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Impact of Energy Consumption on Environmental Pollution a Case Study of Pakistan

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Abstract. This study investigated that impact of energy consumption on the environment in Pakistan by using a single equation model. The use of energy consumption E depends on the selected variables, and carbon dioxide emissions GDP, total capital formation and foreign direct investment are independent variables that collect data from 1980 to 2008. Results show that GDP and energy consumption impact directly on foreign investment climate is negative and insignificant. As the effects of carbon dioxide and energy consumption of the capital, is positive. Rising energy consumption and the emission of carbon dioxide is increasing environmental pollution in Pakistan. This research shows that the government should take appropriate policies to control environmental pollution.

Introduction

We usually use the word energy; we think the word is most familiar. Energy has no definition, is a person different from the definition of energy. Energy can be briefly defined as the ability of the body "to create is not to evaluate" the system or a change or energy. It is impossible to admit that activity, no energy and total, it is fixed in the universe. Which cannot be destroyed or created in other words, it can be expressed. We need energy to do with the lifting, running, heating or powering things, and some physical action.

Can science, we define as energy "There is a system or person or entity energy systems can do so much work on another system or entity."

In general terms, can say we have a method or system of an entity's ability to work on the "power of another entity or system." The target system has a number of ways to keep power. No matter what not held any form of energy, it always refers to a material's ability to work on another object.

Energy demand and related with economic development. The country's energy consumption has become the lifeblood of economic growth for everyone. In a competitive world, more energy use, energy industry requires a lot of energy especially the demand of growing energy in developing countries. As many ways, electrical energy, exist for the acquisition of hydroelectric power, thermal power energy, solar energy and tidal power. As can be seen in the power plant, is everywhere areas, work stations and offices. Large industrial energy uses for mass production of goods. People take advantage of cheap goods. Many countries use different things cheaper. The many business opportunities and promote economic growth. Therefore, income increases the level of investment, investment, labor, trade openness and growth.

Today, we have climate change is the major environmental problem. Climate changes due to global warming. As the layer of heat - the most important issue as more global warming gases and materials in our environment that has a large amount of carbon dioxide in the atmosphere, CO_2. Coal and natural gas fuel, removal or burning forests to pasture and plants to burn fossil fuels. The resulting sulfur dioxide, methane and heat rise, increased warmth in the air, by releasing the gas environmental abuse.

Pakistan's demand for energy is growing, but with limited energy supplies. Pakistan's energy disaster due to having limits energy sources. Pakistan energy government is encouraging domestic and intercontinental private investors in particular, to give them good opportunities in energy. Pakistan's government also intends to expand its energy combine to ensure energy security.

Objectives of Study

i. To examine the relationship between energy consumption and economic growth. To see how economic growth lead to the energy consumption.
ii. To see the impact of energy consumption on environment. Either its positive impact or negative impact on environment.

$$EN=\alpha 0+\alpha 1GDP+\alpha 2CO_2+\alpha 3GCF+\alpha 4INV+\mu$$

EN = Energy Consumption
GDP = Gross Domestic Product
CO_2 = Carbon dioxide (CO_2) Emissions
GCF = Gross capital formation
INV = Foreign direct investmen

Summary Statistics

Table 1. Analyze the Energy Consumption and Environmental Degradation in Pakistan the Descriptive Summary.

	CO_2	ENE	GCF	GDP	INV
$\overline{x}$	0.71	427.48	3.67	4.91	0.96
$\tilde{x}$	0.73	441.98	4.11	4.96	0.68
Max	0.98	522.99	18.52	10.23	3.64
Min	0.42	318.06	-9.18	1.11	0.12
σ_X	0.18	59.49	6.44	2.24	0.89
Skew	0.03	-0.23	0.21	0.18	1.82
kurtos	1.90	1.84	3.27	2.32	5.63
JB	1.61	2.01	0.36	0.71	27.41
Prob.	0.42	0.38	0.81	0.69	0.00
$\sum$	22.58	13611.06	118.01	158.64	31.21
$\sum \sigma_X$	0.96	110124.1	1301.95	160.61	24.03
Obses.	32	32	32	32	32

Source: Author's himself

The Pairwise Correlation Matrix

Correlation Matrix

Table 2. Pairwise Correlation Matrix.

