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ASYMMETRIC GARCH-TYPE AND HALF-LIFE VOLATILITY MODELLING IN EXCHANGE RATES OF EURASIAN ECONOMIC UNION MEMBERS

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ABSTRACT

The variability in the price of a financial asset is called volatility and is often measured with a standard deviation. Empirical studies have shown that many financial asset returns exhibit fat tails (leptokurtosis) and are often characterized by volatility clustering and asymmetry. The aim of this study is to determine the asymmetric GARCH-type modeling of the exchange rates of Belarus, Armenia, Kazakhstan, Kyrgyzstan, and Russia, which constitute the Eurasian Economic Union as of January 1, 2015, as well as to determine the return time to the mean after the shocks. The return series obtained over the daily closing prices of the exchange rates of the countries in question between December 31, 2018 and June 30, 2023 were analyzed using the EGARCH method and the return to mean were calculated.

Keywords: Foreign Exchange, Half-life volatility, EGARCH, Eurasian Economic Union.

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INTRODUCTION

Since the 1990s, the transformation and change experienced globally have completely overturned political, economic, military, and cultural balances (Kocaoglu, 1996). The dissolution of the Republics of the Union of Soviet Socialist Republics (USSR) in 1991 led to a fundamental shift in the global balance of power. The collapse of the Soviet Union resulted in the complete loss of functionality of the social, political, and economic structures established among the countries in the former Soviet geography, leading to numerous economic, social, and political problems (Ozturk, 2013). In this new system, the United States emerged as the sole dominant power globally (Baharcicek, 1996). However, Russia has implemented several measures to create regional formations capable of serving as a counterbalance to the United States of America in light of the influence propagated by Russian intellectuals that an unipolar world order would not be equitable. Among these formations, the most noteworthy can be listed as Commonwealth of Independent States (CIS), the Shanghai Cooperation Organization, and the Eurasian Economic Union (Agir and Agir, 2017).

Following the dissolution of the USSR in 1991, the Commonwealth of Independent States (CIS) was established under the leadership of Belarus, Ukraine, and the Russian Federation. The CIS, being more of a political organization, did not focus on economic cooperation among the member countries (Pirimbayev and Ganiyev, 2010) and it has been revealed over time to be unsuccessful (Agir and Agir, 2017). The Shanghai Cooperation Organization (SCO), also referred to as the Shanghai Five and the Shanghai Pact, was formed in 1996 by China, Russia, Kazakhstan, Kyrgyzstan, and Tajikistan with a similar lack of emphasis on economic cooperation. However, the organization has since expanded its membership to include Uzbekistan in 2001, followed by India and Pakistan in 2017, and most recently Iran in 2021, bringing the total number of members to nine (Batmaz, 2021).

In order to further promote economic collaboration, the member states of the Commonwealth of Independent States (CIS) agreed to establish the Eurasian Economic Community (EAEC, EurAseC/EvrAzES) in Astana (Kazakhstan) on October 10, 2000. This move was intended to lend support to the earlier-signed Customs Union (1995) and Common Economic Space (1999) agreements. Belarus, Kazakhstan, Kyrgyzstan, Russia, and Tajikistan were the signatories to this agreement.

The objective of the Customs Union agreement was to simplify the exchange of goods in mutual trade and promote advantageous trade conditions among member states as well as with third countries, while also encouraging economic integration. The Republic of Belarus, the Republic of Kazakhstan, and the Russian Federation collaborated to establish the Customs Union in January 2010, which led to the implementation of the Common Customs Tariff, the elimination of customs procedures and controls at internal borders, and the successful realization of unrestricted movement of goods.

The Eurasian Economic Union (EEU) was established finally on January 1, 2015, with the signing of the Agreement on the Eurasian Economic Union by the heads of state of Belarus, Kazakhstan, Kyrgyzstan, Russia, Tajikistan, and Uzbekistan. The agreement aimed to create a new level of economic integration

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among its member states, with the goal of establishing a single market and a unified economic space. The EEU has a population of 185 million people and a combined GDP of over $2 trillion, making it the second largest interstate organization after the European Union (EU) (Turkish Exporters Assembly, 2019). The EEU has several key objectives, including removing barriers to trade and investment, increasing economic cooperation, and promoting sustainable development among its member states (Hamzaoglu, 2021; Bahsi-Kocer and Gokten, 2021).

The foundational goals of the Eurasian Economic Union and the expectations of the member countries from the Union can be summarized under the following headings (Batmaz, 2021):

1) The currencies of the regional countries began to continually lose value against the US dollar with the US dollar becoming increasingly influential in the Eurasian Region, especially in the second half of the 1990s. The Union's primary objective was to minimize the circulation of the US dollar in the region.

2) As member countries of the Union, they must effectively use the region's natural resources, capital, and strong human resources by combining them, thus creating a robust integration model that acts as a significant bridge between Europe and the Asia Pacific.

3) To achieve cooperation in areas such as food, energy, education, health, and many more among member countries but also with other countries in the region.

4) To evolve into a common defense union in the coming years.

5) To undertake joint projects in the development and utilization of new technologies in member countries (excluding Russia).

6) To become an institutional structure that acts as the political, economic, and military locomotive of the Eurasian geography.

In this context, modelling and forecasting exchange rate volatility plays an effective role in the policies to be implemented by central banks and the decisions of financial investors. Increased volatility in exchange rates can cause significant problems for the country's economy. Therefore, the study of exchange rate volatility is an important topic for policy makers, investors and academics.

The second chapter of the study includes a review of the literature, while the third chapter explains the data set and methodology used. The fourth chapter presents empirical findings, and the fifth chapter covers conclusions and evaluation.

LITERATURE REVIEW

There are numerous studies on exchange rate volatility modeling in both domestic and international publications. Hafner (1998) analyzed high-frequency exchange rate data using ARCH models and found significant asymmetric effects. Additionally, he demonstrated that the shape of the volatility smile changes over different time horizons. Ahmed et al. (2018) conducted a comprehensive analysis of the returns of stock markets in emerging economies. They found that the returns of the South Korean market have a slower mean reversion than those of the Pakistani market in conclusion. Abdalla (2012) modeled exchange rate

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movements using daily data from 19 Arab countries and found that GARCH models were successful in capturing the volatility clustering phenomenon. Gbenro and Moussa (2019) investigated the mean reversion of stock prices in East African countries and found that the speed of mean reversion was lower in composite indices than in individual stocks. Oikonomikou (2018) presented evidence of equity market linkages in the following transition economies: Russia, Ukraine, Poland and Czech Republic from beginning of January 2005 till the end of December 2014 using a multivariate asymmetric EGARCH model. Empirical results indicate significant return and volatility spillover effects during the full sample, the "Great Recession" and Ukrainian political crisis episodes. Balaban et al. (2019) examined the impact of an unexplained component of real exchange rate volatility on FDI in transition economies. Using a GARCH specification, the obtained results show that the impact of the unexplained component of real exchange rate volatility on FDI differs among economic activities since 2000.Other studies on exchange rate volatility include those by Longmore and Robinson (2004), Wang (2006), Yoon and Lee (2008), Hamadu and Adeleke (2009), and Fiser and Roman (2010).

Şimşek et al. (2017) measured the competitiveness of Kazakhstan's industries in the Eurasian Economic Union market using different trade indices. The results revealed that the raw material-intensive industry has a comparative advantage in Kazakhstan's trade in the union market, while the labor-intensive industry and research-intensive sectors that are difficult to imitate are disadvantageous.

Gurbuz (2023) measured the financial stability of the Eurasian Economic Union (EEU) member economies with the financial stability index. In addition, the study discusses how different crises that emerged in the 2008-2022 analysis period affected financial stability in Eurasian countries. Similarly, Bozkurt and Ongel (2023) investigated the impact of generational changes in the labor market on the economic growth of Eurasian countries. Aşık and Karadam (2023) analyzed the foreign trade trends of Eurasian countries and the determinants of their foreign trade. Sugaipova (2015) analyzed the effect of being a member of the Eurasian Economic Union on the foreign trade of member countries with the help of the gravity model. According to the results obtained from the data for the period 2010-2013, it is seen that being a member of the Eurasian Economic Union has an effect of increasing foreign trade by approximately 150%. Examining the effects of globalization on foreign trade, Abakumova and Primierova (2020) examined the mutual foreign trade of the Eurasian Economic Union member countries using data for the period 2000-2016. Misevic (2021), who analyzed the foreign trade tendencies of the Eurasian Economic Union member countries with the help of the gravity model, revealed that member countries are more inclined to foreign trade and that EEU membership is of great importance for the exports of these countries. Tumanyan (2018), who examined the impact of the Eurasian Economic Union on trade flows with the gravity model, analyzed the trade-enhancing and direction-determining effects of EEU membership by using the data of Eurasian countries and their 58 trade partners for the period 2005-2016. Kot et al. (2022) examined the mutual foreign trade of the countries that emerged after the collapse of the Soviet Union using data for the period 2015-2021 and showed that the regional integration of these countries within the framework of the Eurasian Economic Union has achieved a great deal of success in the field of foreign trade. Finally, Aydin (2023) revealed the volatil-

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ity pass-through between the exchange rates of Belarus, Armenia, Kazakhstan, Kyrgyzstan and Russia, which constitute the Eurasian Economic Union. The return series obtained from the daily closing prices of the exchange rates of these countries are analyzed with the MGARCH method, and the source countries of the news effect of return volatilities and the source countries of volatility pass-through are identified.

This study aims to contribute to the literature by providing a new perspective on exchange rate volatility modeling for the member states of the Eurasian Economic Community. To our knowledge, this is the first study to model the exchange rate volatility and half-life for the countries of the Eurasian Economic Union.

DATA SET AND METHOD

Data Set

In this study, daily closing prices of USD-based exchange rates for the period from December 31, 2018, to June 30, 2023 (1174 observations) have been used among the following countries of the Eurasian Economic Union (EEU) for Belarus, Armenia, Kazakhstan, Kyrgyzstan and Russia starting from January 1, 2015. The data was sourced from the investing.com database. The exchange rate series used in the analysis are USD to Armenian Dram (USD_AMD), USD to Belarusian Ruble (USD_BYN), USD to Kyrgyzstani Som (USD_KGS), USD to Kazakhstani Tenge (USD_KZT), and USD to Russian Ruble (USD_RUB). Logarithmic first differences were taken from the daily closing prices to obtain the return series. The obtained daily return series were analyzed using the EGARCH method, and the mean reversion times following the shocks were calculated.

$r_t = \ln(p_t / p_{t-1})$

In the Russia-Ukraine war that began in February 2022, Belarus, seen as an ally of Russia, faced sanctions from many countries. Fitch Ratings and S&P downgraded Belarus's credit rating from B to CCC in March 2022 (DEİK, 2022). The announcement of the Belarusian government on June 29, 2022, to enter a grace period for bond payments and the announcement that foreign currency debts would be paid in the local currency adversely affected the ratings. Fitch Rating downgraded Belarus's Long-Term Foreign Currency Issuer Default Rating to 'C' from 'CCC'. Moreover, the Belarusian government made changes to the currency basket, and on July 6, 2022, the USD/BYN exchange rate dropped from 3.3776 to 2.5706, with the Belarusian Ruble gaining 0.8070 units in value against the US Dollar. This sharp fluctuation in the exchange rate (approximately 31.39%) affected the USD/BYN exchange rate return series, so an adjustment was made by adding the change amount to continue the analyses.

Methodology

The high volatility of financial time series makes it difficult to analyze them using traditional methods. Therefore, models with conditional heteroscedasticity have been developed to address this issue. The foundations of conditional

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variance models are laid by the Autoregressive Conditional Heteroskedasticity (ARCH) model proposed by Engle (1982) and its derivative, the Generalized Autoregressive Conditional Heteroskedasticity (GARCH) model, introduced by Bollerslev (1986). Today, there are numerous derivative models of conditional variance models.

In ARCH and GARCH models, since the squares of the lagged values of the error terms are used for calculation, the effects of good (positive) and bad (negative) news/shocks on the conditional variance are assumed to be the same. However, it is known that decision-makers are more affected by negative shocks. In this context, distinguishing the effects of negative and positive shocks on the conditional variance becomes important. This distinction is achieved by incorporating an external leverage parameter (asymmetry coefficient) into the model. In this study, the EGARCH model, which is among the most preferred asymmetric volatility models, has been used to analyze the asymmetric effects of shocks.

The Exponential GARCH (EGARCH) model was developed by Nelson (1991). The EGARCH model allows for both asymmetric effects on volatility and the possibility of negative values for the volatility. As a result, the model can be expressed in logarithmic form, making it more flexible than other GARCH models (Bolkcom and Akcay, 2005; Tsay, 2005). The EGARCH (*p*,*q*) model can be represented as follows:

$$\underset{\sigma_t^2}{\ln\left(\sigma_t^2\right)} = \omega_0 + \sum_{i=1}^{p} \alpha_i \frac{\left|\varepsilon_{t-i}\right| + \gamma_i \varepsilon_{t-i}}{\sigma_{t-i}} + \sum_{j=1}^{q} \beta_j \sigma_{t-j}^2 \qquad (1)$$

In the equation, represents the conditional variance, is the constant term, denotes the return, *αi* is the ARCH parameter, *βj* is the GARCH parameter, and indicates the leverage (asymmetry) parameter. In the model, the presence of a leverage (asymmetry) effect on the conditional variance can be suggested when. In this case, if is positive and statistically significant, it can be said that a positive/good news/shock in the past increases volatility more than a negative/bad news/shock; conversely, if is negative and statistically significant, it implies that a negative/bad news/shock in the past increases volatility more than a positive/good news/shock (Ural, 2010). However, the general expectation in financial markets is that negative shocks increase volatility more. The stationarity of the EGARCH model is contingent on the condition, and the volatility coefficient is obtained using the following equation:

$$\sigma = \sqrt{\exp\left\{\omega_0 + \left(\sum_{i=1}^{p} \alpha_i \sqrt{\frac{2}{\pi}}\right) \Big/ \left(1 - \sum_{j=1}^{q} \beta_j\right)\right\}} \qquad (2)$$

$$HL = \frac{-\ln(2)}{\ln(\widehat{P})} \qquad (3)$$

Mean reversion implies that current information has no impact on the long-term forecast of volatility. In stationary GARCH-type models, the time it takes for volatility to return to its long-term average level is measured by the half-life of the shock value (Engle and Patton, 2001). $\widehat{P} = \sum_{j=1}^{q} \beta_j$

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For the EGARCH model, the volatility persistence parameter is and the stationarity of the model depends on the condition . In the EGARCH model, if , it issaid that the return series tend to revert to the mean. Based on this, the half-life shock value can be calculated using the following equation (Gbenro and Moussa, 2019):

EMPIRICAL FINDINGS

The study's empirical findings were presented and interpreted using tables and figures. Upon evaluating Table 1's descriptive statistics, it was observed that, during the analysis period, the USD_AMD exchange rate return series had a negative average return, while all other exchange rate return series had positive average returns. Moreover, the USD_BYN return series had the highest average return, while the USD_RUB return series had the highest minimum and maximum returns. The USD_RUB return series had the highest volatility (standard deviation), indicating that it is the riskiest, followed by USD_KGS, USD_BYN, USD_KZT, and USD_AMD return series in descending order. Accordingly, the USD_RUB return series is the highest risk and the USD_AMD return series was the least risky. All exchange rate return series had kurtosis coefficients greater than the critical value of 3 for the normal distribution, indicating a fat-tail characteristic. The skewness coefficients were also different from the critical value of 0 for a normal distribution, with the USD_AMD return series having negative coefficients, indicating a left-skewed distribution, and all other return series having positive coefficients, indicating a right-skewed distribution. The skewness coefficients being different from 0 indicates the presence of asymmetric effects. The Jarque-Bera test statistics, which test the assumption of normality, indicated that none of the exchange rate return series follow a normal distribution, as their probability or p-values are less than 0.05.

Table 1. *Descriptive Statistics*

	USD_AMD	USD_BYN	USD_KGS	USD_KZT	USD_RUB
Observations	1.173	1.173	1.173	1.173	1.173
Mean	-0,000195	0,000367	0,000189	0,000136	0,000216
Standard Deviation	0,003636	0,006506	0,008442	0,006264	0,015304
Minimum	-0,030484	-0,046528	-0,087250	-0,031696	-0,114728
Maximum	0,030067	0,124662	0,145094	0,067419	0,225156
Kurtosis	22,41156	130,1729	108,1006	36,00098	60,41143
Skewness	-0,615293	7,465931	4,291862	2,814913	3,665072
Jarque-Bera Test (p-value)	18.490,54 (0,00000)	801.349,90 (0,00000)	543.481,40 (0,00000)	54.777,14 (0,00000)	163.721,70 (0,00000)

Source: Authors' calculations.

Figure 1 below shows the time path graphs of the exchange rate return series subject to analysis. Accordingly, it is seen that there are volatility clusters for all return series in certain periods and that volatility increases especially as of the year 2022 of the analysis (approximately 750 to 1,000 observations). The announcement made by Russian President Vladimir Putin on February 24, 2022, regarding the invasion of Ukraine and missile attacks on military facilities, is believed to have had a considerable impact on the increase observed. Furthermore, the study examined the impact of the Russia-Ukraine war on volatility modeling using a dummy variable.

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Figure 1. *Time-Path Graphs of Exchange Rate Return Series*

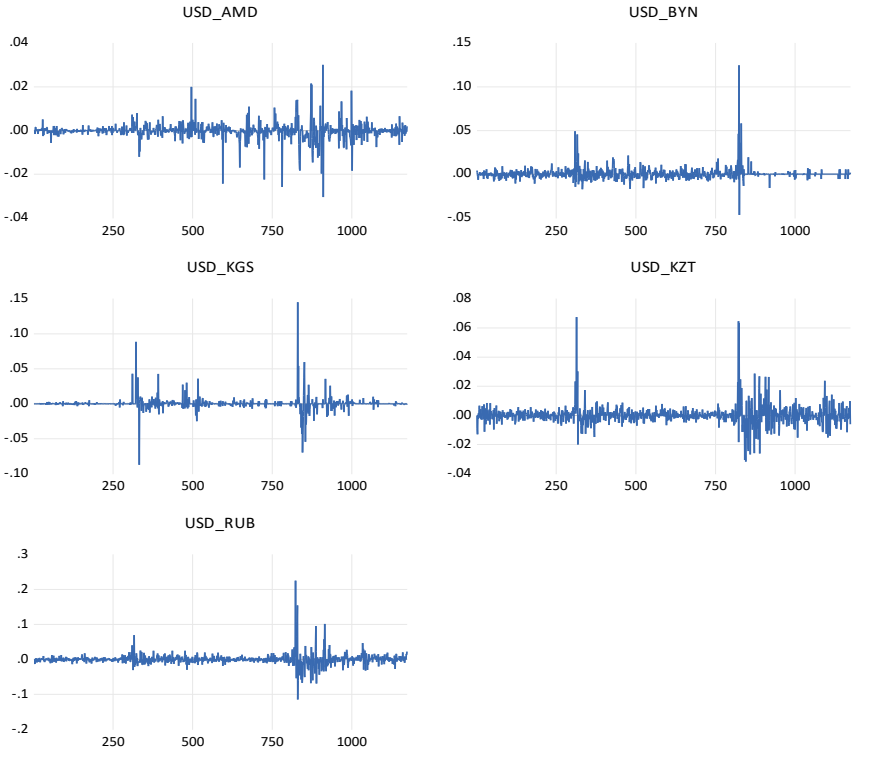

Table 2. *Unit Root Test Results*

Variable	Test	Trend Absent and Constant	Constant	Trend Present and Constant	Stationary Level
USD_AMD	ADF	-19,22337 (0,000)	-19,27814 (0,000)	-19,34181 (0,000)	*I*(0)
	PP	-29,77824 (0,000)	-29,75380 (0,000)	-29,74972 (0,000)	
	KPSS	-	0,409921 (0,000)	0,093762 (0,000)	
USD_BYN	ADF	-9,075770 (0,000)	-9,166678 (0,000)	-9,166239 (0,000)	*I*(0)
	PP	-39,19328 (0,000)	-39,19136 (0,000)	-39,1324 (0,000)	
	KPSS	-	0,095272 (0,000)	0,040474 (0,000)	
USD-KGS	ADF	-16,28142 (0,000)	-16,29235 (0,000)	-16,28688 (0,000)	*I*(0)
	PP	-30,94160 (0,000)	-30,93750 (0,000)	-30,92574 (0,000)	
	KPSS	-	0,023640 (0,000)	0,017780 (0,000)	
USD_KZT	ADF	-13,36258 (0,000)	-13,37362 (0,000)	-13,37294 (0,000)	*I*(0)
	PP	-34,77935 (0,000)	-34,76447 (0,000)	-34,75123 (0,000)	
	KPSS	-	0,022939 (0,000)	0,018299 (0,000)	
USD_RUB	ADF	-10,43555 (0,000)	-10,43970 (0,000)	-10,44485 (0,000)	*I*(0)
	PP	-29,60468 (0,000)	-29,59152 (0,000)	-29,58257 (0,000)	
	KPSS	-	0,065522 (0,000)	0,046938 (0,000)	
MacKinnon Critical Values (%1)	ADF	-2,566938	-3,435720	-3,965903	
	PP	-2,566937	-3,435715	-3,965896	
	KPSS	-	0,739000	0,216000	

Note: The values in parentheses indicate probability.
Source: Authors' calculations.

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Both the descriptive statistics and the time-path graphs indicate that the exchange rate return series possess fundamental characteristics of financial time series, such as asymmetric structure, fat tails, and volatility clustering. It is crucial for financial time series to be stationary, as non-stationarity can lead to spurious regression and misleading results. Consequently, the absence of a unit root, implying the stationarity of the series, is a requisite condition. However, since the return series are obtained by taking logarithmic first differences, the likelihood of them being non-stationary is almost negligible. The stationarity of the exchange rate return series has been examined using Augmented Dickey-Fuller (ADF), Phillips-Perron (PP), and Kwiatkowski-Phillips-Schmidt-Shin (KPSS) unit root tests. For the ADF and PP tests, the null hypothesis (H_0) indicates the presence of a unit root in the time series, reflecting a non-stationary [I(1)] condition, while the null hypothesis (H_0) of the KPSS test implies the absence of a unit root, indicating a stationary [I(0)] state. For modeling purposes, the null hypothesis should be rejected in the ADF and PP tests and accepted in the KPSS test (Ural et al., 2022:59). As evident from Table 2, all exchange rate return series are stationary at a 1% significance level for all unit root tests.

To predict the ARCH model, it is first necessary to investigate the presence of ARCH effects. There are generally two tests used to test the existence of the ARCH effect. The autocorrelation in the return series and therefore the changing variance structure are tested both with Ljung-Box Q and Q^2 statistics and with the ARCH-LM test. Since weekly return series are used, lag values of 1 and 5 are looked at for the Ljung-Box Q and Q^2 statistics and the ARCH-LM test. The test results obtained are presented in Table 3.

Table 3. *Ljung-Box Q and Q^2 and ARCH-LM Test Statistics*

Variable	Statistic	Value	Statistic	Value	Statistic	Value
USD_AMD	Ljung-Box Q(1)	26,696 (0,000)	Ljung-Box Q^2(1)	91,490 (0,000)	ARCH-LM (1)	91,18416 (0,000)
	Ljung-Box Q(5)	61,228 (0,000)	Ljung-Box Q^2(5)	161,60 (0,000)	ARCH-LM (5)	114,4544 (0,000)
USD_BYN	Ljung-Box Q(1)	15,301 (0,000)	Ljung-Box Q^2(1)	23,069 (0,000)	ARCH-LM (1)	22,99022 (0,000)
	Ljung-Box Q(5)	134,16 (0,001)	Ljung-Box Q^2(5)	67,855 (0,000)	ARCH-LM (5)	59,67330 (0,000)
USD_KGS	Ljung-Box Q(1)	13,506 (0,000)	Ljung-Box Q^2(1)	0,5172 (0,472)	ARCH-LM (1)	0,515464 (0,473)
	Ljung-Box Q(5)	76,934 (0,000)	Ljung-Box Q^2(5)	20,363 (0,001)	ARCH-LM (5)	18,31239 (0,003)
USD_KZT	Ljung-Box Q(1)	0,8191 (0,365)	Ljung-Box Q^2(1)	9,6981 (0,002)	ARCH-LM (1)	9,665302 (0,002)
	Ljung-Box Q(5)	56,970 (0,000)	Ljung-Box Q^2(5)	190,92 (0,000)	ARCH-LM (5)	148,5681 (0,000)
USD_RUB	Ljung-Box Q(1)	27,947 (0,000)	Ljung-Box Q^2(1)	51,085146 (0,000)	ARCH-LM (1)	51,67629 (0,000)
	Ljung-Box Q(5)	92,920 (0,000)	Ljung-Box Q^2(5)	136,49 (0,000)	ARCH-LM (5)	90,83604 (0,000)

Note: Values in parentheses indicate probability.
Source: Authors' calculations.

As seen in the table, for the USD_KGS return series at 1 lag, the Ljung-Box Q^2 and ARCH-LM test results are smaller than the chi-square (χ^2) table value at a 95% confidence level, and the probability values are greater than 0.05, leading

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to the acceptance of the null hypotheses (H_0). This indicates that there is no autocorrelation and varying variance in the error terms of this particular exchange rate return series. In contrast, for the USD_KGS return series at 1 and 5 lags and for all exchange rate return series at 1 and 5 lags, the results of the Ljung-Box *Q*, Q^2, and ARCH-LM tests exceed the chi-square (χ^2) table value at a 95% confidence level, and the probability values are less than 0.05. Consequently, the alternative hypotheses (H_1) are accepted, indicating the presence of autocorrelation and varying variance in the error terms of all exchange rate return series. Therefore, the analyses have continued with this assumption.

Following the confirmation of the presence of ARCH effects, analyses were conducted considering different probability distributions (Normal, Student-t, Generalized Error Distribution (GED)). As indicated by the descriptive statistics and the observed asymmetric structure of all exchange rate return series (skewness ≠ 0) which accounts for asymmetric effects, has been used for volatility modeling by the EGARCH model. Additionally, the effects of the Russia-Ukraine war on volatility modeling have been analyzed with the aid of a dummy variable.

