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Models of Green Economy in Arab Countries Using the Environmental Performance Index

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Abstract

This paper aims at characterizing the main trends affecting the environmental and greening economy systems in Arab countries. This is tackled through the use of data based on Environmental Performance Index (EPI) with statistical analysis of its related indicators. Promising results are attained based on descriptive statistics, trend and regression analyzes besides comparison of oil and non-oil exporting countries. The attained results show that Arab countries express different patterns with regard to environmental performance and greening of their economies while statistically significant differences appear between oil and non-oil exporters.

Keywords: green economy, environmental performance index, oil and non-oil exporting countries.

JEL: Q5, O2

Introduction

This paper aims at showing the major environmental trends and differences in environmental performance and in the development of green economy in Arab countries. As this set of economies is composed of oil exporting and non oil exporting countries, statistical tests are devoted to showing similarities and differences between these two groups of economies. This is motivated by the increasing roles of environmental systems in economic sustainability of individual, regional and global economies. The present paper is a follow-up to a previous version (El Alouani & Driouchi, 2014) where the focus was placed on several dimensions that included also energy.

After a review of literature that relates to the greening initiatives undertaken by different Arab economies, the sources of data used with emphasis on Environmental Performance Index are introduced. Descriptive statistics and regression analysis are respectively performed with the results discussed in each section. A set of appendices related to sections II and III, is added to support the results and findings discussed in the text.

I. Literature Review

Examples of Arab countries going green are provided in the FEMISE report (World Bank, 2012a) where most of the directions underlined above are already expressed in series of initiatives. Most of these country projects are taking place in North Africa and Jordan. These initiatives are cited in this paper.

But, other publications, conferences and reports such as those by Abaza, Saab and Zeitoun (2011), UN-Escwa (2012), UN-Escwa, Las and Unep (2011), Krishnan and Leed (2013),

Khoday (2011) and UNDP (2013) indicate the greening trends and initiatives taking place in Arab economies.

In April 2009, Morocco implemented a new policy of replacing dirty diesel with clean one. This new diesel is drastically less polluting than the dirty one and has necessitated \$850 million injected to the Moroccan refinery. This initiative comes within the new politics of the kingdom of purer air (World Bank, 2012a).

In Egypt, the environmental service provider Veolia and the Governorate of Alexandria developed a “public-private partnership” to take care of the region’s waste management (World Bank, 2012a, p. 27). This partnership not only led to a cleaner area but to 4,500 new positions.

In Tunisia, the “eco-leaf program” develops a recycling system for packaging waste (World Bank, 2012a, p. 27). In addition to gathering more plastics and metal, this project helped create more jobs mainly for university graduates. There is a participation fee associated with the program, but other sources of financing such as taxes and the World Bank Carbon Finance program are also involved.

In Tunisia, a system to reuse water was developed in the Hammamet region. Wastewater was reused to irrigate two golf courses (World Bank, 2012a). This project successfully preserved the golf courses while generating 170 new positions.

In 2000, Jordan built a new treatment plant to reuse wastewater. This mission partly solved the water scarcity problem that the country faces. Just like the other projects developed in the region, this plant generated thousands of direct and indirect jobs. The plant also served its purpose and is now providing 10% of the total national water allocation (World Bank, 2012a).

In Egypt, a large food manufacturing company began new environmental actions to diminish its energy use. Water recycling methods were settled and heating was optimized in order to require

minimum costs. This strategy participated in reducing the fuel consumption by 40% (World Bank, 2012a).

In Tunisia, an automobile batteries constructor invested \$522,500 to diminish pollution and infection, which in turn made him save nearly \$1.5 million each year (World Bank, 2012a).

Morocco has undertaken several projects in collaboration with the Moroccan State Secretariat for Water (SEEE) and the Mediterranean Action Plan (MAP). The constraint of such projects is to find the right balance between developing the coasts touristic activities and guarding the biodiversity of the bay. Billions of dollars were invested to create job opportunities and develop touristic projects that would improve the inhabitants' living standards (World Bank, 2012a).

Tunisian coasts have been getting more populated during the past years. This trend has come with the issues associated with growing population. Less water is available and the air is more polluted leading to a less attractive touristic environment. Therefore, the country has involved in projects aiming to protect the two regions of Tabarka and Djerba in parallel to the demographic and touristic development these coasts are experiencing. For instance, scuba diving and fishing have been regulated in such a way that no one will impair the other and that the diversity of the area is preserved (World Bank, 2012a).

In 2007, Amman's project of the Greater Amman Municipality (GAM) or what is referred to as the "Amman Master Plan" was to build new offices, high end flats, and infrastructure while preserving the patrimony zones and developing "green" energy sources (World Bank, 2012a, p.37).

In Morocco, a new city Zenata is being built on 1,205 acres. The characteristic of this urban area is that it is an Eco2 city, i.e.: a city meeting certain ecological standards such as reduced energy consumption. This agglomeration would contribute in creating new jobs and

providing citizens' housing in addition to protecting the environment and avoiding pollution (World Bank, 2012a).

In Egypt, a new law was passed to forbid any public transportation vehicle that is 20 years or older from obtaining or renewing their license. Cabs were also concerned by this regulation and their owners had the option to submit their cars for recycling. They would then obtain a financial compensation to help them get a new vehicle. In Cairo only, 41,000 vehicles were substituted. This new reform will reduce large amounts of CO₂ emissions participating in maintaining cleaner air (World Bank, 2012a).

In Constantine (Algeria), a new aerial tramway started operating in 2008. Up to 24,000 passengers can use this new infrastructure daily through a large range of operating hours. Ten similar projects are being developed in Algeria to ensure a better transportation system to more citizens (World Bank, 2012a).

Morocco has been collaborating with the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) to analyze the current situation of the kingdom and develop a new regulatory set of actions that could be taken to improve the environmental policies of the region. The main areas involved are water, coastal, and waste management (World Bank, 2012a).

For a long time in Jordan, fuel subsidies were available to compensate for the price sudden jumps. However, in a politics of reducing fuel consumption, these subsidies were progressively reduced commencing 2005. This strategy involved bonuses to low-income households and increases in the minimum wages to ensure a smooth transition (World Bank, 2012a).

In 2006, Morocco has introduced a Corporate Social Responsibility (CSR) label to acknowledge how companies are dedicated to green development of the region. This label was

developed by the Confédération Générale des Entreprises du Maroc (CGEM) and is based on accredited auditors' reports and suggestions, and the firm's commitment to implementing the auditor's recommendations (World Bank, 2012a).

In parallel to the main financial functions of the Moroccan Caisse des Dépôts et de Gestion (CDG) such as ensuring sustainable development in its projects, it participates in actions to preserve environmental matters. In 2009, with the help of the French Caisse des Dépôts et Consignations (CDC), the CDG created a new entity to reforest thousands of hectares and involve the wood production field to be environmental friendly. Another collaboration with the European Investment Bank (EIB) led to a fund whose mission is to strengthen the Kyoto Protocol in Morocco through renewable energy projects for example (World Bank, 2012a).

In 2010, the Tunisian government with the help of the Global Environment Facility and "Agence Française de Développement" worked on an initiative to reduce electricity consumption through appliances. The first step was to impose compulsory power consumption labels on machines. The second one was to meet "Minimum Energy Performance Standards" (MEPS) (World Bank, 2012a, p. 80). The whole strategy would result in major reductions of electricity consumption and savings in imports and investment costs in gas and electricity.

Private institutions are managing Jordan's protected areas. Sustainable development is a key element for Jordan and efforts are made to maintain the ecosystem of such areas. The country is now trying to find the perfect balance between public and private management to ensure protection of natural resources (World Bank, 2012a).

Water management in Morocco is not only a government priority but is sometimes supervised by residents. A good example is in an Oasis where the cooperative Al Madania was

created. The 50 members of this organism found new ways to manage their water consumption in order to increase their cultivations (World Bank, 2012a).

The Tunisian national agency for energy management (ANME) participated with other governmental entities to decrease new buildings' energy consumption. A Total of 46 projects were undertaken around the country and the energy reduction in each building reached 33% (World Bank 2012a).

