

## Energy exports, globalization and economic growth: Evidence from OPEC countries



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### ARTICLE INFO

#### Article history:

Received 14 July 2017

Received in revised form

12 December 2017

Accepted 14 December 2017

#### Keywords:

Political globalization

Social globalization

Economic globalization

Economic growth

Panel data

### ABSTRACT

This study has examined the effects of globalization and energy exports on economic growth using panel data among twelve OPEC countries by 1980-2015. The results show that the energy exports growth among OPEC countries in 1980-2015. Moreover, the mixed variables of energy exports and the globalization in all aspects have a significant positive effect on economic growth. In addition, fertility rate, life expectancy, government consumption costs, money, quasi-money, and fixed gross fund have a significant negative effect on economic growth in these countries. Furthermore political and social globalization on economic growth among the other negative factors is more and less respectively.

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### 1. Introduction

Kacowicz (2007) defined globalization as cultural, social, and political relationships increasing beyond national boundaries. Barro and Gordon (1983) believed that globalization is a process in which national boundaries are getting merged. National economics, cultures, technologies, and governments become integrated and also sophisticated reciprocal relationships are made. Globalization has economic, social, and political aspects but the alternations which made by globalization has been occurred more in the economic field. The most important features of globalization that influencing economics are the globalization of economic behavior and using global business as an economic development motivator, the centralization and the competition. International monetary fund defines globalization more extensive and comprehensive. In other words, it assumes the globalization as the growth of reciprocal dependency of countries' economics all over the world by increasing the rate and varieties of goods and services transactions and also fund streaming beyond boundaries by wide technology distribution. Social globalization merges cultural boundaries. Immigrations and tourisms industry, globalization of life norms and global mutual values are all the symbols of social globalization. Generally, the

policies of each country emerge from its internal policy systems and national governments undertake final responsibilities to protect economics security and amenity inside their boundaries. Political globalization leads to increase international institutions role on the general policies of countries and equalize the policies inside countries. In addition, energy is one of the most important production institutions in all industries and also all countries' productions are attaching it; thus it has significant effects on economic growth of all countries in the world. OPEC countries have huge energy resources and their economics is hanger on oil resources. Moreover, globalization is a phenomenon that it has great impact on their economics. Energy exports and globalization on the bases of countries economic structures can have positive or negative effects on economic growth. In other words, if exporter countries in energy could manage their export incomes properly, they can use it for their economic growth. The globalization can have different influence on the economic growth in OPEC countries depending on their economic structure. Therefore, the present study shows the effects of energy export and the economic, social, and political globalization on economic growth of OPEC countries (Saudi Arabia, Iraq, Iran, Aljazeera, Algeria, United Arab Emirates, Libya, Ecuador, Qatar, Venezuela, Angola, and Nigeria) in 1980-2015. The purpose of this article is answering to this question whether energy export and economic, political, and social globalization have positive or negative effects on OPEC countries?

So this article has organized in several parts. The theoretical bases and then research background

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<https://doi.org/10.21833/ijaas.2018.02.019>

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knowledge are discussed. Part 4 is the Data and methodological framework, and part 5 is the model estimation and finally the conclusion are disserted.

## 2. Theoretical bases

### 2.1. Globalization

One of the most significant evolutions in recent years is convergence and combination of national economics in global economics which has gone along with technological and information technology progresses which have gone along with the liberalization policies conditions (Islam and Meade, 2012). Globalization includes political, social and economic aspects and actually it should be known similar to a new social system that can have different performances in various aspects. It can be claimed that it is all behaviors setter and even confrontations and challenges in relationships among societies and governments. According to international monetary fund (1997), Globalization includes countries daily dependency on each other for increasing and having varieties of good and services transactions among countries, circulation of global fund simultaneously by developing technology. The most important features of globalization which influences economics is globalization economic behaviors, using global business as economic development motivator, centralization, and competition. Generally, globalization has positive and negative effects on economic growth according to countries economic structure, developing rate, and the ways of managing it.

