasters such as drought, excessive precipitation, and excessive heating and cooling, it causes demographic and economic problems to come to the fore by driving individuals to change in environmental activities. Many studies in the literature have focused on the effect of climate change on leading macroeconomic indicators. For example, Batten et al. (2020) studied the effects of climate change on macroeconomic impact and monetary policy. They argued that climate change and mitigation policies could cause significantly lower wealth, financial losses, and GDP, affecting a central bank's ability to achieve its monetary stability objective. Kahn et al. (2021), in their study investigating the long-term impact of climate change on economic activities in countries, stated that permanent temperature changes negatively affect real growth per capita. On the other hand, the topics examined in economic policy analysis in recent years have a wide range and extend to the conditions that can be derived in terms of macroeconomic variables, supervisory-regulatory framework conditions, income distribution, and social cohesion. In this context, there are essential studies on how implementing climate policy measures affects macroeconomic indicators due to which economic mechanisms.

For example, Walz & Schleich (2009) stated in their study that climate policy measures trigger various adaptation responses between individual companies and private households, manifesting as structural effects at both regional and sectoral levels. In addition, they said that these reactions caused changes in macroeconomic variables at the macroeconomic level. Similarly, Bowen et al. (2014), in their study discussing the impact of climate policies, stated that the carbon pricing applied to prevent climate change would positively affect the increase in total investments, especially in energy-related sectors.

Adediran et al. (2023) are an important study in this field. Adediran et al. (2023) conducted a global review of the macroeconomic impacts of climate change for 22 countries classified by economic group. Accordingly, they stated that climate change is inflationary globally, and its adverse effects on exchange rate markets are only seen in developing economies. Also, according to the study, stock markets can protect against natural climate risks but not climate risks arising from policy uncertainty.

As can be seen, many essential studies in the literature on the macroeconomic impact of climate policy. However, the number of studies examining the effects of climate policy uncertainty on macroeconomic indicators is quite limited. In particular, this study is crucial as it is one of the first to analyze inflation and climate policy uncertainty empirically. For this reason, it is believed that the study will make an essential contribution to the literature. Table 2 below summarizes selected literature that empirically examines the economic impacts of climate change.

Table 2: Summary of Selected Literature Examining the Economic Impacts of Climate Change

Author(s)	**Methodology**	**Period**	**Country**	**Study finding**
İlliyasu vd. (2023)	SVAR	2002M1-2022M12	Africa	According to the study results, the increase in climate change reduces real production and causes increases in general consumer prices, especially food, in the countries in the sample group.
Dinç (2022)	Hatemi-J Asymmetric Causality Test	2000M1-2021M11	USA	The study found that the rise in climate policy uncertainty will negatively affect CO2 emissions and energy consumption in sectors.
Akyol (2022)	OLS regression method	1968-2018	Türkiye	The study examining the relationship between economic growth and climate change found that the increase in climate change negatively affected economic growth.
Cavlak (2022)	NARDL	2000M1-2021M11	USA	According to the study's findings, which bring out the asymmetric relationship between climate policy uncertainty, oil prices, and renewable energy consumption, climate policy uncertainty is affected by positive and negative changes in clean energy consumption and oil prices in the medium and long term.
Odongo vd. (2022)	GMM	2001-2020	Eastern and Southern African Countries	The study, which measures climate change with precipitation amounts, found that precipitation amounts, imported food price inflation, and food inflation are the key determinants. In contrast, subsidies, oil prices, and imported inflation are the critical determinants of general inflation.