II. The Variables and Data Used

The Environmental Performance Index (EPI) is mainly a method of quantifying and numerically benchmarking the environmental performance of policies by country. The Environmental Sustainability Index (ESI) that was published between 1999 and 2005 preceded the EPI. Both indexes were developed by Yale University (Yale Center for Environmental Law and Policy) and Columbia University (Center for International Earth Science Information Network) in collaboration with the World Economic Forum and the Joint Research Centre of the European Commission. (Yale, 2012)

The Environmental Performance Index (EPI) is composed of Environmental Health (EH), Ecosystem Vitality (EV), Environmental Burden of Disease (EHEH), Air (effect on human health) (EHAIR), Water (effect on human health) (EHWATER): Air (ecosystem effect) (EVAIR), Water resources (ecosystem effect) (EVWATER), Biodiversity and Habitat (EVBH) Agriculture (EVAG) , Forests (EVFOREST), Fisheries (EVFISH) and Climate change and Energy (EVCLIMATE). Data on different components and on the aggregate EPI are available and data for the period 2000 to 2012 are used in this analysis with the coverage of large numbers of countries and include all Arab countries. (Yale, 2012).

III. Empirical Analysis and Results

EPI scores (Yale, 2012) vary widely across Arab countries and so do their trends over time. In 2010, Egypt scored the highest value for EPI (55.2) and Iraq the lowest one (25.3). Arab countries also vary in their amount of progress their EPI is showing over years as represented by the value of regression coefficients obtained. Egypt, Libya, and UAE are the most performing Arab countries. On the average, their EPI value is increasing by 0.569, 0.356, and 0.451 respectively every year. In a second position come Algeria, Jordan, Lebanon, Morocco, Oman, Qatar, and Yemen with positive regression coefficients that do not exceed 0.3 increases in EPI value per year. Iraq, Kuwait, and Saudi Arabia are the least performing as their EPI value show a decrease over the years by amounts that do not exceed 1 EPI score per year(-.018, -.162, -.115,)

EH and EV scores have different pattern of change over time as with EPI. A value increase appears in the EH score of Algeria, Egypt, Jordan, Lebanon, Libya, Mauritania, Morocco, Oman, Saudi Arabia, UAE, Yemen. Among those countries, only Iraq, Jordan, Libya, UAE, and Yemen along with Bahrain and Qatar that show an increase in the EV score as well, while Saudi Arabia, Oman, and Algeria show a decrease in their EV scores. EH however declines in Iraq and Kuwait. EH increases the fastest in Egypt and Algeria with coefficients of 1.857 and 1.288 EH score per year respectively, and EV increases the fastest in Bahrain with a pace of 1.69 EV score per year. For the rest of the countries, the increase or decrease in EH as well as EV scores per year is less than 1.

Within each of the two policy objectives EH and EV, the trend pattern for the sub-indicators differ across the countries and the sub-categories.

EHEH score increased over the years in all the Arab countries to the exception of Kuwait where it has decreased on the average by 0.1 per year. The Coefficients of determination obtained from the analysis reach 97% for most countries; they show indeed the strong correlation of EHEH scores and time. The most performing Arab countries in this sub-category register growth rates of 1.6, 1.56, and 1.41 and are respectively UAE, Oman, and Egypt. The rest of the countries mark growth rates that are less than 1. The Environmental Performance Index ranks UAE as the first country to score the highest value of EHEH improvement in the world during the past decade. Oman ranks 7th, Yemen, Morocco, and Egypt ranks 10th, 11th, and 12th respectively.

EHAIR, the second sub-category within EH shows a different picture about the environmental performance of Arab countries. A bigger variation exists across the countries; Lebanon, Bahrain, and Qatar have held their EHEH at its maximum (100) during the last decade, while Yemen displayed the lowest values among Arab countries of an EHAIR score of 34.7 in 2010. Among countries, Algeria, Egypt, Jordan, Libya, and Mauritania are the ones improving the air's effect on the human health within their territories to varying degrees. Libya and Tunisia could reach maximum score during the last years of the past decade. The rest of countries including Iraq, UAE, Kuwait, Oman, Saudi Arabia, Morocco, and Yemen have witnessed a fall in their EHAIR scores. In fact, the first three countries in this category are ranked the three lowest countries in the world for their trend rank.

Variance of environmental performance across Arab countries is further stressed when analyzing data for EHWATER, the last sub-category within EH. Qatar has held its score at its maximum of 100 for the entire last decade. Mauritania had a score of 8.1 in 2010, only increasing slightly from the 5.6 score in 2000. Sudan and Yemen also figure among the lowest scores' countries with scores of 11.3 and 16 respectively. In general, the EHWATER were kept almost constant

over the year with minor improvement in few countries and more important growth in Egypt that went from 52.3 to 71.0 in 10 years.

While the average of European countries is around 61, most Arab countries are doing poorly in improving the effect of air on ecosystems, which reflects on their EVAIR scores. The least performing country in this sub-category is Kuwait with a score of 9.8 in 2010. Algeria is the most performing Arab country with a score of 61 in 2010. It is improving the fastest over time with a growth rate of 1.54 EVAIR score per year. Most other countries have positive growth rates lower than 1, while Kuwait and Sudan have regressed slightly.

As for EVWATER, while European countries' score swing around 37 on the average, Most Arab countries show far lower values that have been constant over the entire last decade. Bahrain for example scores 0, Lebanon 3.4, Qatar 9, Syria 7.6, Tunisia and Morocco 9.0. Countries with scores above 29.0 are Mauritania, Algeria, Oman and Sudan

While the same sample of European countries have succeeded in raising their score of EVBH from 65 to 77 during the ten year period studied, most Arab countries have kept theirs constant over almost the entire period. The exception to that is Bahrain which went from 1.3 in 2000 to 57.9 in 2003 and till 2010. Score vary from 0.6 in Syria to 99.0 in Saudi Arabia.

The same steadiness applies to EVAG with scores varying from 0.0 in Libya and Mauritania to scores above 60 for most of the other countries to 97.0 in Sudan while the average in European countries has improved to reach 46.6 in 2010.

As far as forestry is concerned, Arab countries are different in their EVFOREST scores and the way they change over time. Linear increase in the value of the score is noticed in Mauritania at a rate of 6.51 EVFOREST score per year and Sudan but important step back has been made in

Saudi Arabia with a rate of 4.72 EVFOREST score per year. In a less important rate, Algeria and Tunisia are also regressing. The rest of the countries have held their scores elevated and constant over time.

The pattern of change in EVFISH score during the last decade was such that most Arab countries have witnessed a fall in their scores. Some at important rates exceeding 1.5 EVFISH score per year like in Algeria, Lebanon, Sudan, and Syria, and reaching 2.6 per year in Egypt; others at a less important rate that do not exceed one and are in progressive order of their fall rate: Tunisia, Morocco, Kuwait, Yemen, UAE, and Bahrain. Libya is the only country, which have progressed over time and has reached in 2010 the highest score among the rest of the countries of 62.3.

Analysis of EVCLIMATE data show that Arab countries vary once again in both their score values and trend of change. In general, the rate of linear change, either positive or negative, does not exceed 1 for any of the countries. Countries, which have been improving their scores, are Bahrain, Jordan, Libya, Qatar, and Tunisia. Countries, which have had a fall in their scores, are Yemen, Syria, Sudan, Saudi Arabia, Oman, Egypt, and Algeria.

These trends are introduced in country tables that are shown in appendix I. These trends are for the period 2000-2010. For the aggregate variable "EPI", all the estimated trends are positive and with statistically significant coefficients except for Kuwait, Iraq and Saudi Arabia.

IV. Results of Comparisons of Models of green economy in Arab Countries

The variables used to represent Arab countries are oil activities and mainly oil consumption (cos), and oil rents (rent). They are assumed to be affecting environmental

performance. The variables used to characterize environmental sustainability levels are those related to the EPI indicators.

The regressions are run for all Arab countries and then for the groups 1 and 2 as oil and non-oil exporters respectively. The results of these three sets of regressions are shown in tables of appendix II.

A chow test is then used to test of the existence of any difference between the two groups of Arab economies. The outcomes of the chow test are shown in appendix III.

The objective of this test is to determine whether there exists a significant difference between the oil exporting and oil non-exporting Arab countries in terms of their environmental behavior. This is achieved by summing the residual sum of squares when separate regressions are run for the two groups' subsamples, and comparing it against the residual sum of squares from the pooled sample regression via the following statistical measure:

$$\frac{(SSc - (SS1 + SS2))/k}{\frac{SS1+SS2}{N-2k}}$$

This test allows determining whether there is a significant reduction in the residual sum of squares when we subdivide the pooled sample of countries into two categories depending on their oil export activity and run separate regressions.

Multiple regressions are run for each of the EPI sub-variables on the two oil variables. The F statistic is calculated for each of the individual EPI variables. Results are shown in the table below where the test statistic values are displayed in the right-most column. The critical value of F against which these F values are compared is:

$F(3,170) = 2.65 (2.70)$ at 5% significance level

Or $F(3,170) = 3.88 (3.98)$ at 1% significance level.