	CO_2	ENE	GCF	GDP	INV
CO_2	1.01	-	-	-	-
ENE	0.97	1.01	-	-	-
GCF	-0.32	-0.29	1.01	-	-
GDP	-0.53	-0.51	0.47	1.01	-
INV	0.72	0.71	0.09	-0.21	1.01

Source: Author's himself

Here in above table of pair wise correlation, CO_2 is correlated with CO_2 at 1.01 points and correlated with ENE 0.97 which shows that there is problem of multicollinearity. CO_2 is correlated with GDP and INV respectively at, 0.53 and 0.72 which have no multi problem but with GCF 0.32 shows the less than critical value. Overall there is problem of multicollinearity.

ENE is correlated with ENE at 1.01 points and GCF at 0.29 which is less than critical value. Correlation with GDP and INV respectively at 0.53 and 0.72 which shows no multi problem.

Estimated Results

To test the impact of energy consumption on the environment in Pakistan, the results of empirical analysis will be presented in the following table.

Table 3. Impact of Energy Consumption on the Environment in Pakistan, the Empirical Analysis.

Dependent Variable: LENE				
Method: Least Squares				
Date: 22/11/16 Time: 14:36				
Sample (adjusted): 1980 2008				
Included observations: 23 After Adjusted				
Variable	Coefficient	Std. Error	T-Statistic	Probe.
C	6.259	0.020	302.541	0.000
LGDP	-0.008	0.014	-0.471	0.693
LCO_2	0.574	0.045	11.654	0.041
LGCF	0.020	0.010	1.947	0.067
LINV	-0.011	0.012	-1.031	0.311
R-Squared	0.9866	Mean dependent var.		6.032
Adjusted R-squared	0.9945	S.D. Dependent var.		0.126
		F-statistic		202.179
Durbin-Watson stat	1.9251	Probe (F-statistic)		0.000000

Source: Author's himself

Literature References

International Research

Soytas et al. (2006) investigated the impact of energy consumption on the carbon dioxide emissions of carbon dioxide. Data collected in 1960 - 2004. The investigation focused on the environmental Kuznets curve, according to researchers before, but this research energy, carbon dioxide and economic growth, Granger crash between fixed capital and manpower. Results showed that we can solve the environmental problems of economic development.

Saree Soytas (2007) studied the causal relationship between Turkey carbon dioxide CO_2, economic growth and energy consumption. Analysis of carbon dioxide is produced by carbon dioxide emissions, fuel consumption, the main problem of global warming. Data collected in 1960 and 2000. As energy consumption (E), carbon dioxide (C), labor (L), GDP (Y) variable and fixed capital investments. Data from the World Bank indicators. The reality of a relationship that is, when

economic growth is the increase in carbon dioxide. When carbon dioxide increases, increases automatically increase global warming and environmental pollution. If the amount of reduction in carbon dioxide, have a negative impact on economic growth.

Chontanawata et al. (2008) describes the energy plays a very important role in economic development. The study was conducted using data from 100 countries to understand the causal relationship between energy and economic growth. Data such as energy (E) and real GDP (Y) variables were collected, 2000 to 1971. Data from the Human Development Report. Results showed that compared to developed countries and developing countries, the most common causal relationship between energy and GDP shows.

Govindaraju and Tang, (2012) CO_2 emissions and coal consumption and investigated the relationship between economic growth in India and China. The implication means to evaluate the relationship between the variables from Granger crash tests, data from the World Development Indicators. In this study, the use of carbon dioxide emissions, and the real GDP per capita income and other variables of coal consumption.