Çuhadar (2020)	System GMM	2000-2014	20 developing countries	In the study, the relationship between the carbon emission level, agricultural added value, the ratio of irrigated lands, participatory democracy, urbanization, real GDP per capita, energy use, and urban population data was examined. It has been concluded that agricultural added value, participatory democracy, and energy use statistically affect carbon emissions.
Damla Or (2017)	Panel Threshold Regression	1961-2023	Selected 49 countries	The study examining the impact of climate change on agricultural production and inflation found that the shift in precipitation had a positive impact on agricultural products at low latitudes and a negative effect on agricultural products at high latitudes. Accordingly, climate change had an indirect impact on inflation.
Tekeoğlu vd. (2017)	Pedroni and Kao Co-integration Test, FMOLS-DOLS	1993-2019	26 OECD Countries	In the study, there is evidence that the environmental effects of climate change – that is, the rise in CO_2 emissions – increase food prices.

3. Dataset and Method

The motivation for this study is to empirically investigate the relationship between climate policy uncertainty and inflation for the USA using the annual data from 1990-2021 and the variables in Table 3. In this context, the variables used in the model established are expressed in Table 3.

Table 3: Variables and Descriptions

Variables	Description	Source From Data
CPU	Climate Policy Uncertainty Index	Gavriilidis (2021)
INF	Inflation (%, Annual CPI)	World bank
GDP	GDP Growth (Annual %)	World bank
LABOR	Total Labor Force	World bank
CO_2	$C0_2$ emissions (metric tons per capita)	World Bank & Our World in Data Database

The relationship between the variables can be expressed with the help of Equation 1:

$$INF_t = \beta_0 + \beta_1 GDP + \beta_2 LnLABOR + \beta_3 CO_2 + \beta_4 CPU + \varepsilon_t \quad (1)$$

In equation 1, t indicates that the data selected in the model is the time series. In addition, β_0 shows the constant coefficient of the model and β_1, β_2, β_3, β_4 show the coefficients of the independent variables. ε_t Represents the error terms. Accordingly, whether the variables are stationary or not was initially examined by ADF and PP unit root test analysis.

If the series is stationary, in other words, if the series include a unit root as a result of testing the stationarity test, that is, the unit root inclusion status of the series, the series should be made stationary by taking the difference of the series and the spurious regression problem should be eliminated (Akcan et al. 2022).

In this study, Augmented Dickey-Fuller (ADF) (1981) and Phillips-Peron (PP) (1988) unit root tests, which are the highly used stationarity tests in time series, were used, and the results are shown in Table 4.

Table 4: ADF ve PP Unit Root Tests Result

Variables	ADF	PP
CPU	-1.5076	-1.4072
ΔCPU	-6.1553***	-6.1638***
INF	-6.0230***	-12.343***
GDP	-4.7213***	-4.6936***
lnLABOR	-0.8555	-0.8555
$\Delta LnLABOR$	-4.5094***	-4.5135***
CO_2	-1.8604	-1.7849
ΔCO_2	-5.2242***	-5.7240***

Note: The *** sign indicates that the H0 hypothesis was rejected at the 1% significance level for the ADF and PP Unit Root Tests.

According to the unit root test results expressed in Table 2, it is seen that the CPU, lnLABOR, and CO_2 variables are not stationary at the level and become stationary after the first difference is taken. The variables in question are stationary at the I(1) level. On the other hand, it is seen that the INF and GDP variables are stationary at the level of I(0).

The study examined the co-integration relationship between the variables after the unit root test of the variables. Co-integration techniques are used to determine the long-term relationships between time series. In this context, there are many co-integration techniques whose foundations have been laid. Examples are the methodology of Phillips and Hansen, which is based on the residuals of Engle and Granger, and modified ordinary least squares manufacturer.

On the other hand, the most significant limitation of these techniques is the need for all series to be integrated to the same degree. But Pesaran et al. (2001), the co-integration approach removes these constraints. The ARDL methodology provides regressors to be stationary in levels (I(0)) or first difference (I(1)). Therefore, this technique was used to obtain the long-run relationship between the series. Because of this convenience, the ARDL method has been preferred in many studies and this study.