The non-exporting countries (group 1) taken in this analysis are Jordan, Lebanon, Morocco, Egypt, and Tunisia. The exporting ones (group 2) are: UAE, Algeria, Iraq, Kuwait, Libya, Oman, Qatar, Saudi Arabia, Sudan, Syria, and Yemen.

The results show values above the statistically critical ones for the following EPI indicators: EPI, EV, EVAIR, EVWATER, EVBH, EVAG, EVFISH, EVCLIMATE, SO2CAP, SO2GDP, WATUSEINV, PACOV, POPs, TCEEZ, CO2CAP, CO2KWH, and RENEW. We conclude from that, the existence of a difference between the performance of the exporting and non-exporting countries of oil in terms of these particular environmental categories that the pooled regression do not adequately account for.

In general, the overall environmental performance is significantly different between the first and second group of countries. This does not mean that their performance is also different in all environmental sub-categories. In fact, the test results show a similarity between all countries in their performance in the Environmental Health policy objective and at the same time a significant difference between the two groups of countries in their performance in the other policy objective, Ecosystem vitality. A similarity is present in all the analyzed variables of the policy categories and their sub-categories that belong to the Environmental Health policy objective, namely the Environmental burden of disease (EHEH), air pollution and water pollution on their effects on humans (EHAIR and EHWATER), child mortality (CHMORT), indoor air pollution (INDOOR), and access to drinking water (WATSUPINV). A significant difference however exists between the performance of the two groups of countries in all the

analyzed policy categories of the Ecosystem Vitality policy objective and in almost all their sub-categories excluding marine protection (MPAEEZ) and CO₂ emissions per GDP (CO₂GDP). Difference in environmental performances concerns the following variables: air and water on their effects on ecosystems (EVAIR and EVWATER), biodiversity and habitat (EVBH), agriculture (EVAG), fisheries (EVFISH), climate change (EVCLIMATE), sulfur dioxide per capita and per GDP (SO₂CAP and SO₂GDP), change in water quantity (WATUSEINV), biome protection (PACOV), pesticide regulation (POPs), coastal shelf fishing pressure (TCEEZ), CO₂ emissions per capita and per KWh (CO₂CAP and CO₂KWH), and renewable electricity (RENEW).

Conclusion

This paper has attempted to characterize the trends related to environmental performance in the Arab world with an important emphasis on the link to the components of the environmental performance index. Descriptive analysis besides time trend determination and regressions are conducted.

The Arab policies are also characterized by the absence of national standards, testing, and certification schemes for the renewable energy based technologies. Moreover, the energy policies do not account for the external cost of fossil fuels caused by environmental degradation as hospitalization costs or loss in fisheries and agriculture. In fact, a study undertaken by the World Bank estimated this kind of losses to account for 4.8% of GDP in Egypt (1999), 3.7% in Morocco (2000), and 3.6% in Algeria (1998) (AFED, 2011).

When trying to analyze the links between different components of the environmental performance index and oil consumption and rents, important results are derived. The non-exporting countries (group 1) taken in this analysis are: Jordan, Lebanon, Morocco, Egypt, and Tunisia. The exporting ones (group 2) are: UAE, Algeria, Iraq, Kuwait, Libya, Oman, Qatar, Saudi Arabia, Sudan, Syria, and Yemen.

In general, the overall environmental performance is significantly different between the first and second group of countries. This does not mean that their performance is also different in all environmental sub-categories. In fact, the test results show a similarity between all countries in their performance in the Environmental Health policy objective and at the same time a significant difference between the two groups of countries in their performance in the other policy objective, Ecosystem vitality. A similarity is also found in all the analyzed in all variables of the policy categories and their sub-categories that belong to the Environmental Health policy objective, namely the Environmental burden of disease, air pollution and water pollution on their effects on humans, which also includes, child mortality, indoor air pollution, and access to drinking water. A significant difference however exists between the performance of the two groups of countries in all the analyzed policy categories of the Ecosystem Vitality policy objective and in almost all their sub-categories excluding marine protection and CO2 emissions per GDP. Difference in environmental performances concerns the following variables: air and water on their effects on ecosystems, biodiversity and habitat, agriculture, fisheries, climate change, sulfur dioxide per capita and per GDP, change in water quantity, biomass protection, pesticide regulation, coastal shelf fishing pressure, CO2 emissions per capita and per KWh, and renewable electricity.

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Appendices

APPENDIX I: Time Trends in EPI components per country

Qatar			
Variable	Cst	Coeff	R ²
EPI	45.947	0.071	0.73
	-540.288	-4.936	
EH	89.791	-0.007	0.014
	-755.698	(-.361)	
EV	27.157	0.104	0.658
	-182.864	-4.162	
EHEH	79.581	-0.015	0.014
	-334.884	(-.361)	
EHAIR			
EHWATER			
EVAIR	30.061	0.335	0.829
	-100.397	-6.616	
EVWATER			
EVBH	39.901	0.038	0.6
	-648.924	-3.674	
EVAG			
EVFOREST			
EVFISH	50.195	0.254	0.19
	-48.51	-1.452	
EVCLIMATE	2.681	0.093	0.536
	-15.739	-3.225	
CHMORT_pt	79.581	-0.015	0.014
	-334.884	(-.361)	
INDOOR_pt			
PM25_pt			
WATSUPINV_pt			
ACSATINV_pt			
SO2CAP_pt	10.259	0.267	0.82
	-41.627	-6.411	
SO2GDP_pt	49.863	0.403	0.785
	-119.855	-5.725	
WATUSEINV_pt			
PACOV_pt	13.064	0.109	0.6
	-74.375	-3.674	
MPAEEZ_pt			
AZE_pt			
AGSUB_pt			

Bahrain			
Variable	Cst	Coeff	R ²
EPI			
EH			
EV	13.747	1.69	0.601
	-5.065	-3.684	
EHEH	79.549	0.282	0.937
	-553.967	-11.608	
EHAIR			
EHWATER			
EVAIR	11.243	0.503	0.663
	-15.879	-4.206	
EVWATER			
EVBH			
EVAG			
EVFOREST			
EVFISH	27.862	-0.873	0.578
	-18.945	(-3.511)	
EVCLIMATE	1.661	0.069	0.494
	-12.002	-2.966	
CHMORT_pt	79.549	0.282	0.937
	-553.967	-11.608	
INDOOR_pt			
PM25_pt			
WATSUPINV_pt			
ACSATINV_pt			
SO2CAP_pt	1.326	0.332	0.663
	-2.84	-4.211	
SO2GDP_pt	21.16	0.674	0.661
	-22.194	-4.185	
WATUSEINV_pt			
PACOV_pt			
MPAEEZ_pt			
AZE_pt			
AGSUB_pt			
POPs_pt			
FORGROINV_pt			
FORLOSS_pt			
FORCOVINV_pt			

POPs_pt			
FORGROINV_pt			
FORLOSS_pt			
FORCOVINV_pt			
FSOC_pt	59.5	1.49	0.585
	-24.065	-3.564	
TCEEZ_pt	40.891	-0.982	0.82
	-45.131	(-6.410)	
CO2CAP_pt			
CO2GDP_pt	0.07	-0.01	0.373
	-2.875	(-2.313)	
CO2KWH_pt	17.709	0.641	0.565
	-15.951	-3.418	
RENEW_pt			
Oil Cons	42.265	10.317	0.977
	-13.479	-19.466	
Oil Prod	802.912	52.159	0.903
	-23.809	-9.15	
Oil Exp	713.545	7.672	0.029
	-8.565	-0.492	
Oil Rents	29.936	-1.075	0.441
	-13.091	(-2.510)	

FSOC_pt	53.555	-1.509	0.49
	-17.648	(-2.941)	
TCEEZ_pt	2.169	-0.237	0.545
	-5.078	(-3.284)	
CO2CAP_pt			
CO2GDP_pt	4.074	0.177	0.646
	-15.806	-4.057	
CO2KWH_pt	1.567	0.05	0.013
	-1.839	-0.348	
RENEW_pt			
Oil Cons	20.178	2.763	0.936
	-14.181	-11.487	
Oil Prod	48.146	-0.328	0.667
	-105.386	(-4.248)	
Oil Exp			
Oil Rents	17.938	0.555	0.191
	-8.317	-1.373	

Kuwait			
Variable	Cst	Coeff	R ²
EPI	37.186	-0.162	0.918
	-390.656	(-10.060)	
EH	87.975	-0.442	0.913
	-326.74	(-9.718)	
EV	15.42	-0.042	0.119
	-68.79	(-1.100)	
EHEH	79.980	-0.109	0.75
	(645.639)	(-5.196)	
EHAIR	99.85	-1.551	0.922
	-112.018	(-10.297)	
EHWATER			
EVAIR	10.649	-0.111	0.733
	-80.709	(-4.973)	
EVWATER			
EVBH			
EVAG			
EVFOREST			
EVFISH	27.823	-0.658	0.378