Due to the large number of exchange rate return series under analysis, not all analysis results are presented for the sake of brevity. Instead, only the model results pertaining to the most significant probability distribution according to model selection criteria are shown. Table 4 displays the estimation results for the EGARCH (1,1) model, while Table 5 presents the estimation results for the EGARCH (1,1) model incorporating a dummy variable related to the Russia-Ukraine war.

Table 4. *EGARCH (1,1) Model Estimation Results*

	Coefficient	USD_AMD (Student-t)	USD_BYN (Student-t)	USD_KGS (Student-t)	USD_KZT (Student-t)	USD_RUB (Student-t)
Mean Equation	μ	-0,000008 (0,000028) [0,7729]	-0,000003 (0,000013) [0,8393]	-0,000002 (0,000012) [0,9884]	0,000010 (0,000081) [0,8980]	-0,000052 (0,000175) [0,7678]
Variane Equation	ω	-0,374625 (0,061233) [0,0000]	-0,170336 (0,028181) [0,0000]	-0,647030 (0,057033) [0,0000]	-0,430658 (0,083296) [0,0000]	-0,476744 (0,081082) [0,0000]
	α	3,556420 (1,742251) [0,0412]	0,554582 (0,231889) [0,0168]	2,712928 (1,379504) [0,0492]	0,279942 (0,038465) [0,0000]	0,309611 (0,043327) [0,0000]
	γ	0,581531 (0,388183) [0,1341]	0,308842 (0,133447) [0,0206]	-1,806989 (0,922460) [0,0501]	-0,006909 (0,023587) [0,7696]	0,056990 (0,023634) [0,0159]
	β	0,974722 (0,006140) [0,0000]	0,997801 (0,002883) [0,0000]	0,956239 (0,003282) [0,0000]	0,977960 (0,006641) [0,0000]	0,972756 (0,007131) [0,0000]
	t-Dist./GED Dist.	2,003083 (0,003129) [0,0000]	2,064383 (0,055670) [0,0000]	2,003357 (0,003407) [0,0000]	3,704677 (0,456757) [0,0000]	4,181072 (0,553005) [0,0000]
Model Selection Criteria	*Log Likelihood*	5.681,45	5.196,43	5.962,89	4.849,21	3.954,47
	AIC	-9,676804	-8,849838	-10,15668	-8,257815	-6,732251
	SIC	-9,650884	-8,823919	-10,13076	-8,231895	-6,706331
	HQC	-9,667029	-8,840064	-10,14691	-8,248040	-6,722476
	ARCH-LM	0,003780 [0,9510]	0,001159 [0,9728]	0,020243 [0,8869]	0,056172 [0,8127]	0,051180 [0,8209]

Note: Standard errors are shown with (.), and probability values are indicated with [.]. t-Dist represents the degrees of freedom for the Student-t distribution. Log-Likelihood refers to the maximum logarithmic likelihood value, AIC to the Akaike information criterion, BIC to the

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Schwarz information criterion, HQC to the Hannan-Quinn information criterion, and ARCH-LM indicates the ARCH-LM test statistic for 1 lag. Source: Authors' calculations.

Upon examining into Table 4, it's evident that models showcasing a Student-t distribution emerge as the most appropriate for all exchange rate return series based on selection criteria. The mean equation's constant coefficient has (μ) been proven statistically unimportant across these exchange rate return sequences while its counterpart constant coefficient in the variance equation stands (ω) up to be quite significant. Going over returns from USD_KGS suggests short memory indicated by an inconsequential ARCH coefficient (α) and equally insignificant asymmetry coefficients (γ) spotted among USD_AMD and USD_KZT returns. However, the asymmetry coefficients (γ) are statistically significant in other return series, indicating that in the USD_BYN and USD_RUB return series, positive shocks/news increase volatility more, whereas in the USD_KGS series, negative shocks/news have a greater impact. The GARCH coefficient (β), representing long-term memory for all exchange rate return series, is statistically significant and close to one. This closeness to one implies that shocks to the series have a long-lasting memory effect, meaning that today's conditional variance is more influenced by a greater number of past observations (price movements). When examining the ARCH-LM test statistic for one lag, it is smaller than the chi-square ($\chi 2$) table value at a 95% confidence level and the probability values are greater than 0.05, indicating the absence of ARCH effects in the exchange rate return series and the appropriateness of the Student-t distributed EGARCH (1,1) model.

To determine the effects of the Russia-Ukraine war on volatility modeling, a dummy variable was created and included in the mean equation. The announcement on television by Russian President Vladimir Putin on February 24, 2022, about the initiation of the invasion of Ukraine and the missile attacks on military facilities necessitated the dummy variable to take a value of zero for the period from December 31, 2018, to February 23, 2022, and a value of one from February 24, 2022, onwards. The model results are presented in Table 5.

According to Table 5; for all foreign exchange rate return series except USD-BYN, the constant coefficient of the mean equation is statistically insignificant, whereas the constant coefficient of the variance equation is statistically significant. Furthermore, for the USD_KGS return series, the ARCH coefficient indicating short memory is statistically insignificant, as are the asymmetry coefficients for the USD_KGS and USD_KZT return series. For other return series, the asymmetry coefficients are statistically significant, and it is understood that positive shocks/news increase the volatility more in the case of USD_AMD (significant at the 10% level), USD_BYN, and USD_RUB return series. For all foreign exchange rate return series, the GARCH coefficient that indicates long memory is statistically significant and again takes values close to one. This suggests that past observations (price movements) have a more significant impact on today's conditional variance. The ARCH-LM test statistic values for one lag are smaller than the chi-square ($\chi 2$) table value at a 95% confidence level, and the probability values are greater than 0.05, indicating the absence of ARCH effects in the exchange rate return series. This confirms that the appropriate model is again the Student-t distributed EGARCH (1,1).

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Table 5. *EGARCH (1,1) Model Estimation Results with Dummy Variable*

	Coefficient	USD_AMD (Student-t)	USD_BYN (Student-t)	USD_KGS (Student-t)	USD_KZT (Student-t)	USD_RUB (Student-t)
Mean Equation	μ	0,000002 (0,00002) [0,9586]	-0,000689 (0,000081) [0,0000]	0,000001 (0,000020) [0,9443]	0,000042 (0,000086) [0,6252]	-0,000227 (0,000187) [0,2244]
	D_WAR	-0,000192 (0,000079) [0,0154]	0,000690 (0,000087) [0,0000]	0,000020 (0,000010) [0,0468]	-0,000420 (0,000250) [0,0933]	0,001602 (0,000490) [0,0011]
Variance Equation	ω	-0,374970 (0,056334) [0,0000]	-0,149209 (0,016537) [0,0000]	-0,513544 (0,077850) [0,0000]	-0,442781 (0,085065) [0,0000]	-0,454714 (0,081770) [0,0000]
	α	3,350576 (1,113278) [0,0026]	2,022124 (0,431408) [0,0000]	2,295947 (2,395764) [0,3379]	0,285895 (0,039265) [0,0000]	0,30876 (0,043720) [0,0000]
	γ	0,583373 (0,0327648) [0,0750]	1,318761 (0,280686) [0,0000]	-1,515664 (1,580869) [0,3377]	-0,004900 (0,024159) [0,8393]	0,052929 (0,023927) [0,0270]
	β	0,974774 (0,006057) [0,0000]	0,999222 (0,001923) [0,0000]	0,970418 (0,003647) [0,0000]	0,977210 (0,006795) [0,0000]	0,975066 (0,007133) [0,0000]
	t-Dist./GED Dist.	2,003374 (0,002340) [0,0000]	2,003407 (0,001546) [0,0000]	2,004124 (0,008670) [0,0000]	3,688358 (0,456024) [0,0000]	4,165489 (0,543038) [0,0000]
Model Selection Criteria	*Log Likelihood*	5.684,41	5.216,30	5.965,41	4.850,31	3.958,96
	AIC	-9,680148	-8,882005	-10,15927	-8,257982	-6,738214
	SIC	-9,649909	-8,851765	-10,12903	-8,227743	-6,707974
	HQC	-9,668745	-8,870601	-10,14786	-8,246578	-6,726810
	ARCH-LM	0,003531 [0,9526]	0,000951 [0,9754]	0,019336 [0,8894]	0,044606 [0,8327]	0,086885 [0,7682]

Note: Standard errors are indicated with (.), and probability values are shown with [.]. t-Dist refers to the degrees of freedom for the Student-t distribution. Log-Likelihood represents the maximum logarithmic likelihood value, AIC is the Akaike information criterion, BIC is the Schwarz information criterion, HQC is the Hannan-Quinn information criterion, and ARCH-LM denotes the ARCH-LM test statistic for 1 lag. Source: Authors' calculations.

The differentiating factor in Table 5 is the dummy variable D_WAR. The dummy variable, included in the models to represent the Russia-Ukraine war, was found to be statistically significant at the 1% level in the USD_BYN and USD_RUB return series, at the 5% level in the USD_AMD and USD_KGS return series, and at the 10% level in the USD_KZT return series. The DWAR coefficient took a negative sign in the models related to the USD_AMD and USD_KZT return series, but a positive sign in the other return series. Accordingly, it has been concluded that the Russia-Ukraine war has decreased the average return in the USD_AMD and USD_KZT foreign exchange return series, whereas it has increased the average return in the USD_BYN, USDKGS, and USD_RUB exchange rate return series. Additionally, the asymmetry coefficient has become statistically insignificant for the USD_KGS return series as well as for the USD_KZT series, while it turned statistically significant at the 10% level for the USD_AMD return series. It has been understood that for the USD_AMD, USDBYN, and USD_RUB return series, where the asymmetry coefficient is significant, positive shocks/news have increased volatility more. The GARCH coefficient, which indicates long memory, has increased in the dummy-variable-inclusive models for all return series except the USD_KZT series, meaning that compared

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to the models without the dummy variable, more past days affect today's conditional variance.

Regarding model selection criteria, although the Schwarz Information Criterion (SIC) and Hannan-Quinn Criterion (HQC) are relatively large for the USD_KZT return series, it has been determined that the Student-t distributed EGARCH (1,1) models incorporating the dummy variable D_WAR are more appropriate for all exchange rate return series.

In the final stage, the half-lives of shocks in the exchange rate return series have been calculated. According to Table 6, the β coefficients are less than one, indicating that volatility reverts to its long-term average level. Indeed, the β coefficients are higher in the models considering the Russia-Ukraine war with the aid of the dummy variable, except for USD_KZT. Accordingly:

- For the USD_AMD return series, a shock reverts to the mean (dissipates) within 27 days in both the model without the dummy variable and the model with the dummy variable.

- For the USD_BYN return series, a shock reverts to the mean within 315 days in the model without the dummy variable and within 891 days in the model with the dummy variable.

- For the USD_KGS return series, a shock reverts to the mean within 15 days in the model without the dummy variable and within 23 days in the model with the dummy variable.

- For the USD_KZT return series, a shock reverts to the mean within 31 days in the model without the dummy variable and within 30 days in the model with the dummy variable.

- For the USD_RUB return series, a shock reverts to the mean within 25 days in the model without the dummy variable and within 27 days in the model with the dummy variable.

This situation that indicates the Russia-Ukraine war generally increases the β coefficient, which represents volatility persistence, and thus suggests that volatility tends to revert to the average over a longer period.

Table 6. *Half-Life of Shocks*

		Without Dummy	**With Dummy**
USD_AMD	Beta (β) Coefficient	0,974722	0,974774
	Half-life (Day)	27	27
USD_BYN	Beta (β) Coefficient	0,997801	0,999222
	Half-life (Day)	315	891
USD_KGS	Beta (β) Coefficient	0,956239	0,970418
	Half-life (Day)	15	23
USD_KZT	Beta (β) Coefficient	0,977960	0,977210
	Half-life (Day)	31	30
USD_RUB	Beta (β) Coefficient	0,972756	0,975066
	Half-life (Day)	25	27

Source: Authors' calculations.

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CONCLUSION AND ASSESSMENT

In this scholarly endeavor, return series derived from daily closing exchange rates between December 31, 2018, and June 30, 2023, for Belarus, Armenia, Kazakhstan, Kyrgyzstan, and Russia constituting the Eurasian Economic Union as of January 1, 2015 have been meticulously analyzed utilizing the EGARCH method. The mean reversion times for these series have been systematically calculated. Additionally, the volatility modeling implications of the Russia-Ukraine conflict, which commenced on February 24, 2022, have been rigorously examined through the application of a dummy variable.

Conclusively, Student-t distributed models have been identified as the most fitting for all exchange rate return series. For the USD_AMD and USD_KZT return series, the asymmetry coefficients were found to be statistically non-significant. However, in other return series, these coefficients are statistically significant, with positive shocks/news augmenting volatility more notably in the USD_BYN and USD_RUB series, and negative shocks/news having a more substantial impact in the USD_KGS series. As determined by the dummy variable-inclusive model outcomes, the asymmetry coefficients for the USD_KGS and USD_KZT return series were statistically non-significant. In contrast, in other return series, the asymmetry coefficients are statistically significant, with positive shocks/news again heightening volatility in the USD_AMD (significant at a 10% level), USD_BYN, and USD_RUB series.

The GARCH coefficient, indicative of long memory, has elevated in dummy variable-inclusive models for all return series except USD_KZT, implying a more pronounced influence of historical days on the current conditional variance compared to models without the dummy variable. The half-lives of shocks in the exchange rate return series have been calculated, revealing that the Russia-Ukraine conflict generally increases the β coefficient, which symbolizes volatility persistence, thus suggesting a protracted duration for volatility to revert to the mean.

Based on the findings, it is concluded that both positive and negative shocks/news increase the volatility in the exchange rates of the Union Members and that the increased volatility can only return to the average in the long term. There could be various reasons underlying this. The Eurasian Economic Union, despite being an economic union, gives the impression of an organization where geostrategic concerns take precedence, and this could be considered one of the main reasons for the increased volatility. It does not seem likely in the near future that the organization dominated by Russia will turn into a strong international economic integration movement. Furthermore, recent instabilities in the exchange rates of the US dollar, increased risks and uncertainties in international trade can also contribute to an increase in volatility. Beyond these, significant differences among member countries in terms of basic macroeconomic indicators and foreign trade performance, geographical discontinuities among member countries, the natural resource-dependent fragile economies of Russia and Kazakhstan, inefficient and inadequate transportation routes, lack of an effective system in information exchange, absence of an effective international payment system, differences among member countries in terms of population, economic size, and political power, and historical problems among members and potential member countries, especially Armenia's regional tensions, negatively affect the

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volatility in the exchange rates of the Union and its member countries. To reduce volatility and strengthen the Union in line with its objectives, the following measures can be recommended:

- Developing an effective payment system and establishing monetary union in international trade among countries against the US dollar,
- Developing the Anti-Crisis Fund and expanding the scope of the fund,
- Using the fund in investment projects and the implementation of common policies,
- Signing economic agreements with China and benefiting from the opportunities created by the Belt and Road Initiative.

The inclusion of other powerful actors in the region such as China and Iran in the Union or strengthening strategic cooperation, the development of the customs union between Russia and Kazakhstan, an increase in the number of members, spreading to a wider geography, and most importantly, having political will, desire, and determination will accelerate the integration process and reduce volatility. In this context, a multilateral evaluation of Turkey's membership in the Union, as an experienced and more developed country among Eurasian countries and Turkic States, would be beneficial. The participation of a large economy and a moderately developed industry like Turkey could lead to an increase in the complementarity level in foreign trade and transportation among union countries, creating a development in favor of all countries.

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AN EVOLVING ENERGY PARTNERSHIP: THE EUROPEAN UNION AND AZERBAIJAN

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ABSTRACT

Azerbaijan is a fossil fuel exporter that the EU has paid special attention to since it began prioritizing energy security. This study analyzes the EU's positioning of Azerbaijan within its foreign energy policy. The article presents a chronological analysis of the significant events and dynamics of the past two decades from both EU and Azerbaijan perspectives, with reference largely to official documents. The gradual rise of Azerbaijan on the EU energy agenda is attributed to the EU's dependence on Russian fossil resources and the Russia-Ukraine energy crises. The article also focuses on the specific example of how Azerbaijan's advantage in energy bargaining has created an exception in the EU's normative neighborhood relations. Most recently, this energy partnership relationship has been evolving to include non-fossil resources as well.

Keywords: European Union, Azerbaijan, the Southern Gas Corridor, Russia-Ukraine war, Energy cooperation.

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INTRODUCTION

Energy has always been the crucial factor in the relations between the European Union (EU) and Azerbaijan. The EU is a major energy demand region, heavily reliant on energy imports, while Azerbaijan stands out in the Caspian region due to its significant natural gas resources and production. Although the foundations for this relationship were laid at the end of the last century, significant energy relations began to develop in the first decade of the 21st century. The reasons for this development, which has been almost uninterrupted despite the negative aspects of the normative dimension of EU-Azerbaijan relations, should be evaluated. By analyzing the last two decades, this study aims to identify the factors that led the EU to establish and develop this energy partnership with Azerbaijan, and those that have led the partnership to evolve to include other areas besides hydrocarbons. Upon analyzing this development process, the conflict between Russia and Ukraine, which eventually turned into a war in 2022, played a decisive role in EU-Azerbaijan energy relations.

The factors that we have identified as specific for the EU can basically be categorized under two main headings. The first is the EU's chronic energy dependence on fossil resources and foreign sources. Second, Russian fossil resources constitute the largest slice of this external dependence. Therefore, since the 2006 Russia-Ukraine natural gas crisis, the EU has been searching for new supply markets and for strengthening its energy transition (Proedrou, 2012; Cerrah, 2015; Atesoglu Guney, 2014; Cwiek-Karpowicz, 2013; Koksoy, 2022; Ultan and Saygin, 2022). For Azerbaijan, the primary factor has been the adoption and implementation of opening to foreign markets in energy as a state policy since the first years of independence. A complementary factor, which is not sufficiently emphasized but which we believe to be very important, is that Azerbaijan's strong energy history and capabilities have manifested themselves in a short period of time. In this context, the European market and the EU as its umbrella has emerged as an important market for Azerbaijan's natural gas over the years. Azerbaijan's ability to use its energy advantages as a soft bargaining tool that rewards by cooperation, rather than as a hard element in its overall foreign policy practices, is the second factor (Salayev, 1956; Bagirov, 1996; Azərbaycan Respublikasi Prezidentinin Katibliyi, 2001; Mirbabayev, 2008, 2013; Erhan and Gurbuz, 2013; Telli, 2015; Hasanov et al., 2020). This allows Azerbaijan to adjust regional balances and manage its foreign relations in its favor. One of the best examples of this ability can be seen in conducting its relations with the EU.

In this picture of mutual expectations, Azerbaijan became one of the reliable partners for the EU in its search for new supply markets. While the primary focus of this relationship is the trade of fossil resources, there have also been efforts to collaborate on green energy initiatives. However, this progress has not been entirely smooth and linear. During the realization of the Southern Gas Corridor (SGC), Azerbaijan utilized its energy bargaining advantage to manage a temporary disagreement in the negotiations on the Association Agreement (AA). This period coincided with the Crimea issue and EU's increased concern over its dependence on Russian fossil fuels. Therefore, this example of soft bargaining proved that Azerbaijan would become an energy partner that cannot be easily given up by the EU. Recently, due to the Russia-Ukraine war and the EU's

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desire for independence from Russian energy resources, EU-Azerbaijan energy relations have strengthened and evolved to include the green energy field. In the current situation, mutual decisions and steps are being taken to strengthen this momentum.

EU-AZERBAIJAN RELATIONS

Foundations

The EU recognized Azerbaijan shortly after the declaration of independence in 1991, and diplomatic relations were established in 1992. The first observer of Azerbaijan to the EU was appointed in 1995. Although the European Commission appointed a permanent representative in Azerbaijan in 1998, the mission was carried out by the French embassy in Baku until the opening of the representation office in 2000. The EU provided humanitarian aid to the country from the very beginning and signed a memorandum on free loan aid in 1995 (Commission of the European Communities, 1993: 264; European Commission Spokesman's Service, 1998; Huseynov, 2003: 40-41). The EU also established relations with Azerbaijan within the Commonwealth of Independent States on a multilateral basis. In this context, the TACIS program (Technical Assistance to the Commonwealth of Independent States) was launched in 1991 with the aim of supporting the process of transition to market economies and democratic societies in the countries of Eastern Europe, South Caucasus, and Central Asia (Frenz, 2008: 6). The Partnership and Cooperation Agreement (PCA) as the main legal framework of bilateral relations between the parties was signed in 1996 and entered into force in 1999 (PCA, 1999).

The 21st century has brought forth various challenges and opportunities in the Eurasia region, specifically in Southern Caucasia and Central Asia sub-regions. These challenges and opportunities were rooted in the end of the Cold War and the collapse of the Soviet Union. Due to various internal and external factors, as well as Moscow's influence in the region, the EU's presence in the region has evolved cautiously. However, multilateral programs and projects including Azerbaijan that were initiated in the 1990s gained significant importance with the emergence of energy issues in the early 2000s. The EU's relations with Azerbaijan have been conducted through various tools, programs, or projects, including TACIS, TRACECA (Transport Corridor Europe-Caucasus-Asia) and INOGATE (Interstate Oil and Gas Transport to Europe), until the country's inclusion in the European Neighborhood Policy (ENP) in 2005 and subsequently its Eastern Partnership (EaP) dimension in 2009. TRACECA was launched in 1993 to support the political and economic development of the Black Sea Region, Caucasus, and Central Asia by improving international transport (TRACECA, 2022). INOGATE was initiated in 1996 to deal with gas and oil transportation between the CIS and the EU, with the aim of reducing their dependency on fossil fuels and imports, improving the security of their energy supply, and mitigating overall climate change (INOGATE, 2022).

ENP, EaP and Azerbaijan

ENP which came into scene with Commission communications in 2003 and of which general framework covering Eastern and Southern neighbors presented in

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2004 by placing those in EU's new geopolitical planning because of upcoming huge enlargement. Although roots of EU's policy approach towards countries and regions except candidates can be found in 1990s, ENP emerged as a new foreign policy tool at the beginning of the 21st century (Kahraman, 2008: 452). By taking "the opportunity offered by enlargement to enhance relations with its neighbors on the basis of shared values", EU decided to contribute "… to the development of a flourishing civil society to promote basic liberties such as freedom of expression and association" in neighbors by expecting "In return for concrete progress demonstrating shared values and effective implementation of political, economic and institutional reforms, including in aligning legislation with the acquis, the EU's neighborhood should benefit from the prospect of closer economic integration with the EU" (COM (2003) 104 Final: 3-4). A Neighborhood Instrument was also planned at the first stage with the objectives of promoting sustainable economic and social development in the border areas; working together to address common challenges, in fields such as environment, public health, and the prevention of and fight against organized crime; ensuring efficient and secure borders; promoting local, "people-to-people" type actions (COM (2003) 393 Final: 5-6). As set in Strategy document, EU having normative ideals undertook the task of making contribution to stability and good governance in neighborhood and promoting a ring of well governed countries with whom it can enjoy close and cooperative relations (COM (2004) 373 Final: 6). Covering 16 countries (Algeria, Armenia, Azerbaijan, Belarus, Egypt, Georgia, Israel, Jordan, Lebanon, Libya, Republic of Moldova, Morocco, Syria, Palestine, Tunisia, Ukraine) ENP was organized in Southern and Eastern dimensions. EaP which included Azerbaijan has been formed in 2009 (COM (2008) 823 Final; SEC (2008) 2974/3) to better focus on regional instruments. Also specific policy tools were added to the policy, namely the Black Sea Synergy (COM (2007) 160 Final).

An Azerbaijan Country Report has been presented in March 2005 by the Commission after its suggestion for including Azerbaijan in ENP together with Armenia, Georgia, Egypt and Lebanon (SEC (2005) 286). A week before adopting the Action Plan concerning relations within the ENP, a Memorandum of Understanding on a Strategic Partnership Between the European Union and the Republic of Azerbaijan in the Field of Energy was signed in November 2006 (European Commission, 2006a). Then an EU-Azerbaijan ENP Action Plan was adopted for a five-year period as "… a political document laying out the strategic objectives of the cooperation between Azerbaijan and the EU" (EU-Azerbaijan Cooperation Council, 2006). Azerbaijan, together with other five Eastern European Partners- Armenia, Belarus, Georgia, the Republic of Moldova and Ukraine- participated to the EaP which was launched at the Prague Summit in May 2009 as a specific dimension of ENP forming "a more ambitious partnership between the European Union and the partner countries" (COM (2008) 823 Final; Council of the European Union, 2009). While the components and priority areas of cooperation for the period of 2007-2013 was arranged by Azerbaijan Country Strategy Paper within the context of ENPI (European Commission, 2006b), 2014-2017 period was organized under ENI (EEAS and European Commission – Europeaid, 2013). Because EU-Azerbaijan ENP Action Plan has expired in 2011, parties have settled on an open-ended extension until the AA is signed (European Commission, 2012). EU-Azerbaijan ENP Action Plan implementation has been monitored and reported by annual

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progress reports which observe country performance since 2006. All these documents, and others not mentioned here, underlie ENP to develop relations with Azerbaijan in the areas of trade, investment, economy, social, finance, science, technology, and culture on an economic and political benefit basis.

As the EU established its framework of relations with Azerbaijan and launched the ENP, it had to address the issue of dependence on energy imports, particularly on Russian resources. Azerbaijan's role in the EU's energy policy will increase as the EU seeks to address these issues.

EU'S ENERGY IMPORT DEPENDENCY AND RUSSIA

In the early years of the 21st century, the EU has also begun to confront a long-standing problem that needs to be addressed more seriously this time around: dependence on fossil resources for energy and high import dependence for the supply of these fossil resources (Table 1).