In the study, the model of the co-integration relationship is expressed in equation 2.

$$\Delta INF_t = \beta_0 + \sum_{i=1}^{x} \beta_1 \Delta INF_{t-p} + \sum_{i=1}^{m} \beta_2 GDP_{t-p} + \sum_{i=1}^{n} \beta_3 lnLABOR_{t-p} + \sum_{i=1}^{d} \beta_4\, CO2_{\,t-p} + \sum_{i=1}^{l} \beta_5\, CPU_{t-p} + \beta_6 \Delta INF_{t-1} + \beta_7 GDP_{t-1} + \beta_8 lnLABOR_{t-1} + \beta_9 CO2_{t-1} + \beta_{10} CPU_{t-1} + \varepsilon_t \quad (2)$$

The lag length (p) specified in equation 2 should be determined in the boundary test approach. Then, F statistics is applied to the first period values of the dependent and independent variables to investigate the existence of the co-integration relationship. The hypotheses of the question test are given below.

$$H_0 = \beta_6 = \beta_7 = \beta_8 = \beta_9 = \beta_{10} = 0$$

$$H_1 \neq \beta_6 \neq \beta_7 \neq \beta_8 \neq \beta_9 \neq \beta_{10} \neq 0$$

The statistical value of F was calculated according to the stated hypotheses of Pesaran et al. (2001) critical lower and critical upper limits. If the estimated F statistical value is greater than the critical upper limit, it can be interpreted that there is a co-integration relationship between the variables.

Table 5: Co-integration Test Results

K	F Statistic	Lower Limit %5	Upper limit %5
4	6.035726	2.56	3.49

Accordingly, the calculated F statistical value by Pesaran et al. (2001) expresses a co-integration relationship between the variables because it has a higher F statistic value than the upper bound critical value calculated by. After this stage, the ARDL Model can be established to determine the long- and short-term relationships between the variables. Table 5 shows the co-integration test results.

In this study, which examines the relationship between climate policy uncertainty and inflation in the USA, Pesaran et al. (2001) Autoregressive Distributed Lag (ARDL) model was used. The ARDL model has the opportunity to test model against other tests, regardless of whether the variables to be used in the analysis are I(1) or I(0) at the first level (Pesaran et al., 2001: 290; Pamuk and Bektaş, 2014: 82), Unrestricted Error Correction Model Since UECM is used, it produces more statistically significant results than Engle-Granger (Narayan and Narayan, 2005: 429) It has some advantages such as providing more reliable results than Enge Granger in studies where the number of observations is limited (Narayan and Smyth, 2005: 103).

After the co-integration relationship expressed in equation 2, equations 3 and 4 were estimated. And the ARDL error correction model, which shows the long-term coefficients of the variables used in the model and the coefficients related to the short-term, was analyzed.

$$INF_t = \beta_0 + \sum_{i=1}^{p} \beta_{1i}\, INF_{t-i} + \sum_{i=1}^{p} \beta_{2i}\, GDP_{t-i} + \sum_{i=1}^{p} \beta_{3i} \Delta\, LnLABOR_{t-i} + \sum_{i=1}^{p} \beta_{4i}\, \Delta CO2_{t-i} + \sum_{i=1}^{p} \beta_{5i}\, \Delta CPU_{t-i} + \beta_{6i} INF_{t-1} + \beta_{7i} GDP_{t-1} + \beta_{8i} \Delta LnLABOR_{t-1} + \beta_{9i} \Delta CO2_{t-1} + \beta_{10i} \Delta CPU_{t-1} + \varepsilon_t \quad (3)$$

$$INF_t = \beta_0 + \sum_{i=1}^{p} \beta_{1i}\, INF_{t-i} + \sum_{i=1}^{p} \beta_{2i}\, GDP_{t-i} + \sum_{i=1}^{p} \beta_{3i}\, \Delta LnLABOR_{t-i} + \sum_{i=1}^{p} \beta_{4i}\, \Delta CO2_{t-i} + \sum_{i=1}^{p} \beta_{5i}\, \Delta CPU_{t-i} + \beta_{6i} INF_{t-1} + \beta_{7i} GDP_{t-1} + \beta_{8i} \Delta LnLABOR_{t-1} + \beta_{9i} \Delta CO2_{t-1} + \beta_{10i} \Delta CPU_{t-1} + \delta ECM_{t-1} + \varepsilon_t \quad (4)$$

In equations 3 and 4, the expression Δ expresses the first difference of the series, while in equation 4, ECM_{t-1} error correction term, δ; stands for error correction coefficient. Table 6 represents the long-term coefficients of the ARDL model.