Mauritania			
Variable	Cst	Coeff	R ²
EPI			
EH	21.162	0.27	0.975
	-246.618	-18.596	
EV			
EHEH	17.002	0.346	0.972
	-147.343	-17.76	
EHAIR	44.999	0.107	0.32
	-146.919	-2.06	
EHWATER	5.644	0.279	0.978
	-68.334	-20.018	
EVAIR			
EVWATER			
EVBH			
EVAG			
EVFOREST	-12.844	6.514	0.807
	(-2.047)	-6.142	
EVFISH	14.673	0.025	0.039
	-58.88	-0.603	

	-16.716	(-2.337)	
EVCLIMATE	3.671	0.122	0.118
	-5.589	-1.097	
CHMORT_pt	79.98	-0.109	0.75
	-645.639	(-5.196)	
INDOOR_pt			
PM25_pt	99.699	-3.103	0.922
	-55.925	(-10.297)	
WATSUPINV_pt			
ACSATINV_pt			
SO2CAP_pt			
SO2GDP_pt	21.298	-0.222	0.733
	-80.709	(-4.973)	
WATUSEINV_pt			
PACOV_pt			
MPAEEZ_pt			
AZE_pt			
AGSUB_pt			
POPs_pt			
FORGROINV_pt			
FORLOSS_pt			
FORCOVINV_pt			
FSOC_pt	44.362	-1.192	0.308
	-12.592	(-2.001)	
TCEEZ_pt	11.284	-0.123	0.288
	-29.501	(-1.907)	
CO2CAP_pt			
CO2GDP_pt	8.997	0.436	0.243
	-5.927	-1.7	
CO2KWH_pt	3.484	-0.206	0.176
	-3.971	(-1.388)	
RENEW_pt			
Oil Cons	267.306	9.227	0.888
	-41.406	-8.455	
Oil Prod	2164.51	52.529	0.515
	-21.534	-3.092	
Oil Exp	1228.501	52.543	0.44
	-10.979	-2.507	
Oil Rents	44.049	1.134	0.176
	-9.509	-1.306	

Morocco			
Variable	Cst	Coeff	R ²

EVCLIMATE			
CHMORT_pt	17.002	0.346	0.972
	-147.343	-17.76	
INDOOR_pt	5.155	0.224	0.772
	-21.498	-5.518	
PM25_pt	84.843	-0.01	0.001
	-151.169	(-1.110)	
WATSUPINV_pt	6.196	0.405	0.978
	-51.727	-20.018	
ACSATINV_pt	5.092	0.154	0.976
	-107.142	-19.129	
SO2CAP_pt			
SO2GDP_pt			
WATUSEINV_pt			
PACOV_pt			
MPAEEZ_pt			
AZE_pt			
AGSUB_pt			
POPs_pt			
FORGROINV_pt	-24.924	12.763	0.802
	(-1.992)	-6.034	
FORLOSS_pt			
FORCOVINV_pt	-0.763	0.266	0.414
	(-1.223)	-2.521	
FSOC_pt	12.766	-0.247	0.417
	-22.121	(-2.537)	
TCEEZ_pt	16.581	0.298	0.506
	-28.511	-3.034	
CO2CAP_pt			
CO2GDP_pt			
CO2KWH_pt			
RENEW_pt			
Oil Cons	23.63	-0.393	0.531
	-32.453	(-3.194)	
Oil Prod	-1.336	1.684	0.322
	(-2.277)	-2.067	
Oil Exp	-2.171	1.896	0.322
	(-4.18)	-1.948	
Oil Rents			

Egypt			
Variable	Cst	Coeff	R ²

EPI	43.528	0.261	0.865
	-213.759	-7.581	
EH	53.097	0.724	0.993
	-454.69	-36.682	
EV	39.427	0.062	0.154
	-136.421	-1.278	
EHEH	57.845	1.417	0.999
	-765.702	-110.946	
EHAIR	71.305	-0.276	0.472
	-124.062	(-2.837)	
EHWATER	25.391	0.338	0.95
	-165.835	-13.073	
EVAIR	29.914	0.237	0.435
	-56.234	-2.634	
EVWATER			
EVBH	22.335	0.001	0.7
	-21386.719	-4.583	
EVAG	73.745	0.193	0.7
	-296.222	-4.583	
EVFOREST	82.109	0.307	0.055
	-32.765	-0.725	
EVFISH	25.759	-0.257	0.383
	-40.043	(-2.363)	
EVCLIMATE	55.36	0.05	0.027
	-94.215	-0.499	
CHMORT_pt	57.845	1.417	0.999
	-765.702	-110.946	
INDOOR_pt	42.61	-0.551	0.472
	-37.068	(-2.837)	
PM25_pt			
WATSUPINV_pt	28.632	0.346	0.968
	-229.715	-16.42	
ACSATINV_pt	22.151	0.331	0.923
	-117.836	-10.409	
SO2CAP_pt	37.222	0.063	0.116
	-109.264	-1.087	
SO2GDP_pt	22.606	0.411	0.547
	-30.605	-3.293	
WATUSEINV_pt			
PACOV_pt			
MPAEEZ_pt	65.247	0.003	0.7
	-17280.313	-4.583	

EPI	50.386	0.569	0.798
	-89.378	-5.97	
EH	58.309	1.857	0.971
	-92.845	-17.489	
EV	46.991	0.017	0.003
	-72.202	-0.154	
EHEH	58.678	1.415	0.974
	-128.508	-18.34	
EHAIR	62.277	2.577	0.961
	-60.937	-14.918	
EHWATER	53.605	2.018	0.962
	-68.053	-15.16	
EVAIR	39.446	0.348	0.723
	-93.058	-4.851	
EVWATER			
EVBH	37.236	0.783	0.57
	-27.77	-3.456	
EVAG	82.327	1.868	0.285
	-14.115	-1.894	
EVFOREST			
EVFISH	50.482	-2.594	0.808
	-20.24	(-6.154)	
EVCLIMATE	48.529	-0.647	0.788
	-73.279	(-5.779)	
CHMORT_pt	58.678	1.415	0.974
	-128.508	-18.34	
INDOOR_pt	58.209	4.847	0.948
	-26.092	-12.854	
PM25_pt	66.345	0.307	0.587
	-130.599	-3.573	
WATSUPINV_pt	63.538	2.315	0.978
	-92.609	-19.965	
ACSATINV_pt	43.673	1.722	0.906
	-39.879	-9.3	
SO2CAP_pt	43.334	0.243	0.657
	-125.39	-4.155	
SO2GDP_pt	35.557	0.453	0.755
	-69.968	-5.268	
WATUSEINV_pt			
PACOV_pt	28.524	0.844	0.556
	-19.179	-3.357	
MPAEEZ_pt			

AZE_pt			
AGSUB_pt			
POPs_pt	77.273	0.579	0.7
	-103.464	-4.583	
FORGROINV_pt	103.925	-1.308	0.25
	-23.256	(-1.732)	
FORLOSS_pt			
FORCOVINV_pt	84.021	2.229	0.449
	-17.26	-2.709	
FSOC_pt	48.192	-0.627	0.396
	-31.578	(-2.429)	
TCEEZ_pt	3.327	0.113	0.022
	-2.231	-0.447	
CO2CAP_pt	100.339	-0.273	0.671
	-266.164	(-4.284)	
CO2GDP_pt	54.461	0.131	0.146
	-87.292	-1.241	
CO2KWH_pt	2.084	0.176	0.535
	-6.452	-3.219	
RENEW_pt	5.785	0.486	0.257
	-3.551	-1.766	
Oil Cons	152.529	5.642	0.864
	-34.528	-7.556	
Oil Prod	5.259	0.027	0.489
	-95.078	-2.936	
Oil Exp			
Oil Rents	0.005	3.52E-05	0.006
	-5.478	-0.234	

AZE_pt			
AGSUB_pt			
POPs_pt			
FORGROINV_pt			
FORLOSS_pt			
FORCOVINV_pt			
FSOC_pt	76.549	-6.066	0.814
	-13.371	(-6.269)	
TCEEZ_pt	24.415	0.878	0.711
	-22.136	-4.708	
CO2CAP_pt	91.098	-1.26	0.915
	-120.663	(-9.871)	
CO2GDP_pt	36.106	-0.178	0.915
	-40.872	(-1.195)	
CO2KWH_pt	9.592	-0.202	0.516
	-24.886	(-3.099)	
RENEW_pt	-0.755	17.124	0.839
	(-6.843)	-26.22	
Oil Cons	513.193	26.151	0.95
	-43.593	-13.142	
Oil Prod	762.971	-7.392	0.429
	-45.346	(-2.599)	
Oil Exp	155.067	-13.01	0.485
	-6.124	(-2.743)	
Oil Rents	6.27	0.257	0.123
	-4.625	-1.123	