### 2.2. Economic globalization

Islam and Maede (2012) believed that economic globalization is a process of combination the national economics in a pervasive global economics in which productivity factors (work force and capital), technology, and information pass freely from geographical boundaries and the products (including goods and services) enter freely in countries. The main features of this process is dependency on marketing system, privatization, and have a free conditions in various aspects including business, financial markets, foreign direct investment resealing. The common conception of economic globalization is equivalent to the internationalization that comes along with international transactions and interactions.

#### 2.2.1. Positive effects of economic globalization

Positive effects of economic globalization are as follows:

- Economic openness: Rao and Vadlamannati (2011) generally believed that countries with opener economics have higher economics' growth. This issue is originated from business competition efficiency, benefits and advantages of privatization, technology and organizational improvement. In other words, these countries can obtain the best global ideas by least costs and this is a great benefit to countries from globalization.
- Technology transferring: According to exogenous and endogenous models, technology is an effective factor on economic growth. Economic globalization underlies technology transformation and this followed by increasing economic growth in developing countries.
- Competition increase: The international competition increase is one of the Positive effects of economic globalization, competition increase leads to economic efficiency increasing in internal and international levels. Since competition is the most important factor in increasing system efficiency that it can lead to economic growth.
- Extension in international work division: Since the developing countries have a huge work force, the Globalization provides better conditions for work division and they can be specialized in goods user. On the other hand, developed countries can increase their specialization in capital-used goods and also their workers can participate in production with more productivity. Consequently, both groups can use global work division. By this and by deleting business obstacles in capital movement and financial resources fields, international work division will increase and it will help to productivity growth.
- Intentional business: On the bases of classic economists' theories, there are more amenities after business. According to the comparative advantage of Ricardo, companies can improve their amenities by importing a good with less absolute advantage and exporting a good with more absolute advantage. Globalization boosting increases international business, consequently, economic growth is increasing. Stiglitz (2004) emphasized on economics as one the positive aspects of globalization. By business releasing and economic globalization, unemployment rate reduces and employment increases which these are positive aspects of globalization. Business releasing and economic globalization have a significant effect on reducing unemployment and increasing employment rate.
- Foreign direct investment (FDI): Foreign direct investment is a potential resource for growing in employment and economic. Foreign direct investment is one of the effective factors in economic growth based on the new theories such as endogenous growth. FDI emphasizes human capital transfer (ILO, 1999). We can produce new technologies and utilize them for economic growth by attracting foreign investment.
- Financial liberalization: Financial liberalization is one of the globalization effects. Based on economic theories on competition and efficiency

models of marketing, it can be claimed that financial liberalization leads to faster economic growth and economic development. Some economist such as Bekaert et al. (2005) and Henry (2000) believed that financial liberalization causes coming of foreign investment, capital marketing progress, increasing in internal investment, and consequently economic growth. Mac Kinnon (1973) and Shaw (1973) emphasized on removing limitations in financial market and they state that financial liberalization causes increasing in capital efficiency and depositories rates and by this we increase saving and resources consequently increase the investment which it leads to economic growth.

- Privatization: Privatization is one effect of globalization. According to economic theoretical bases, privatization can influence of economic growth by 2 infrastructural deductions: first, indirect channels, micro economics aspect, efficiency effect and agency organization can increase economic growth. For example, more centralized ownership and better supervision by managers on private sectors lead to significant improvement in agency productivity and this has significant role in economic growth; secondly, privatization could impact economic growth by a direct channel and it could influence on macroeconomics variables such as governmental and foreign direct investments known as institutions.

### 2.2.2. Negative aspects of economic globalization

Stiglitz (2004) believed that identity crisis or cultural crisis, dependency, habits or previous life procedures changes, freedom restraining of people, dominance reduction of national governments following reduction in importance of political, geographical, and cultural boundaries, increase poverty and unbalanced incomes distributions, instability of cultural system, and more limitation of authorities and power of national governments in the third world countries, occurrence of global problems such as environment pollution, warming earth, AIDS, terrorism, international trafficking and other problems are negative effects of globalization.