Table 6: Long-Run Coefficient by ARDL Model Long-Term Results

Variables	Coefficient	P Value
CPU	0.056574	0.0090***
GDP	0.780360	0.0655**
lnLABOR	0.216170	0.9701
CO_2	0.916878	0.0038***

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

According to Table 6, the increase in climate policy uncertainty increases inflation. This result is also statistically significant. Uncertainties in climate policy further increase the deformations caused by environmental degradation and thus cause price increases in many sectors, especially in the food sector. In other words, the uncertainty increase created by the climate uncertainty policy reduces real production from its potential level. It causes a rise in food and general consumer prices nationwide. Tekeoğlu et al. (2017) and İlliyasu et al. (2023) are also compatible with these results.

Another variable discussed in the study is GDP. The increase in GDP increases inflation. These results are also statistically significant. An increase in inflation will cause a decrease in individual wealth, and individuals will increase their savings to reach their pre-inflationary wealth. On the other hand, increasing savings will cause a reduction in interest rates, which will positively affect investments and, ultimately, growth. These results are consistent with Mahmoud (2015) and Ahmad and Joyia (2012).

On the other hand, the study found that the increase in carbon emissions increased the inflation rate. This result is also statistically significant. Recently, various policies, such as carbon taxes to limit carbon emissions, have been implemented in many countries, especially developed ones. Although carbon taxes are generally preferred as a deterrent in the said sector by increasing the prices of carbon-intensive products, they also cause an increase in energy prices. On the other hand, rising energy prices can positively affect inflation rates.

The last variable examined in the study is the workforce variable. It is seen that the increase in the labor force increases inflation. The increase in the labor force pushes the countries to grow more than they should. This situation affects the inflation rates positively.

However, the study did not find the labor force variable statistically significant. After the long-run coefficients of the variables are estimated, the ARDL error correction results showing the short-term relationship calculated by determining the appropriate lag values are presented in Table 5. The error correction term (ECT) in equation 4 is the adjustment rate parameter that shows how fast the series reaches long-term equilibrium. The sign of this coefficient is expected to be negative and statistically significant. The error correction term of the study was found to be -0.64, and the sign of the coefficient was negative and statistically significant. In other words, it shows that 64% of the deviations in the long-term balance following short-term shocks can be eliminated after one period.

Table 7: Error Correction Model Test Results

Variables	**Coefficient**	**T Statistic**	**P Value**
D(CPU)	0.016298	3.623939	0.0028
D(CPU(-1))	0.004710	0.844245	0.4127
D(CPU(-2))	-0.021581	-4.266807	0.0008
D(GDP)	0.179767	2.590609	0.0214
Dln(LABOR)	117.0138	4.977670	0.0002
Dln(LABOR(-1))	-108.5084	-4.599862	0.0004
D(CO_2)	0.069631	0.278941	0.7844
D(CO_2 (-1))	-1.014908	-4.013858	0.0013
D(CO_2 (-2))	-1.340428	-7.165690	0.0000
ECM(-1)	-0.640150	-7.010567	0.0000

In the study, tests for varying variance, autocorrelation, and stability of the model were conducted, and these tests are indicated in Table 8 and Figure 2.

