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Environmental Kuznets Curve: The Evidence from BSEC Countries*

Çevresel Kuznets Eğrisi: KEİÖ Ülkeleri Uygulaması

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ABSTRACT

The Environmental Kuznets Curve hypothesis observes the linkage between environmental quality and per capita income. It argues that environmental quality decreases in early periods of GDP growth per capita. But from a certain point it begins to increase. This paper examines the presence of the Environmental Kuznets Curve in Black Sea Economic Cooperation (BSEC) countries by using the variables, energy consumption, CO2 emissions per capita income for the time period of 1992-2012. Panel data is used in order to test if there is a relationship that supports the Environmental Kuznets Curve hypothesis.

Keywords: Environmental Kuznets Curve, CO2 Emission, Energy Consumption, Panel Data

ÖZET

Çevresel Kuznets Eğrisi hipotezi çevresel kalite ve kişi başı gelir arasındaki bağlantıyı araştırmaktadır. Bu yaklaşıma göre kişi başı gelir büyümesinin ilk aşamalarında çevresel kalite düşmekte ve belirli bir noktadan sonra ise artmaya başlamaktadır. Bu çalışmada Karadeniz Ekonomik İşbirliği (KEİ) ülkelerinde enerji tüketimi, CO2 emisyonu ve kişi başı gelir değişkenleri kullanılarak 1992-2012 zaman periyodunda Çevresel Kuznets Eğrisi'nin varlığını araştırılmaktadır. Çevresel Kuznets Eğrisi hipotezini destekleyen bir ilişkinin varlığının tespit edilmesinde panel yöntemi kullanılmıştır.

Anahtar Kelimeler: Çevresel Kuznets Eğrisi, CO2 Emisyonu, Enerji Tüketimi, Panel Veri.

1. INTRODUCTION

Economic growth has been one of the high priority subjects for economists and policy-makers after World War II. During the 1960s, environmental problems such as pollution and noise pollution were on the rise in conjunction with growing economies. At that time, concerns about environmental problems were included in the report called as 'Club of Rome' and some ideas were proposed to limit growth. In this report, the lower growth rates were being argued with some scientific indicators. Today, it is also being argued that the nature has reached its limit to tolerate pollution, thus growth and consumption must be limited. Those who criticized 'Club of Rome' report stated that a growth ratio between economic growth and pollution had not been provided in the report. Moreover, pollution was not caused by economic growth but by a defect in the pricing system, i.e. the impossibility of internalizing the external effects on the pricing system (Bruvoll and Medin, 2003:27-28).

The gases emitted by fossil fuels such as coal, petroleum and natural gas that have been increasingly used following the industrialization process are cited among the main causes of global warming. Global warming is the rise in the Earth's temperature as the sun rays passing through the atmosphere to the Earth's surface are absorbed there as they cannot be radiated back due to greenhouse gases – a layer caused by human activities. Thus, global warming threatens the sustainability of the environment, disrupts the working of the ecological system, causes natural events to occur in unexpected ways and increases the number of natural disasters. At this point, some conventions exist to prevent this globally threatening problem.

The main source of CO_2 emission is fossil fuel production, industrial activities and deforestation. These cause increases in atmospheric greenhouse gases. If the current emission of greenhouse gases continues as it is, by the time we reach the year

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2100, the global temperature will have risen by about 1 - 3.5 degrees Celsius and the sea levels will have risen by 15-95cm. The temperature rise causes many problems including global climate changes, ozone layer thinning, pollution, depletion of natural resources and the disruption of the ecosystem. To prevent all these problems, 150 countries met and signed the United Nations Framework Convention on Climate Change in 1992. This convention was designed to lower the rising amount of greenhouse gases in the atmosphere. Following this, the Kyoto protocol aimed to lower the greenhouse gas emissions by 5.2% between 2008-2012 (Mor and Jindal, 2012:5).

Trade and foreign investment policies, the pollution levels and the existence of natural resources are affected by three mechanisms. The first mechanism is the scale effect: if the trade and investment liberalizations cause expansion, the total pollution will rise. Economic growth will cause a growth in energy requirements and if this energy is provided by previous methods, the amount of output will be proportional to the pollution. The second mechanism is the composition effect. As the trade is liberalized, industries start growing more with the advantage that they obtain. If liberalization is not supported with environmental regulations, the increasing trade will start harming the environment. Although trade liberalization encourages countries to use their resources efficiently, the net effect of liberalization depends on the control of pollution in national regulations. The third mechanism is the technique effect. Trade liberalization and foreign investments cause the production structure of a country to change. In less developed countries, with the entry of modern technologies to the country with foreign investments and foreign direct investment, these technologies that are more environmentally-friendly reduce pollution per output. Moreover, the level of income rising with trade liberalization causes a demand for a cleaner environment (Grossman and Kruger, 1991: 3-5).