In addition, Easterly et al. (1997) believed that globalization can increase the risk and reduces economic growth. Countries undertake heavy costs without considering exchange rate, intensive capital interring and then its intensive output. Actually, agencies ask for the risk reward against high changes in price of inputs and outputs that this has a negative effect on investment and growth.

### 2.3. Political aspect of globalization

In political view, the globalization has significant effects on political relations and culture in global level. The significant parts of globalization in

political era in the world level are promoting cosmopolitan in international and family relationships level, promoting democracy and political culture growth on global level, changing traditional power of societies to a competitive and systematic power, citizenship rights growth and extension, awareness growth and reinforcement of society in civilized society framework, evolution in political visions, change in attitude toward political life, beliefs, thoughts, and values in macro and international levels, selection of freedom in framework of political development models and information transferring. The idea of global citizenship that is pivotal conception of cosmopolitan, evokes global responsibility sense to cope with ecology problems and eradicate global poverty, remove philosophy of many international existence by weakening ethical, religious, and national existence such as international war that capital making and investment in war period doesn't usually have significant prosperity, because as a war result, future landscape is vague and sometimes dark. So for reduction in investment, growth reduces, because investment is one of growth element in economic systems.

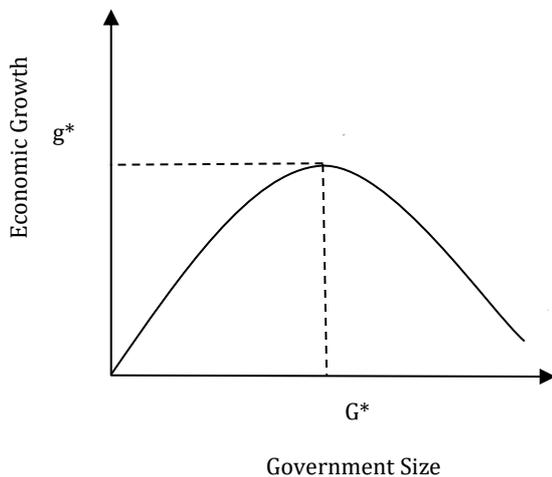
### 2.4. Social-cultural aspect of globalization

It can be claimed about social-cultural aspect that ecological movements, peace movements and so on cooperate in global aspect; but the possibility of these transactions and awareness depends on transnational development. This fact not only leads various news of world people and groups awareness about problems of other places and their reciprocal connection all over the world, but also it facilitates mutual cooperation among local sectors of a movement and reinforces transnational connections inside them. Another importance note is that immigrants to western industrial countries keep their relationships with friends and families that can be an important factor in political, religious, and national struggles in those countries which is effective on their economic growth. In addition, it can be claimed about social globalization that social globalization can be trigger of citizenship rights development and growth. Although, activities are individually, but their resultant help toward social condition progress that is effective on countries economic growth.

One of important effects of globalization is no culture field in a way boundaries and limited spaces collapse leads to culture confrontation and making global culture which are integrated by impacting with other cultures. Some others have rough and struggling view about invader culture. Some of cultures yield to peaceful coexistence and the others know cultural interaction and they get an inevitable conversation. It is right that the globalization process leads to integration, coherence and removing diversities, but it makes other types of coexistence, connections, mixtures make differences.

## 2.5. Social-political aspect effects of globalization on economic growth

Generally, globalization from social-political aspect leads to effectiveness of beneficiaries groups on governments. Consequently, amount of government concentration on economic activities reduces and this is an effective fact on economic growth. To explain this fact, we can use Army curve in reverse U shape (Fig. 1). This curve shows the reverse relationship between government and GDP growth.



**Fig. 1:** reverse relationship between government and GDP growth

Government can have positive effect on economic growth to a certain limitation, without it, government size increase is harmful. Therefore, there is an optimum size for government and consequently if the government size decreases, there is a correct combination of governmental and private decision makings about resources attribution and production increases. This feature can be imagined when government is small; therefore, the initial steps of government expenses growth is with income level increase and economic growth positive rates, but by increase in government size, descendent return law starts, taxes and tariffs increase to provide governments financials will have reverse effects on economic structures. Simultaneously, governments transferring payments increases and this increase have changed into non-motivator effects. By increasing in costs, government attracts lot amounts of national income and reduces national production.