Iraq			
Variable	Cst	Coeff	R ²
EPI	25.614	-0.018	0.065
	-190.59	(-.793)	
EH	46.294	-0.207	0.883
	-311.019	(-8.243)	
EV	16.751	0.063	0.321
	-92.527	-2.063	
EHEH	53.289	0.224	0.982
	-900.388	-22.388	
EHAIR	50.781	-1.374	0.964
	-96.709	(-15.485)	
EHWATER	27.817	0.097	0.934

Jordan			
Variable	Cst	Coeff	R ²
EPI	39.696	0.261	0.983
	-578.397	-22.495	
EH	71.857	0.481	0.973
	-452.767	-17.913	
EV	25.912	0.167	0.952
	-352.325	-13.422	
EHEH	65.041	0.607	0.995
	-749.521	-41.387	
EHAIR	87.611	0.708	0.831
	-139.255	-6.658	
EHWATER			

	-547.003	-11.266	
EVAIR	22.004	-0.087	0.086
	-39.362	(-.922)	
EVWATER			
EVBH			
EVAG			
EVFOREST			
EVFISH	15.792	0.108	0.155
	-31.694	-1.284	
EVCLIMATE	22.492	0.239	0.268
	-28.838	-1.813	
CHMORT_pt	53.289	0.224	0.982
	-900.388	-22.388	
INDOOR_pt	51.659	-1.228	0.859
	-52.598	(-7.398)	
PM25_pt	49.903	-1.521	0.823
	-35.88	(-6.468)	
WATSUPINV_pt	30.796	-0.132	0.808
	-243.021	(-6.158)	
ACSATINV_pt	24.838	0.326	0.975
	-241.637	-18.739	
SO2CAP_pt	28.318	0.215	0.395
	-53.928	-2.424	
SO2GDP_pt	15.69	-0.389	0.21
	-10.539	(-1.547)	
WATUSEINV_pt			
PACOV_pt			
MPAEEZ_pt			
AZE_pt			
AGSUB_pt			
POPs_pt			
FORGROINV_pt			
FORLOSS_pt			
FORCOVINV_pt			
FSOC_pt			
TCEEZ_pt	15.792	0.108	0.155
	-31.694	-1.284	
CO2CAP_pt	62.811	0.182	0.059
	-43.747	-0.75	
CO2GDP_pt			
CO2KWH_pt	0.781	0.089	0.1
	-1.479	-0.998	
RENEW_pt	2.609	1.08	0.232

EVAIR	0.776	20.621	0.763
	-5.382	-24.163	
EVWATER			
EVBH	9.021	0.013	0.686
	-527.018	-4.431	
EVAG			
EVFOREST			
EVFISH	27.34	0.138	0.071
	-27.856	-0.829	
EVCLIMATE	33.219	0.165	0.312
	-68.848	-2.022	
CHMORT_pt	65.041	0.607	0.995
	-749.521	-41.387	
INDOOR_pt	89.055	1.277	0.925
	-123.781	-10.5	
PM25_pt	86.167	0.139	0.077
	-90.922	-0.868	
WATSUPINV_pt			
ACSATINV_pt			
SO2CAP_pt	27.228	0.527	0.727
	-42.694	-4.891	
SO2GDP_pt	14.015	1.026	0.779
	-13.024	-5.638	
WATUSEINV_pt			
PACOV_pt	8.925	0.013	0.686
	-520.885	-4.431	
MPAEEZ_pt			
AZE_pt			
AGSUB_pt			
POPs_pt			
FORGROINV_pt			
FORLOSS_pt			
FORCOVINV_pt			
FSOC_pt			
TCEEZ_pt	27.34	0.138	0.071
	-27.856	-0.829	
CO2CAP_pt	68.84	-0.441	0.519
	-82.267	(-3.119)	
CO2GDP_pt	24.444	0.807	0.882
	-42	-8.208	
CO2KWH_pt	3.096	0.265	0.85
	-14.137	-7.147	
RENEW_pt	0.698	-0.02	0.528

	-0.674	-1.651	
Oil Cons	439.595	20.601	0.856
	-26.37	-7.311	
Oil Prod	2068.454	15.321	0.021
	-9.949	-0.436	
Oil Exp	1611.29	-1.354	0
	-8.011	(-.036)	
Oil Rents			

	-18.879	(-3.170)	
Oil Cons	104.997	-0.402	0.071
	-36.464	(-.827)	
Oil Prod	0.032	-0.002	0.45
	-8.919	(-2.714)	
Oil Exp			
Oil Rents	0.003	-4.06E-05	0.011
	-3.887	(-.322)	

Lebanon			
Variable	Cst	Coeff	R ²
EPI	46.929	0.094	0.225
	-136.681	-1.618	
EH	78.286	0.345	0.994
	-1430.183	-37.27	
EV	33.49	-0.014	0.003
	-68.1	(-.164)	
EHEH	62.523	0.69	0.994
	-571.097	-37.269	
EHAIR			
EHWATER			
EVAIR	24.742	0.163	0.259
	-45.398	-1.774	
EVWATER			
EVBH			
EVAG	61.872	0.207	0.75
	-263.018	-5.196	
EVFOREST			
EVFISH	50.252	-1.689	0.638
	-20.033	(-3.983)	
EVCLIMATE	27.936	0.358	0.13
	-15.278	-1.157	
CHMORT_pt	62.523	0.69	0.994
	-571.097	-37.269	
INDOOR_pt			
PM25_pt			
WATSUPINV_pt			
ACSATINV_pt			
SO2CAP_pt	23.177	0.056	0.054
	-50.38	-0.717	
SO2GDP_pt	26.307	0.271	0.404

Libya			
Variable	Cst	Coeff	R ²
EPI	34.813	0.365	0.885
	-133.99	-8.307	
EH	71.309	0.7	0.962
	-260.543	-15.124	
EV	19.171	0.221	0.73
	-72.196	-4.931	
EHEH	79.282	0.537	0.978
	-497.401	-19.921	
EHAIR	85.623	1.725	0.933
	-94.162	-11.225	
EHWATER			
EVAIR	34.548	0.883	0.816
	-41.818	-6.321	
EVWATER			
EVBH			
EVAG			
EVFOREST			
EVFISH	58.893	0.368	0.652
	-111.06	-4.105	
EVCLIMATE	19.457	0.248	0.371
	-30.595	-2.302	
CHMORT_pt	79.282	0.537	0.978
	-497.401	-19.921	
INDOOR_pt	71.245	3.451	0.933
	-39.175	-11.225	
PM25_pt			
WATSUPINV_pt			
ACSATINV_pt			
SO2CAP_pt	29.516	0.663	0.803
	-45.628	-6.062	

	-40.535	-2.471	
WATUSEINV_pt			
PACOV_pt			
MPAEEZ_pt			
AZE_pt			
AGSUB_pt			
POPs_pt	71.694	0.62	0.75
	-101.591	-5.196	
FORGROINV_pt			
FORLOSS_pt			
FORCOVINV_pt			
FSOC_pt	74.201	-2.988	0.587
	-15	(-3.575)	
TCEEZ_pt	26.303	-0.389	0.859
	-84.631	(-7.412)	
CO2CAP_pt	59.387	-0.067	0.002
	-18.853	(-.126)	
CO2GDP_pt	16.81	1.023	0.446
	-7.479	-2.693	
CO2KWH_pt	1.706	0.329	0.488
	-2.567	-2.93	
RENEW_pt	6.741	-0.175	0.054
	-4.662	(-.717)	
Oil Cons	108.003	-2.987	0.84
	-41.954	(-6.864)	
Oil Prod			
Oil Exp			
Oil Rents			

SO2GDP_pt	39.58	1.103	0.814
	-38.118	-6.282	
WATUSEINV_pt			
PACOV_pt			
MPAEEZ_pt			
AZE_pt			
AGSUB_pt			
POPs_pt			
FORGROINV_pt			
FORLOSS_pt			
FORCOVINV_pt			
FSOC_pt			
TCEEZ_pt	45.546	0.736	0.652
	-42.945	-4.105	
CO2CAP_pt	35.921	-0.067	0.028
	-45.804	(-.506)	
CO2GDP_pt	19.671	0.774	0.675
	-18.586	-4.328	
CO2KWH_pt			
RENEW_pt			
Oil Cons	221.579	6.27	0.831
	-39.704	-6.646	
Oil Prod	1404.476	49.719	0.793
	-28.027	-5.87	
Oil Exp	1082.442	23.67	0.243
	-13.723	-1.602	
Oil Rents	40.194	2.032	0.307
	-6.98	-1.884	