Club of Rome report says that the view to limit economic growth since it causes environmental pollution has been postponed along with the arguments proposed and it has been suggested that at one point, environmental pollution will decrease along with economic growth. At that point, we just have to mention the Environmental Kuznets Curve that has founded this view and its result.

The Environmental Kuznets Curve hypothesis was created based on the hypothesis by Kuznets (1995) concerning the income inequality and economic development and was named after it. The Environmental Kuznets Curve considers the relation between different indicators reflecting environmental pollution and per capita income. Although environmental pollution increases in the first stages of economic growth, when higher level of incomes are reached, economic growth provides environmental improvement. So the Environmental Kuznets Curve hypothesis proposes a relation between GDP and environmental pollution that appears to be an inverted U shape (Stern, 2003:3).

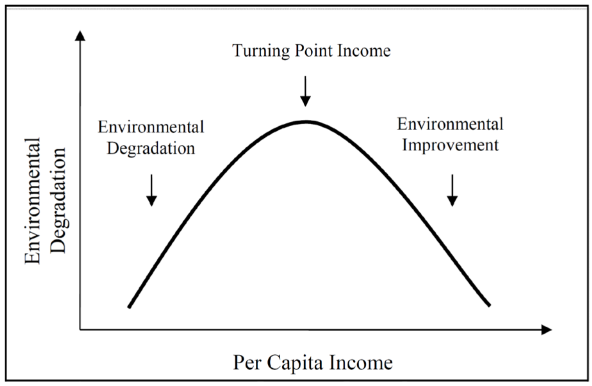

Figure 1: Environmental Kuznets Curve

Source: Yandle, Bhattarai and Vijayaraghavan, (2004: 3).

The relationship between environment and economic growth has become a hotly debated subject among economists since 1990s. Generally the subject matter of these studies is the relation between level of income and environmental pollution at different levels of economic development. The environmental Kuznets curve hypothesis suggests that the environmental pollution increases at the beginning of economic growth. However, when it passes a certain level of income, the economic growth allows environmental remediation. This tells us that the relationship between level of income and environmental pollution is inverse-U shaped. Three factors affect this form of relationship: scale effect, composition effect and technology effect. The scale effect determines that as the production rises, more natural resources will be used, and the environment will be damaged more, so the scale effect shows the positive part of the relationship. The composition effect causes a shift from the manufacturing industry to the services industry with the change in economic structure, and reduces environmental pollution by using fewer natural resources. The technology effect describes the rising technological investments as the national incomes of countries rise. R&D investments increase and environmental pollution decreases with the increasing use of environmentally-friendly technologies (Erataş and Uysal, 2014:68-69). In the light of this, we will discuss the relationship between environment and economy in the organization of the Black Sea Economic Cooperation.

The unproblematic-looking Turkey during the cold war years has started efforts for collaboration to increase interactions of Black-sea countries both among themselves and with world countries after the positive economic and political changes that have happened following the fall of the iron curtain. Countries on the coast of the Black Sea such as Turkey, Bulgaria, Georgia, Romania, Russian Federation and Ukraine have created a collaboration including Albania, Azerbaijan, Armenia, Moldova and Greece to create a lasting collaboration. In 1992, these 11 countries signed a declaration and as the BSEC Charter signed in Yalta in 1998 came to force, it became an organization aiming to increase the economic collaboration of Black Sea countries (Kaya, 2009:15). Serbia has later been accepted to the BSEC Organization. Although BSEC has been active for many years, and includes countries with precious natural resources, 19 million square meters of area and a population of 350 million, it still looks like an organization that cannot realize its true potential.

This study is intended to show the relationship between per capita income and environmental pollution in the Black Sea Economic Cooperation countries by using Kuznets Curve hypothesis. With the results obtained from the analysis, the validity of Kuznets Curve hypothesis for BSEC countries will be seen. Although there are numerous studies on the relationship between income per capita and environmental pollution, there is no study on BSEC countries. This study aims to make a contribution to literature by using panel data with the data of 1992-2012, Kuznets Curve hypothesis, and by using the variables, energy consumption, CO2 emission and income per capita for BSEC countries. There will be suggestions on policies for BSEC countries within the results obtained.