## 2.6. Globalization index

In this research, KOF index is used for globalization. KOF was introduced for the first time in 2002 and then it was updated and its details were provided by Dreher et al. (2008). KOF index include economic, social, and political aspects. The role of social KOF is 36%, social KOF is 37%, and political KOF is 26% that economic KOF includes 50% of real stream and 50% limitation that real stream includes

21% business, 28% foreign investment, 24% portfolio investment, and 27% payment to foreign citizens. Limitation includes 24% hidden obstacles of export, 27% average tariff rate, 26% taxes on international business, 23% limitation capital account. Social KOF includes 34% related information to person includes 35% data related to information stream and 31% information related to cultures adjacency that related information to person includes 25% telephone traffic, 3% transportation and transferring as a percentage of (GDP), 26% international tourism, 21% foreign population (percentage of total population), and 24% is international letters (capitation). Related data to information stream includes 33% of internet users (in per 1000 persons), 36% is television (in per 1000 persons), and 31% is business in newspapers (percentage of GDP). Related information to cultural adjacency includes 45% McDonald restaurants (capitation), 45% number of Ikea stores, and 10% business in book (GDP percentage). Political KOF includes 25% embassies in state, 28% membership for economic organization in international organizations, 22% is for participation in emissions of U.N Security Council, and 26% international contracts. Generally, economic globalization reduces goods, capital, services, and also information turning distance. Political globalization indicates government policies publication. Social globalization indicates ideas, information, images and people extension. All indexes of globalization are in range 0 to 1. (Higher amounts show more globalization).

## 2.7. Economic growth

Economic growth includes increasing in national income or gross domestic production (GDP) of a society in certain period that it is usually measured as percentage in increasing national gross production or national gross income (Basu, 1997). It can be stated that related studies to economic growth includes 3 classes that each one is different from the others according to history and methodology. The first stream is classic one that formed in 18<sup>th</sup> century by David Hume and Adam Amith and it was finished in the middle of 19<sup>th</sup> century by Stuart Mill and Carl Marz. The second classic stream was explored after World War II by new statistical method. They considered technology development as a production growth endogenous factor. The third one is the newest stream that it is an endogenous stream which rejects classic and it is neoclassic assumptions by ideal markets and descendant return of factors especially the capital. Endogenous growth emphasizes on this notion that economic growth is an economic system that the result not to inter forces from out on it and activities based on innovation are considered as a main engine for technological advances and economic growth (Solow, 1956).

Generally, endogenous growth models are mainly divided into 2 main classes: The first class is RandD

emphasizing on research and development, knowledge production and its effects on goods and services production can know Romer as its precursor. The second class is human capital model that it is emphasizing on role of human force quality and related indexes that Lucas had a great role in this model expansion.

### 3. Research background

Dollar and Keraay (2002) explored globalization effects on economic growth of developing countries using panel data. Result has shown that countries with higher globalization index have higher economic growth.

Lancaster (1976) explored the relationship between globalization and regionalism in small economics. In this research, effective factors on economic growth are explored in these types of countries and factors such as social capital, economics openness, social cohesion, social power, and political power have been emphasized. Research results indicate positive and significant relationship with economic growth.

Stiglitz (2004) explored the relationship between economic growth and globalization in new-arrival economics. Findings show that in non-optimum management, globalization will have negative effect on economic growth in developing countries.

Gomes (2006) in a research explored financial globalization on economic growth in 23 countries in 1983-2001 using panel data. Research results have shown that financial globalization has positive and significant effect on economic globalization in these countries (Gomes, 2006)

Basu (2006) proposed 2 suggestions referring to globalization problems makes in poverty increase. First, participation of unemployment in this process of dividends and second, formation of an organization with high execution power to fight with poverty eradication policies and cooperation (Basu, 2006).