Table 1. *EU27 Energy Import Dependency by Fuel (Net mass, %)*

	2000	2005	2010	2015	2019	2020	2021
Total	57.8	59.5	57.4	57.6	62.3	59.1	57.1
Solid fossil fuels	29.8	35.7	38.2	41.0	43.3	35.8	37.5
of which hard coal	43.2	52.5	57.7	63.0	67.9	57.4	59.7
Oil and petroleum products	99.8	101.2	102.1	104.7	105.0	105.3	99.7
of which crude and NGL	92.5	93.0	94.4	95.9	96.6	96.1	95.1
Natural gas	65.7	69.0	67.8	74.5	89.7	83.6	83.5

Source: European Commission, 2022a: 24; 2023: 24.

The 2006 natural gas crisis between Ukraine and Russia had a significant impact on European countries that rely on Russian natural gas transported through the Ukrainian transit line. This event brought energy policy to the forefront of the EU's agenda. The EU had already taken steps towards transitioning to new and renewable energies to achieve a more self-sufficient energy supply. However, the 2009 crisis accelerated the search for alternative purchasing markets for EU countries that were highly dependent on Russian natural gas at the time. Although some Central and Eastern European countries may be more vulnerable to Russia due to their geographical, political, social, military, and economic position, particularly their proximity to the Russian sales market and high purchases of Russian energy products (Table 2), they are not the only ones highly dependent on energy imports. Some of the most politically and economically powerful members of the EU have high total energy import dependency rates, too (European Commission, 2022a: 71; 2023: 71).

For example, the import dependency of an industrial actor such as Germany did not fall below 60 per cent in the first two decades of the century. Since 2010, Germany has been implementing a comprehensive transition to renewable energy program (Quitzow et al., 2016), and in 2021, the country accounted for 36.5% of the EU's total imports of solid fossil fuels. In the refining sector, the strong Netherlands has become increasingly dependent on imports, which have

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almost doubled in the last two decades. Again, five countries (the Netherlands, Germany, France, Spain, and Italy) account for 63.3% of total EU imports of oil and oil products in 2021, while these five countries account for 72.2% of total EU imports of natural gas, in varying order (European Commission, 2023: 51, 56, 60).

Russia occupies a prominent place among the high fossil dependency ratios in Table 1. Over the last two decades, Russia has been by far the most important supplier of crude oil, NGLs and natural gas to the EU. In 2020, Russian products accounted for 25.7% of extra-EU oil and NGL imports, 38.7% of natural gas imports and 53.9% of hard coal imports (European Commission, 2022a: 67-70). The overall share of Russia in the EU-27 energy basket across all products was estimated at 24.4% in 2020. Some EU members have become more dependent on Russian fossil resources **(Table 2).**

Russia has entered the EU's LNG market at similar dates and quantities as the United States. This dependency is perceived as a threat to energy security by the EU, which also had negative experiences during the 2006-2009 Ukraine-Russia natural crises. The LNG trade between the US and the EU began in 2016 and grew significantly with the 2018 agreement, resulting in a 2418% increase in US LNG exports to the EU market from 2018 to February 2022 (European Commission, 2022b). Following the beginning of the Russia-Ukraine war, new negotiations between the EU and the US in March 2022 resulted in decisions to increase investment cooperation and trade in the short and medium terms in the transition to green energy, particularly LNG. For the EU to achieve its goal of phasing out Russian fossil resources by 2027, commitments were made for the US to export at least 15 billion m^3 of additional LNG to the EU market in 2022 and for the EU side to work to ensure stable demand for approximately 50 billion m^3 of additional US LNG annually until at least 2030 (The White House, 2022). It should be noted that whether US LNG can substitute Russian natural gas in the EU market in the short and medium term, and to varying degrees in the member states, and its role in ensuring EU energy security in the medium and long term are two different issues (Keypour, 2022).

However, the fact that Russian LNG has fallen from second to third place in the EU's LNG imports from 2019 to 2020 and has been replaced by the US, while its dominance in pipeline gas continues, should be considered as one of the reasons for Russia's energy pressure on the EU. Because, considering that natural gas is the most popular energy source in the global transition to green energy, new and renewable energy-economy, and that the demand for it will gradually increase (especially in the transition phase from coal to gas) (International Energy Agency, 2019), it is understood that the mode of transportation in the transatlantic/intercontinental trade of this natural gas is the seaborne, and therefore the LNG format of natural gas will be important in this transition process for a few decades (International Gas Union & Snam, 2022; International Group of Liquefied Natural Gas Importers, 2022), especially for the consumer European market, this priority will be more evident. This demonstrates that investments and trade in LNG will play a crucial role in the energy sector, as well as in the competitions and collaborations in which it is a factor. It may even be a factor in some armed conflicts, such as the Russia-Ukraine conflict. Additionally, decarbonized gas derivatives, such as biogas and hydrogen, are expected to become more prominent soon.

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Table 2. *Imports from Russia in Gross Available Energy, 2020 (%)*

	Total	Natural gas	Oil	Coal
EU_27	24.4	41.1	36.5	19.3
Belgium	24.3	7.9	46.1	35.8
Bulgaria	15.4	72.8	13.1	8.2
Czechia	23.7	86.0	35.7	1.7
Denmark	21.1	52.4	27.6	86.3
Germany	31.1	58.9	35.2	21.5
Estonia	21.4	86.5	279.4∗	0.1
Ireland	3.2	0.0	6.1	5.2
Greece	46.5	38.9	73.0	8.9
Spain	7.5	10.5	8.8	43.2
France	8.4	20.0	15.7	29.7
Croatia	24.7	55.0	14.2	74.7
Italy	23.8	40.4	17.4	49.8
Cyprus	1.7	:	1.3	105.4∗
Latvia	31.0	100.1∗	25.5	95.6
Lithuania	96.1	50.5	202.7∗	69.1
Luxembourg	4.3	27.2	0.0	7.7
Hungary	54.2	110.4∗	57.4	11.3
Malta	7.5	0.0	8.7	:
Netherlands	49.0	35.8	70.5	50.3
Austria	16.5	58.6	7.3	9.2
Poland	35.0	45.5	76.3	13.4
Portugal	4.9	9.6	6.0	0.0
Romania	17.0	15.5	37.0	11.8
Slovenia	17.6	81.0	24.9	0.8
Slovakia	57.3	75.2	159.4∗	26.6
Finland	45.0	92.4	141.2∗	30.0
Sweden	8.5	13.9	32.5	22.7

Source: Eurostat, 2022.

Notes: (∗) above 100% indicates that the country imports more than it needs for domestic consumption and exports different energy product. (:) means share cannot be calculated.

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EU ENERGY SECURITY POLICIES AND THE POSITIONING OF AZERBAIJAN

In the past two decades, the EU has prioritized energy security and policy development, while also establishing an energy diplomacy network that grants it a unique institutional position within EU diplomacy. As part of these efforts, the EU has engaged in a dialogue with Azerbaijan. The 2006 Green Paper, one of the first important documents published in this context, highlighted the issue of the EU's dependence on hydrocarbons and foreign energy, particularly Russia. It proposed alternative natural gas supply sources and routes to address these problems, including independent supply to Europe from the Caspian region (COM (2006) 105 Final: 15-16). Efforts to include Caspian resources in the supply pool have been expanded in a short period of time. It is important to note Russia's close and influential position to Azerbaijan. However, establishing new ties with Azerbaijan and other producers in the Caspian region has been identified as a priority in foreign energy relations, as the transportation of Caspian energy resources to the EU has been deemed necessary. The transportation of Caspian natural gas to Europe has been prioritized through the Nabucco pipeline and the Trans-Caspian energy corridor (COM (2007) 1 Final: 9, 24-25).

Published in 2008, the EU's Second Strategic Energy Review brought the SGC to the agenda. Identified as one of the EU's highest energy security priorities, it was identified as one of the six priority infrastructure actions proposed to be carried out within the scope of infrastructure development, which is seen as crucial for meeting the Union's future energy needs (COM (2008) 781 Final: 4-5). In those years, the goal of integrated transportation of Caspian and Middle Eastern natural gas resources to the EU markets to meet future EU needs was clearly stated. The report also emphasized the need to include Azerbaijan, Turkmenistan, Iraq and in the long run Uzbekistan and Iran in this corridor. It was envisaged that the project would operate entirely within EU rules and based on EU investments, including transit countries such as Turkey on the road from the Caspian to EU markets. The importance of the transportation of Caspian resources to the EU markets has been constantly brought up in subsequent documents. In the Energy Infrastructure Priorities for 2020 and Beyond document, the Southern Corridor, which is planned to bring natural gas from the Caspian Basin, Central Asia and the Middle East to the EU, was identified and Azerbaijan, Turkmenistan and Iraq were highlighted as potential supply countries (COM (2010) 677 Final: 11, 32).

However, by the end of 2012, the EU's interest in this project had diminished as Nabucco was removed from the agenda and ultimately canceled. During this time, the TANAP (Trans Anatolian Natural Gas Pipeline Project) was initiated through an agreement between Turkey and Azerbaijan in June 26, 2012 (Türkiye-Azerbaycan Antlasmasi, 2013). Shortly thereafter, Russia invaded Crimea in 2014, causing energy supply security to once again become a priority on the EU's agenda (Jarosiewicz, 2015: 10-11).

The 2014 European Energy Security Strategy did not address Central Asia in its entirety, but emphasized that Turkmenistan, along with Iraq and Iran, could contribute significantly to the expansion of the SGC in the long-term perspective for diversification of external gas supply sources (COM (2014) 330 Final: 16). The 2015 Energy Union Package also emphasized the need to intensify the work on

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the SGC in order to ensure the export of Central Asian natural gas to Europe, and stated that the EU will use all foreign policy instruments to establish strategic energy partnerships with Algeria, Turkey, Azerbaijan, Turkmenistan, the Middle East, Africa and other potential producing and transit countries and/or regions to revitalize energy and climate diplomacy (COM (2015) 80 Final: 4, 6). In the same year, the Energy Diplomacy Action Plan reiterated the need to give special priority in the EU's foreign policy to vital partners and initiatives to strengthen the diversification of energy resources, sources of supply and routes, especially in the neighborhood (Council of the European Union 2015: 3, 6). Among these vital initiatives, the SGC was again mentioned.

As can be seen, the transportation of Caspian resources to the EU markets and the development of infrastructures compatible with the EU markets have become important in the EU energy approach. The EU's main focus in the region is natural gas. Central Asia is often considered together with the South Caucasus (especially Azerbaijan) in the same energy programs. This brings the EaP into the picture. The INOGATE Program, in which the Central Asian countries and all current EaP countries are partners, has been one of the longest running EU-funded energy technical assistance programs from 1996 until its conclusion in 2016. It has worked within the policy frameworks of the Baku Initiative since 2004 and EaP since 2009 (INOGATE, 2022). Following the conclusion of INOGATE in 2016, the new regional energy cooperation program between the EU, the Neighborhood and Central Asia is planned to focus on better use of energy statistics, sharing best practices and EU experience, and evidence-based energy policies. An EU contribution budget of around €20 million has been set for the period 2016-2020 (European Commission, 2016).

Azerbaijan is considered an important partner for the transportation of fossil resources from the Caspian region and neighboring areas to the European market. The country holds a strategic position as the starting point of the SGC, which is a vital route for the EU. As a result, Azerbaijan has been granted some privileges within the ENP and EaP. The EU's energy interests took precedence over the normative expectations prioritized by the ENP and the EaP. This was evident as the construction of the SGC was also a matter of concern at the time. At the beginning of this period, Joint Declaration on the Establishment of the Southern Gas Corridor and Protocol of Intention on the Establishment of a Working Group on the Southern Gas Corridor were signed on January 13, 2011 (Ministry of Energy of the Republic of Azerbaijan, 2023). On May 29, 2018, the Corridor was launched and gas transportation to Turkey started on June 30, 2018 and to the EU market via Greece, Bulgaria and Italy on December 31, 2020. The gas flow through the Corridor to Europe paved the way for further energy cooperation between the EU and Azerbaijan, and on February 4, 2022, the parties agreed on the establishment of an energy dialogue between EU and Azerbaijan (Ibadoghlu, 2023).

Finally, it is important to emphasize a more general observation when determining Azerbaijan's position in the EU energy security agenda and planning. The European External Action Service considers the EaP countries, including Azerbaijan, as non-EU European countries (European External Action Service, 2023). Therefore, emphasizing such a definition by the diplomatic service of the EU's, we can conclude that Azerbaijan is one of the geopolitical Europeans, the

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EU's eastern neighbors (Sahin, 2021: 297). This is an approach that strengthens Azerbaijan's reliable position in the energy partnership. Azerbaijan is aware that this position, which has improved over the years, is due to its advantage of energy bargaining. The most notable example of such a situation can be observed during the negotiations with the EU on moving from the PCA to a comprehensive AA.

ADVANTAGE IN ENERGY BARGAINING: NEGOTIATIONS FOR A COMPREHENSIVE AGREEMENT

The EU aimed to replace previous Partnership and Cooperation Agreements with Association Agreements and Deep and Comprehensive Free Trade Area (DCFTA) arrangements within the framework of the EaP. However, negotiations for an AA were conditional on specific requirements. In particular, the partner country's membership of the World Trade Organization (WTO) was a condition for the completion of the DCFTA.

In 2010, the EU initiated talks with all three South Caucasian countries to sign AAs along with complementary DCFTAs (Zasztowt, 2015): 2A prerequisite for such an agreement was for the partner country to become a member of the WTO, but Azerbaijan had a long way to go before such accession. Additionally, the Azerbaijani government has not expressed any intention to sign the agreement. President Ilham Aliyev criticized the ambiguity of the term 'association' during the World Economic Forum meetings in January 2014 and announced that the country had no plans to sign the agreement. The Azerbaijani government has stated that the agreement is not a priority for the country (Abbasov, 2015: 58). Although Azerbaijan has made slow progress towards WTO accession and has a critical stance towards the AA, the parties have signed some significant documents: Agreements on visa facilitation (November 29, 2013) and readmission of persons residing without authorization (February 28, 2014), the Joint Declaration on a mobility partnership (December 5, 2013) and the Protocol to the PCA on a Framework Agreement on the general principles for Azerbaijan's participation in EU programmes (June 14, 2014) (Republic of Azerbaijan Ministry of Foreign Affairs, 2023). While these developments have been taking place, Azerbaijan has proposed a Strategic Modernization Partnership (SMP) as a new model of cooperation. A draft text dated April 4, 2014, has been claimed to have been presented to the EU. According to some analysts, this suggested agreement did not aim to impose or mandate political and economic reforms, regional security, energy cooperation, sustainable economic growth, and support for deep and comprehensive democracy on the government of Azerbaijan. Instead, it aimed to promote these objectives (Abbasov, 2015: 58; Zasztowt, 2015: 2). In his speech at ADA University in Baku on June 14, 2014, European Commission President Jose Manuel Barroso stated that the negotiations on the SMP should start immediately and the agreement should be finalized in the coming months, by emphasizing "… As part of our relationship, we are also interested in developing a strategic energy partnership, but I want to make it clear this is not the only interest in play. This is so vital for both of us…" (Barroso, 2014: 14-16). The possibility that the SMP might have a weak conditional character in terms of the EU's normative will raised the question of whether the EU was backtracking some rules at the expense of other interests.

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Putting Azerbaijan's SMP suggestion on table was not a sharp stepping back but clearly loosen some rules of ENP or EaP. Telltale sign of this will be revisioning ENP second time in 2015[2] and adopting a more flexible attitude towards neighboring partners, including Azerbaijan. This was a wide scale review with a need to answer the demands of partners with very different levels of ambition (JOIN (2015) 6 Final: 3). As explained in the Communication, the purpose of this review was to propose a more effective policy to build a more effective partnerships with the neighbors while pursuing own interests including the promotion of universal values: "The EU's own stability is built on democracy, human rights and the rule of law and economic openness and the new ENP will take stabilization as its main political priority in this mandate" (JOIN (2015) 50 Final: 2). Together with good governance, democracy, rule of law and human rights as focal points, 2015 review has been based on economic development for stabilization, security and migration and mobility for forming future relations with its neighbors.

In spite of country's withdrawal from AA negotiations in October 2014 and suspended PCA meetings in 2015, EU side did not relinquish and kept official talks with the country for grinding on bilateral relations (SWD (2017) 485 Final: 1). Commissioner Hahn visited Baku in April 2015. Donald Tusk, President of the European Council, in July 2015 and High Representative of the Union for Foreign Affairs and Security Policy / Vice-President of the Commission Federica Mogherini in February 2016 also visited Baku. Reasons of that highest level of concern may be several but this instance certainly not a regularity for EU towards all neighboring countries. This gave an impression for us to consider other possible priorities (i.e. energy) other than Azerbaijan's democracy and human rights situation which EU always stresses on especially within ENP and EaP. Because it is known that country's slow democratic development and violations of human rights were in high importance for European Parliament (EP) those days. Parliament's resolution on the persecution of many human rights defenders in Azerbaijan adopted on September 18, 2014, stated: "… in the last few years the general human rights climate in Azerbaijan has been deteriorating, with a major escalation of government repression, pressure and intimidation directed at NGOs, civil society activists, journalists and human rights defenders taking place in recent months…" (European Parliament, 2014). First reaction was from Azerbaijani Parliament by announcing to re-consider their relations with EP and secondly, Azerbaijani government withdrew from AA negotiations, as mentioned before. But in May 2015, during Riga Summit of EaP, Azerbaijan expressed its intention on resumption of negotiations on a new agreement (SWD (2017) 485 Final: 1). Even though another stinging criticism by the EP emphasizing "… the overall human rights situation in Azerbaijan has deteriorated continuously over the last few years, with growing intimidation and repression and intensification of the practice of criminal prosecution of NGO leaders, human rights defenders, journalists and other civil society representatives" was adopted as a resolution in September 10, 2015 (European Parliament, 2015), the Council adopted a mandate to negotiate a comprehensive

2 The first review was in 2011. EU expected more additional reforms from neighbors. In return committed more rewards as additional financial and other kinds of support (COM (2011) 303 Final) and published A Medium Term Programme for a Renewed European Neighborhood Policy for the years 2011-2014 (SEC (2011) 650 Final).

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agreement with Azerbaijan in 2016 (Council of the European Union, 2016). On the same day President Aliyev's visit to Brussels, President Tusk announced the official launching date of talks on this new agreement as February 7, 2017, by highlighting energy relations and shared commitment to finalize SGC (Council of the European Union, 2017). So, the negotiations have been made since then.

Following this example, another significant development that strengthened Azerbaijan's energy position for the EU and, moreover, led to the start of the process of diversifying the scope of energy relations is the Russia-Ukraine war. Because with this war, the EU has expanded the scope of its energy supply security and started to intensify its initiatives to transition to renewable energy along with its climate targets. Azerbaijan's position has also been affected by these developments.

RUSSIA-UKRAINE WAR: IMPLICATIONS FOR ENERGY RELATIONS

We can focus on two developments that embody the reflection of the Russia-Ukraine War on the EU's energy policies and relations. The first of these is the decrease in coal and oil trade, especially in coal and oil trade, as a result of the sanctions imposed by the EU on Russia, and in natural gas trade as a result of Russia using its natural gas card in return. The second is the energy transition program that the EU started in previous years but tightened with the war. This program specifically consists of the REPowerEU plan and related initiatives, which is a much more comprehensive transition program that aims to make Europe independent from Russian fossil fuels before 2030 (COM (2022) 230 Final). One of these related initiatives, the document titled External Energy Relations of the EU in a Changing World, has put forward a strategy for the development of international energy cooperation (JOIN (2022) 23 Final). These developments also provided the basis for strengthening Azerbaijan's position in EU energy supply.

The EU launched its first restrictive measures against Russia in 2014 with the illegal annexation of Crimea and Sevastopol (Council of the European Union, 2014a, 2014b). The sanctions have been widely accepted and announced in packages since February 23, 2022, especially after military operations launched by Russia on February 24, 2022. Belarus is also included in these packages to the extent that it supports the actions of Russia (European Commission, 2022c). In the comprehensive packages adopted between 23 February 2022 and 18 December 2023, the energy-specific measures can be summarized as follows (European Council and Council of the European Union, 2022):

- prohibition on imports from Russia of oil, coal, and liquefied propane,
- price cap related to the maritime transport of Russian oil,
- prohibition on exports to Russia of goods and technologies in the oil refining sector,
- prohibition on new investments in the Russian energy and mining sector,
- inclusion of energy sector investors and businesspeople in sanctioned individuals list.

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The sanctions do not apply to natural gas in general, which is of strategic importance for the EU. Therefore, natural gas was Russia's trump card in facing sanctions. In retaliation for Russia's decision to pay for energy sales in rubles, some EU countries refused to comply, and Russia responded by slowing or cutting off the flow of gas (Liboreiro, 2022). Poland, Bulgaria, Finland, Denmark, the Netherlands, Germany, Italy, France, Austria, Slovakia, and the Czech Republic all experienced gas shortages. Trade data from the period immediately before and after the war shows that changes began to emerge within a few months. In 2021, 25.0% of the EU's total oil import value (25.9% of net mass) and 39.7% of its natural gas import value (44.5% of net mass) came from Russia. Imports of oil and natural gas from Russia have decreased significantly since the beginning of the war and the sanctions at the end of the first quarter of 2022 (Table 3 and 4).

In the second quarter of 2022, the EU imported EUR 90.4 billion (120.8 million tons) of oil. Azerbaijan's share was 4.4% in value and 4.0% in net mass (ranking 10th among the top importing countries in both shares). In the second quarter of 2023, the EU imported EUR 63.8 billion (116.6 million tons) of oil. Azerbaijan's share was 5.4% in value and 5.1% in net mass (8th among the top importing countries in both ratios).

Table 3. *Extra-EU Imports of Petroleum Oil (Shares in Value and Net Mass)*

Partner	2022 2. quarter		2022 3. quarter		2023 2. quarter		2023 3. quarter	
	V %	M %	V %	M %	V %	M %	V %	M %
Russia	16.9	21.5	14.4	18.3	2.7	4.0	3.9	4.4
Azerbaijan	4.4	4.0	4.6	4.0	5.4	5.1	4.6	4.4

Source: Eurostat, 2023a; 2023b.

During the second quarter of 2022, the EU imported natural gas, including LNG, with a total value of €73.6 billion (61.8 million tons). Out of this amount, €47.2 billion (43 million tons) was in gaseous state. Azerbaijan ranked fifth among the top importing countries, with a share of 6.6% in value and 5.2% in net mass. In the second quarter of 2023, the EU imported €36.9 billion worth of natural gas, including LNG, with €21.6 billion being in gaseous state. During this period, Azerbaijan ranked fifth among the top importing countries with a share of 6.0% in value and 7.1% in net mass.

Table 4. *Extra-EU Imports of Natural Gas in Gaseous State (Shares in Value and Net Mass)*

Partner	2022 2. quarter		2022 3. quarter		2023 2. quarter		2023 3. quarter	
	V %	M %	V %	M %	V %	M %	V %	M %
Russia	28.3	29.7	16.7	16.1	13.8	14.3	16.0	19.7
Azerbaijan	6.6	5.2	8.3	6.1	6.0	7.1	5.9	7.8

Source: Eurostat, 2023a; 2023b.

Azerbaijan's position in the EU import market is on the rise in both energy groups. Notably, there has been a significant increase in pipeline gas. In the third quarter of 2023, Azerbaijan accounted for 4.6% of the EU's oil imports by value and 4.4% by net mass. Azerbaijan ranked 9th among the top importing countries in both ratios, with an oil import share almost equal to that of Russia. During the same period, it ranked fifth among the top importing countries in both ratios,

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with a 5.9% share of pipeline gas imports in value and a 7.8% share in net mass (Eurostat, 2023b).

In the last 20 years, the EU has prioritized enhancing its energy policy both internally and externally, with a focus on transitioning to renewable and clean energy. This effort gained momentum after the 2006 Ukraine gas crisis and intensified following the illegal annexation of Crimea in 2014. The EU has published several strategies, including the European Energy Security Strategy, the Energy Union Framework Strategy, and the EU Energy Diplomacy Action Plan, to achieve these goals (COM (2014) 330 Final; COM (2015) 80 Final; Council of the European Union, 2015). In 2014, the Strategic Agenda was announced, which was updated in 2019. The agenda aimed to diversify energy and supply sources and achieve green energy targets (European Council, 2014; 2019). Shortly before the Covid-19 pandemic affected Europe, the European Green Deal was announced, which further solidified the transition to green Energy (COM (2019) 640 Final). The EU has become more determined in its goals regarding the transition to renewable energy. It has started to diversify energy supply markets and routes through external energy cooperation. Finally, the REPowerEU plan was launched about three months after the start of the Russia-Ukraine war. An important document in our context is the strategy for the EU to develop international energy cooperation as one of the plan's related initiatives (JOIN (2022) 23 Final).

According to this new external energy policy, the EU aims to realize complementary but different objectives together. First, it aims to diversify its energy supply and increase energy savings and efficiency in order to strengthen its energy security, resilience and strategic autonomy. Additionally, the EU seeks to accelerate the global transition to green and just energy to ensure sustainable, secure, and affordable energy for both the EU and the world. As a special case, EU also aims to support Ukraine and other countries that are affected by Russian aggression. Finally, the EU seeks to build long-lasting international partnerships and promote its clean energy industries worldwide. The first dimension of its foreign energy policy, which it is building in detailed steps to achieve these goals, is to diversify EU's gas supply. By emphasizing the EU's obligation to import gas from non-Russian sources, the aim is to increase purchases from existing suppliers and establish relations with new suppliers. At this point, in addition to Canada, Egypt, Israel, Japan, Japan, Korea, Qatar, Norway and Algeria, Azerbaijan and the SGC are emphasized. Azerbaijan's intention to increase pipeline gas exports to the EU has solidified its position as an important partner for the EU. As a result, the EU will intensify its cooperation with Azerbaijan "in the light of the strategic importance of the Southern Gas Corridor". Gas supplies to the EU and the Western Balkans would be increased by increasing the capacity of the Trans Adriatic Pipeline (TAP) (JOIN (2022) 23 Final: 3).