In the first part of the study, information on globalization, environmental degradation, Environmental Kuznets Curve and the organization of Black Sea Economic Cooperation is given. Second part includes the literature review. In the third part, data and model specification are to be submitted. Empirical result and interpretation part are in the fourth part of the study. The fifth and last part includes the conclusion.

2. LITERATURE REVIEW

There are many studies in the literature that examine the relationship between economic growth and CO_2 emissions. In these studies, the compliance of the relationship between economic growth and CO_2 emissions to the Environmental Kuznets Curve approach has also been examined. This study considers studies that assume that CO_2 is the determining factor in environmental pollution while conducting its literature review. One of the reasons why CO_2 emission is considered as an environmental pollution variable is the fact that most of the recent studies and discussions have been conducted over this variable. Another reason is that CO_2 is the main greenhouse gas that causes global warming. Moreover, CO_2 is directly related to the energy that allows the production and consumption to continue around the world. For this reason, the proposed economic and environmental policies are directly related to the relation between CO_2 and economic growth (Saatçi and Dumrul, 2012:71).

Some studies using the panel method to analyze the Environmental Kuznets Curve hypothesis, their authors, publication dates, the periods and countries reviewed in the studies, the study methods and the results of the studies are presented in Table 1.

Table 1: Some Studies of EKC Analysis Using on Panel Method

Authors/Year	Period	Country	Method	Result
Grossman and Krueger(1991)	1977,1982, 1988	NAFTA	Panel Data	EKC is valid.
Selden and Song (1994)	1979-1987	30 Countries	Panel Data	EKC is valid.
Liu (2005)	1975-1990	24 OECD Countries	Panel Data	EKC is valid.
Song, Zheng and Tong (2008)	1985-2005	Chinese Regions	Panel Cointegration, FMOLS	EKC is valid.
Apergis and Payne (2010)	1992-2004	Commonwealth of independent states	Panel VECM	EKC is valid.
Acaravci and Öztürk (2010)	1960-2005	European Countries	Panel Cointegration, ARDL	EKC is not valid for the most countries.
Arı and Zeren (2011)	2000-2005	17 Mediterranean Countries	Panel Regression Model	EKC is N shaped curve.
Mor and Jindal (2012)	1997-2008	39 Kyoto Countries	Panel Data	EKC is valid.
Leitao (2013)	1980-2010	Portugal,Spain, Greece and Ireland	Panel Data	EKC is valid.
Erataş and Uysal (2014)	1992-2010	BRICT Countries	Panel Cointegration	EKC is N shaped curve.
Öztürk and Yıldırım (2015)	1967-2010	MINT Countries	Panel Causality Long Run	EKC is valid. (except Turkey and Mexico)
Baek (2015)	1960-2010	Arctic Countries	Panel Cointegration, ARDL	EKC is valid.

It is seen from Table 1 that the studies we have analyzed with the panel method show different results at the end of the literature review. Although some of the reviewed studies show a reverse-U relationship, some studies have another turning point and shows N shaped relation. A reversed-U relationship shows us that the pollution increases at first, but decreases after a certain turning point; however the N shaped curve shows that the pollution start to increase again at higher level of incomes. This study extends the recent works cited above by implementing the panel unit root test and panel regression model to search the relationship among economic growth, CO_2 emission and energy consumption for 11 BSEC countries including the annual period 1992-2011.

3. DATA AND MODEL SPECIFICATION

The conducted study will analyze the panel regression model for Black See Economic Cooperation countries for 1992-2011 with an Environmental Kuznets Curve approach that shows the relation between GDP and environmental pollution and propose policy suggestions based on the findings. We use panel data since it has some advantages according to time series and cross section studies.

EKC function of the panel regression model form is as follows:

$$CO_2 = \alpha_0 + \beta_1 GDP_{it} + \beta_2 GDPit^2 + \beta_3 EC_{it} + v_{it}$$

Here i=1...11 shows the numbers of countries used in the study and t=1...20 shows the time intervals used in the study. The dependent variable CO_2 shows the carbon dioxide emission per person, α0, the constant parameter, EC the energy consumption, GDP the real per capita income (Constant 2005 US$), GPD^2 the square of the real per capita income and *vit* the error term. It is anticipated that $\beta 1$ and $\beta 2$ parameters come out positive and negative successively according to the Environmental Kuznets Curve approach. The EKC hypothesis expects that the CO_2 emissions will rise with the increasing level of income up to a certain point, and decrease following that turning point level of income. The existence of a cubic polynomial relationship has been examined by adding the GPD^3 variables to the model, but as the parameter of the variables have been meaningless, they are excluded. The variables have been included in the model after calculating their logarithms. A comment about the relationship between economic growth and environmental pollution can be offered considering the signs of the parameters based on the results obtained from the aforementioned EKC model.