Rao and Vadlamannati (2011) in a research explored political, social, and economic effects on economic growth. Panel data method was used; statistical population was 21 African low-income countries in 1992-2010. Results show that globalization has a little significant and positive effect on growth (Rao and Vadlamannati, 2011).

Chang et al. (2013) explored energy export effect and globalization on economic growth using Least Square Dummy Variable (LSDV) method in a panel from 5 south Caucasus countries (Azerbaijan, Armenia, Georgia, Russia and Turkey) in period 1990-2009 and research results show that energy export, global cohesion and their interactions have positive and significant effects in south Caucasus countries (Chang et al., 2013).

Gurgul and Lach (2014) explored various aspects of globalization on economic growth in ten economics of CEE results showing in the internet, TV, and newspapers (social aspects of globalization) have positive effect on economic development in

CEE economics that increase international business, foreign investment growth, reduction import obstacles and tax policies development (economic aspect) (Gurgul and Lach, 2014).

### 4. Data and methodological framework

In this model effect of energy export and globalization was explored using generalized methods of moment (GMM). GMM is one of estimation model for model parameters in dynamic panel data approach that is usable for time, section, and panel data series. This method considers dynamic mediation effects of dependent variable. If dependent variable entered in model with lag, it will lead to correlation interruption between descriptive (regressive) variables and sentences. Consequently using ordinary least square method shows torched and maladapted results. The generalized model of moments can use tool variables to remove this defect. For mathematical and algebraic statement of GMM, we consider the following dynamic model:

$$Y_{it} = \alpha Y_{it-1} + \beta' X_{it} + \eta_t + \phi_t + \varepsilon_{it} \quad (1)$$

In mentioned relation, Y is dependent variable, X is descriptive variable,  $\eta$  indicates individual effect or countries constant,  $\phi$  is time constant effects,  $\varepsilon$  interruption term, i and t are indicator of country and time period, respectively. It is assumed in model (1) that disruption terms have correlation with people or countries constants effects and lag amounts are not dependent variables. If  $\eta$  has correlation with some descriptive variables, one proper method to delete constant and individual effects is using first order difference, because in using method with constant effect it will lead to torched nasty estimation. It is necessary to get difference from relation (1); therefore, in this condition, relation (1) changed to the following relation:

$$\Delta Y_{it} = \alpha \Delta Y_{it-1} + \beta' \Delta X_{it} + \Delta \phi_t + \Delta \varepsilon_{it} \quad (2)$$

In relation (2), lagged difference of dependent variable ( $\Delta Y_{it-1}$ ) by first order difference of disruption terms ( $\Delta \varepsilon_{it}$ ) has correlation and also endogenous problem related to some descriptive variables is not considered in model. Therefore, it is necessary to remove this problem using tool variables inn model. Therefore, moment conditions are true about relation (2):

$$E(Y_{it-s}, \Delta \varepsilon_{it}) = 0 \quad S \geq 2; t = 3, 4, \dots, T \quad (3)$$

$$E(X_{it-s}, \Delta \varepsilon_{it}) = 0 \quad S \geq 2; t = 3, 4, \dots, T \quad (4)$$

To estimate parameters of relation (2), tool variables matrix has been used:

$$z_i = \text{diag}(Y_{i1}, Y_{i2}, \dots, Y_{it-2}, X_{i1}, X_{i2}, \dots, X_{it-2}) \quad (5)$$

Therefore, GMM dynasties estimation shown by  $\delta$  is defined as following:

$$\hat{\delta} = (B' z A_N z' B)^{-1} B' z A_N z' Y \tag{6}$$

In the rest after estimation, it is necessary to use [Sargan \(1958\)](#) test to explore creditability of defined tools variables in model and extra-clearance of equation. Moreover, self-regression order of disruption terms should be tested, because difference methods of first order to delete constant effects are proper when self-correlation order of disruption term isn't second order. [Sargan \(1958\)](#) test asymptotically has  $X^2$  defined as following:

$$S = \hat{\varepsilon}' z (\sum_{i=1}^N z_i' H_i z_i)^{-1} z' \hat{\varepsilon} \tag{7}$$