Saudi Arabia			
Variable	Cst	Coeff	R ²
EPI	50.985	-0.115	0.961
	-1117.254	(-14.967)	
EH	70.018	0.093	0.564
	-434.571	-3.415	
EV	42.828	-0.205	0.983
	-810.493	(-22.927)	
EHEH	72.684	0.364	0.93
	-368.609	-10.912	
EHAIR	89.424	-0.355	0.77
	-233.443	(-5.489)	
EHWATER			

Oman			
Variable	Cst	Coeff	R ²
EPI	43.511	0.085	0.445
	-233.41	-2.687	
EH	67.473	0.744	0.939
	-180.572	-11.784	
EV	33.242	-0.198	0.836
	-192.451	(-6.783)	
EHEH	68.847	1.557	0.959
	-108.934	-14.576	
EHAIR	93.717	-0.548	0.893
	-250.673	(-8.671)	
EHWATER	38.481	0.411	0.978

EVAIR	15.697	0.401	0.81
	-41.045	-6.196	
EVWATER			
EVBH			
EVAG			
EVFOREST	112.421	-4.725	0.59
	-14.486	(-3.602)	
EVFISH	28.39	-0.95	0.755
	-26.603	(-5.267)	
EVCLIMATE	13.104	-0.634	0.96
	-51.45	(-14.737)	
CHMORT_pt	72.684	0.364	0.93
	-368.609	-10.912	
INDOOR_pt			
PM25_pt	78.847	-0.711	0.77
	-102.916	(-5.489)	
WATSUPINV_pt			
ACSATINV_pt			
SO2CAP_pt	7.616	0.336	0.768
	-20.888	-5.458	
SO2GDP_pt	23.778	0.465	0.825
	-56.356	-6.516	
WATUSEINV_pt			
PACOV_pt			
MPAEEZ_pt			
AZE_pt			
AGSUB_pt			
POPs_pt			
FORGROINV_pt	124.843	-9.451	0.59
	-8.043	(-3.602)	
FORLOSS_pt			
FORCOVINV_pt			
FSOC_pt	36.354	-1.572	0.721
	-18.861	(-4.827)	
TCEEZ_pt	20.426	-0.328	0.784
	-60.15	(-5.711)	
CO2CAP_pt	18.189	-1.176	0.982
	-57.734	(-22.078)	
CO2GDP_pt	17.392	-0.624	0.851
	-33.711	(-7.158)	
CO2KWH_pt	4.335	-0.03	0.066
	-19.727	(-0.799)	
RENEW_pt			
Oil Cons	1469.893	105.781	0.971
	-40.651	-17.307	

	-315.503	-19.931	
EVAIR	17.486	0.05	0.081
	-52.577	-0.892	
EVWATER			
EVBH			
EVAG			
EVFOREST			
EVFISH	24.902	0.163	0.079
	-22.698	-0.878	
EVCLIMATE	19.888	-0.806	0.938
	-48.749	(-11.681)	
CHMORT_pt	68.847	1.557	0.959
	-108.934	-14.576	
INDOOR_pt			
PM25_pt	87.433	-1.096	0.893
	-116.933	(-8.671)	
WATSUPINV_pt	34.145	0.822	0.978
	-139.976	-19.931	
ACSATINV_pt			
SO2CAP_pt	9.203	-0.02	0.011
	-25.321	(-0.322)	
SO2GDP_pt	25.769	0.12	0.344
	-78.763	-2.172	
WATUSEINV_pt			
PACOV_pt			
MPAEEZ_pt			
AZE_pt			
AGSUB_pt			
POPs_pt			
FORGROINV_pt			
FORLOSS_pt			
FORCOVINV_pt			
FSOC_pt	22.082	0.447	0.128
	-9.626	-1.152	
TCEEZ_pt	27.722	-0.121	0.169
	-52.292	(-1.351)	
CO2CAP_pt	30.286	-1.768	0.962
	-43.979	(-15.191)	
CO2GDP_pt	26.351	-0.509	0.77
	-48.057	(-5.487)	
CO2KWH_pt	0.435	-0.058	0.512
	-3.926	(-3.074)	
RENEW_pt			
Oil Cons	46.104	5.879	0.96
	-19.468	-14.686	

Oil Prod	9456.872	127.4	0.345
	-27.322	-2.178	
Oil Exp	9456.872	127.4	0.345
	-27.322	-2.178	
Oil Rents	6442.7	68.15	0.195
	-24.634	-1.391	

Oil Prod	895.58	-14.228	0.332
	-22.505	(-2.115)	
Oil Exp	870.897	-27.68	0.82
	-35.605	(-6.041)	
Oil Rents	37.336	0.113	0.005
	-12.891	-0.207	

Yemen			
Variable	Cst	Coeff	R ²
EPI	32.789	0.277	0.962
	-301.846	-15.071	
EH	25.939	0.781	0.997
	-306.99	-54.678	
EV	35.725	0.061	0.39
	-238.983	-2.4	
EHEH	27.669	1.424	1
	-605.15	-184.263	
EHAIR	34.377	0.054	0.069
	-87.632	-0.82	
EHWATER	14.041	0.221	0.978
	-212.23	-19.776	
EVAIR	18.699	1.2	0.808
	-16.234	-6.162	
EVWATER			
EVBH			
EVAG			
EVFOREST			
EVFISH	40.754	-0.738	0.429
	-24.257	(-2.598)	
EVCLIMATE	40.749	-0.132	0.634
	-206.814	(-3.951)	
CHMORT_pt	27.669	1.424	1
	-605.15	-184.263	
INDOOR_pt	13.335	0.182	0.887
	-103.973	-8.402	
PM25_pt	55.419	-0.073	0.04
	-77.783	(-.610)	
WATSUPINV_pt	18.095	-0.197	0.962
	-235.298	(-15.158)	
ACSATINV_pt	9.987	0.639	0.978

UAE			
Variable	Cst	Coeff	R ²
EPI	47.375	0.451	0.556
	-59.565	-3.356	
EH	81.886	0.647	0.937
	-247.501	-11.577	
EV	32.585	0.367	0.314
	-30.462	-2.03	
EHEH	76.648	1.606	0.976
	-154.971	-19.209	
EHAIR	89.267	-0.622	0.868
	-186.265	(-7.679)	
EHWATER			
EVAIR	28.557	0.505	0.83
	-63.512	-6.639	
EVWATER			
EVBH	76.454	1.315	0.284
	-18.559	-1.889	
EVAG			
EVFOREST			
EVFISH	34.951	-0.83	0.583
	-25.251	(-3.548)	
EVCLIMATE	2.547	0.055	0.112
	-8.385	-1.068	
CHMORT_pt	76.648	1.606	0.976
	-154.971	-19.209	
INDOOR_pt			
PM25_pt	78.535	-1.244	0.868
	-81.935	(-7.679)	
WATSUPINV_pt			
ACSATINV_pt			
SO2CAP_pt	11.77	0.437	0.834
	-30.639	-6.736	

	-52.317	-19.814	
SO2CAP_pt	30.372	1.043	0.805
	-30.018	-6.1	
SO2GDP_pt	7.025	1.356	0.811
	-5.436	-6.209	
WATUSEINV_pt			
PACOV_pt			
MPAEEZ_pt			
AZE_pt			
AGSUB_pt			
POPs_pt			
FORGROINV_pt			
FORLOSS_pt			
FORCOVINV_pt			
FSOC_pt	51.74	-0.908	0.275
	-17.819	(-1.850)	
TCEEZ_pt	29.768	-0.568	0.707
	-41.334	(-4.664)	
CO2CAP_pt			
CO2GDP_pt	16.501	-0.623	0.859
	-33.081	(-7.394)	
CO2KWH_pt	-0.175	0.577	0.931
	(-0.566)	-11.029	
RENEW_pt			
Oil Cons	97.926	6.249	0.872
	-20.746	-7.832	
Oil Prod	471.425	-19.987	0.921
	-40.974	(-10.277)	
Oil Exp	379.101	-21.145	0.903
	-29.013	(-8.639)	
Oil Rents	36.795	-1.072	0.271
	-10.621	(-1.831)	