The annual data are utilized to cover the period from1992 to 2011 for eleven BSEC countries: Albania, Armenia, Azerbaijan, Bulgaria, Georgia, Greece, Moldova, Romania, Russia, Turkey and Ukraine. The variables used throughout this study are taken from the World Development Index (WDI) 2015. The variables are CO_2 emissions measured metric tons per capita, energy consumption measured kg of oil equivalent per capita and GDP per capita. Descriptive statistics are presented in the Table 2.

Table 2: Descriptive Statistics

Variable	CO2	EC	GDP
Mean	4.648325	1844.347	4292.928
Median	4.030429	1543.777	2554.960
Maximum	14.00131	5351.216	24307.57
Minimum	0.486455	384.5950	565.1594
Std. Dev.	3.317414	1172.885	5294.585
Skewness	0.676279	0.989158	2.406376
Kurtosis	2.569591	3.365368	8.081797
Jarque-Bera	18.46777	37.09956	449.0497
Probability	0.000098	0.000000	0.000000
Sum	1022.632	405756.2	944444.1
Sum Sq. Dev.	2410.147	3.01E08+	6.14E09+
Observations	220	220	220

4. EMPIRICAL RESULTS AND INTERPRETATION

The studies suggesting a panel unit root test include Levin, Lin and Chu (2002), Breitung (2000), Im et al. (2003), Fisher ADF (1999), Fisher PP (2001), and Hadri (1999). As Levin, Lin and Chu (2002) suggest, the panel unit root test for panel data analysis including industry level data, the Levin, Lin and Chu (2002) panel unit root test has been chosen (Levin et al, 2002:18). There are two fundamental unit root test groups. The first group contains the LLC, Breitung and Hadri tests, while the second includes the Im-Pesaran shin, Fisher ADF and Fisher PP tests. For the stability of the result to be accepted, at least two tests from each group must have the exact results. Levin-Lin-Chu (LLC), Breitung Im- Pesaran-Shin, Fisher ADF and Fisher PP tests are testing the hypothesis that a unit root exists.

Table 3: Unit Root Test Results

Unit Root Test	Individual Affects and Individual Linear Trends			
	CO_2	EC	GDP	GDP^2
Levin, Lin & Chu t	-2.08033 (0.0187)*	-3.83317 (0.0001)**	-2.26250 (0.01189)*	-2.42257 (0.0077)**
Im, Pesaran and Shin W-stat	-1.01900 (0.1541)	-2.65475 (0.0040)*	-2.06186 (0.0196)*	-2.17269 (0.0149)**
ADF - Fisher Chi-square	36.2871 (0.0283)*	52.0773 (0.0003)**	45.4440 (0.0023)**	46.2986 (0.0018)**
PP - Fisher Chi-square	67.2865 (0.0000)**	73.1331 (0.0000)**	52.9230 (0.0002)**	57.9889 (0.0000)**

Note: */** statistically significant, respectively at the %1, %5 levels

The tests have been executed by considering the constant term, individual trend and intercept variables. We check the probable results while interpreting test results. In the tests we have examined the existence of the unit root. The hypothesis is that the unit root exists. Thus, we reject the hypothesis if they p values are lower than 0.05.

According to Table 3, null hypothesis of unit root is rejected except Im, Pesaran and Shin W-stat for CO_2 variables. However, if only two of them are rejected null hypothesis, it is adequate for the panel unit root test. Therefore, we deduce that unit root is not existent in this data set. It concludes that variables are stationary on level.

After that, in order to investigate the relationship among variables, we apply a panel data on level of variables. We estimated through pooled OLS, fixed effects, and random effects in the static panel. But in this study, we have to use redundant fixed effect test rather than OLS and the other tests. The F statistics test the null hypothesis of similar impacts for all individuals. If test results confirm the null hypothesis, we can utilize the OLS estimator.