In this test,  $Y = X\hat{\delta}$ ,  $\hat{\delta}$  is  $k \times 1$  matrix,  $Z$  is tool variables matrix,  $H$  is square matrix with  $(T-q-1)$  dimensions that  $T$  is number of observation and  $q$  is number of mode descriptive variables. In this test, if  $H_0$  is not rejected, defined tool variables in model will be valid and don't need to more tool variables definition. But if  $H_0$  is rejected, defined tool variable are improper and is insufficient and more proper tool variables should be defined for model ([Baltagi, 2008](#)) to obtain more efficient results, extra descriptive variables are included in model such as government final consumption expenditures a percentage of domestic gross production (government, money and quasi money (M2) as a percentage domestic gross production (money),

gross capital making as a percentage of domestic gross production (capital), life expectancy at birth (life), fertility rate (productivity). Based on theoretical bases and literature, and research empirical model of this study have determined the relationship between energy export, economic, social, and political globalization and economic growth explicitly as following:

$$Y_t = C + \beta_1 Y_{t-1} + \beta_2 \text{Energy} + \beta_3 \text{Fertility} + \beta_4 \text{Government} + \beta_5 \text{Capital} + \beta_6 \text{Money} + \beta_7 \text{Life} + U_t \tag{8}$$

That  $Y_t$  is grow rate of GDP,  $Y_{t-1}$ : Annual growth rate of GDP for previous period, Energy: is energy, Fertility: is productivity rate, birth rate, government: is final consumption expenditures of government, capital is gross capital, Money is money and quasi money, Life: is life expectancy at birth. All related data was extracted from global bank.

### 5. Model estimation

According to the importance of oil in economic growth and development, OPEC countries have been explored in this study. Then GMM test in [Table 1](#) have been used in 1980-2014. All data was extracted from global bank ([Fig. 2](#)).