Zeb et al. (2014) studied the relationship between poverty and energy, carbon dioxide, gross domestic product (GDP). Implication by special SAARC Granger War, from 1975 - 2010 data such as gross domestic product (GDP), carbon dioxide, energy (E) and the lack of natural resources (NRD), etc. are collected, variable. Data from the World Development Indicators. SAARC countries, especially Bangladesh, Nepal, Sri Lanka, India and Pakistan. Granger crash test results showed the absence of the double effect of poverty and energy production, Nepal and Pakistan, carbon dioxide and natural resources. Automatic natural resources (such as wind and solar) use, CO_2 reduction arose. Wind and solar renewable energy, not the end. They make use of the security of energy systems. I grew up in poverty, there is no economic growth, energy production because of reduced economic demand for energy. In India and Bangladesh, a poverty-related accident potential show bilateral relations and relations between Sri Lanka and energy poverty.

Saidi and Hammami (2015) studied the impact of economic growth on carbon dioxide emissions and energy consumption. Implication by dynamic panel data model. Data were collected from 58 countries 1990-2012 period. The results, showed that CO_2 emissions and energy consumption was positively correlated. Energy is the most important economic lifeline. Due to the energy issues, the crisis appears. On the other hand, it would contaminate water and air. Due to climate change, cause many diseases. However, growing energy demand. The absolute increase in energy consumption and increase the use of CO_2. The high carbon dioxide levels increase in global warming, to reduce this kind of environment. Thus, the introduction of renewable energy sources The present study suggests that controlling emissions of carbon dioxide.

National Research

Accidentally direction of economic development and energy consumption with Aqeel Butt (2001) studied the relationship between Pakistan. By implication integration technology partners, the results show economic growth affecting the total energy consumption. Oil consumption will not affect each other's economic development, on the other hand, gas and economic development. But power sector, economic growth is due to the power consumption. This study analyzes the energy consumption lead to direct employment.

Ahmed et al. (2014) Kuznets curve EKC study of economic growth, the effects of deforestation to provide evidence to support Pakistan. Data is extracted from 1980- 2013. Data time-series data. In this study, Autoregressive Distributed Lag ADRL using crash test and Granger. Deforestation is regarded as the dependent variable, economic growth, energy consumption and population as an argument. The results showed that long-term environmental Kuznets curve relationship between economic development and deforestation in the EKC. Granger crash test results show that deforestation leads to economic growth and energy consumption. There is no reason for two-way between economic growth and energy consumption. But the long-term population and economic growth have led to deforestation. The final result is a need for appropriate policies to reduce the felling of some forests.

Conclusion

These studies show that the increase in economic growth, with increased energy consumption, economic growth and energy consumption was positively correlated. GDP, increasing foreign direct investment and economic growth factors having a positive effect on economic growth and energy consumption. Now researchers gross domestic product, energy consumption will investigate the impact of foreign direct investment. Pakistan's energy consumption and they are either irrelevant.

Epilogue

The main objective of this study is to look at the relationship between Pakistan's energy consumption and environmental pollution. According to theory, the increase in rising energy consumption, environmental pollution. For this purpose, to collect the data from 1980 to 2008 and Pakistan's economic development and to apply OLS to test the relationship between environmental pollution. Carbon dioxide emissions, total capital and foreign direct investment as independent variables, energy consumption and GDP is considered dependent.

The results also increase carbon dioxide emissions and their variants value of gross capital formation, energy consumption showed that positive and significant impact on Pakistan's rising energy consumption, Pakistan Environmental Pollution. When carbon dioxide is increased, increasing environmental pollution and energy consumption, according to the result in favor of ideology, theory, which follows the principle of Environmental Kuznets Curve. Solid assets, because of the increased consumption and production in Pakistan, and Gross investment which helps to increased environmental pollution increased energy consumption also rises.

Results and theoretical cumulative foreign direct investment in the production and direction. Here the results are negative and insignificant. The main negative, because foreign policy is directly produced by the Pakistan government, which is why the result is not suitable for contrast, the GDP of Pakistan to reduce energy consumption.

Recommendation

1) Government should formulate good policies should be conducive to foreign direct investment in Pakistan, and increase economic growth and energy consumption will also be increased. However, due to increasing economic growth and energy consumption, environmental pollution will also increase.

2) The Pakistan government should also reduce environmental pollution in Pakistan, for the purpose of a policy helps to reduce the deterioration of the environment in Pakistan.

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