Table 4: Redundant Fixed Effect Test

Redundant Fixed Effects Tests			
Test cross-section fixed effects			
Effects Test	Statistic	d.f.	Prob.
Cross-section F	16.446843	(10,206)	0.0000
Cross-section Chi-square	129.116253	10	0.0000

Obtained p values are evaluated on the basis of a significance level of 0.05. Test results obtained above indicate that we need to make estimations using a fixed effects or a random effects model. It is the Hausman test that will indicate whether we will select fixed effects or random effects between these approaches. Before proceeding with Hausman test results; we had better mention briefly about what Hausman test is for.

Known as fixed effects regression model in literature, this approach is a model that is based on the assumption that slope coefficients do not change according to cross sections, whereas the fixed varies according to cross sections. Such a model can be written as follows:

$$Y_{it} = b_{1i} + b_2X_{2it} + b_3X_{3it} + u_{it}$$

Error term included within this equation consists of two components:

$$u_{it} = \mu_i + v_{it}$$

μ_i indicates non-observable effects that belong to the cross sections. In other words, common effects that belong to variables are not included in the model, but the ones which have impacts on the dependent variable are separated on the basis of cross sections in fixed effects approach. Thus the relations between dependent variable and independent variables have been revealed more clearly. The basic characteristic of the fixed effects model is that residual has a fixed part. As for v_{it}, it is accidental residual, i.e., it is the residual in classical regression equation and it is independent from Y. In this approach, the features of each cross section unit, not changing over time, are represented through dummy variables. Whereas, it is accepted in a random effects model that μ_i' is not fixed on the basis of cross sections and it randomly varies. Furthermore, μ_i, v_{it} and Yit are independent from each other. When such conditions are ensured, random effects model is preferred. Random effects model is suitable for household panel studies as the samplings are randomly selected from a considerable space. And this increases the possibility of indiscriminate effects. However, it should be noted that random effects approach is more difficult than fixed effects approach. Random effects model should be estimated through generalized least squares (GLS) or feasible generalized least squares (FGLS) method (Baltagi, 2001: 11-35).

Descriptions so far have been about whether only the cross sectional dimension of u_{it} has a fixed or random component. This panel analysis dealing only with cross sectional dimension is called as one-way error component regression analysis in literature. However, error term may have a part that also changes according to the time just as it has a part that changes according to cross sections. And such analysis is called as two-way error component regression analysis. In this respect, error term consists of three components:

$$u_{it} == \mu_i + +\gamma_t + +v_{it}$$

Herein γt that is recent in the equation indicates non-observable effects of time. That is to say, it indicates the effects of variations involving a specific time range, having an impact of dependent variable, but not included in the model. For instance, in an analysis performed with a 40-year importation serial, the impact of an import ban for one year is caught by γt. In the fixed effects model, it is assumed that μ_i and $\gamma_t$are fixed and that ν is distributed randomly. As for the random effects model, μ_i, γ_t, v_{it} and Yit are independent from each other both in terms of time dimension and cross sectional dimension, μ_i, γ_t and v_{it} are distributed randomly (Baltagi, 2001: 11-35).

In a random effects model, it is assumed that μi, γt, vit and Yit are independent from each other in terms of both time and cross sectional dimensions and that μi, γt and vit are randomly distributed. This is tested with the Hausman test, i.e., it tests whether error term components are independent from independent variables or not. It is certain that this is valid for two-way error component regression analysis. Since there is no time aspect within one-way analysis, Hausman test only tests whether or not the error term belongs only to the cross sections (μi) is unrelated to other estimators. In this case, the estimators within the fixed effects model and those in the random effects model should differ significantly from each other. Hausman test checks through the null hypothesis indicating that the estimator of random effects is correct. Let us perform how to interpret the results by considering the Hausman test results.

Table 5: Hausman Test

Correlated Random Effects - Hausman Test			
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	8.041646	3	0.0452

Results are once again evaluated data significance level of 0.05 in consideration of p values. Cross section random (random distribution probability for cross section error term) p value is 0.0452 and null hypothesis is rejected at a significance level of 0.05; i.e., it is not right to select the random effects model. In this case, fixed effects model is chosen. Results obtained from the test are presented in Table 5.