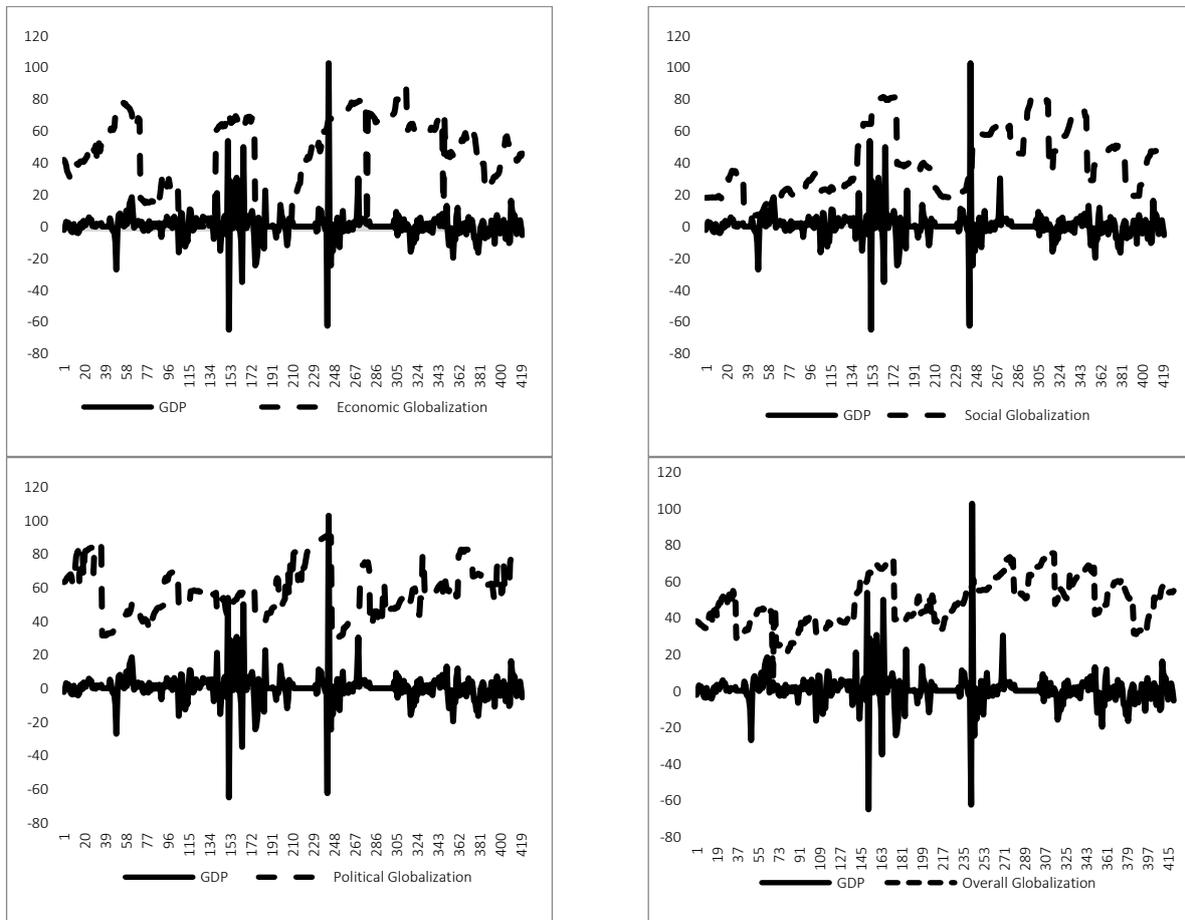


Fig. 2: Globalization aspects and GDP

**Table 1:** GMM estimation results of models for OPEC countries

Models Independent variable	1	2	3	4
GDP(-1)	0.0121 (0.365)***	0.0153 (0.266)***	0.0178 (0.188)***	0.01746 (0.179)***
Energy	0.0058 (0.000)*	0.0069 (0.000)*	0.0079 (0.000)*	0.0077 (0.000)*
Fertility	-0.0004 (0.000)*	-0.0005 (0.000)*	-0.0004 (0.000)*	-0.0003 (0.000)*
Government	-1.1397 (0.019)*	-2.7022 (0.002)*	-1.8840 (0.029)*	-2.2014 (0.007)*
Capital	-1.8284 (0.042)*	-3.4357 (0.000)*	-2.5142 (0.005)*	-2.7551 (0.001)*
Money	-0.7590 (0.027)*	-0.6726 (0.093)**	-0.7909 (0.025)*	-0.6548 (0.064)**
Life	-0.0061 (0.000)*	-0.0028 (0.000)*	-0.0032 (0.001)*	-0.0050 (0.001)*
KOF Economic	-0.0708 (0.000)*			
KOF Social		-0.0251 (0.001)*		
KOF Political			-0.0016 (0.013)*	
KOF Total				-0.0027 (0.058)**
Energi*Kof E	0.0243 (0.038)**			
Energi*Kof S		0.0233 (0.029)*		
Energi*Kof P			0.0381 (0.001)**	
Energi*Kof T				0.0314 (0.005)*
Sargan (1958) test (p- value)	32.4538 (0.855)	46.5619 (0.290)	42.671 (0.442)	45.3569 (0.33)
Arellano and Bond (1991) test (1) (p- value)	-2.0910 (0.036)	-2.0548 (0.039)	-2.0186 (0.043)	-1.8684 (0.061)
Arellano and Bond (1991) test (2) (p- value)	-2.1917 (0.284)	-1.1713 (0.241)	-1.3013 (0.193)	-1.6210 (0.105)

The p-values are presented in brackets. \*, \*\* and \*\*\* indicate statistical significance at the 1%, 5% and 10% level, respectively

Sargan (1958) test has been used to determine any types of tools and errors. There shouldn't be correlation between tools and error terms for tools to be valid. H0 test tools validity to the extent errors aren't first order in difference equation. Here, Sargan (1958) test results show non-rejection H0 and validity of defined tool variables; therefore, model doesn't need to any other tools. It is better to say, there is no correlation between defined tools variables and constant or individual effects of countries. In the rest, Arellano and Bond (1991) test statistics has been used to determine self-correlation of disruption terms. It seems that H0 is not rejected for non-existence of self-correlation in difference disruption terms so Arellano and Bond (1991) method is a proper method to estimate model parameters and deleting constant effects. In other words, by one order of difference from disruption terms, series correlation was deleted from terms elements and differed disruption terms don't have first and second order of self-correlation.