The document's objectives were quickly realized with the signing of a new Memorandum of Understanding on Strategic Partnership in the Field of Energy between the EU and Azerbaijan on July 18, 2022. The agreement aims to increase the delivery of Azerbaijani natural gas to Europe through the SGC to 12 billion cubic meters in 2023 and 20 billion cubic meters per year by 2027 (AIR Center, 2022: 1-5). The new Memorandum also highlights the mutual interest of the EU and Azerbaijan in enhancing the development and deployment of renewable energy generation and transmission capacity. Among the topics

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emphasized in the energy dialogue initiated between the EU and Azerbaijan in February 2022, particular attention is given to oil, natural gas, renewable energy production, hydrogen, and energy efficiency.

These developments align with Azerbaijan's plans to increase investments in green energy, specifically hydrogen, and enter the export market in the coming years. Azerbaijan is carrying out joint projects with international energy companies and aims to generate approximately 19 GW of power between 2031 and 2037 for the production and export of green energy, hydrogen, and green ammonia. Azerbaijan aims to become a significant energy player in the Caspian-Black Sea-European Union Green Energy Corridor and through the Azerbaijan-Turkey-Europe route by exporting green energy (Dokso, 2023). One important step on this path is the agreement on green energy between Azerbaijan, Georgia and two EU members, namely Romania and Hungry. In December 2022 four countries signed an agreement to form a strategic partnership for the development and transmission of green energy. The agreement outlines plan for the four countries to collaborate on the development of a 1,195-km power cable under the Black Sea. This will create a renewable energy transmission corridor from Azerbaijan, through Georgia, to Romania, and ultimately to Hungary (Kubiak, 2023).

In the short term, the war between Russia and Ukraine provided an opportunity for Azerbaijan to expand its hydrocarbon exports to the EU market; in the longer term, it served as a catalyst for Azerbaijan's transition to green energy production and exports, which is crucial to boosting the country's green energy investments and supporting the EU's energy transition and climate goals. Azerbaijan continues to pursue a pragmatic and balanced foreign policy in harmony with its energy policy.

A SPECIAL CASE: THE NAGORNO-KARABAKH CONFLICT

It is also necessary to briefly touch upon the overlapping aspects of the EU's position on the Karabakh issue and the developments in energy relations over the past decade. The implementation of the Action Plans under the ENP means that the EU has become a potential actor in solving this regional issue. However, within the scope of the EaP, the EU's position on the Nagorno-Karabakh conflict can be expressed in two points: First, a peaceful solution, and second, supporting the initiatives of the Minsk Group in this solution. Although the appointment of a special representative to the South Caucasus in 2003 (The Council of the European Union, 2003) and the implementation of the ENP and EaP policies, EU actions have not gone much beyond taking some initiatives, such as providing humanitarian support and facilitating dialogue between the conflicting parties.

The EU was expected to serve as a counterweight for Azerbaijan against the Minsk Group, which is headed by the US and France, where the Armenian diaspora is strong, as well as Russia, which supports Armenia. Over the years, the EU has expressed positive views and statements of support for Azerbaijan and has stated that it would not support the independence of Nagorno-Karabakh. These developments have paved the way for Azerbaijan to develop an opinion in this direction. Therefore, the EU was expected to participate in the resolution of the conflict. However, the EU maintained its cautious stance and emphasized

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the importance of the Minsk Group's efforts. A very prominent position was the EP's 2010 resolution demanding the withdrawal of Armenian forces from the occupied territories of Azerbaijan (European Parliament, 2010). It is also important to note that the timing of this decision coincided with the EU's inclusion of the SGC on its agenda in 2008 and its subsequent inclusion in its energy infrastructure priorities in 2010 (COM (2008) 781 Final: 4-5; COM (2010) 677 Final: 11, 32). Although the EU did not take any overtly partisan initiatives thereafter, it continued its traditional dialogue-building activities. After the first full-scale armed conflict in June 2010, escalating conflicts, particularly in 2014 (August and November), 2015 (December) and 2016 (April), took place at the same time as the implementation of the SCS and the EU-Azerbaijan negotiations on a comprehensive agreement. In these conflicts, the general position of the EU side has again been to call for a ceasefire and to continue efforts for a peaceful settlement. However, this stance has been criticized at various levels in Azerbaijan, emphasizing that the EU has been unfair in protecting Azerbaijan's rights in the Karabakh issue when considered together with the energy issue (Aras, 2017: 113-114).

After 2012, with Nabucco falling off the agenda and the signing of the TANAP agreement between Turkey and Azerbaijan, the EU put the SGC issue to rest for a while. However, with Russia's illegal annexation of Crimea in March 2014, energy security has again risen to the top of the agenda for the EU. In the meantime, pressure on Azerbaijan from various NGOs and political groups on the SGC and TANAP intensified, and Azerbaijan faced protests over corruption, environmental degradation, and human rights violations (Mathiesen, 2017a; 2017b). It should be recalled that the EP resolutions of September 18, 2014, and September 10, 2015, on human rights violations were in this direction. Azerbaijan's reaction to the first resolution was to withdraw from the AA negotiations and suspend the PCA meetings. After the SPM proposal, high-level EU interest led to the launch of negotiations on a new agreement in February 2017.

While Azerbaijan has spent the last few years dealing with the Karabakh conflict and balancing Russia on the one hand and managing its relations with the EU on the other, the most significant effort and gains have been in the energy sector. The 2nd Karabakh War, in which Azerbaijan regained its occupied territories, started on September 27, 2020, and ended on November 10, 2020, about a month and a half before the start of natural gas flow to Europe via TAP. During this period, it cannot be said that the EU took any significant negative steps towards Azerbaijan. The EU's actions after the war were the establishment of the EUMCAP civilian observer mission (October 2022) and the EUMA civilian mission for supporting mediation (January 2023) (Kolarz, 2023).

Recently, there has been an emphasis on the potential for renewable energy investments in the Karabakh and eastern Zangezur regions (Morrow, 2022). Azerbaijan has invested in green energy, including in the Karabakh region, and has signed agreements with international energy companies such as BP, Masdar, and ACWA Power (Mammadov, 2022). In 2021, it was decided to establish a Green Energy Zone in the Karabakh region. The plan is to export the green energy produced in the region to Europe through the Azerbaijan-Turkey-Europe Energy Corridor (Genin, 2023). Given the significance of this region on the international transportation route, Azerbaijan's utilization of the green energy potential through international investments will not only provide infrastructure for the region's reconstruction but also support Azerbaijan's zero-carbon target in energy cooperation with the EU.

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CONCLUSION

In 1999, the EU included Azerbaijan in its circle of cooperation through the PCA. However, the EU's cautious approach towards the South Caucasus region began to change after the emergence of Russian natural gas crises in 2006. The EU has taken steps to improve its relations with the countries of the region, although its involvement has been mainly civilian and economic. Over the years, it has also established a partnership with Azerbaijan as a significant contributor to the flow of natural gas to the EU market. The emergence of the SGC as a strategic project in the EU's efforts to diversify energy sources, supply markets, and routes in the process of an energy transition integrated with climate action has been the main factor in strengthening Azerbaijan's position in the EU energy policy. Thus, Azerbaijan, as an ENP partner in the South Caucasus and a potential importer of natural gas, has come to the attention of the EU. However, despite the conditionality structure of the ENP and the EaP, Azerbaijan's attitude of avoiding normative demands in its relations with the EU and the uncertainty about the future of regional stability with the emerging Karabakh conflict on the one hand, and Russia's attempts to expand its room for actions in the Black Sea with the illegal annexation of Crimea, which endangered the planned natural gas projects, on the other hand, put the EU in a dilemma. The outcome was determined by the dynamics of energy geopolitics. The completion of the SGC and the flow of natural gas to the European market, which has been at the forefront of the European energy system in recent years, was considered a priority.

At the end of 2020, gas began flowing to Europe to meet the rising energy demand in the markets during the recovery process after the Covid-19 pandemic. However, the negative effects of the 2022 Russia-Ukraine war have now come into play. The EU has tightened its decades-long efforts to encourage member states to switch to renewable energy and has begun the phasing-out of Russian fossil resources. However, natural gas remains a critical resource in addition to the need to diversify renewable energy sources. Azerbaijan has taken advantage of this by increasing its natural gas production and exporting larger quantities to the EU market, while also planning to develop cooperation on non-fossil resources. Azerbaijan, which has depended primarily on fossil fuel production and revenues have had an energy partnership with the EU for almost two decades, but there is an opportunity to develop renewable energy potential and technologies that would benefit not only the EU but also Azerbaijan. This partnership has recently started to evolve with the advent of a renewable energy dimension. As in the past, it is likely that any future relationship between the parties will certainly require an energy dimension. This will pose both challenges and opportunities for Azerbaijan. Investing in renewable energy, particularly in the Karabakh region, will enhance Azerbaijan's foreign policy position.

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Research Article

IN SMUGGLE WITH CLIMATE CHANGE, EXTRA–BUDGETARY FUND APPLICATION AS AN INSTRUMENT OF GREEN KEYNESIAN ECONOMIC POLICY

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ABSTRACT

Green Keynesian Economics, which is a postmodern reflection of Keynesian economic thought, suggests that negativities, which are possible for environmental problems causing climate change to lead to, should be solved by active role public sector will undertake. As known, carbon emissions, emitted to atmosphere in global scale, may cause climate change via greenhouse effect. This case leads country economies to face to a set of problems. Green Keynesian Economics suggests a mix of simultaneous sustainable policies as a solution for a set of problems under consideration. The aim of this study is to suggest a financial instrument taking place in the scope of Green Keynesian School for Türkiye targeting to achieve net zero carbon emission as of the year 2053.

Keywords: Extra-Budgetary Fund, Green Keynesianism, Climate Change.

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INTRODUCTION

When regarded to historical development of economic literature, it will be seen that there are in fact two economic schools, and that they are built in the thought that whether or not they take place in economic activities of government. Mercantilism, also referred to commercial capitalism, is based on the argument that national wealth is increased thanks to precious mines to be obtained by colonialism. In mercantilist doctrine, government has an absolute hegemony in all of economic activities. Physiocracy school, put forward by Quesnay and known agricultural capitalism, is built in natural order run. According to this, government must not intervene in commercial activities. In fact, mottos of "*laissez fair, laissez pass*" was introduced by physiocrats. So, physiocrats put forward that government had not to intervene in economic life. Traditional Economics School, which is also known as industrial capitalism, and which is an economic reflection of liberalism, is against intervention of government in economic life. Traditional economics recommends that government is to be small scale as possible as and to perform full public and goods and service-specified activities such as internal and external security, justice and diplomacy. Together with second half of 19th century, neoclassical economics that ended absolute hegemony of traditional economics made suggestions similar to traditional doctrine in terms of general structure. One of the points making distinct neoclassic economics from traditional economics is the presence of government in economic life. Neoclassic economics, in contrast to traditional economics, claims that government has to limitedly intervene in economic life. That the approach of "laissez faire" cannot account for 1929 Economic Depression led to search of new doctrine alternative to classic economics. At this point, Keynesian economics got involved. Keynes put forward that instabilities experienced in an economy resulted from lack of economic demand. At this point of removing this inadequacy that is encountered, he emphasized that government had to intervene in economy. Along with the 1970s, monetarists that are very famous put forward that activities of government in economic life are useless and challenged government intervention.

The concept of sustainable development being a current issue, beginning from 1980s, has a critical importance especially in terms of developing countries. Because, in some countries, production factor that will test stable economic growth is inadequate compared to developed countries. This case obliges developing countries to take some actions, which will not impede economic development. In other words, in developing countries policymakers are actively involved in economic activities.

At the present time, in the context of sustainable development targets in terms of developing countries, one of the biggest risks is climate change and negativities that is reflection of it. Almost all scientists agree that the main source of negativities under consideration is global carbon emission emitted to atmosphere. Since the years, when the problem has first emerged, neoclassic economics that is dominant economic approach suggests to use market-based methods that are similar carbon trade to remove negative externalities occurring as a result of global warming. In return to this, while urgency of problem requires to develop tangible mechanisms for immediate solution, in applications of various countries, it is seen that market-based instruments are not adequately effective and do

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not bring a rapid solution. Therefore, alternatively to neoclassic thought, radical approaches are put forward, which argues that the problem arises from capitalism and that capitalist relationships have to be left. On the other hand, some moderate approaches, which try to solve the problem in compliance with the system and target social negotiation, have begun to develop. In this context, the "Coase Theorem" put forward by Ronald Coase in 1960 is an important milestone. Coase is not actually talking about a theory with the ideas he puts forward in his work "The Problem of Social Cost". According to Coase, the phenomenon of ownership should be taken into consideration in eliminating negative externalities and in the efficiency of resource use. Paradigm change of interest unavoidably brings with it a new intervenient formation in economic schools. As a result of paradigm change experienced, one of the approaches standing out among the approaches mentioned about is also Green Keynesianism. New Keynesianism is an approach aiming to simultaneously solve all of contemporary problems such as both environmental problems and unemployment. Green Keynesianism differs from neoclassic economics about the presence of government for solution of especially global warming. In other word, Green Keynesianism targets to mobilize not only market-based instruments but also various complementary instruments in leadership of government. In this new school, referred to Green Keynesian Economics, government affects economic activities with instruments of monetary and fiscal policy. The thought of Green Keynesianism has emerged in a pessimist environment 2008 Global Economic Crisis created. The aim in Green Keynesianism, as mentioned above, is not only solution of environmental problems. Beside this, it handles all problems related to energy, food, drinking water and even natural disasters. While these problems are mentioned in the important parts of the world, millions of people at global level were affected from these problems. Therefore, Green Keynesianism introduces an approach struggling with these problems concerning all world regardless country or region. Applications of Green Keynesianism were implemented in two ways. The first of these, following global financial crisis, is financial incentive package executed in the leadership of the countries such as USA, China, South Korea and Japan. Another approach, referred to green order, is a strategy suggesting to use the various instruments with the various purposes such as renewable energy and energy efficiency as well as developing extra industries, providing extra income for government. The aim of this study, for Türkiye, which takes place in the developing countries and sets net zero carbon emission targets for 2053, is to suggest an instrument of fiscal policy in the context of Green Keynesian School. For achieving this aim, the expression that "is only legal regulations enough or is there any need for fiscal policy in struggling with climate change" was determined as study question.

When business models and industrial structure in our age are brought into mind, it will not be wrong to qualify the target Türkiye set as assertive. However, there are many things that is necessary to be done and many actions to be taken for catching this assertive target. Legal regulations are the first instruments coming into mind in this scope. It is possible that supporting these regulations with economic and fiscal instruments plays key role in terms of the targets set. Because fiscal instruments have a high potential in affecting the economic decisions the individuals and institutions will make. A new tax imposed and incentive provided by policymakers will lead economic decision units to review the decisions they will take. Following the concept of homo-economicus, individuals and in-

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stitutions will leave the areas imposed extra tax and go toward the area, where there are incentives. The focus point of the study, in the process going to the target of net zero carbon emission, is to affect the economic activities of the economic decision units with an orientating tax and encouraging incentive system in such a way that it will provide the mechanism given place.

Orientating tax and encouraging tax systems, put forward in the study ignores "pay as you pollute principle", which is one of the main principles of environmental law. In other words, with the suggestion we are going to introduce for Türkiye, it is aimed that economic decision units make activities, which will not lead to carbon emissions, among the main factors of climate change. The suggestion we are going to introduce in this direction, incorporates carbon tax and emission trade systems, which are reflection of a large amount of studies, carried out about the subject in the literature, and is based on "pay as you pollute principle". In installation of the study, due to suggesting a fiscal instrument without giving place the principle of interest, this study differs from the studies carried out in similar areas and makes contribution to the literature.

In the main characteristic of the suggestion "fiscal instrument" given place in the study, punishing carbon emissions, the primary reason for climate change, and promoting green friendly technologies. In this direction, the distribution of carbon emission in Türkiye according to sectors is based on. In tax system we install, extra budgetary fund stoppage is brought for the consumption of fossil-based inputs, used by the sectors relatively emitting more carbon to atmosphere. In return to this, thanks to environmentally friendly technologies, the sectors using renewable energy resources in production are encouraged. Among these financial instruments, which are essentially similar financial liabilities, the "Combating Climate Change Share" will be collected at the rate of 2% of the fossil fuel consumption price, and the "Environmental Protection Fund" will be collected at the rate of 1% of the fossil fuel consumption price. At this point, the question "why it is not exposed tax for fossil-based inputs instead of putting extra budgetary fund stoppage" may come into mind. What is the underlying putting extra budgetary fund stoppage as an instrument of fiscal policy is to completely allocate the input obtained from reduction made for struggling with climate change. If the tax is exposed instead of extra budgetary stoppage, all income obtained in this case would go to budget of central government, which is pool of all incomes. The expenditures are done through this income. Initiative here is on political authority. Government itself determines the composition of public expenditures according to the state of economic cycle and can realize expenditures from this pool of income. This may seem a normal case at the first look. However, in extraordinary cases such as COVID-19 and global economic crisis, when expenditure regimes of government are brought into mind, it will be concluded that reductions made for using in struggle with climate change, can be used for the different aims. This case can lead to ineffectiveness in resource allocation in terms of climate change.

Another important issue related to extra budgetary fund application, introduced in the study, is fiscal audit. In the system we install, at the point of struggle with climate change, an institute making expenditures, which can play an active role, at the point of struggle with climate change, will be created, and the income obtained via fund stoppage will be transferred to the budget of the institute or

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organization under consideration. The fiscal and performance supervision of the income obtained from the fund of interest will be executed by Turkish Court of Account.

The tax and promotion system we have installed can be criticized due to the fact that it is contradictory to the phenomenon of fiscal discipline of extra budgetary funds. However, thanks to audit that is effective and based on the principles of economic effectiveness, which can be Turkish Court of Account, its moving away from fiscal discipline will be able to be impeded. The fact that the gains this fiscal instrument, appalled for a supreme aim like struggling with climate change, can provide more than negativities they can introduce is highly possible.

THEORETICAL FRAMEWORK

Green Keynesian Thought is of the thoughts first being a current issue immediately after 2008 financial crisis. Green Keynesianism targets on simultaneously eliminating instabilities in labor market and removing negativities related to environment that is international public goods. Even though it seems a new stream, historical root of Green Keynesian Thought dates to 1929 Depression. New order, which a current issue after Great Depression, and which was resultant of various theories and which was occurred with the attempts of Roosevelt, USA President, are the keystones of Green Keynesian Thought (Thompson, 2008: 5).

According to neoclassic economics, climate change and the costs it creates arise from not optimally allowing resources and low value natural capital policy (Loiseau et al., 2016: 362). Although neoclassic economics identified the source of negativities mentioned, social change directed to removing negativities cannot be mostly pronounced (Rezai, et al., 2013: 70). That neoclassic school does not suggest solution in this area prepared an environment for environmental economy to emerge and develop (Cato, 2009: 7).

Green Keynesian Economics is the resultant of environmental economy and Keynesian macroeconomics (Harris, 2013: 3). In other words, Green Keynesian Economics, like Green Economics, is a sector that is necessary to be scrutinized under the roof of environmental economics. Due to this characteristics it has, Green Keynesian School are utilized as social democrat version of Green Economics (Sweeney, 2015: 12).

Green Keynesian Economics aims to pass to sustainable stage of resource distribution with optimal resource distribution. In direction of this aim, it is based on the opinion that government intervenes in economy by means of the policies it develops (Tienhaara, 2018: 5). According to another view, the main aim of environmental Keynesianism is to create effective demand and impede disappearance of planet via political authority to encourage low carbon industries and green friendly activities (Blackwater, 2012: 51). According to a different view, Green Keynesianism is the state, adapted to the present time, of original Keynesian Fiscal Policy with sustainable environment and ecological purposes. Green Keynesianism made a current issue several problems of economic structure at the present time such as income and welfare injustice, the dependence of economic activities on fossil fuels and sustainable economic growth (Harris, 2013: 4).

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The number of those supporting Keynesianism from various schools is not in considerable amount at all. The unique issue the various economic schools supported Green Keynesianism is the government, which actively plays a role in economic life. In other words, the fact that the government removes malfunctions in labor markets increases individual welfare, arranges economy for catching stable economic growth via public incomes and public expenditures is supported (Wainwright and Mann, 2018: 97).

Price mechanisms, one of the fundamentals of market economy, according to environmental economy remains incapable in conserving resource in middle and long term. In similar way, the run of price mechanism does not become remedy for fossil fuels whose effect continues over years. In these areas, there is a need for political authority. In other words, for catching the level of stable growth and providing sustainable ecological activities, Green Keynesianism puts forward that active intervention of government is necessary (Harris, 2013: 3-4).

STRUGGLE OF TÜRKİYE WITH CLIMATE CHANGE

As given place in the previous section of the study, carbon-based fuels releasing high amount of energy can lead to global warming, thus, climate change, which harms countries with natural disasters such as forest fires, flood disasters, etc.

According to a study carried out by McKinsey Global Institute, it is expected that climate change creates devastating impacts on Turkish economy. Türkiye, together with Egypt, Iran and Mexico, takes place among the countries, which will experience the most drought results from climate change until 2050 (McKinsey Global Institute, 2020: 104). This possible scenario will be able to jeopardize liveability in Türkiye, supply chains related to scarcity of water, usability of natural resources, especially agricultural areas, in considerable amount; in short, will be able to impede sustainable development. This situation may lead to significant disruptions in the supply chain, as well as in the agricultural and logistics sectors.

Turkish public administration that is aware of the importance of the case went on attack about developing policy in the area of climate change as of the second half of the year 2021. In this direction, in the period of July 2021, Ministry of Trade published “Green Agreement Action Plan”. This plan is a vital milestone with regard to “green economy”, defined as heartening economic growth and development by conserving natural resources providing to be sustained the resources and environmental cycle, which increase welfare level of individuals (OECD, 2011: 4).

Another move made about climate change in Türkiye is the law no. 7335, published in Official Journal dated of October 07, 2021 and numbered 31621. This law accepted approval of Paris Climate Treaty, signed on the date of April 22, 2016 on the name of Grand National Assembly of Türkiye.

With No.85 Presidency Decree, published in Official Journal, dated October 29, 2021, the name of Ministry of Environment and Urbanization was replaced as “Ministry of Environment, Urbanization and Climate Change”. Under mentioned Ministry, “Climate Change Headship” was established.

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In a struggle with climate change, in Türkiye entering structural transformation, arrangements in the judicial area, given place above, have great importance. In our opinion, besides legal regulations, economic and fiscal applications to be appealed will be more effective in struggle with climate change.

FISCAL INSTRUMENT SUGGESTION FOR NET ZERO EMISSION TARGET

In struggle with climate change, we consider that fiscal application that will complete legal arrangements made will be taxing. As expressed above, taxing is an effective, income providing and functional instrument, given to governments. There are taxes called carbon tax appealed directed to this aim Carbon tax application is based on the "Pay as you pollute principle can be shortly defined as participation of those causing negative externalities in the cost of government made public expenditures to impede and taking under supervision negative environmental externalities (Yilmaz, 2017: 139). For Türkiye targeting on achieving net zero emission in 2053, in this study aiming to make a fiscal policy-based solution suggestion, taxing given place has a structure that is completely different from carbon tax and pay as you pollute principle". Because in carbon tax application, government permits to pollute to economic decision units less or more: Taxing we suggest is disincentive about polluting environment and encouraging about appealing to environmentally friendly applications.

In our study, taxing suggested for Türkiye, is not in fact environmental tax. Because the income obtained from environmental taxes, in accordance with nondiscretionary appropriation principle, like the other tax incomes, cannot be specific to realize certain aims. In addition, in accordance with "unity principle" among budgeting principles, all public incomes are used for financing public expenditure through single budget. A single treasury belonging to government is formed and the incomes collected specific to a single budget are used by subsidizing for expenditures of the relevant units (Acar, 2006: 220).

As a result of some economic activities carried out in a country, in eliminating negative externalities carbon-dense emissions, released to atmosphere, form, in terms of taking expected results in taxing, it is critically important to completely canalize the income obtained from taxing to this area.

In eliminating negative externalities occurring on environment, encouraging and disincentive feature of taxing can have a functional structure. With taxing made, on the one hand, activity leading to negative externality is punished, on the other hand, alternative activity that can subsidize this activity will have been encouraged. Thus, "taxing climate" considering knife edge balance between negative externalities emerging on environment due to activities of individuals and sustainable development and also orientating investment decisions of entrepreneurs will have been created.

The main aim of taxing we will suggest for Türkiye is to punish the consumption and investment directed to fossil fuels that are rich in terms of carbon content and encourage investments based on environmentally friendly renewable energy resources. Taxing to be made through fossil fuels means cost increase for entrepreneurs. Thus, energy costs keep an important place in total costs in industrial

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production. Entrepreneurs that are in decision stage about whether or not to invest will prefer green energy and provide low-cost advantage.

In orientating entrepreneurs to renewable energy, affecting their investment decisions, environmental technologies will play a complementary role in this direction, it is not surprising that policymaker's discriminative incentives provide important gains in in especially renewable energy technologies in obtaining from green taxing.

Tax reduction, tax delay, buying guarantee and discounted corporate tax to be provided for the enterprises being active in renewable energy production are of some incentive applications that can be effective in this context. It is possible for applications such as long-term gain exceptions and insurance premium incentive to be provided for especially for entrepreneurs due to their activities under consideration and insurance premium incentive to strengthen the decision of investment decision of both domestic and foreign investors (Sut Goker, 2019: 109). In this context, it can be expected that incentives directed to R&D activities in carbon catching, storing and transforming areas may provide to important gains for Türkiye economy in terms of 2053 vision.

Another application suggestion directed to encouraging renewable energy production is for the law of no. 197 Engine Vehicle Tax (EVT). With a paragraph to be added to 4th item concerning "exceptions", all electric vehicles, which do not fossil fuel can be kept exempt form EVT regardless of vehicle value, motor cylinder volume and age.

Another taxing instrument to provide encouraging electric vehicles and engendering less carbon emission is expenditure taxes. In this context, the delivery of zero-kilometer vehicle is included in the subject of value added tax and the first acquisition of those subjecting to recording and registration among the same vehicle, to the subject of special consumption tax. With a legal regulation to be done, exemption of value added tax and special consumption tax to be applied to electric motor vehicles will shift the demand of zero-kilometer vehicle from fossil – fuelled internal-combustion vehicles to electric motor vehicles.