Table 6: Fixed Effect Test

Variable	Coefficient	t-Statistic	Prob.	Expected Sign
C	-13.02295	-7.898488	0.0000	
LNGDP	1.317305	3.020230	0.0028	(+)
LNGDP²	-0.082425	-2.999533	0.0030	(-)
LNEC	1.237955	31.93446	0.0000	(+)

R2=0.975670

Significance of obtained results is assessed on the basis of R^2 and t statistics (Gujarati, 2003:640–644). Significance of variable coefficients is indicated by p values. It is seen that all variables are important at a significance level of 0.05. It is further seen that coefficient that belongs to energy consumption is significant, and it is in a positive relation with CO_2 emission. As the increase in energy consumption under EKC hypothesis will require higher-level of economic activities, CO_2 emission will also increase. Therefore, it is anticipated that the coefficient of energy consumption will be positive. In brief, increase in energy consumption will result in an increase in production and economic activities. Thus, it will lead to an increase in growth and carbon emission. Besides this, the more the economic growth is, the higher the need for energy consumption is. And such increase in energy consumption will refer to a growing economy (Arı and Zeren, 2011:41).

Anticipated result in accordance with the literature has been obtained. Environmental Kuznets Curve hypothesis says that is positive and is negative show the increment in degradation due to an increment in income to a level after which an increment in income consequences in lower degradation and it shows us the inverted-U shape curve (Apergis and Payne, 2009:651).

Coefficient of per capita income is significant and it reflects the positive correlation of the relationship between real per capita income and CO_2 emission. Also, the coefficient of square the real per capita income conforms with the expected sign. According to the result obtained from the Environmental Kuznets Curve hypothesis, which is analysed for BSEC countries, the validity of Environmental Kuznets curve has been acknowledged in such countries. Aformula is used for the calculation of EKC turning point for BSEC countries (Erataş and Uysal, 2014:19). According to this equation, threshold value calculated for BSEC countries for 1992-2011 periods is approximately $7990.

5. CONCLUSION

In this study, we examine the relationship among environmental degradation, income and energy consumption for BSEC countries in order to search the existence of the Environmental Kuznets Curve. We use panel data to analyze the relationship among these variables. The variables we apply unit test are real per capita income, CO2 emissions and energy consumption.

In the empirical EKC literature, other studies like Selden and Song (1994), Apergis and Payne (2010) and Mor and Jindal (2012) also get an inverted-U shaped relationship between income and CO2.Our results of analysis illustrate that EKC hypothesis is supported by this data.

This study is conducted for the BSEC countries and the result of it is predicted to reveal that there is a relationship between environmental pollution and economic growth as presumed by EKC hypothesis. In the earlier stages of economic growth, CO_2 emission increases up to a certain level of income. After the mentioned level of income, CO_2 emission decreases by the economic growth. In summary, EKC function appears in the form of reverse-U and it indicates that CO_2 emission decreases as the income increases. It is seen that, if income raising policies are implemented in these countries, clean technologies are used by companies and public and the legal regulations are adapted, these will contribute to the decrease of pollution.

In an economic structure in which the industrial sector has a greater share, there is an increase in the environmental pollution. The reasons for this can be summarized as increasing production depending on the increasing scale economies, increasing utilization of natural resources to cope with the increasing production and the negative effects of increased consumption on environment. With economic development, economic structure is transformed and a transition from the industrial sector to service sector is experienced. Service sector utilizes fewer natural resources than the industrial sector. In the advanced stages of industrialization, environmental pollution decreases through the utilization of clean technologies, change in information process, transition to service based economic activities and efforts to improve the environment.

EKC analysis shows us that the necessary actions should be implemented as waiting for the increase of awareness of people will eventually undermine the environmental well-being. This study indicates that economic growth does not naturally diminish pollution. So, each country has to develop national policies in order to struggle against pollution, without considering the level of incomes as a determinant.

After the analysis of BSEC countries, it is observed that there are some structural changes experienced in these countries and the policy-makers have to adopt those organizational changes with the clean technologies. Policy-makers have to consider technology, economy and environment together and handle the lawful regulations they will implement accordingly. So far, it is understood that these aspects have been noticed within the scope of BSEC organization. In order to prevent economic degradation globally, the impact of national environmental policies to be implemented by countries within the direction of their own dynamics will be more effective when compared with a global environmental sensitivity. Therefore, individual environmental policies followed by countries, related to their own economic structures and cultural statuses will make more contribution in total. Environmental policies of these countries should cover clean technology, renewable energy resources and legitimate environmental regulations. Finally, the development policies to be applied in these countries have to be executed with a sustainable growth target considering the environmental targets thoroughly.

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