SO2GDP_pt	45.343	0.572	0.814
	-84.265	-6.285	
WATUSEINV_pt			
PACOV_pt	76.997	1.409	0.291
	-17.769	-1.924	
MPAEEZ_pt	74.577	0.991	0.25
	-22.027	-1.732	
AZE_pt			
AGSUB_pt			
POPs_pt			
FORGROINV_pt			
FORLOSS_pt			
FORCOVINV_pt			
FSOC_pt	40.085	-1.52	0.612
	-16.805	(-3.770)	
TCEEZ_pt	29.816	-0.14	0.224
	-57.941	(-1.610)	
CO2CAP_pt	6.998	0.101	0.035
	-6.67	-0.569	
CO2GDP_pt	0.648	0.13	0.086
	-0.774	-0.918	
CO2KWH_pt			
RENEW_pt			
Oil Cons	286.552	25.78	0.907
	-17.63	-9.383	
Oil Prod	2515.759	45.87	0.57
	-32.045	-3.457	
Oil Exp	1764.561	61.265	0.571
	-17.612	-3.265	
Oil Rents	16.149	0.496	0.168
	-7.426	-1.349	

Algeria							
Variable	Cst	Coeff	R ²	Variable	Cst	Coeff	R ²
EPI	47.266	0.237	0.582	SO2GDP_pt	49.747	1.785	0.835
	-118.989	-3.537			-31.776	-6.744	
EH	54.379	1.288	0.946	WATUSEINV_pt	30.7		
	-89.171	-12.497		PACOV_pt	37.1		

EV	44.217	-0.213	0.393
	-84.746	(-2.413)	
EHEH	49.449	1.047	0.991
	-255.809	-32.04	
EHAIR	70.988	3.074	0.851
	-28.011	-7.177	
EHWATER	47.631	-0.015	0.102
	-526.079	(-1.010)	
EVAIR	49.425	1.547	0.835
	-36.403	-6.742	
EVWATER	30.7		
EVBH	37.5		
EVAG	61		
EVFOREST	63.163	-2.347	0.435
	-11.968	(-2.631)	
EVFISH	40.401	-1.44	0.735
	-23.698	(-4.998)	
EVCLIMATE	44.368	-0.38	0.956
	-277.254	(-14.042)	
CHMORT_pt	49.449	1.047	0.991
	-255.809	-32.04	
INDOOR_pt	41.976	6.149	0.851
	-8.282	-7.177	
PM25_pt	100		
WATSUPINV_pt	42.493	-0.99	0.953
	-97.927	(-13.504)	
ACSATINV_pt	52.768	0.96	0.973
	-167.064	-17.972	
SO2CAP_pt	49.103	1.31	0.833
	-42.509	-6.708	

MPAEEZ_pt	47.4		
AZE_pt	--		
AGSUB_pt	64.2		
POPs_pt	54.5		
FORGROINV_pt	122.663	-8.448	0.571
	-8.498	(-3.462)	
FORLOSS_pt			
FORCOVINV_pt	21.266	1.407	0.742
	-12.994	-5.086	
FSOC_pt	57.19	-2.846	0.771
	-18.722	(-5.511)	
TCEEZ_pt	23.613	-0.035	0.016
	-44.389	(-3.86)	
CO2CAP_pt	81.648	-0.995	0.976
	-267.535	(-19.289)	
CO2GDP_pt	43.197	-0.164	0.492
	-131.743	(-2.955)	
CO2KWH_pt	4.061	0.119	0.668
	-24.6	-4.255	
RENEW_pt	0.422	0.053	0.188
	-1.944	-1.442	
Oil Cons	200.355	11.117	0.957
	-43.204	-14.182	
Oil Prod	1562.536	48.227	0.683
	-24.132	-4.406	
Oil Exp	865.735	0.808	0
	-6.055	-0.03	
Oil Rents	13.294	0.824	0.382
	-6.428	-2.357	

Appendix II: Regression Results for all, oil exporting and non oil exporting countries

All countries

Variable	Constant	Coef of oil consumption (cos)	Coef of oil rents	R ²
EPI	46.617	0.008	-0.238	0.654
	-99.419	-10.754	(-17.366)	
EH	66.849	0.006	-0.128	0.033
	-31.766	-1.894	(-2.070)	
EV	37.945	0.008	-0.286	0.414
	-41.864	-6.063	(-10.774)	
EHEH	63.275	0.007	-0.01	0.04
	-32.804	-2.563	(-.172)	
EHAIR	82.357	0.007	-0.252	0.074
	-35.05	-1.933	(-3.662)	
EHWATER	58.489	0.002	-0.239	0.042
	-19.491	-0.503	(-2.719)	
EVAIR	35.927	-0.004	-0.146	0.098
	-22.9	(-1.671)	(-3.174)	
EVWATER	14.378	-0.004	0.057	0.046
	-14.606	(-2.657)	-1.988	
EVBH	28.19	0.039	-0.328	0.413
	-11.869	-10.976	(-4.719)	
EVAG	70.254	0.01	-0.495	0.225
	-29.433	-2.714	(-7.081)	
EVFISH	35.365	-0.006	-0.034	0.066
	-26.835	(-2.886)	(-.874)	
EVCLIMATE	40.524	-0.007	-0.007	0.241
	-21.253	(-2.410)	(-2.410)	
CHMORT	63.275	0.007	-0.01	0.04
	-32.8	-2.563	(-.172)	
INDOOR	72.955	0.018	-0.158	0.06
	-20.05	-3.299	(-1.482)	
WATSUPINV	61.003	0.007	-0.414	0.097
	-18.584	-1.364	(-4.311)	
SO2CAP	35.994	-0.007	-0.167	0.102
	-17.642	(-2.255)	(-2.803)	
SO2GDP	35.859	-0.001	-0.124	0.044
	-21.045	(-.375)	(-2.487)	
WATUSEINV	14.378	-0.004	0.057	0.046
	-14.606	(-2.657)	-1.988	
PACOV	15.762	0.045	-0.234	0.428

	-5.986	-11.343	(-3.030)	
MPAEEZ	69.39	0.025	-0.825	0.614
	-39.521	-9.495	(-16.044)	
POPs	57.521	0.036	-0.771	0.254
	-14.338	-5.985	(-6.566)	
TCEEZ	24.57	-0.004	0.051	0.033
	-20.454	(-2.339)	-1.452	
CO2CAP	71.512	-0.016	-0.442	0.167
	-18.685	(-2.757)	(-3.947)	
CO2GDP	38.558	-0.003	-0.429	0.304
	-20.22	(-1.129)	(-7.695)	
CO2KWH	6.306	0	-0.061	0.083
	-11.409	-0.242	(-3.787)	
RENEW	7.023	-0.002	-0.044	0.024
	-6.289	(-1.012)	(-1.358)	

Group 1: oil non-exporting countries				
Variable	Cst	Coef cos	Coef rent	R ²
EPI	43.096	0.01	0.456	0.71
	-95.38	-4.409	-2.866	
EH	69.641	-0.005	0.056	0.012
	-39.976	(-.559)	-0.092	
EV	31.72	0.017	0.627	0.644
	-39.219	-4.035	-2.202	
EHEH	65.138	5	-0.279	0.037
	-93.057	-1.405	(-1.132)	
EHAIR	90.107	-0.037	1.138	0.199
	-39.796	(-3.149)	-1.428	
EHWATER	58.178	0.007	-0.355	0.002
	-13.785	-0.301	(-.239)	
EVAIR	23.593	0.027	0.041	0.876
	-52.39	-11.532	-0.261	
EVWATER	9.094	0.002	-0.079	0.005
	-11.71	-0.49	(-.290)	
EVBH	17.189	0.02	1.416	0.682
	-14.745	-3.371	-3.453	
EVAG	65.083	0.046	-0.322	0.673
	-51.188	-6.885	(-.721)	
EVFISH	28.314	0.019	-0.775	0.091
	-16.359	-2.16	(-1.272)	
EVCLIMATE	41.01	0.001	0.687	0.062

Group2: oil exporting countries				
Variable	Cst	Coef cos	Coef rent	R ²
EPI	49.251	0.007	-0.287	0.712
	-68.636	-9.756	(-16.297)	
EH	65.391	0.007	-0.103	0.028
	-17.051	-1.724	(-1.096)	
EV	42.334	0.007	-0.366	0.476
	-28.853	-4.885	(-10.159)	
EHEH	61.84	0.008	0.017	0.043
	-17.057	-2.145	-0.191	
EHAIR	79.972	0.009	-0.222	0.058
	-19.285	-2.144	(-2.179)	
EHWATER	57.911	0.002	-0.225	0.027
	-11.419	-0.394	(-1.806)	
EVAIR	45.173	-0.006	-0.317	0.249
	-17.217	(-2.220)	(-4.918)	
EVWATER	21.479	-0.004	-0.087	0.112
	-13.493	(-2.355)	(-2.226)	
EVBH	46.912	0.041	-0.718	0.535
	-12.277	-10.67	(-7.649)	
EVAG	66.198	0.006	-0.387	0.104
	-15.411	-1.522	(-3.671)	
EVFISH	40.827	-0.007	-0.135	0.166
	-19.231	(-3.129)	(-2.599)	
EVCLIMATE	33.837	-0.009	-0.171	0.127