Lag in dependent variable is positive and significant by assumption of other conditions being constant. It means economic growth is related to previous periods. It means with more growth in previous periods, this growth will continue in future that shows growth dynamic. Energy export variable is positive and significant by assumption of other

conditions being constant. It can be for this reason that energy exports motivator force of most service and productive activities can have a certain status in economic development and growth. Export increase of each energy carriers will be economic growth motivator. If OPEC members' countries manage incomes from oil resource export properly, they can use it for economic growth. Birth rate variable coefficient is negative and significant by assumption of all other conditions be constant, because if population growth is not proper with other factors growth, it will lead to economic growth. Gross capital making coefficient is negative and significant by constant assumption of all other factors, maybe because investment capital in these countries which are mostly governmental leads to reduction in private sector role and reduction in economic growth according to its substantial effect. Money and quasi money coefficient is negative and significant by constant assumption of all other factors maybe because society liquidity increase, if not aligned with domestic gross production, is intensifying factor of inflation, instability and reduction in economic growth. Government consumption coefficient by constant assumption of all other conditions is negative and significant, it maybe because government expenditures misleading to non-productive and non-productive fields. In addition,

too much interference of government in economic reduces productivity and people efficiency. Bureaucratic inflexible methods and processes lead to stop creativity and innovation potential.

Economic globalization by constant assumption of other conditions is negative and significant. Globalization can increase risk and reduce economic growth. Without considering exchange rate regime, intensive interring of capital then intensive exit makes heavy costs on country. Actually, agencies demands risk against high changes in input and output prices that has negative effect on investment and growth.

Social globalization by constant assumption of other conditions is negative and significant that can origin from identity crisis or cultural crisis, dependency, previous life habits and procedures, reduction national government dominance then reduction of political, geographical, cultural importance, limitation of authorities and power of national governments, poverty, unequal income distribution, instability in cultural system especially in the third world countries.

Political globalization is negative and significant by constant assumption of other conditions. In other words, by constant assumption of other conditions, there is reverse relationship between political KOF and GDP growth rate that can originate from getting under the pressure of multi-national companies followed by government are obliged to scarify benefits from economic growth for their multi-national wills. Total globalization effect on economic growth by constant assumption of other conditions is negative and significant. In addition, a combined variable of energy export and economic, social and political globalization and total globalization by constant assumption of other conditions is positive and significant on economic growth. Actually, if globalization is with more energy export, it has positive effect on economic growth.

## 6. Conclusion

Energy export as the main resource of national income for OPEC countries and globalization as one of the most important issues in the world can influence economic growth significantly. In this research, energy export and globalization has been explored on OPEC countries during 1980-2015. The results show that energy export variable has positive and significant effects. This result is consistent with Chang et al. (2013), Elkind (2005), and Kruyt et al. (2009) findings.

Globalization variables such as economic, social, political, and total globalization have positive effect on economic growth. This result is consistent with Islam and Meade (2012) and Gawor (2008) findings.

In addition, combined variables of energy export and globalization in all globalization aspects have positive and significant effect on economic growth.

Birth rate variable have negative and significant effect on economic growth. This result is consistent with Gurgul and Lach (2014) findings.

Life expectancy variable has negative and significant effect on countries economic growth. This result is consistent with Meissner (2014) findings.

Government consumption expenditures variable have negative and significant effect on economic growth. This result is consistent with Chang et al. (2013) findings.

Money and quasi money have negative and significant effect on economic growth of countries. This result is consistent with Chang et al. (2013) findings.

Making gross constant capital variable have negative and significant effect on economic growth of countries. This result is consistent with Stiglitz (1999) findings.

In addition, political and social globalization as a negative effect on economic growth is stronger and weaker than other aspects of globalization, respectively.

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