In total budgetary incomes in Türkiye VAT and SCT collected from expenditures have an important share. From this as aspect, the exemption suggestion made above can seem to lead to decrease in budgetary income at the first look. However, the share of fossil fuels[2] in total import of Türkiye is brought into mind, the probability that net effect of our taxing suggestion for VAT and SCT on the budget is zero or even positive emerges. When the possible negativities climatic change will create are taken into account, it will not be wrong to expect that worsening will not occur in terms of budgetary balance.

Another element having an important place in preferring electric motor vehicles is also prevalence of charging stations for vehicles. For increasing investments to charging stations, the investments to be made in this area can be included in the scope of investment incentive certificate regardless of interregional

2 According to the data of Türkiye Statistical Institute, Group of Mineral Fuels, Mineral Oils and products obtaining preparation of these, bituminous substances, mineral paraffin take place in the first order in total import https://data.tuik.gov.tr/Bulten/Index?p=Dis-Ticaret-Istatistikleri-Ocak-2022-45536. Accessed: 01.07.2023.

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differences. As a result, in greenhouse gas emission among the main factors of climatic change, important gains will be able to be obtained in direction of 2053 targets.

Another component of our suggestion about taxing is related to no. 1319 real estate tax law and valuable housing tax recently included in our tax system. House owners producing electric energy to be included solar energy panel in their houses can be exempt from real estate tax with a legal regulation to be done and from valuable housing tax on condition that it the necessary terms and conditions are performed.

Taxing suggestions made until here is directed to supply of renewable energy by encouraging in terms of taxing. In removing negativities of climate change, taxing area we suggest for Türkiye is related to use of energy. For struggling with climate change, the main instrument we suggest in taxing energy is similar fiscal obligations. Thanks to fiscal obligations such as "Share of Struggle with Climate Change" and "Environmental Protection Fund" to be created, we think of that the resource needed for struggle with climate change will be provided.

Among our suggestions directed to taxing energy use, Share of Struggle with Climate Change will be collected fiscal obligation in the rate of 2% of the price of fossil fuel consumption and Environmental Protection Fund in the rate of 1% of fossil fuel consumption. According to our suggestion, in addition, these sums that are collected will be transferred to Climate Change, established with no.85 Presidency Decree, published dated of October 29, 2021. Of course, for installation of cycle specified, it is necessary to make a lot of legal regulation.

Behind not suggesting traditional taxing but Share of Struggle with Climate Change and Environmental Protection Fund, "Nondiscretionary Appropriation Principle" and 13/g provision of no.5018 law take place. If the suggestion we made will take place in the scope of central administration budgetary incomes, the income obtained could not wholly be specific to struggle with climate change. Fluctuations that can occur in economic cycle can impede struggle with climate change in terms of resource. However, in taxing to be made in the form of similar fiscal obligation, the share of this probability will decrease.

The income obtained by two similar fiscal obligations we suggest for Türkiye, on the condition that the necessary legal regulations are performed, can find a place for itself among the incomes of Climate Change Headship and these incomes can be used in the necessary expenditures that are necessary to struggle with climatic change. Again, with necessary legal regulations, fiscal audit of the incomes obtained from fiscal obligations of interest will be made by court of account on the name of Grand National Assembly of Türkiye.

In addition, this suggestion can seem to be against unity principle that can be defined as showing all incomes and expenditures of government in a single budget. However, currently, in Turkish fiscal system, there are also some exceptions of unity principles such as recovery share, tourism share. For realizing a purpose like climate change, we consider that a tolerable exception can be added to the principles of interest. As given place in the previous sections of the study, possible effects climatic change will create has irreversible quality. Due to this feature of it, we think that struggle with climate change deserves to be exception of "unity principle".

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It is likely that this proposal we have made on the way to Türkiye's carbon neutral target will have difficulties in implementation. The most important of these difficulties is political feasibility. Because the application of extra-budgetary funds is similar to a tax in many respects. The emotional resistance of taxpayers to the extra-budgetary fund application mentioned above will undoubtedly put the government in a difficult situation. This possibility may push policymakers back to the point of implementing the said fund application. As it is known, fossil fuel consumption is perhaps one of the main factors of environmental problems. Binding decisions of supranational organizations may be an effective solution for the non-implementation of our extra-budgetary fund proposal, which aims to reduce carbon emissions released into the atmosphere as a result of fossil fuel consumption and encourage the use of renewable energy, due to lack of political feasibility. As a matter of fact, environmental problems are an important issue that concerns not only the country within its borders, but also all countries on a global scale and needs to be solved. "It is highly likely that this problem will be eliminated thanks to transnational cooperation."

CONCLUSION

Greenhouse gases, due to radiation they contain, lead to global warming. This increase of heat causes the amount of precipitation to more decrease in the regions relatively receiving less rain, on the other hand, in the regions receiving more rain, to excessive rains and floods.

Changes of interest occurring at climate leads to continuous losses in country economies and can impede their sustainable development targets. That developing countries desiring to include in the class of developed countries by effectively using resources they have are more affected from climatic changes is possible. Because economies of countries under consideration cannot complete their structural transformations yet. In addition, the inputs to provide stable economic inputs are not ample. While the case is so, when the existing economic activities harm due to climate change, the case can transform into a full dilemma.

Climate change threatening not only developing countries but also world economies led attention to be directed to environmental policies. For protecting environment in the scope of global goods, supranational agencies, the various attempts are made. In this context, in 1972, United Nations Environmental Conference was held in the Stockholm, capital of Sweden. Stockholm The conference, called "Stockholm Conference" is the first attempt made in global scale about struggle with environmental pollution. In addition, with United Nation Climatic Change Framework Convention, Kyoto Protocol and Paris Climate Convention are the other milestones in global scale about struggle with climatic change.

Struggle with climate change, due to the fact that environment is a public goods, requires international cooperation. However, national climate change overlapping global attempts governments will put into operation can increase effectiveness of struggle with climatic change.

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Although treaties are made in this way in the area of global warming a climate change, the necessary steps could not be taken from economic point of view. Neoclassic economics, which are generally acceptable in that period as prevailing economic policy, satisfying solutions could not be found for the problem with global warming and climate change. According to the doctrine mentioned, the cause of environment-based negativities such as climate change and global warming is not being able to optimally allocate resource and low natural capital policy adopted. Unsuccessful attitude neoclassic economics exhibited in these matters concerning all word led to paradigm change in terms of economic policy. Many theoreticians that are members of different schools put forward that it is necessary for government to actively intervene in the issues of global warming and climatic change. As a result, in the early 1990s, the concept of green economy emerged. As given place in the previous sections of the study, the emergence of Green Keynesianism Stream corresponds to immediately after 2008 global financial crisis. Global crisis experienced made again current issue the subjects of global warming and climatic change put aside.

In Türkiye, together with the second half of 2021, the decisive and radical steps have begun to be taken about struggle with climatic change. In this direction, "2053 Vision" targets, set about struggle with climate change, have a great importance. Türkiye, which clearly sets the zero-carbon emission for the year 2053, has begun to implement legal regulations in the direction of this target. However, we are of the opinion that it will be difficult to achieve these targets with only legal regulations. By means of economic and fiscal instruments, making functional the necessary incentive and disincentive applications will have vital importance in terms of sustainable development cycle of Türkiye. At the point of achieving these targets, active intervention of government is sine qua non.

For decisively struggling with climate change, our Green Keynesian taxing for Türkiye consists of the mix of tax and similar fiscal obligation taking place in the scope of public incomes. Our taxing suggestion aiming to reduce carbon emissions released to atmosphere from fossil fuels that is primary factor leading to the formation greenhouse gas has a two-staged structure. At the first stage, encouraging production of renewable energy is the main target. In this direction, while fossil fuels and production activities used for them are punished by discriminative tax application, environmentally friendly green technologies and inputs are not taxed at all, at least, are subjected to low level taxing. In this area, Motor Vehicles Tax, Value-added Tax and Special Consumption Tax come into our face as taxes, on which orienting tax applications can be made.

The other stage of our taxing suggestion targets on consumption of fossil fuels. In this stage aiming the entrepreneurs and individuals to orientate renewable energy consumption rather than fossil fuels, as a result of making the necessary legal regulations, similar fiscal obligations such as "Share of Struggle with Climate Change" and "Environmental Protection Fund" we believe in the scope of Green Keynesian Stream are suggested to be integrated into our taxing system. So, Climate Change Headship as making expenditure will be able to accelerate renewable energy investments with both share it takes from central administration budget and share of struggle with climate change and incomes collected from Environmental Protection Fund. Under this suggestion, the fact that public income cannot be specific to specific certain public expenditures lies. If central

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management suggested an environmental tax to include in the scope of budget, the collected income may not be reserved for struggling with only climate change. However, thanks to the fiscal instruments we suggest, Climate Change Headship will completely make the incomes it obtains specific to the struggle with climate change.

In 56th item of Constitution of Republic of Türkiye is ensured that "everyone has the right to live in the healthy and balanced environment, and that developing environment, protecting environmental health and preventing environmental pollution are the duties of government and citizen". In this direction a roof law, we can accept constitution of climate change, must be urgently enacted, which will comprise for the steps Türkiye will take in struggle with climate change. In preparation process of the law under consideration, providing the participation of universities, the relevant nongovernmental organizations, relevant ministries and the other representatives of the sector has a sin quo non feature in terms of becoming holistic of the subject. Especially coordinated activities of central administration and local administration organizations will be able to provide important gains in struggle with climate change.

In achieving 2053 targets, key role is to reduce carbon – contented emissions. For reducing this emission, it is necessary for Türkiye's energy policy to evolve from fossil fuel resources to renewable energy resource. In this direction, carbon trace map of Türkiye must be objectively formed. The activities, which lead global warming and high carbon emission, must be reviewed and deterred with taxing. Environmentally friendly renewable energy resourced activities must be encouraged with taxing.

It is a fact that climate is rapidly changing. For removing negativities climate changes may lead to, it is necessary for Turkish public management to change more rapidly than climate. Taxing system, maybe, is the first of changing areas of interest. Rather than "pay as you pollute principle", environmentally friendly preventing pollution arrangements will perform important duties in catching 2053 vision about climate change of Türkiye.

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Research Article

DEVELOPMENTS IN THE RENEWABLE ENERGY SYSTEM POLICIES OF CHINA

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ABSTRACT

Cross-country studies on energy system policies have reached significant potential as a result of renewable energy resources and effects. Here, developments are evaluated especially on different characteristics of countries such as strategies, technological developments and environmental effects of energy. The scope and quality of these studies over China has changed, first of all, in 2001, according to economic studies and the legally protected features of investments in the diversity of renewable energy resources. Utilization of these energy resources was increased by providing various tax incentives to the sectors. The main targets in this direction can be stated as the goal of both maintaining the world leadership position in the field of economy, reducing environmental damage and ending dependence on imports by using the country's resources. In the research, topics such as the effects/results/developments of China's strategies and targets were mentioned and certain inferences were made.

Keywords: Renewable energy, China, Energy, Energy system policies, Incentives.

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INTRODUCTION

Changes in international systems have been accompanied by technological and economic developments. These developments, especially after the Cold War, have necessitated the development of system policies depending on issues such as security perception, welfare understanding, technological competence and globalization. Another development is related to economic development. Factors affecting economic growth have also changed the development mechanisms of countries, and one of these factors is energy. The steps taken by countries for energy system policies such as investments, incentive systems, legal regulations are important issues for economic growth. Energy system policies are among the targets developed in this direction.

For the People's Republic of China, the period before and after the Cold War, a pivotal moment in world history, represents a critical imperative to either remain isolated from the international system or to engage and integrate within the new world order established post-Cold War. In this context, it is essential for China to be highly successful, advanced, and robust in both state and private ventures across economic and social spheres. This article specifically addresses the topic of energy, with a particular focus on renewable energy, which constitutes the primary research problem of the paper. Our research evaluates the developments in renewable energy policies in the People's Republic of China and examines the purposes and objectives for which this energy source will be utilized.

In this China-specific study, renewable energy policies will be examined as a result of both an environment-oriented approach and the depletion of non-renewable energy resources. The perception of continuity in growth requires countries to increase their economic gains by utilizing existing energy resources. As a result of China's desire to have a continuously growing economy, it can be stated that it has improved its energy policies and supported parameters such as incentive systems and energy security. In line with these objectives, China has increased its efforts on renewable energy resources in order to meet its energy needs, reduce environmental pollution, ensure technological and economic developments, and increase energy security. Among the energy policy activities of the Chinese government, there are studies on incentive systems, legal regulations, targets focused on the Renewable Energy Law, and studies within the scope of the Electricity Market Regulatory Commission.

In line with the aforementioned, the overall research will be completed in three stages: in the first stage, renewable energy system policies will be analyzed, in the second stage, China's energy system policies and developments will be analyzed. In the third stage, the main objectives of China's adoption of renewable energy system policy will be stated. The main purpose of the research is to identify the issues that directly affect China such as energy supply, energy security, technological and economic developments, environmental pollution and to show the developments. Thus, China's energy system policies, current situation and goals will be analyzed. In addition, the issue of economic development, which is the main focus of such studies, will also be evaluated.

RENEWABLE ENERGY RESOURCES AND SCOPE

Energy is one of the most important elements of consumption today. Since it is a necessary resource in application tools, energy consumption is constantly increasing. However, especially the needs of developed countries for energy resources have increased as a result of technological developments and opportunities

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(Kocaslan, 2006: 1). Because energy consumption is a direct or indirect necessity. However, the increase in the energy consumed has also made it difficult to meet this energy. Therefore, the need for new energy resources has increased. The development of renewable energy resources is a result of these needs (Mele, 2019: 269). In addition, issues such as reducing air pollution and making energy consumption resources suitable for reuse have increased the tendency towards the use of renewable energy (Baydas and Tatli, 2018: 31).

Renewable energy resources are also associated with increasing population and industrialization. Because the increase in energy requirements as a result of the growing population has led to a rapid closing of the gap between energy production and consumption (Balat, 2004: 235). With the impact of industrial activities, 20 billion tons of carbon dioxide, 100 billion tons of sulfur compounds, 2 million tons of lead and other toxic chemical compounds are released into the atmosphere every year. There are also assessments that the resources used will decrease day by day. This emphasizes the importance of renewable energy resources (Kumbur et al., 2005: 1). As a result of the aforementioned developments, renewable energy resources have also affected the studies carried out around the world. Although the factors that pave the way for countries to carry out studies are based on various reasons, economic and social developments have also been experienced during the meeting of energy needs. The development levels of countries and the tendencies towards the use of renewable energy are also proportional to the goal of economic development. The use of countries' own resources in the use of energy has been achieved through renewable energy. This has affected the investments of countries in renewable energy. The impact and nature of renewable energy can also be examined in this respect (Koc et al., 2018: 87).

China is a world leader in the production of renewable energies and electric vehicles. A third of the world's solar power capacity is installed in China. Elon Musk commented on renewable energy and electric vehicles in a post on Twitter: "Few seem to realize that China is the world leader in renewable energy and electric vehicle generation. Whatever you think of China, that's just a fact". China is also the world's largest producer of hydro, wind and solar energy and therefore of renewable energies (Sonnenseite, 2022).

Characteristics, Types and Advantages of Renewable Energy

Non-renewable energy resources have now been replaced by renewable fuels. In other words, the use of fossil fuels has started to be reduced. Renewable energy resources, whose use is increasing day by day around the world, are examined in various categories. Varieties such as wind, sun, biofuels, biomass, geothermal, ocean resources, which are constantly found in nature, are examples of such resources (Panwar et al., 2011: 1513). The most important features of the use of renewable energy sources are that they are constantly repeatable and that the resource is renewed faster than the rate of consumption. In addition, the fact that it is environmentally friendly makes an important contribution to maintaining ecological balance. In this respect, renewable energy is also the equivalent of the expression clean environment (Karadag et al., 2009: 24).

The need for renewable energy is important to ensure that people's needs are met. The fulfillment of these needs has had an impact on the increase in the need for energy. In meeting energy needs, non-renewable energy resources are tried to be abandoned due to their damaging factors. Issues such as climate change,

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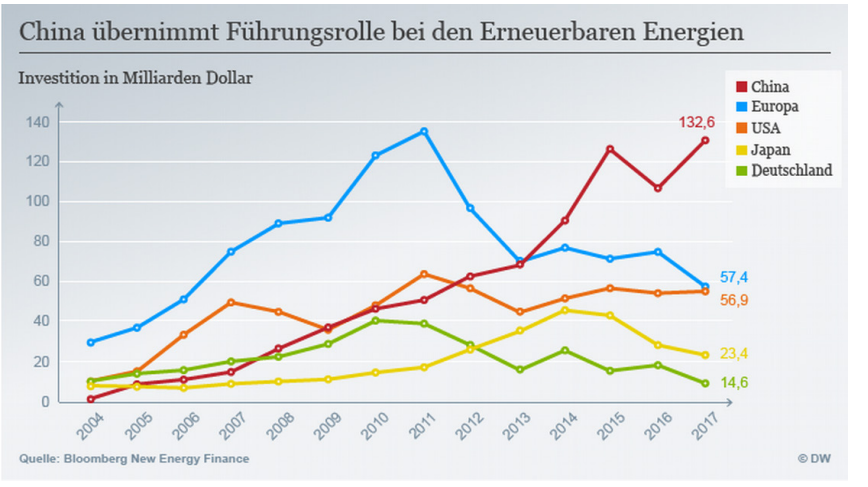
global warming, air pollution have developed as a result of the use of non-renewable energy resources (Keles and Bilgen, 2012: 5199-5200). The important and effective results of this are the negative effects on natural disasters such as floods and storms. Therefore, renewable energy resources are taken into consideration due to their characteristics and positive effects. The advantages of use are factors such as ensuring continuity in energy without harming nature, renewability, and restoration to nature. Not harming nature and human life is among the most important results in this direction (Seker, 2016: 809).

THE ROLE OF RESOURCES AND ECONOMIC DEVELOPMENTS IN CHINA'S ENERGY POLICIES

The People's Republic of China has become one of the great powers in modern world politics and economics. The resource of China's power is linked to the developments in its economy since the 1980s. In terms of its economic power and potential, China has opened the door to major developments, especially in energy relations. This is because China's need for energy and its economic development have been shaped in the same process. This shows that China is not only an energy producer for its own territory, but also an energy producer, transporter and marketer worldwide. The fact that China is an important energy resource for Central Asia is a case in point. In this respect, it can be stated that it has paved the way for China to become a great power in the world (Saki, 2018: 228).

China in particular is making great strides in future technologies and is expanding wind and solar power like no other country in the world (Figure 1). "China is taking on this leading role because it recognizes the enormous market opportunities and the economic benefits," says energy economist Prof. Claudia Kemfert from the German Institute for Economic Research (DIW), who also advises the German government on the German Council of Economic Experts (Rueter, 2018).

Figure 1. *China is Taking the Lead in Renewable Energy*



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As China has the largest population in the world, its energy needs have also increased. China is said to be the world's largest energy producer after the United States and the third largest oil importer after the United States and Japan. Accordingly, increases in energy needs have made China a country that requires rapid growth and development. However, this has shown that simply meeting energy needs is not enough. The main reason for this is that the economic developments in China are not distributed in a balanced way (Energy Information Administration, 2007). In addition, there is a mixed economic structure, but there is also a lot of work on the privatization of public areas. The main goal of the Chinese government here is to encourage foreign capital and ensure efficiency on energy by providing the necessary incentives. Accordingly, in line with its economic development goals, the Chinese government's efforts are focused on developing policies to increase energy efficiency. For example, tax, tariff and investment facilities provided to foreign investors are among the practices developed in energy policies (Muslume, 2008: 251).

The Chinese government's developments in energy geopolitics are also related to the improvement of its energy policy. In addition to these developments, which can be considered in terms of efficient resource utilization, China's emergence as a rising military, political and economic power is also important. In other words, efforts to improve its energy policy have been based on certain factors. In particular, China's growing population, developing industry and increasing manpower have paved the way for a policy that can meet its energy consumption. Moreover, recent developments such as China's increasing military expenditures, strengthening diplomatic relations with Central Asia and Africa, and playing an active role in regional politics are important goals in increasing its energy system policies. The goals of an interactive policy approach with international policies are also reflected in energy policies. Moreover, the development of an active policy is an important development in this respect (Ciftci, 2019: 80). Accordingly, both national and international policy understanding can be expressed within the scope of the Chinese government's overall work.

The elements that China takes into account when developing its energy policies include geopolitical implications. For example, the importance of maritime activities is an effective step in energy activities. At important points of energy resources, maritime activity has been a source of commercial routes. In this respect, China has not only exported and imported energy on the East Coast, but also carried out these activities through the South China Sea (Lazarou, 2017: 4). This issue is important for China, which aims to have a more active energy policy. Because the Chinese government, while using energy resources, is considered as an economic power and is among the great powers, which makes it important that all evaluations expressed in energy policies are in this direction. Because the Chinese government has tried to bring energy security (Ertekin, 2017: 189) to the forefront among the strategies of utilizing energy resources. For China, whose energy demand is increasing day by day, the scope of energy security has paved the way for the use of new resources and, in a sense, the development of a renewable energy policy. Because as a result of the advantages, characteristics and utilization effects of renewable energy resources, there is a tendency in this direction worldwide.

Necessity of China's Renewable Energy Policy Support and Goals under the Renewable Energy Law

Renewable energy and the advantages provided by this energy have opened the

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door for many countries to carry out effective studies. China is one of the countries operating for this purpose. Especially with the enactment of the Renewable Energy Law in 2005, investments in energy resources have increased. In 2006, the share of renewable energy in total electricity generation was 7%. Within the scope of the 2006-2010 Five-Year Plan, statements were developed that renewable energy production would be 15% in the future. However, China's total installed capacity only reached 25 GW by the end of 2009. By 2020, this ratio is targeted to increase to 120 GW.

What can be considered important in these activities of China are the practices developed under the Renewable Energy Law. The obligation to purchase electricity from renewable energy producers was developed for grid operators. Along with this practice, various facilities are offered to producers. For example, tax reductions are seen as financial advantages. Feed-in tariffs and national incentive systems have reached an important dimension in renewable energy, especially in regional procurement, which applies to wind and solar energy. In the case of very small-scale electricity generation, the feed-in tariffs have basically diverted the feed-in tariffs into effective demand for renewable energy (Uluatam, 2010: 39-40).

In line with the aforementioned, China has taken incentive systems into account when developing its strategies to utilize renewable energy. The scope of incentives here is based on providing various financial facilities. These facilities provided to the producers basically privilege them to contribute to the country's energy production systems in order to prefer renewable energy. In addition, ensuring clean energy policies and sustainable energy are among the activities that take these developments into account. Accordingly, the studies developed by China from 2005 to 2020 are a reflection of these incentives and the nature of the law. Because these situations are also the result of important developments.

China's developments in the last 15 years with the Renewable Energy Law have been achieved through legal, political and economic processes. The policies implemented are also developed within the framework of these objectives. When the effects on investment volume are analyzed, China has become a leading country with its incentive systems. On the other hand, the impact of renewable energy resources in China's growing economy is also based on the country's alternative policies. As a result of being a rich country in hydroelectricity and modern renewable energy resources, China's investments are also high. Investments have been developed in this direction. Its position as a leading country is due to both the presence of rich resources and the investments made. This is an effective result showing that investments are supported by policy supports and incentive mechanisms.

The competence of these policies can be explained by the fact that they are basically capable of ensuring energy supply security. In addition, it can be stated that China is the country that consumes the most energy worldwide due to its large population, increasing industrialization and urbanization. The fact that around 70% of China's primary energy resource is coal has paved the way for air pollution and the disappearance of the concept of clean environment. In this respect, China's production of the highest amount of greenhouse gases in the world has been an important study requirement for both the country and the world in general. The prevention of air, water and soil pollution is intended to be ensured through energy supply security. These issues expressed in the development of renewable energy policies are not simple evaluations. Because China has created three different options for itself to ensure a clean environment and a sustainable life. The first is to risk low economic growth. The second is to redu-

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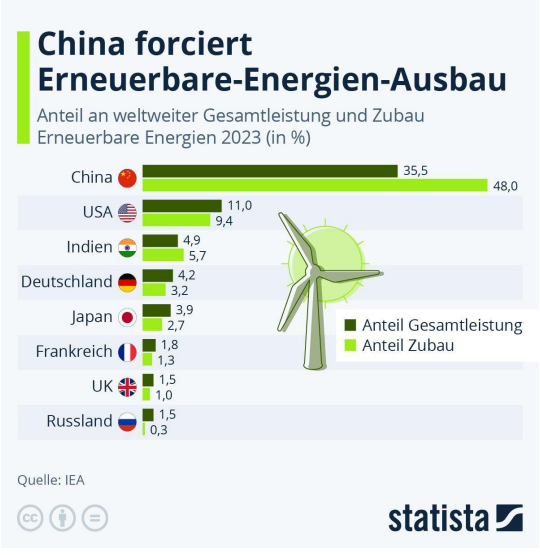
ce energy intensity. The third is to use renewable energy resources. But one area where China wants to be a world leader is in economic activity. It has developed to support both a clean environment and competent economic growth by utilizing renewable energy resources. In this direction, it provides energy systems, legal regulations and financial incentives for its targets that are effective with renewable energy resources (Kaya and Bayraktar, 2019: 164-166).

The goal and scale of China's policy support in this direction is focused on finding and developing an economic system based on energy security supply. An example of a related study can be cited based on tax incentives. A working paper in this direction was developed by the China Institute in 2016. The scope of the report is to consider the impact of China's subsidies and tax incentives. As a result of the report, it was assessed that the benefits of China's preferential policies would also boost developments in the renewable energy industry at the same rate (China Institute, 2016: 33-34). The domestic innovative work target is also taken into account by China in this direction. These issues in developing competitive structures will become more important with the steps to be taken by the government. Because China, which ranks first in terms of investments and capacities in renewable energy resources worldwide, is in a more prioritized position in hydroelectric, solar and wind energy than Japan, the United States, the United Kingdom and Germany (Ulusoy and Dastan, 2017: 131-136). Based on 2016 data, it can be stated that the government will take more comprehensive steps in the future.