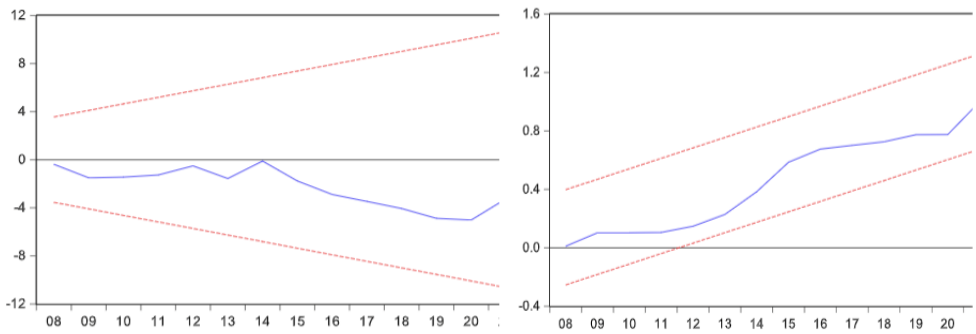
Table 8: Diagnostic Test Statistics

R^2	0.87
Log-likelihood	-12.14
Breusch- Godfrey LM Testi	1.4320 (0.2861)
Breusch-Pagan-Godfrey	0.3538 (0.9692)

Note: Values in parentheses are probabilities.

Based on the test results in Table 7, it is seen that there is no auto-correlation problem as a result of the Breusch-Godfrey LM test, there is no problem of varying variance as a result of the Breusch-Pagan-Godfrey test, and the explanatory power of the model with R^2 is 0.87.

Figure 1: CUSUM and CUSUM of Squares Test



Eventually, the stability of the parameters was examined in the study. Therefore, Cusum and Cusum of Square graphics were obtained. Accordingly, it is seen that the test parameters for error terms remain within critical limits, and this result indicates that the model is stable.

5. Conclusion

Inflation is one of the most critical macroeconomic problems of all countries. Inflation, especially in the food and indirect sectors arising from the problems related to climate change, is a topic that has been increasingly discussed in recent days. Today, climate policies, one of the negative externalities experienced due to globalization, profoundly affect the public and the real economy.

Other than this, climate change forms the basis of critical structural changes affecting the financial and economic system. It constitutes the most concrete response to the damage caused by the global economic system to nature. In this context, climate change policy uncertainty exposes economies to physical risks arising from frequent natural disasters and transition risks arising from policy changes. As a result, it causes risks such as deterioration of the balance sheets of the country's central banks and increasing financial instability. Uncertainty in policies related to climate change, together with the risks mentioned above, triggers inflation by preventing potential growth and price stability.

The purpose of this study is to empirically examine the short-term and long-term correlation between climate policy uncertainty and inflation in the USA for the period 1990-2021. In this context, the ARDL Bound test approach improved by Pesaran et al. was used. In examining the relationship between the climate policy uncertainty index and inflation, carbon emissions, GDP, and total labor force variables were included in the model as control variables.

In the study, the effect of climate policy uncertainty on inflation is positive and statistically significant. This result shows that increased climate policy uncertainty lowers real production from its potential level. This causes increases in food and general consumer prices all over the country.

Therefore, uncertainties in climate policy will further increase the deformations caused by environmental degradation. Thus, price increases will occur in many sectors, especially the food sector. On the other hand, carbon emissions and GDP positively affect inflation, and the coefficients are statistically significant. However, although the total workforce variable affects inflation positively, this coefficient was statistically insignificant.

Today, the most crucial reason for the uncertainty of the said policies is the lack of serious, sustainable, and decisive steps in the fight against climate change, both at the national and international levels. The success of climate change policies, and thus the elimination of the adverse effects of climate change uncertainty on the macro economy, primarily requires a legally binding and determined international cooperation. On the other hand, another thing to be done to prevent the negative impact of climate policy uncertainty on the macroeconomic outlook of the country's economies, such as inflation, is not to accept the environment as a part of the economic system. Whereas the boundaries of the economy should be determined to the extent that the environment allows, this thought should gain weight.

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