	-21.632	-0.127	-1.03	
CHMORT	65.138	0.005	-0.279	0.037
	-93.057	-1.405	(-1.132)	
INDOOR	78.108	-0.025	2.368	0.035
	-15.888	(-.974)	-1.369	
WATSUPINV	61.055	0.01	0.453	0.022
	-13.171	-0.419	-0.278	
SO2CAP	25.834	0.035	-0.416	0.742
	-33.503	-8.643	(-1.533)	
SO2GDP	21.352	0.019	0.499	0.719
	-30.654	-5.343	-2.035	
WATUSEINV	9.094	0.002	-0.079	0.005
	-11.71	-0.49	(-.290)	
PACOV	1.885	0.04	0.602	0.953
	-4.07	-16.753	-3.69	
MPAEEZ	66.665	0.021	0.476	0.095
	-18.258	-1.119	-0.37	
POPs	50.086	0.191	-11.869	0.598
	-11.778	-8.605	(-7.932)	
TCEEZ	15.445	0.018	0.015	0.146
	-8.253	-1.808	-0.022	
CO2CAP	74.207	0.018	0.146	0.09
	-26.835	-1.267	-0.15	
CO2GDP	40.404	-0.024	1.765	0.068
	-15.269	(-1.763)	-1.896	
CO2KWH	4.335	-0.002	0.725	0.601
	-13.585	(-1.401)	-6.46	
RENEW	1.639	0.025	-0.603	0.604
	-2.51	-7.284	(-2.626)	

	-10.377	(-2.752)	(-2.139)	
CHMORT	61.84	0.008	0.017	0.043
	-17.057	-2.145	-0.191	
INDOOR	70.909	0.019	-0.127	0.075
	-11.5	-3.102	(-.842)	
WATSUPINV	57.055	0.005	-0.325	0.047
	-10.368	-0.99	(-2.407)	
SO2CAP	39.508	-0.01	-0.216	0.133
	-10.752	(-2.642)	(-2.390)	
SO2GDP	50.838	-0.002	-0.418	0.304
	-19.667	(-.751)	(-6.587)	
WATUSEINV	21.479	-0.004	-0.087	0.112
	-13.493	(-2.355)	(-2.226)	
PACOV	37.294	0.046	-0.678	0.524
	-8.743	-10.881	(-6.471)	
MPAEEZ	71	0.024	-0.853	0.672
	-29.257	-10.087	(-14.312)	
POPs	53.039	0.033	-0.647	0.218
	-8.068	-5.108	(-4.008)	
TCEEZ	32.325	-0.005	-0.096	0.159
	-19.438	(-3.199)	(-2.355)	
CO2CAP	53.88	-0.02	-0.052	0.088
	-8.163	(-3.101)	(-.320)	
CO2GDP	35.663	-0.004	-0.37	0.203
	-11.266	(-1.183)	(-4.756)	
CO2KWH	7.897	0	-0.091	0.121
	-8.052	(-.168)	(-3.787)	
RENEW	8.752	-0.003	-0.067	0.05
	-4.387	(-1.578)	(-1.366)	

Appendix III: Chow-Test for Comparisons between non oil and oil exporting countries

		SSR	k	N	S1+S2	Sc-(S1+S2)	N1+N2-2k	Den	Num	F
EPI	Comb.	2913.579	3	176	2178.292	735.287	170	12.813	245.096	19.128 (**)
	Group 1	280.727	3	55						
	Group 2	1897.565	3	121						
EH	Comb.	58687.97	3	176	58372.74	315.227	170	343.369	105.076	0.306
	Group 1	4172.973	3	55						
	Group 2	54199.77	3	121						
EV	Comb.	10887.58	3	176	8832.828	2054.752	170	51.958	684.917	13.182 (**)
	Group 1	899.486	3	55						
	Group 2	7933.342	3	121						
EHEH	Comb.	49304.28	3	176	49115.21	189.077	170	288.913	63.026	0.218
	Group 1	673.742	3	55						
	Group 2	48441.47	3	121						
EHAIR	Comb.	73166.61	3	176	70425.18	2741.43	170	414.26 6	913.81 0	2.206
	Group 1	7049.597	3	55						
	Group 2	63375.59	3	121						
EHWATER	Comb.	119331.4	3	176	119282	49.442	170	701.659	16.481	0.023
	Group 1	24491.75	3	55						
	Group 2	94790.25	3	121						
EVAIR	Comb.	32600.61	3	176	25648.37	6952.242	170	150.873	2317.414	15.360 (**)
	Group 1	278.845	3	55						
	Group 2	25369.52	3	121						
EVWATER	Comb.	12841.87	3	176	10167.08	2674.792	170	59.806	891.597	14.908 (**)
	Group 1	829.283	3	55						
	Group 2	9337.796	3	121						
EVBH	Comb.	74756.23	3	176	55679.2	19077.03	170	327.525	6359.009	19.415 (**)
	Group 1	1868.444	3	55						
	Group 2	53810.76	3	121						
EVAG	Comb.	75500.18	3	176	70217.48	5282.7	170	413.044	1760.900	4.263 (**)
	Group 1	2222.842	3	55						
	Group 2	67994.64	3	121						
EVFISH	Comb.	23016.63	3	176	20728.67	2287.959	170	121.933	762.653	6.255 (**)
	Group 1	4119.24	3	55						
	Group 2	16609.43	3	121						
EVCLIMATE	Comb.	48178.94	3	176	44123.05	4055.889	170	259.547	1351.963	5.209 (**)
	Group 1	4942.195	3	55						
	Group 2	39180.85	3	121						
CHMORT	Comb.	49304.28	3	176	49115.21	189.077	170	288.913	63.026	0.218
	Group 1	673.742	3	55						

	Group 2	48441.47	3	121						
INDOOR	Comb.	175399	3	176	173342.7	2056.302	170	1019.663	685.434	0.672
	Group 1	33231.57	3	55						
	Group 2	140111.2	3	121						
WATSUPINV	Comb.	142800.2	3	176	141152.2	1647.982	170	830.307	549.327	0.662
	Group 1	29547.9	3	55						
	Group 2	111604.3	3	121						
SO2CAP	Comb.	55161.48	3	176	50574.29	4587.19	170	297.496	1529.063	5.140 (**)
	Group 1	817.598	3	55						
	Group 2	49756.69	3	121						
SO2GDP	Comb.	38478.31	3	176	25290.97	13187.34	170	148.770	4395.781	29.547 (**)
	Group 1	667.165	3	55						
	Group 2	24623.8	3	121						
WATUSEINV	Comb.	12841.87	3	176	10167.08	2674.792	170	59.806	891.597	14.910 (**)
	Group 1	829.283	3	55						
	Group 2	9337.796	3	121						
PACOV	Comb.	91898.56	3	176	67348.87	24549.69	170	396.170	8183.229	20.656 (**)
	Group 1	295.075	3	55						
	Group 2	67053.79	3	121						
MPAEEZ	Comb.	40854.32	3	176	40034.12	820.2	170	235.495	273.400	1.161 (**)
	Group 1	18330.9	3	55						
	Group 2	21703.22	3	121						
POPs	Comb.	213296.2	3	176	184135.1	29161.04	170	1083.148	9720.347	8.974 (**)
	Group 1	24866.39	3	55						
	Group 2	159268.7	3	121						
TCEEZ	Comb.	19123.13	3	176	15007.09	4116.04	170	88.277	1372.013	15.542 (**)
	Group 1	4815.469	3	55						
	Group 2	10191.63	3	121						
CO2CAP	Comb.	194118.9	3	176	171073.2	23045.64	170	1006.313	7681.881	7.634 (**)
	Group 1	10515.05	3	55						
	Group 2	160558.2	3	121						
CO2KWH	Comb.	4048.125	3	176	3685.254	362.871	170	21.678	120.957	5.579 (**)
	Group 1	139.999	3	55						
	Group 2	3545.255	3	121						
CO2GDP	Comb.	48156.49	3	176	46556.53	1599.96	170	273.862	533.320	1.947
	Group 1	9628.36	3	55						
	Group 2	36928.17	3	121						
RENEW	Comb.	16523.6	3	176	15251.57	1272.029	170	89.715	424.010	4.726 (**)
	Group 1	586.74	3	55						
	Group 2	14664.83	3	121						