China is the largest CO2 emitter in the world and continues to build new coal-fired power plants. The world's most populous country also has an ambitious civilian nuclear program. But the so-called Middle Kingdom is also the leading nation when it comes to the expansion of renewable energies, as a forecast by the International Energy Agency (IEA) shows (Figure 2). According to this, the installed capacity of renewable energy is set to increase by 170 gigawatts this year alone, which corresponds to almost half of all the capacity added worldwide. In total, China would then have a nominal capacity of over 1,400 gigawatts or 35.5 percent of the world's installed capacity (Brant, 2023).

Figure 2. *China Forced Renewable Energy Expansion*



Source: Statista, 2023

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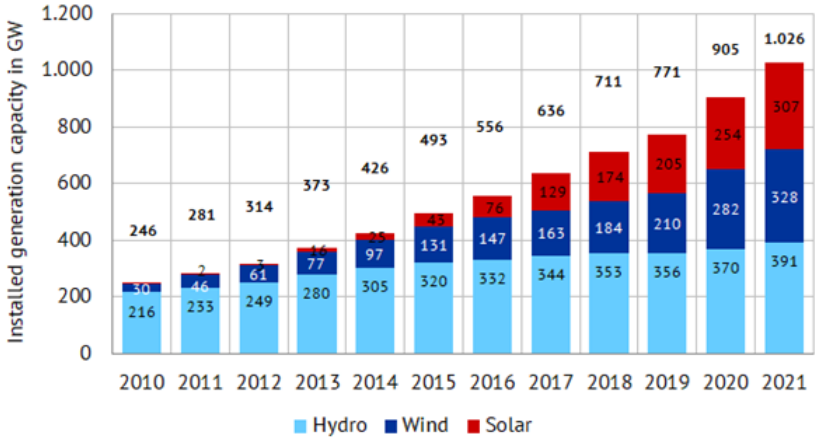
China's generation capacity from hydropower, wind and solar exceeded the 1,000 GW threshold last year. This means that China should easily reach its target of 1,200 GW of renewable capacity by 2030 (Goß and Stein, 2022). With the current expansion figures, it could even be exceeded by 300 GW. The development since 2010 is shown in Figure 3.

Figure 3. *Total Installed Renewable Energy Capacity in China in GW per Year*



Source: Goß and Stein, 2022

China's Legal Regulations on Energy Policy

China's energy system policies were systematized in 2006 with the Renewable Energy Law. The studies carried out until this period, on the other hand, gained momentum in 2001. Until 2006, the legal regulations and policy supports can be expressed as the reduction of value added tax for renewable energy and preferential tax policies to increase the use of renewable energy (Kaya and Bayraktar, 2019: 167). Although China developed its energy regulation efforts after 1990, it reflected some efforts pointing to renewable energy in 2001. However, the main regulations consist of studies limited to energy saving until 2005 (Qiu and Li, 2012: 10687).

China's strategy to utilize and develop renewable energy includes the goal of effectively utilizing the natural energy market. China achieves these strategies through investment diversification. In future government steps in this direction, such investment diversification will be ensured through various policies and legal frameworks as well as the utilization of resources. This assessment is a result related to the investments made. The policies of the Chinese central government can generally be expressed in terms of markets across the spectrum. The use of highly preferential foreign channels is the structure of energy investments in general. However, supporting real international investments with an increase also requires a large domestic investment in the source of capital (Cunningham, 2015: 1-2). It can be mentioned that the legal structure related to this is being developed. An effective issue in investments is the legal privileges provided within the scope of the policies developed.

When China's legal policies in the context of renewable energy are evaluated in the period after 2006, it can be stated that it has primarily developed strategies for renewable energy development targets. In the same period, biofuel projects

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were supported and efforts were secured with the Renewable Energy Law. In 2007, a national climate change program and a medium and long-term development plan for renewable energy were established. In 2009, the legal policy was the development plan for offshore wind, the amendment of the law on renewable energy and the implementation of a tariff guarantee for wind energy. In 2010, feed-in tariff for biomass energy was developed. In 2011, a feed-in tariff system for solar energy was established. In 2012, a renewable energy feed-in tariff system was developed. In 2013, a feed-in tariff was introduced to support solar panels. In 2016, China developed an energy technology innovation action plan and renewable energy procurement regulations. In 2017, a renewable energy green certification and trading mechanism was established. In 2018, studies were developed for renewable energy quota applications (Kaya and Bayraktar, 2019: 167). The 11th Five-Year Development Plan was established in 2006, the 12th Five-Year Development Plan in 2012 and the 13th Five-Year Development Plan in 2014. The objectives set within the scope of these policies are primarily focused on supporting policies within the legal framework. This also plays an important role in the formulation of incentive policies.

China plans clean solar supply chain, when it comes to solar technology, the world is dependent on supplies from China. However, there are debates in the West about human rights violations in the supply chain. The People's Republic is now responding: it is planning its own "clean" supply chains for exports. The West would receive solar technology with a clear conscience but would remain dependent. In the debate about the West's dependence on China and forced labor in the production of solar technology, the People's Republic is now pursuing a dual strategy: the country is apparently establishing a second supply chain that is to be free of polysilicon from Xinjiang. In doing so, Beijing, which dominates the global market for solar technology, wants to avoid pressing questions about human rights when selling its products in Europe and the USA (Beckert, 2022).

The Place and Importance of Incentive Policies in China's Renewable Energy Systems

The scope of renewable energy and support policies has been provided more comprehensively with incentive policies. The place and importance of incentives within the scope of renewable energy policy can be stated with regard to the fact that developments cannot be achieved as desired with a single type of incentive. The main reason for this is due to potential differences. These differences also differ in terms of technological possibilities and capabilities. Another related result is the differences in terms of cost. All these statements show that it is necessary to create types of incentives as well as supporting incentive policies. Therefore, there is no single type of incentive. Tax incentive systems can be mentioned as an example of these incentives (Ulusoy and Dastan, 2017: 122). Diversification of incentive policies is considered important for renewable energy. Because incentive policies may also differ according to the renewable energy resource. For example, the fact that China is the world leader in wind energy differentiates its investments, supports and incentives for wind energy (Celikkaya, 2017: 56). It is also known for its leading position in terms of capacity and capacity increases (Karagol and Kavaz, 2017: 16). It is important to develop appropriate studies and activities. On the other hand, general comments on China's incentive policies and the methods it follows can be stated with its steps to ensure economic stability both nationally and internationally.

When commenting on China's energy strategy and changing policy, it can be mentioned that China has carried out studies that paved the way for differentiations, especially in its foreign policy. The basis of the studies developed within

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the scope of the economic program resulted in an increase in energy imports. In order to reduce energy imports and make the best use of domestic resources, the government worked on energy security and supply (Karaca, 2012: 93). The policies and incentives developed can also be linked to these statements. Yet another assessment can be made regarding the scope of policies and incentives. China has the highest share in the field of energy technology. Across the country, trends, practices, understandings, incentives, supports, policies, etc. are all aimed at ensuring the best contribution to China's economy. China has also not only been working recently, but has basically started to work since the eighties. The effective implementation of these studies based on renewable energy policies has been achieved with the provision of incentives. These developments have been experienced as a result of the investments made. In other words, the basis of incentives was shaped with the activities developed and investments made in the eighties (Ulgen, 2018: 82-85).

The People's Republic of China is now leading the way in the expansion of renewable energies. However, according to the IEA, new political and economic decisions are also turning the USA and India into new driving forces (Kollner, 2023).

For a while, it looked as if China might lose out on the expansion of renewable energies. However, towards the end of the year in particular, the Middle Kingdom put in a real final spurt - and was thus able to add more than 87 gigawatts of solar generation capacity (Stahl, 2023).

CHINA'S MAIN OBJECTIVES IN ADOPTING RENEWABLE ENERGY POLICY

China's main objective in developing its energy policy, and especially its renewable energy policy, is to achieve economic and political success. In order to maintain its success in this direction, China has turned to differentiated energy policy practices around the world. In the 21st century, it revises its energy policies and conducts more effective and comprehensive studies. The basic logic of these efforts can be expressed in the form of high level investments at both national and international levels. The studies here have been developed by adhering to energy supply and demand security. This is because the issue of security is as important as the diversity in energy resources. One of China's important steps in developing its energy policies is related to renewable energy policies. With its renewable energy policies, China has made significant contributions, first nationally and then internationally. In a general context, this is aimed at preventing the damages to the climate and nature caused by its investments in the right energy policy. Because China ranks first among the countries that harm nature with the energy resources it uses. Thus, it is aimed to reduce this damage with renewable energy resources and policies (Istikbal, 2019: 49-59). On the other hand, a related assessment requires the active use of renewable energy by China in addressing climate change. The dual active role in environmental protection can be successfully achieved in this direction (Fan, 2018: 1).

China's renewable energy policy is dominated by climate and nature-oriented practices as well as pragmatic variants of techno-nationalist ideology. To this end, China supports wind and solar companies. In other words, it adopts renewable energy system policies. When it has problems with other economic partners regarding the policies it develops, it shows its flexible policy approach (Kennedy, 2013: 909). The goal of developing another renewable energy policy

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is related to economic growth. The economic factor as one of the most important goals of China's energy policies can be explained by the fact that China is one of the most important countries in the world. It can be said that it has developed as a result of energy policies. Economic-oriented studies are generally accepted as a policy type. The policy objective has also been developed for renewable energy types.

Table 1 shows that China's policies relate to all renewable energy resources. This table, which is shown as an economic basis, refers to investments in wind and solar energy in particular as it makes investments according to the availability of resources. Renewable energy resources do not rank first among China's energy resources. An illustration of this is presented in Table 2.

Table 1. *China's Policy Supports in Renewable Energy (Subject, Type and Target)*

Name of Policy	Date	Policy Type	Policy Objective
Reduction of value added tax	2001	Economic	Wind and bioenergy
Development of a preferential tax policy	2003	Economic	All resources
Sea wind development plan	2009	Economic and political support	Wind energy
Amendment to the Renewable Energy Law	2009	Economic, political, and R&D	All resources
Feed-in tariffs linked to wind energy	2009	Economic and political	Wind energy
Feed-in tariffs linked to biomass energy	2010	Economic and political	Bioenergy
Feed-in tariffs linked to solar energy	2011	Economic and political	Solar energy
Renewable energy feed-in tariff system	2012	Economic	All resources
Feed-in tariff to support solar panels	2013	Economic	Solar energy
13th Five-Year Plan for solar energy development (2016-2020)	2014	Economic	Solar energy
Renewable energy green certification and trading mechanism	2017	Economic	All resources

Source: Kaya and Bayraktar, 2019: 167.

Table 2. *Types of Energy Resources in China's Energy Production (2017)*

Total Consumption	Coal	Hydro Electricity	Renewable Energy	Nuclear Energy	Natural Gas	Others	Petroleum
6495.1	4360.9	1155.8	471.7	248.3	196.2	47.4	14.9
Percentage (%)	67.1	17.7	7.2	3.8	3.0	0.7	0.2

Source: Istikbal, 2019: 60.

When the data on energy resources in Table 2 are analyzed, it is seen that China's energy systems are comprehensive. Policies have been developed based on economic activities upon the increase in renewable energy resources in energy consumption rates. In the 2017 data, the target and scope of the renewable energy resource that increased is the result of these evaluations. Accordingly, targets based on economic factors are based on strategic studies. These indicators show that China's targets among renewable energy system policies are comprehensive. However, the main effective mechanism is shaped towards economic activities.

China has been increasing the proportion of non-fossil energy sources (including nuclear power) in its energy mix for years. By 2030, it is set to rise to 25 percent of primary energy consumption and to 90 percent by 2060. By the end of 2023, it is expected to reach 18.3%, as announced by the National Energy Agency (NEA) in April 2023. The priority is energy security (Abele, 2023).

The Balance between Technological and Economic Developments

Countries that are increasing their investments in the use of renewable energy resources are not only developed countries. Interpretations made as a result of technological developments are generally based on the fact that renewable energy resources will be accompanied by certain opportunities. However, it can be stated that developing countries also accelerate economic development by using renewable energy resources. Spain is one of these countries. Its economic success with renewable energy resources shows that there will be promising developments for developing countries as well (Kum, 2009: 221). The relationship between renewable energy resources and the use of technology, as stated by Demir (Demir, 2012: 1) can be expressed as a tendency towards traditional energy use with the use of faulty technology. The investments that countries will make in technology should be supported by various strategies and developed with targets. Thus, the background of technology can be created. In addition, with the advancement of technology, the use of renewable energy resources is increasing.

It is important for countries to take effective steps towards technology investments. The example of China's technological and economic developments can be mentioned in this respect. China's renewable energy policies are based on energy and climate-related developments, energy systems, renewable energy targets and policies. It has determined its technological investments in line with its targets. China's technological investments have brought their role in the global energy transition to a significant potential. The effective contribution to the success of its investments, as examined in the study developed by SHURA (SHURA, 2018: 77-78) can be expressed in terms of the size of its land area, the ongoing growth of its economy and the fact that it has the highest CO2 emissions from the energy sector in the world. From this perspective, China wants to be among the world leaders in the economy, while at the same time struggling with energy demands and air pollution. It is turning towards technological investments at this level. Again, China's policy and success in this direction is related to its investments in wind and solar energy from 2011 to 2016. China achieved an average annual growth rate of 25% in wind energy and 86% in solar energy. One of the sources of this success is technological investments. Long-

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term energy planning and current environmental regulation are important issues in this context.

China's balance and relationship between economy and growth is to ensure a more service-oriented and cleaner energy mix. The rise in renewable energy resources can also be analyzed from this perspective (TMMOB, 2018: 139). The source of the upward trend mentioned in terms of solar energy can be stated in terms of the increase in the installed capacity every year. Again, the change in this installed capacity over the years by TMMOB can be shown in Table 3.

Table 3. *Changes in China's Solar Electricity Installed Capacity (MW)*

Resource	2012	2013	2014	2015	2016
Renewable Energy (Solar)	6.750	17.740	28.380	43.530	78.070

Source: TMMOB, 2018: 93

Table 3 shows the impact of China's strategies and technological investments in solar energy. It can be stated that China has achieved a result related to its efforts to increase the installed capacity. A goal of achieving technological and economic balance can be expressed in terms of the scope of installed capacity. Especially in 2016, these developments may not be limited to China's desire to make economic progress. This is because political relations have required the security and energy supply of countries to reach the desired potential. China has also carried out certain studies on this issue and, especially after this process, has increased its technological investments and turned more towards developing its economy.

Impact of Renewable Energy on Energy Security and Supply

It is considered that energy-related security problems and threats can be solved with the use of renewable energy. It is thought that long-term security can be ensured with renewable energy resources. In addition, sustainable growth and climate change are also important in terms of energy security. The assessments that certain security-related problems can be eliminated are basically expressed in coordination with the share in energy production. However, it is not capable of directly eliminating all security problems. New security threats may also develop. Therefore, confidence in renewable energy resources depends on energy policies. Many issues ranging from energy supply, pricing, access and transportation costs to inter-country relations are affected by the types of renewable energy resources (Citak and Kilinc Pala, 2016: 79-81). It is important for countries to develop a system policy according to the type of energy resource. This helps to target the investments that countries will make in line with their resources with policies. When this issue is analyzed through China, the scope of the system policy for energy security in renewable energy resources can be expressed in terms of high investments in wind and solar energy. Some resources make it easier for countries to carry out operations such as production and distribution more quickly. Studies on resources for energy production are important in this respect with the system policy. In addition, the productive results of China's energy policy investments were evaluated by Sangroya and Nayak (Sangroya

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and Nayak, 2015: 2-3) in terms of meeting 28% of the world's wind energy capacity alone. This ratio can be considered in the context of China's position linking the issue of energy supply and security with the economic system as well.

Energy security has evolved as a consequence of countries' dependence on energy imports. This issue affecting energy security has become a tool to make security more effective with renewable energy. Activities aimed at protecting national security and interests are closely related to energy security (Erkan, 2013: 1). It is also important for China. In addition to energy security, another factor that can be considered important is energy supply. China's assessment that it will be able to provide 20% of its energy supply from non-fossil resources by 2030 is the result of the developments in renewable energy resources. China has also linked energy security to measures based on system integration as a result of energy supply. It has developed additional measures to integrate wind and solar energy into the sector. These integration efforts are related to battery storage services provided by electric vehicles, technology for converting electrical energy into heat, heat storage batteries, digitalization, modernization of thermal power plants (SHURA, 2018: 79). Investments in integration efforts are mainly aimed at ensuring energy security and achieving energy supply targets. Accordingly, energy security and supply, which are interrelated, are brought to a more measured potential through integrated efforts. Moreover, Kaya and Bayraktar (Kaya and Bayraktar, 2019: 164-166) consider China's energy approach within the scope of energy supply security. In terms of energy supply security, as a result of the 50% oil import dependency rate, it can be stated that it takes into account the renewable energy policy in order to ensure security in this regard. Accordingly, the issue of energy supply security has an important place in the energy system policy.

Relationship between Meeting Energy Needs and Environmental Sensitivity

Another consideration in China's renewable energy system policy relates to environmental sensitivity. The increasing use of fossil fuels has irreparable consequences for the world climate and the environment. In this context, the fact that renewable energy resources affect the possibilities of use with almost no harm to the environment and at the same time are much more cost-effective than fossil fuels creates such a result (Celikkaya, 2017: 53). In addition, the China Renewable Energy Outlook 2019 (China National Renewable Energy Centre, 2019: 10) report has set a strategic measurement that the key objective of China's strategies is the need to achieve coal control. On the other hand, the report also emphasized the need for strict control of coal production and the need to reduce the use of coal due to its environmental problems. A related view is expressed by Sun et al. (2016: 1) on the need to end the decades-long reliance on coal for China's energy consumption in order to protect the environment and prevent anthropogenic climate change. The element emphasized here is also seen as a necessity to prevent climate change. These developments that can be achieved with renewable energy resources show that the principle of environmental sensitivity is examined as a result of other resources. For example (Kaya and Bayraktar, 2019: 166), the use of fossil fuels has a negative impact on food and water security. This is particularly reflected in its impact as a source of

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soil pollution. These factors that reduce the quality of life have increased the importance of renewable energy system policy. Within energy resources, this aspect, which is linked to the issue of energy security and supply, has shown its impact and quality as a more successful measure. The importance for countries of making an assessment between the need for energy and the environmental damage caused by energy resources should be examined by taking into account the results related to these issues. For countries with large populations, such as China, the relationship between energy and environmental sensitivity needs to be evaluated.

China currently covers most of its electricity consumption from coal-fired power plants. However, renewable energy sources also grew strongly in 2020: solar energy by more than 16 percent, wind energy by 15 percent, hydropower by 4 percent (Schmidt, 2021).

CONCLUSION

Studies on energy resources include applications developed based on their exhaustibility. In addition, these applications have brought studies on different issues such as their negative effects on nature, evaluations on energy supply and security, and the effects of establishing a balance between economy and technology to an important potential. Since countries generally import energy, they have turned to studies aimed at ending this dependence. Countries' energy system policies also include these efforts. Among the energy system policies developed by China, renewable energy resources, which is an important issue for all countries, reflected certain activities after the 2000s. Within the scope of the research, the strategies developed by China in this direction cover the activities in which certain steps were taken in 2001 and three important development studies were carried out. Accordingly, legal studies were first developed in line with development plans and targets. The consideration and implementation of renewable energy resources by the sectors was supported by certain incentives. With these incentives regarding tax rates, cost reductions are made. Another evaluation in this context can be made regarding the steps taken according to technological developments. Studies on the establishment of an economic balance between technological developments and economic balance in renewable energy system policies attract attention within the scope of China's energy policy. As an example, it can be stated that China has become the world leader in renewable energy resources, especially as a result of the studies on wind and solar energy policies. In addition, in relation to the increasing demand for energy supply until 2030, issues related to energy security have been developed on a more effective scale.

The balance established between energy supply and security also results in the impact of technological developments. Accordingly, the energy system policies developed by China are based on the diversity of renewable energy resources, changes in energy systems, technological elements, incentives, and legal regulations.

The global market for renewable energy technologies has seen strong growth since 2000. In 2013, for the first time, more renewable energy power generation

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plants were installed than coal, gas and nuclear power plants combined and nuclear energy combined. Wind and solar plants are now the most cost-effective form of electricity generation in more and more form of electricity generation. As they reach significant shares, renewable energies are becoming increasingly system-relevant at many points - leading to additional investment requirements and necessitating changes in regulation.

In particular, the specific characteristics of wind and solar power plants (high capital intensity, low marginal costs, fluctuating electricity electricity generation) mean that, despite the sharp fall in costs, a proactive policy in favor of renewable energies is still required in favor of renewable energies.

In this context, China attaches great importance to renewable energy as a state. Of course, it has made great progress in renewable energy and is increasing its activities day by day. In addition, China is an example for many countries in the world in this regard.

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Research Article

THE PARADOX OF ENVIRONMENTALISM: WHEN ENVIRONMENTALIST CONSUMPTION BECOMES A STATUS SYMBOL

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ABSTRACT

The purpose of this review article is to provide a critical analysis of some of the environmentalist practices developed during the tackle ecological degradation, as well as to evaluate the petty-bourgeois character of these practices. Initially, the article explains that capitalist production-consumption relations are primarily responsible for the observed climate changes in our era. After that, the character of the petty bourgeois, the consumer individual of late capitalism, is discussed in the context of Bourdieusian theory. To empirically explore the social dimensions of petty bourgeois environmentalism, this paper analyzes data from a targeted field research project conducted with residents of two distinct socioeconomic categories within Ankara. The research data employed within the article constitutes a limited subset derived from the broader data repository established by Feyza Korkmaz Saglam during her field research in 2021 July, conducted as part of her doctoral study. The findings, acquired through the application of Bourdieu's Multiple Correspondence Analysis (MCA) technique, reveal the utilization of environmentalist consumerism as a class differentiator, contributing to the perpetuation of capitalist production-consumption relations rather than challenging them.

Keywords: Class distinction, Climate change, Consumption patterns, Environmentalism, Petty bourgeois.

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INTRODUCTION

In recent decades, the lands and waters that have served as a home for human civilization and millions of species have undergone a great deal of destruction. Due to the malign emotions of the human population, the negative effects of increasing consumption and energy demand, expanding urban settlements, and aggressive agriculture are becoming more apparent every year. The floods, overflows, and fires we are witnessing together are raging. In addition to decreasing water resources, rising temperatures are causing droughts and rising sea levels. A decrease in agricultural productivity is accompanied by an increase in ocean acidity. This poses a threat to the future of both other ecosystems and the human species. Marine species are disappearing twice as fast as land-based species as a result of climate change and global warming. The sixth mass extinction event in our planet's history is imminent, but it is the first mass extinction caused by human economic activity. Today, the rate of extinction is 1000 times faster than it was before the Industrial Revolution (Hickel, 2021: 17).

The average temperature in the Northern Hemisphere increased by 1.8 degrees Celsius after the 1900s as a result of anthropogenic activities such as urbanization, industrialization, and the widespread use of motor vehicles (Baer, 2012: 13-14). Due to human-induced production and consumption relations that occur with capitalism, climate events experienced have recently caused scenes that may appear as if they were part of an apocalyptic movie. Nearly, 70,000 people lost their lives due to the heat wave that hit Europe in 2003. It is common to see hurricanes in the USA once every generation, but in 2017-2018, several hurricanes devastated the country. Millions of living creatures were killed by forest fires that ravaged Portugal in 2017 and Australia in 2020. A temperature increases of more than 2 degrees Celsius is likely to cause a permanent famine, according to the Intergovernmental Panel on Climate Change (IPCC) (Hickel, 2021: 18-20).

Climate change has also had significant social impacts. As natural resources diminish, conflicts over natural resources escalate and intensify between regional and global governments. Climate change catastrophes have led to migration, which, in turn, increased populist nationalism (Cizreli and Ustun, 2023: 77-78). Although the climate crisis has many concrete examples, there are those who argue that this threat is imaginary in order to legitimize capitalist relations of production and consumption. In their view, economists and demographers who advocate a free-market approach have stated that humanity is presently in an era of abundance, and capitalism will likely be successful in finding solutions to some environmental problems (Garrard, 2004: 16-17). Despite these individuals, who have the goal of protecting the ideology of capitalist growth and progress, efforts to hide the consequences of the climate crisis or justify capitalism with greenwashing techniques, increasing threats and concerns do not eliminate environmental problems from the agenda. Unlike these conspiratorial circles, whose intentions are transparent, liberal environmentalists who appear to care about environmental issues but do not compromise their personal lifestyles present a greater danger. If environmentalism were recycling, preferring organic food, and participating in nature protection activities, a significant part of the population in industrialized countries would be considered "environmentalists" (Garrard, 2004: 19-20).

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It is impossible to combat climate change without addressing the capitalist ideology of growth and the anthropocentric dominance of nature. There is a liberal understanding of environmentalism that is limited to activities such as hiking, camping, and wildlife-watching, which lacks a deep understanding of ecology, and it has been described in this article as petty bourgeoisie. In this research article, we examine some of the environmentalist practices developed during the fight against climate change and evaluate their petty-bourgeois character. As a starting point, Pierre Bourdieu's theory is used to explain the term "petty bourgeoisie". After describing the practices of this petty-bourgeois environmentalism, we attempt to determine how it distracts the fight against climate change from its main objective.

This article draws upon empirical data obtained through a targeted field research project conducted within Ankara, Turkey, to critically examine the social dimensions of petty bourgeois environmentalism. The research specifically focused on residents belonging to two distinct socioeconomic categories. The data utilized in this analysis constitutes a curated subset of a larger data repository established by Feyza Korkmaz Saglam in July 2021 as part of her doctoral research. By employing Bourdieu's Multiple Correspondence Analysis (MCA) technique, this study sheds light on the intriguing phenomenon of environmentalist consumerism being utilized as a tool for class distinction within petty bourgeois circles. This finding presents a critical re-evaluation of the potential for certain environmental practices to truly challenge the existing capitalist production-consumption relations, instead revealing their potential to contribute to their perpetuation.

BASIC QUALITIES OF THE PETTY BOURGEOISIE

"Distinction: A Social Critique of the Judgement of Taste" is a research by Pierre Bourdieu that examines the petty-bourgeois class in depth. In order to comprehend the analysis of the petty bourgeoisie in this work, it is important to remember that Pierre Bourdieu approaches the concept of class from a relational perspective. He proposes a relational perspective on the social world in order to combat the tendency to view it in an essentialist manner. Bourdieu does not conduct research based on definitions of class hierarchy that can be categorized into pyramids and reduced to economic capital. According to him, class should be defined in terms of the fields so as to comprehend the more complicated and multidimensional cultural hierarchy. To accomplish this, he conducted field research on the characteristics that create class distinctions. According to Bourdieu (1984: 318-321), class distinctions are based on cultural practices and tastes, and the ruling classes establish cultural power by determining the legitimate culture.

"The whole relationship of the petite bourgeoisie to culture can in a sense be deduced from the considerable gap between knowledge and recognition, the source of the cultural goodwill which takes different forms depending on the degree of familiarity with legitimate culture, that is, on social origin and the associated mode of cultural acquisition. The rising petite bourgeoisie invests its good intentions in the minor forms of the legitimate cultural goods and practice just as it deploys prodigious energy and ingenuity in 'living beyond its means' (Bourdieu, 1984: 319-321)*."*

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The petty bourgeoisie admires the ruling classes, who innately possess certain forms of cultural capital. The petty bourgeoisie has succeeded in separating themselves from the proletariat and from their own history, but they must accumulate the necessary capital to become members of the ruling class. The petty bourgeois lives a small life with his or her petty concerns and needs. Declining petty bourgeoises are more ascetic as opposed to entrepreneurial petty bourgeoises. On the rise, the petty-bourgeois convey their ambitions to their children. The new petty bourgeoisie places a high value on presentation and representation, which is why personal development professions (fashion, decoration, dietician, diction courses, sexologist) have developed in this direction. Those in the petty bourgeoisie place a high value on their appearance. In addition to the clothes and bodies they wear, they give importance to their habits and moral behaviour, as if they were on stage. The new bourgeoisie tends to have the most legitimate judgments (Bourdieu, 1984: 366-371). The petty bourgeois reveals itself through its interests: pets, flowers, hunting, gastronomy, the environment, horseback riding, gardening, fishing, and oenology.

PETTY BOURGEOIS ENVIRONMENTALISM

The environmental destruction caused by neo-liberal economic policies was becoming more evident during the 1980s and 1990s, while at the same time, environmental awareness was increasing. The potential for environmental awareness to evolve into an anti-capitalist social opposition existed. Global corporations, particularly oil companies, sought to appear more sensitive to environmental concerns as a part of public relations. Due to the favourable response to this type of advertising from the masses, green marketing has become almost dominant across the entire market (Bowen, 2014: 15-26). In these years (1980s), environmentalist Jay Westervelt introduced the concept of greenwashing (Jeff, 2023).

Generally, greenwashing refers to the practice of large companies making misleading statements, deceptive images, and ambiguous language to minimize the pressure on the environment while increasing demand for their products, even though they are not actually environmentally sensitive (Jeff, 2023). Although a critical and controlling opposition to greenwashing has emerged, the advertising and promotional activities of capitalist firms have helped shape a legitimate environmental culture. There is a significant impact of mass culture on the petty bourgeoisie (Bourdieu, 1993: 127).

"The very broad range of people who are concerned about environmental issues such as global warming and pollution, but who wish to maintain or improve their standard of living as conventionally defined, and who would not welcome radical social change, will be described hereinafter as 'environmentalists' (Garrard, 2004: 18)*."*

The relationship of the (in Bourdieu's terms) petty bourgeoisie of the neo-liberal era who shape their daily attitudes and habits according to the legitimate (dominant) culture but do not compromise their living standards, with environmental problems overlaps with Garrard's definition of "environmentalists." It has been demonstrated in a recent study conducted in Ankara that the petty bourgeoisie uses "ecological awareness" as a means of class differentiation (Korkmaz

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Saglam, 2023: 61-66). According to this research, awareness of recycling, separating waste oil and using organic detergent are considered indicators of differentiation from the poorer classes. However, Korkmaz Saglam's thesis focuses on urban practices. Accordingly, the researcher did not fully utilize the ecological findings in the data set in her dissertation. In the unpublished data, there are findings that reveal the petty bourgeois nature of environmentalist sensitivity. A description of the data collection process and data analysis technique will be provided in the following sections, followed by the findings of the research.

By engaging with critical urban theory, one scholar is able to reveal neoliberal tendencies in climate change mitigation policies which contain forms of carbon trading, and ecological modernization associated with climate change mitigation (Whitehead, 2013: 1349). By critically analysing urban practices, this research reveals the petty bourgeois character of environmentalism and thus gains a unique character. The fact that practices in the struggle against climate change are generally influenced by this petty bourgeois class makes the responsibilities of capitalist production-consumption relations invisible and reduces the issue to a lifestyle choice. This article gains importance by emphasizing the main aspects of petty-bourgeois environmentalism and identifying distractible practices.

RESEARCH DATA SOURCE AND DATA ANALYSIS TECHNIQUE

This article examines the concept of urbanity through the lens of relational sociology, using data from Feyza Korkmaz Saglam's (2023) research. Saglam analyzes the experiences of two groups in Ankara: individuals who have undergone urban transformation and urbanized individuals. Relational sociology rejects categorical analyses and dichotomies as insufficient to capture the nuanced nature of social reality. Instead, it draws on Bourdieu's concept of capital and habitus to understand how individuals navigate the social world. The research specifically focuses on five key urban actions, exploring how these actions generate distinction and overlap among individuals within the urban space, both within and across the two groups. Ethical approval for the study questionnaire was obtained from the Ankara Yildirim Beyazit University Ethics Committee on June 14, 2021 (decision number 86).

The research employed a targeted sampling approach with two distinct populations. The first, representing the "urban transformation experience," comprised 200 individuals residing in Aktas Neighbourhood who previously lived in a shantytown and became residents of a housing estate after participating in urban transformation projects conducted by TOKİ. The second population, representing the "urbanite experience," also consisted of 200 individuals, residing in various neighbourhoods within Cankaya District for at least 20 years and not originating from a shantytown background. While haphazard sampling guided the overall selection process, specific criteria were applied at certain stages. For example, within Aktas, only individuals who lived in the previous shantytown were included, while in Cankaya, the requirement of long-term residency and non-shantytown origins was enforced. This stratified approach ensured both balanced representation and capture of distinct experiences within each population.

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Data collection for this research took place between June 6 and June 30, 2021. In the first stage, pilot research was conducted, and the actual field research was completed after the approval of the ethics committee. Fieldwork was conducted in two geographic regions: Aktas Neighbourhood and Cankaya District. To gain insights into urban experiences, participants completed a questionnaire spanning five key areas: Ecological Consciousness, Consumption Habits, Access to Socio-cultural Amenities, City Management Actions, and Political Participation and Information Acquisition. The questionnaire focused on the presence or absence of specific urban experiences, employing a combination of closed-ended questions for factual data and open-ended questions to delve deeper into motivations and rationale behind participant actions. While not all data collected in the "Ecological Consciousness" and "Consumption Habits" sections were utilized in the initial research, this article revisits and analyzes these specific datasets.

Multiple Correspondence Analysis (MCA) served as the primary analytical tool for this study. MCA, a dimension reduction technique, excels in the analysis of categorical variables. It positions variable values, categorized by feature presence or absence, within a social geometric space, enabling interpretation based on their proximity and distance. By treating data values as qualitative distinctions reflecting feature presence or absence, MCA analyzes the co-occurrence of categorical categories within each variable. Each category signifies either the presence of a feature or a feature that diverges from others. Through this process, MCA elucidates relationships between variable categories and represents data within a lower-dimensional space (Greenacre, 2007; Ozturk, 2020). To facilitate MCA, the demographic variables, experience questions, and open-ended responses were coded and transformed into numerical data. The researcher established specific categories for demographic variables. Experience questions answered with a simple "yes" or "no" were coded accordingly, while other questions were coded based on participant-selected options, with each category assigned a value of 1 or 0. Open-ended responses underwent thematic coding, grouping similar answers together. The subsequent section of article presents findings and themes, accompanied by visual aids.

RESEARCH FINDINGS AND DISCUSSION

Categorical features are scrutinized within the context of their positioning on the X and Y coordinate plane within the urban social space. The arrangement of features as points scattered across the coordinate plane is construed as follows: When the angle between the lines drawn from the features to the origin is approximately 90 degrees, or close to it, it indicates the absence of a relationship between the points, denoting categorical variables that are distinct and independent from each other. An angle close to 180 degrees suggests a negative relationship, representing spatial domains that are dissimilar and separate from one another. When all points are situated at the origin, it signifies a configuration denoting no segregation.

The X axis, serving as the primary axis, elucidates variance, i.e., separation; the Y axis, as the secondary axis, portrays relationships that are not as robust as those on the X axis but indicate a connection. The length of the vector extending from the origin to the points signifies the strength of the separation or relation-

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ship; a longer vector indicates a more pronounced distinction. Consequently, it can be inferred that features or groups of features positioned farther from the origin manifest a more pronounced distinction than relatively closer features.

Following a concise elucidation of the interpretative guidelines, we initially scrutinize figures facilitating the interpretation of the class nature of environmental sensitivity within the ambit of data pertaining to ecological sensitivity actions. Subsequently, we present areas of features wherein spatial segregation either diverges or converges concerning consumption habits.

Aktas, one of the two regions in Ankara exhibiting distinct socio-economic characteristics and serving as the focal point of this study, is recognized as a slum neighbourhood. Undergoing urban transformation orchestrated by the Housing Development Administration (TOKI), it has evolved into one of the most notable areas in Ankara, particularly regarding substantial changes in its physical infrastructure. Following the transformation, during which numerous residents lacking property titles were afforded the opportunity to become homeowners through accessible loans and allocated housing within TOKİ sites, a discernible trend emerged. The inhabitants of this region, having incurred debt and experiencing a shift away from the accustomed opportunities and order of their prior lives, were found to possess generally diminished household income and educational attainment.

Conversely, the participants residing in the Cankaya region have maintained long-standing residency, are assimilated into urban life, and generally exhibit a higher socio-economic profile compared to their counterparts in the Aktas region, as indicated by household income and education level. The spatial segregation of these two groups, representative of disparate socio-economic strata, within the social space is explicated in terms of income level, education level, and the urban characteristics intrinsic to their respective regions of residence.

Ecological Awareness Actions

The presented figure illustrates the multiple correspondence analysis graph depicting the sorting of garbage based on recycling categories in relation to neighbourhood, income level[2], and education level characteristics[3]. Observably, affirmative responses (“yes” - eco1geridon.1) and occasional responses (“sometimes” - eco1geridon.2) to the inquiry regarding garbage sorting for recycling purposes appear to be proximately situated to the Cankaya region along the y-axis within the two-dimensional social space. Furthermore, households with middle to above-middle income levels and individuals with university-level ed

2 In 2021, during the execution of the field research, the net minimum wage stood at 2825.90 Turkish Lira ($318). Income level categories were established based on the prevailing economic conditions of this specific timeframe.

3 The interpretation of the data presented in the figure is delineated as follows: neighbourhood.1 corresponds to Aktas neighborhood. 2 corresponds to Cankaya; household income.1 represents lower income, household income.2 denotes lower-middle income, household income.3 signifies middle income, household income.4 designates upper-middle income, and household income.5 indicates upper income. Additionally, education.1 stands for illiterate, education.2 signifies literate, education.3 represents a primary school graduate, education.4 denotes a secondary school graduate, education.5 indicates a high school graduate, education.6 corresponds to a university graduate, and education.7 represents a graduate.

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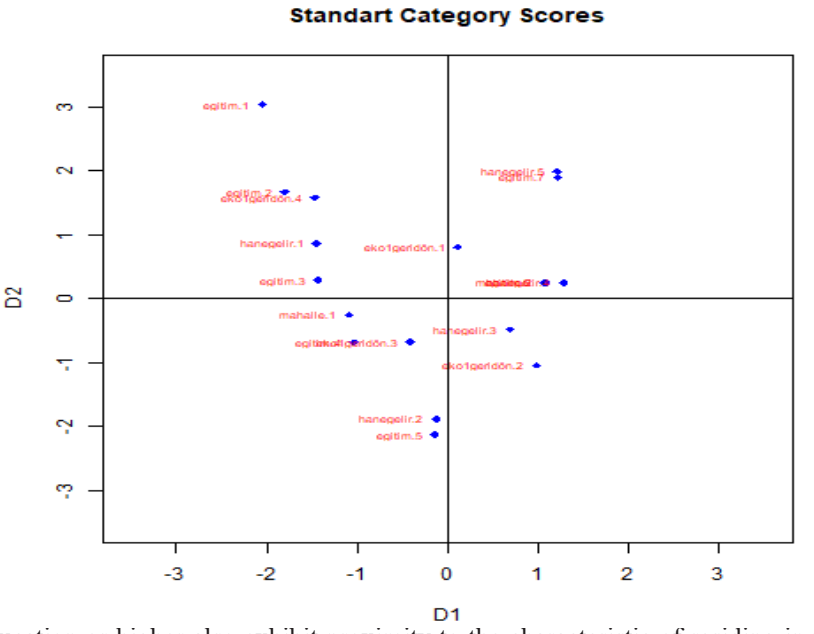
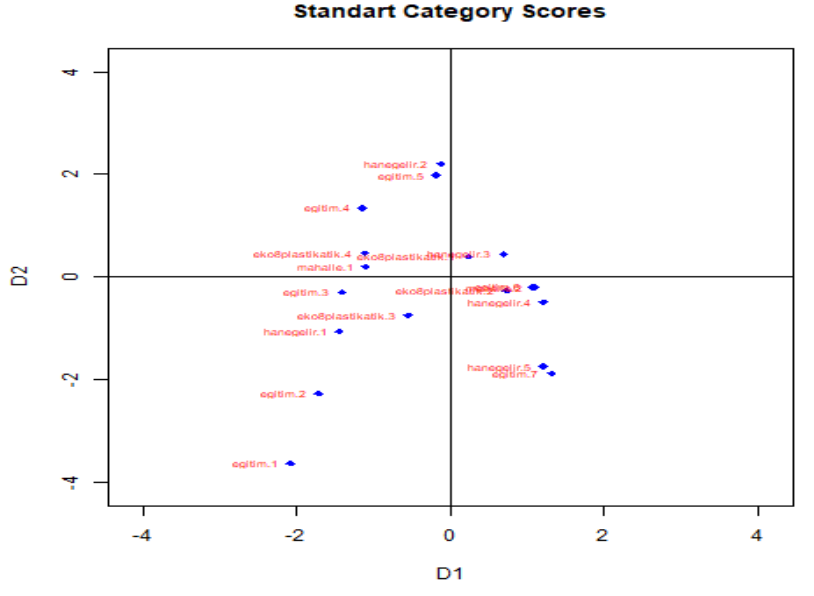
Figure 1. *Recycling of Garbage (see the appendix for the equivalents of the expressions in the figure)*



ucation or higher also exhibit proximity to the characteristic of residing in the Cankaya region. Conversely, attributes such as having a low level of education, belonging to the lower income group, residing in Aktas, and not engaging in garbage separation (eco1geridon.3) are juxtaposed against the former group, thereby delineating a distinction between the two cohorts. The two groups characterized by the lowest level of education and lacking awareness about recycling (eco1geridon.4) appear distinctly separated, occupying positions relatively distant from the origin.

Figure 2. *Awareness on Reducing the Use of Plastic (see the appendix for the equivalents of the expressions in the figure)*



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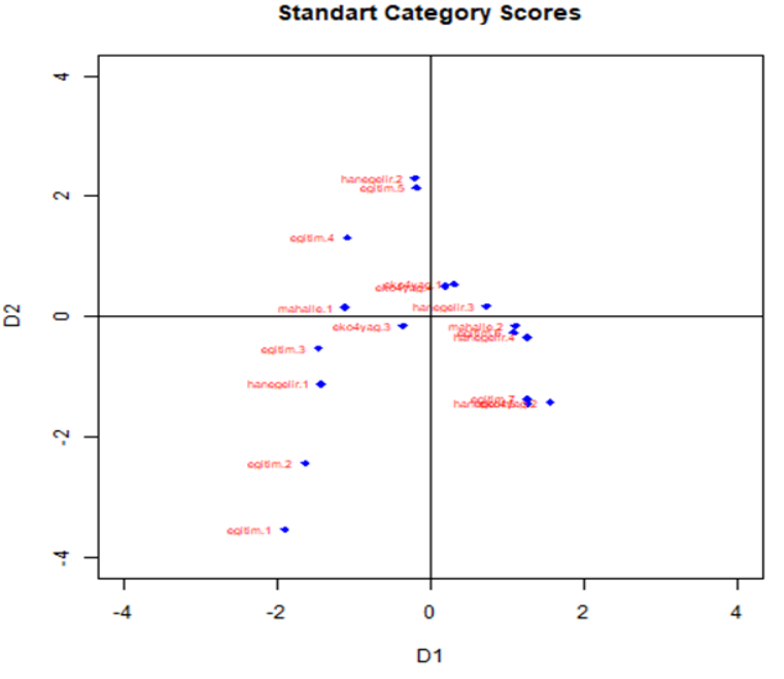
The attribute of possessing a below-average income level (household income.2) in conjunction with a high school diploma aligns relatively closely with the practice of occasional recycling on the y-axis. Conversely, characteristics associated with a high-income bracket and a postgraduate education are positioned in opposition to this group, aligning closely with the recycling attribute. Considering this analysis, it is discerned that the attribute realm of recycling garbage is intricately linked with characteristics indicative of middle to above-middle income levels and a high school education or above.

The presented figure depicts the multiple correspondence analyses concerning the behavioural trait of opting for glass or similar alternatives over plastic as a measure to curtail plastic usage, categorized by neighbourhood, household income, and education level. Examination of the figure reveals a distinct clustering pattern: individuals who actively undertake measures to diminish plastic usage (eco8plastic.1), those who occasionally do so (eco8plastic.2), and characteristic groups associated with residing in Cankaya, possessing middle to upper economic incomes, and having higher education levels are closely aligned around the X-axis. Conversely, individuals belonging to the lower income bracket, holding lower levels of education, and residing in Aktas are closely positioned with the characteristics of not actively reducing plastic usage or expressing no opinion on the matter. This subgroup exhibits a positioning that is diametrically opposite to the former group. The findings from this figure illuminate that the propensity to take action in reducing plastic use and substituting it with glass or more sustainable alternatives correlates with both income and education levels.

Figure 3. *Awareness for Appropriate Disposal of Waste Oils (see the appendix for the equivalents of the expressions in the figure)*



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While the propensity to properly dispose of waste oil at dedicated collection points (eco4yag.1) and the occasional practice of such disposal (eco4yag.2) appear close to the origin and both regions on the X-axis, they display a relative affinity for individuals residing in Cankaya and belonging to middle or upper-middle income groups. Conversely, the lack of proper waste oil disposal (eco4yag.3), also positioned near the origin and between the two regions, suggests negligible regional divergence on this trait. Interviews conducted in relation to this characteristic revealed that participants from Aktas, likely due to their lower income levels, generate less waste oil while cooking, particularly frying oils. Instead of discarding them, they reuse them for further cooking, demonstrating resourcefulness despite limited means. In contrast, participants from Cankaya, influenced by their higher education levels, engage in proper disposal while simultaneously voicing concerns about the inadequacy of local government oil waste collection, criticizing their perceived lack of diligence.

The reciprocal analysis figure for "increasing public transportation usage to reduce traffic and air pollution" reveals a near-complete clustering of feature points around the origin (see Figure 4). This indicates a remarkable absence of clear distinctions based on neighbourhood, household income, and education levels. Such positioning can be attributed to the timing of the fieldwork, conducted immediately following the COVID-19 lockdown period. During this period, observations in both regions demonstrated a distinct pattern: car owners, driven by pandemic fears, actively avoided public transportation, while those without car access, compelled by economic necessities like work, continued to rely on it. These actions, heavily influenced by the pandemic context, deviate from environmentally motivated choices regarding public transportation usage.

Figure 4. *Utilization of Public Transportation (see the appendix for the equivalents of the expressions in the figure)*

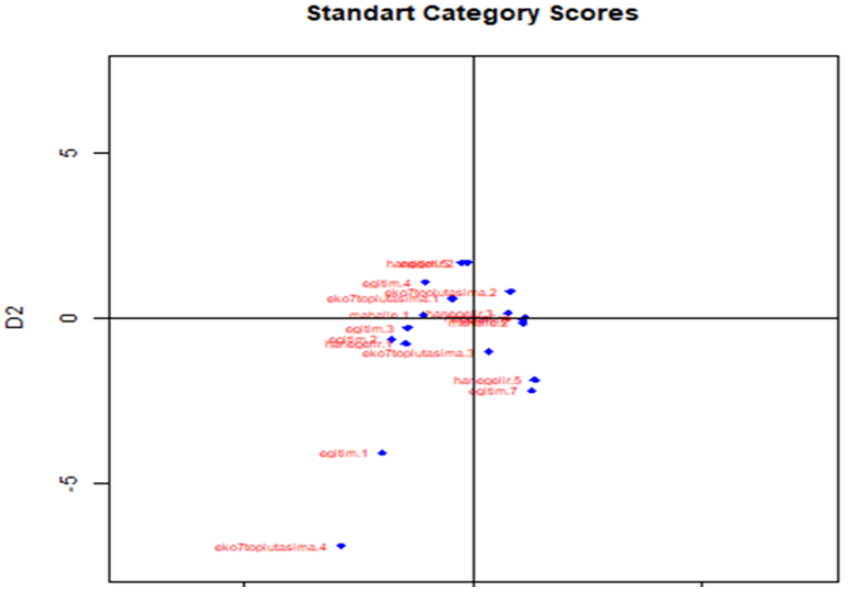

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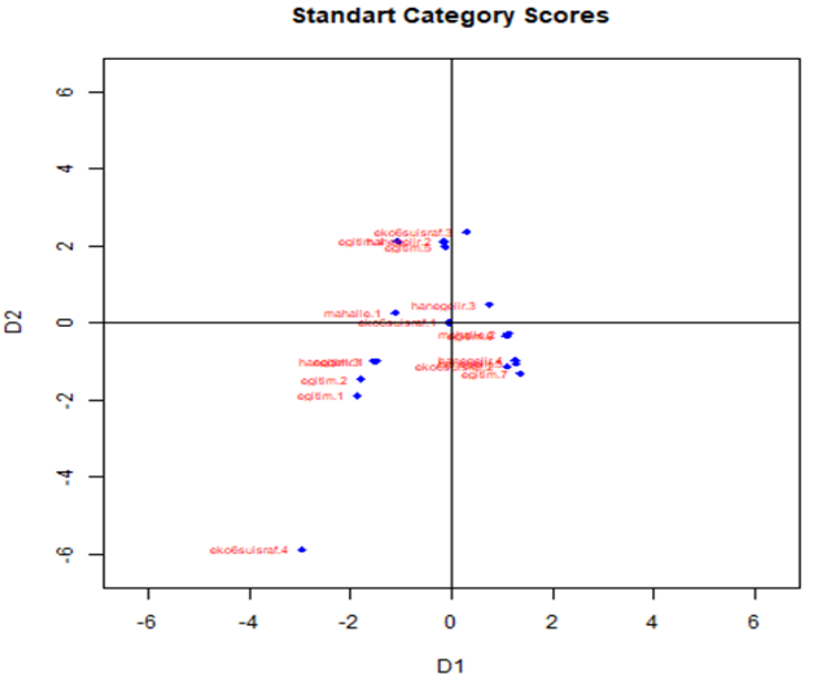
Figure 5. *Awareness on Measures to Prevent Water Waste (see the appendix for the equivalents of the expressions in the figure)*



While anti-wastefulness discourse surrounding limited water resources has gained prominence in climate crisis and drought discussions, it has not demonstrably translated into decreased water use during the pandemic. As evidenced by the figure, the characteristic of "taking action to prevent water waste" is positioned at the origin, highlighting an absence of regional differentiation on this trait. Conversely, the Y-axis reveals a distinct feature area located far from the origin, representing individuals who oppose "reductions in water use" regardless of their region of residence. Interestingly, this area shares proximity with both "middle and higher education level" and "household income below the middle." This co-location suggests that anxieties around disease and hygiene, potentially heightened by the pandemic's impact on middle and lower-income groups, might contribute to the emergence of this distinct trait area and their resistance to water use reduction.

The multiple correspondence analysis figure for "using ecological detergents with organic ingredients to reduce chemical emissions" reveals a clear association between this action and both household income level and higher education level. Interestingly, residing in Cankaya, characterized by higher levels of both factors, further differentiates postgraduate education and upper-income groups in their access to organic detergents. Fieldwork observations suggested that Aktas residents, despite possessing some knowledge about ecological detergents, faced significant barriers in purchasing them due to their expense and limited availability in their local markets.

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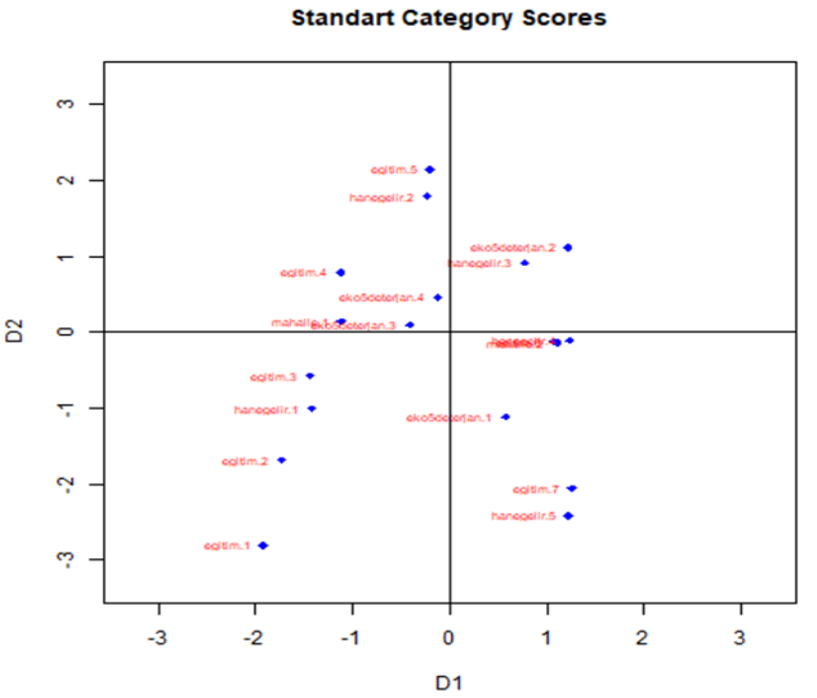
Figure 6. *Use of Ecological Cleaning Detergent (see the appendix for the equivalents of the expressions in the figure)*



The Class Position of Capitalist Consumption Habits

Among Turkish cities, Ankara boasts one of the highest densities of shopping malls. The figure sheds light on how neighbourhood, income level, and education level relate to shopping mall visitation frequency. Geometric plane distribution reveals clusters of closely positioned traits. On the X-axis, we observe a strong correlation between residing in Cankaya, possessing a university degree, belonging to the middle or upper-middle income bracket, and frequenting malls once or several times a week. The Y-axis, conversely, displays a distinct cluster encompassing lower-middle income, high school education, and monthly mall visits, regardless of neighbourhood. These positional relationships suggest that, within the depicted social space, the educated middle class residing in Cankaya exhibits the highest propensity for frequent mall visits compared to other characteristic areas.

Rural cultural lifestyles often involve the production of certain foodstuffs at home, driven by diverse motivations across socio-economic classes. For lower segments, economic practicality reigns supreme, while in urban spaces dominated by consumer culture, a recent surge in environmentalist and sustainable consumption discourse has ignited home production practices among the middle and upper classes, often marketed as healthy and eco-friendly.

The multiple correspondence analysis figure below dissects home production of specific food items (bread, yogurt, pickles, pasta, vinegar, home-farming, etc.) across neighbourhood, income, and education levels. For each item, "1" denotes

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Figure 7. *Frequency of Going to Shopping Centre (see the appendix for the equivalents of the expressions in the figure)*

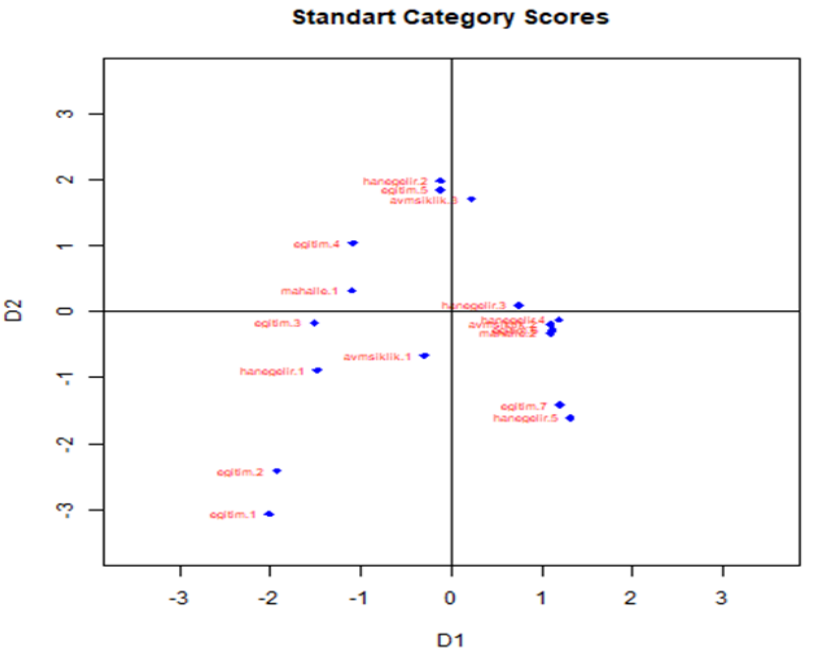
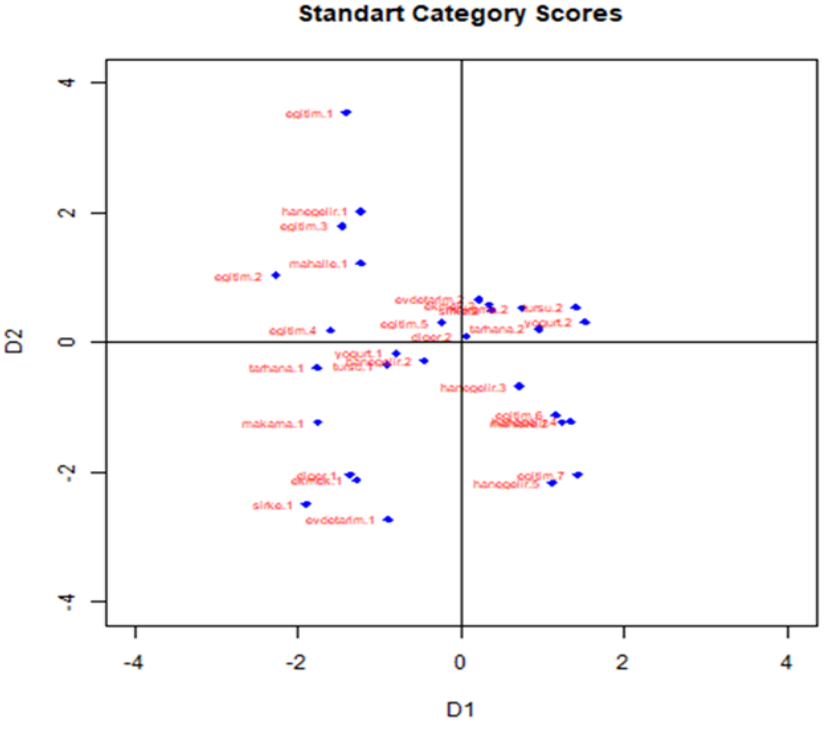


Figure 8. *Production at Home (see the appendix for the equivalents of the expressions in the figure)*



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presence and "2" denotes absence. Notably, residing in Cankaya (urban and affluent) closely associates with not producing foodstuffs at home. Higher education and income levels demonstrate limited alignment with home production traits, suggesting a preference for non-production. Conversely, Aktas residence (lower-middle income), lower-middle income, and secondary education cluster tightly with yogurt, pickle, and tarhana production at home.

Interestingly, home farming, vinegar, and breadmaking, while relatively proximate to upper-income and graduate education groupings on the Y-axis, do not explain significant variance. A curious disconnect emerges between two action types related to consumption habits. The middle and upper-middle class, characterized by high education, Cankaya residence, and purported ecological sensitivity in other analyses, do not exhibit congruent sustainable consumption behaviours. They are, in fact, the most likely group to frequent consumption hubs like shopping malls. This observation highlights a potential dissonance within this social segment. Despite differentiating themselves through ecological sensitivity discourse and emphasizing their cultural capital (education), their consumption habits do not fully reflect comparable sustainability concerns.

CONCLUSIONS AND RECOMMENDATIONS

Our analysis unveils the intricate interplay between environmentalism, consumption patterns, and class dynamics within petty bourgeois circles. The findings suggest that environmental consumerism can be wielded as a tool for class distinction, potentially reinforcing existing capitalist production-consumption relations. Applying Bourdieusian theory to petty bourgeois environmental practices sheds light on the symbolic and status-oriented dimensions of sustainable consumption within this social segment.

Drawing upon nuanced empirical data gleaned from targeted field research in Ankara, the study offers a richer understanding of petty bourgeois environmentalism. This understanding hinges on the complex interplay of cultural and economic capital in shaping ecological consciousness and consumption patterns, thereby shedding light on the intersection of environmental practices with social stratification and urban experiences.

Our research reveals that environmentalist consumption practices can be weaponized for class distinction, potentially reinforcing existing capitalist production-consumption relations. This finding resonates with suspicions that such practices, often embraced by the educated middle class, may ultimately perpetuate unsustainable consumption patterns. Despite espousing actions aligned with ecological sensitivity, bolstered by their cultural capital, this social group exhibits consumption levels comparable to lower classes. Conversely, the engagement of lower cultural classes with sustainable consumption is often driven by limitations in economic capital.

As we confront the burgeoning challenges of climate change and environmental degradation, critical engagement with the socio-economic underpinnings of environmentalism becomes paramount. Scrutinizing the class distinctions and symbolic meanings embedded within sustainable consumption is crucial for fostering more inclusive and equitable environmental action that transcends status-driven motivations.

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In summary, our analysis emphasizes the crucial need to confront petty bourgeois characteristics within environmental practices. This imperative sets the stage for a comprehensive and socially aware strategy in addressing climate change and advocating for sustainable lifestyles. The goal is to establish a more equitable trajectory towards environmental sustainability. Through unveiling the shortcomings of greenwashing, this framework delineates practical measures to enhance transparency and responsibility in environmental commitments. This, in turn, fosters a collaborative and impactful approach to effectively combat climate change.

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APPENDIX

DATA DESCRIPTION

Turkish	Meaning in Turkish	English equavelent
mahalle.1	Aktas	Aktas
mahalle.2	Cankaya	Cankaya
eğitim.1	okuryazar değil	illiterate
eğitim.2	okur yazar	literate
eğitim.3	İlkokul mezunu	Primary school graduate
eğitim.4	Ortaokul mezunu	Middle school graduate
eğitim.5	Lise mezunu	High school graduate
eğitim.6	Üniversite mezunu	University graduate
eğitim.7	Lisansüstü mezunu	Post graduate
hanegelir.1	Alt gelir grubu	Lower income
hanegelir.2	Alt-orta gelir grubu	Lower-middle income
hanegelir.3	Orta gelir grubu	Middle income
hanegelir.4	Üst-orta gelir grubu	Upper-middle income
hanegelir.5	Üst gelir grubu	Upper income
eko1geridön.1	Çöpleri geri dönüştüren	Recycling rubbish
eko1geridön.2	Çöpleri bazen geri dönüştüren	Recycling rubbish sometimes
eko1geridön.3	Çöpleri dönüştürmeyen	Never recycling rubbish
eko1geridön.4	Geri dönüştürme hakkında fikri olmayan	No idea on this tittle
eko8plastik.1	Plastik kullanımını azaltan	Reducing plastic usage
eko8plastik.2	Plastik kullanımını bazen azaltan	Reducing plastic usage sometimes
eko8plastik.3	Plastik kullanımını azaltmayan	Never reducing plastic usage
eko8plastik.4	Plastik azaltılması hakkında fikri olmayan	No idea on this title
eko4yag.1	Atık yağları doğru şekilde tahliye eden	Discharges waste oil correctly
eko4yag.2	Atık yağları bazen doğru tahliye eden	Discharges waste oil sometimes correctly
eko4yag.3	Atık yağları doğru tahliye etmeyen	Never discharges waste oil correctly
eko4yag.4	Bu konuda fikri olmayan	No idea on this title
eko7toplutasima.1	Toplu taşımayı tercih eden	Prefer pubic transport
eko7toplutasima.2	Bazen toplu taşıma tercih eden	Prefer sometimes public transport
eko7toplutasima.3	Toplu taşıma tercih etmeyen	Never prefer pubic transport
eko7toplutasima.4	Bu konuda fikri olmayan	No idea on this title
eko6suisraf.1	Suyu tasarruflu kullanan	Water-saving use
eko6suisraf.2	Suyu bazen tasarruflu kullanan	Sometimes water-saving use
eko6suisraf.3	Suyu tasarruflu kullanmayan	Never save water
eko6suisraf.4	Bu konuda fikri olmayan	No idea on this title
eko5deterjan.1	Ekolojik deterjan kullanan	Using ecologic detergent
eko5deterjan.2	Bazen ekolojik deterjan kullanan	Using sometimes ecologic detergent
eko5deterjan.3	Ekolojik deterjan kullanmayan	Never using ecologic detergent
eko5deterjan.4	Bu konuda fikri olmayan	No idea on this title
avmsiklik.1	AVM'ye hiç gitmeyen ya da nadiren giden	Never or rarely go to shopping centres

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avmsiklik.2	AVM'ye hafta bir ya da birkaç kez giden	Go to shopping centers once or a few times a week
avmsiklik.3	AVM'ye ayda bir ya da birkaç kez giden	Go to shopping centers once or a few times a month
ekmek.1	Evde ekmek yapan	Cooking bread at home
ekmek.2	Evde ekmek yapmayan	Not cooking bread at home
yogurt.1	Evde yoğurt yapan	Making yoghurt at home
yogurt.2	Evde yoğurt yapmayan	Not making yoghurt at home
turşu.1	Evde turşu yapan	Pickling at home
turşu.2	Evde turşu yapmayan	Not pickling at home
makarna.1	Evde makarna yapan	Making pasta at home
makarna.2	Evde makarna yapmayan	Not making pasta at home
tarhana.1	Evde tarhana yapan	Making tarhana at home
tarhana.2	Evde tarhana yapmayan	Not making tarhana at home
sirke.1	Evde sirke yapan	Making vinegar at home
sirke.2	Evde sirke yamayan	Not making vinegar at home
evdetarım.1	Evde tarımla uğraşan	Engaged in home farming
evdetarım.2	Evde tarımla uğraşmayan	Not engaged in home farming
diğer.1 / 2		Others / Not others

BOOK REVIEW

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EURASIAN RESEARCH JOURNAL
ERJ, Vol. 6, No. 1, pp. 104-106, Winter 2024

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ISSN 2519-2442, KAZAKHSTAN
Book Review

GOVERNING UNIVERSITIES IN POST-SOVIET COUNTRIES

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Eckel, Peter D. (Ed.). Governing Universities in Post-Soviet Countries. Cambridge University Press, 2023. pp. 306.

Higher education institutions are deemed pivotal tools for driving science-based social and economic transformations in their respective countries and the global society. These institutions are inherently complex, comprising various components, with governance standing out as a crucial element significantly influencing the effective operation of universities. Recognizing the paramount importance of governance in higher education, Peter D. Eckel's book, *Governing Universities in Post-Soviet Countries* (2023), offers comprehensive and valuable insights into the governance systems of higher education institutions across fifteen independent states, which were at one point in history part of the same system of government of USSR. These countries were mandated to align their universities with the economic, political, and philosophical objectives of the former controlling power. Said differently, the approach toward university systems varies between market-driven, democratic nations and those within centrally planned economies or autocratic regimes. Despite being integrated into the global academic sphere, and influenced by increasing neoliberal trends, the actions, support mechanisms, and particularly, the governance methods of universities are significantly shaped by their local contexts. The emphasis of this book is thus the crucial impact of local environments on what universities engage in, how they receive support, and the specific modes of governance they adopt. The book consists of 21 chapters organized into four parts. This review aims to provide a general highlight of the ideas presented in the book.

The first part of that book entails two chapters. Contributed by Peter D. Eckel, the opening chapter of this book serves as a crucial cornerstone, setting the stage for the comprehensive exploration that follows. It intricately delves into the intricate and ever-evolving landscape of university governance, emphasizing its pivotal role in steering the trajectory and accomplishments of an academic institution. This chapter illuminates the dynamic nature of university governance,

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highlighting its multifaceted elements and how they collectively contribute to the prosperity and efficacy of a university. It underscores the significance of effective governance structures and strategies, illustrating their direct correlation to the overall success, growth, and adaptability of the academic institution within the constantly changing educational landscape. The following chapter emphasizes the importance of comprehending the Soviet context and its enduring influence on the current state of higher education in these post-Soviet nations. The chapter highlights the significance of recognizing the historical legacy of the Soviet Union in shaping the current state of higher education in post-Soviet countries. Zumrad Kataeva, the author of this chapter, underlines that by understanding this legacy, one can better grasp the complexities of institutional structures, identities, and the potential pathways for the future development of higher education in these nations.

The second part of the book (chapters 3-17) extensively explores the individual country profiles of all the fifteen nations that were once part of the Soviet Union. These case profiles are meticulously arranged in alphabetical order and follow a consistent structure. Each case thoroughly examines the national context, which significantly influences and shapes higher education and its system of governance within that particular country. It delves into the intricate framework and composition of the higher education sector in each nation, shedding light on the various factors that play a pivotal role in university governance. Moreover, within each profile, the contributors included a section that intricately details the governing structure of the universities within that country. This section provides a comprehensive overview of how these academic institutions are governed, outlining the key organizational aspects, decision-making processes, and the overall administrative setup that dictates the functioning of universities in the respective nation.

Part three of the book (chapters 18 through 20) constitutes invaluable information, which offers the contributors insightful analyses across three chapters. The authors of chapter 18, Peter D. Eckel and Darkhan Bilyalov, significantly examined both the distinctions and commonalities in approaches to university governance among the post-soviet states. The authors meticulously identified and delineated four distinct emergent models observable across the fifteen countries: state-extended, academic-focused, internal/external stakeholder, and external civic. The following Chapters 19 and 20 represent an exploration into the concept of appropriateness as a proxy for effectiveness, employing two distinct yet interconnected frameworks that are deeply embedded within specific contextual relevance. Chapter 19 meticulously applies the Fukuyama model of governance, precisely scrutinizing levels of autonomy and governmental quality within university systems. Meanwhile, Chapter 20 complements this perspective by employing a different evaluative lens, examining the intertwined dynamics of autonomy and competition within the university landscape. Together, these chapters offer a comprehensive and multi-faceted assessment of the intricate interplay between governance models and their effectiveness in diverse contexts.

In the concluding section of Chapter 21, the book brings together the accumulated insights garnered from detailed descriptions and diverse analyses to provide a coherent understanding of the various findings and their elucidating implications. This segment delves into the exploration of emerging governance models

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and how they might effectively tackle four prevalent dilemmas of governance. The chapter serves as a culmination of the book's exploratory journey, synthesizing the diverse perspectives and empirical evidence gathered throughout the preceding chapters. It strives to present a comprehensive picture of the evolving governance paradigms and their potential to address critical challenges within the realm of governance.

The book possesses several strengths. One of its notable attributes is its capacity to provide valuable, well-organized, and comprehensive information about the governance system of higher education in the post-Soviet region. This wealth of information is expected to enhance the knowledge and understanding of individuals within the higher education community in these states and beyond. Another commendable aspect of the book is its detailed and specific description of the higher education context concerning university governance for the fifteen individual country profiles. Additionally, it offers analyses of the similarities and differences in the higher education governance of these countries. Moreover, the book may empower its readers, both in general and those actively engaged in higher education, to gain insight into the significant role of historical and overall national context in shaping the nature and structure of governance in higher education institutions. Furthermore, the inclusion of various contributors and authors brings diverse perspectives to the table, enriching the content and providing readers with a more comprehensive understanding of the subject matter.

Despite its strengths, the book exhibits some limitations. One potential drawback is its predominant focus on governance structures and strategies, which may result in a limited exploration of other crucial aspects of higher education, including teaching methodologies, research practices, and student experiences. Another limitation lies in the book's narrow scope, as it overlooks the contemporary global educational context where the internationalization of higher education stands out as a critical feature of 21st-century learning. The interconnectedness of every country's education system with the rest of the world is a significant factor in higher education governance that the book fails to adequately recognize. Furthermore, the personal political views and ideologies of the contributors may introduce a potential bias in their interpretation, analysis, and evaluation of the governance systems in post-Soviet states. Lastly, while the book provides a comprehensive analysis of governance models, it falls short in offering explicit and practical solutions for addressing the governance challenges encountered by higher education institutions in the fifteen post-Soviet countries.

Taken together, I believe the book could serve as a valuable resource for enhancing the knowledge and understanding of readers regarding the governance systems in higher education institutions of post-Soviet states. Therefore, I strongly recommend the book for individuals involved in higher education in general, and particularly for those interested in the higher education system of the post-Soviet region.

Eurasian Research Journal

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Publication type	Number of publication	Number of pages			Number of references		
		N	X	SS	N	X	SS
Article	96	2,042	21.3	7.5	2,646	27.6	15.8
Book review	4	30	7.5	4.4	31	7.8	8.3
Total	100	2,072	20.7	7.9	2,677	26.8	16.1

Source: Statistical Country Profiles

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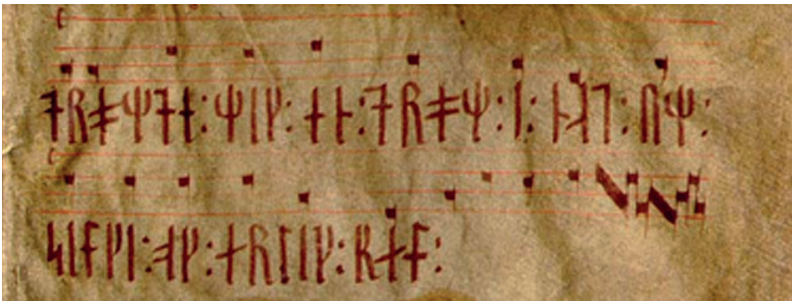
Below is an example of a picture.

Picture 1. *Ancient Rune script*



Source: en.wiktionary.org

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Citations within the text should be given in parentheses as follows:

(Koprulu 1944: 15)

When sources with several authors are cited, the surname of the first author is given and 'et. al' is added.

(Gokay et al. 2002: 18)

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In this respect, Tanpinar (1976: 131) says …

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Koprulu (1926, qtd. in Celik 1998).

Personal interviews should be cited within the text by giving the surnames and dates; they should also be cited in the bibliography. Internet references should always include date of access and be cited in the bibliography.

www.turkedebiyatiisimlersozlugu.com [Accessed: 15.12.2014]

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Example:

Isen, Mustafa (2010). *Tezkireden Biyografiye*. Istanbul: Kapi Yay.

Koprulu, Mehmet Fuat (1961). *Azeri Edebiyatinin Tekamulu*. Istanbul: MEB Yay.

If a source has two authors, the surname of the first author should be placed first; it is not functional to place the surname of the other authors first in alphabetical order.

Example:

Taner, Refika and Asim Bezirci (1981). *Edebiyatimizda Secme Hikayeler*. Basvuru Kitaplari. Istanbul: Gozlem Yay.

If a source has more than three authors, the surname and name of the first author should be written, and the other authors should be indicated by et.al.

Example:

Akyuz, Kenan et al. (1958). *Fuzuli Turkce Divan*. Ankara: Is Bankasi Yay.

The titles of books and journals should be italicized; article titles and book chapters should be placed in quotation marks. Page numbers need not be indicated for books. Shorter works like journals, encyclopedia entries and book chapters, however, require the indication of page numbers.

Example:

Berk, Ilhan (1997). *Poetika*. Istanbul: Yapi Kredi Yay.

Demir, Nurettin (2012). "Turkcede Evidensiyel". *Eurasıan Research Journal*, *Turk Dunyasi Sosyal Bilimler Dergisi* 62(2): 97-117. doi: https://doi.org/10.53277/2519-2442-2021.2-01.

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Example:

Shaw, Stanford (1982). *Osmanli Imparatorlugu*. Trans. Mehmet Harmanci. Istanbul: Sermet Matb.

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Example:

Develi, Hayati (2002). *Evliya Celebi Seyahatnamesine Gore 17. Yuzyil Osmanli Turkcesinde Ses Benzesmesi ve Uyumlar.* Ankara: TDK Yay.

_____ (2003). *XVIII. Yuzyil İstanbul Hayatina Dair Risale-i Garibe.* Istanbul: Kitabevi.

If **more than one work by the same author of the same date** need to be cited, they should be indicated by (a, b).

Example:

Develi, Hayati (2002a). *Evliya Celebi Seyahatnamesine Gore 17. Yuzyil Osmanli Turkcesinde Ses Benzesmesi ve Uyumlar.* Ankara: TDK Yay.

Develi, Hayati (2002b). *XVIII. Yuzyil Istanbul Hayatina Dair Risale-i Garibe.* Istanbul: Kitabevi

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Example:

Ipekten, Haluk (1991). "Azmi-zâde Mustafa Haleti". *İslam Ansiklopedisi*. C. 4. Istanbul: Turkiye Diyanet Vakfi Yay. 348-349.

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Handwritten manuscripts should be cited in the following way: Author. Title of Work. Library. Collection. Catalogue number. sheet.

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Asım. *Zeyl-i Zubdetu'l-Es'ar*. Millet Kutuphanesi. A. Emiri Efendi. No. 1326. vr. 45a.

To cite **a study found on the Internet**, the following order should be followed: Author surname, Author name. "Title of message". Internet address. (Date of Access)

Example:

Turkiye Cumhuriyet Merkez Bankasi. "Gecinme Endeksi (Ucretliler)" Elektronik Veri Dagitim Sistemi. http://evds.tcmb.gov.tr/ (Accessed: 04.02.2009).

An article accepted for publication but not yet published can be cited in the following way:

Example:

Atilim, Murat ve Ekin Tokat (2008). "Forecasting Oil Price Movements with Crack Spread Futures". *Energy Economics*. In print (doi:10.1016/ j.eneco.2008.07.008).

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2. Only reviews on recently published books are accepted. The book that is to be to reviewed must be published within less than a year before the intended date of the publication of ERJ.

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4. Name(s) and address(es) of the author(s): The name(s) and surname(s) of the author(s) should be written in bold characters, and addresses should be in normal font and italicized; the institution(s) the author(s) is/are affiliated with, their contact and e-mail addresses should also be specified.

5. The text of a Book Review should be typed on A4 (29/7x21cm) paper on MS Word in Size 12 Times New Roman or a similar font using 1.5 line spacing. Margins of 2.5 cm should be left on all sides and the pages should be numbered.

6. Tables and Figures should not be used in a Book Review.

7. All Author(s) should refrain from using contractions, first or second person viewpoints, incomplete sentences, ambiguous terminology, and slang, informal style as well as wordy phrases.

8. Author(s) are recommended to proofread and copyedit their Book Review prior to submitting.

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