

The Role of Government Health and Education Expenditure on Economic Growth in Iran and OPEC Countries

Ebrahim Anvari^{1*}, Abdol Majid Ahangari², Elham Jafari³

Received: 2018, December 5

Accepted: 2019, March 13

Abstract

Economic growth is one of the goals of development in the economic plans of every country. Achieving self-development in OPEC member takes precise awareness of the amount and cause of the impact of economic variables on each other and it is, determining the policies and efficient, appropriate strategies for each case. Among these variables, oil revenues, total government expenditure, government expenditure for education, government expenditure for health, and economic growth could be mentioned. An examination of the trend of changes in health expenditure in Iran shows up until 2011. After that, there has been a leap in these expenditures. The share of government education expenditure in the total government budget in Iran has been showing a steady decline in these expenditures. panel data, we study the relationship between health expenditure and education expenditure and economic growth in OPEC countries and Iran from 2004 to 2016. Hence, the panel data method has been applied to estimate models and the panel VAR method has been applied to examine the causality relationships between variables. The results show a positive meaningful relationship between oil revenues, total government expenditure, government expenditure for education, government expenditure in health, and economic growth of OPEC countries and Iran. Furthermore, the result of the Granger Causality test suggests that there is a practical, mutual relationship between oil revenues and economic growth, total government expenditure and economic growth, and also a practical one-sided relationship of economic growth with government expenditure for education and also one-sided relationship of economic growth with government expenditure for health in OPEC countries and Iran.

Keywords: Economic Growth, Government Expenditure, Oil Revenue.

JEL Classification: H51, H40, C13.

1. Introduction

The relationship between government expenditure and economic

1. Department of Economics, Faculty of economics and Social Science, Shahid Chamran University of Ahvaz, Khuzestan, Iran (Corresponding Author: e.anvari@scu.ac.ir).

2. Department of Economics, Faculty of economics and Social Science, Shahid Chamran University of Ahvaz, Khuzestan, Iran (a.ahangari@scu.ac.ir).

3. Department of Economics, Faculty of economics and Social Science, Shahid Chamran University of Ahvaz, Khuzestan, Iran.

growth is one of the issues identified in the economic literature. Use of different tools such as government expenditure, despite the inflationary effects of an increase in government expenditure, has a significant discussion on the prospects of economic growth. Government expenditure on economic growth through investment in health and education is effective. Before the introduction of the theory of human capital, physical capital was the only way to increase economic growth. But then, in the early 1960s, the concept of human capital in addition to physical capital has raised as a driver of economic growth. Many economists believe that what ultimately leads to the economic and social development of the country it is human labor.

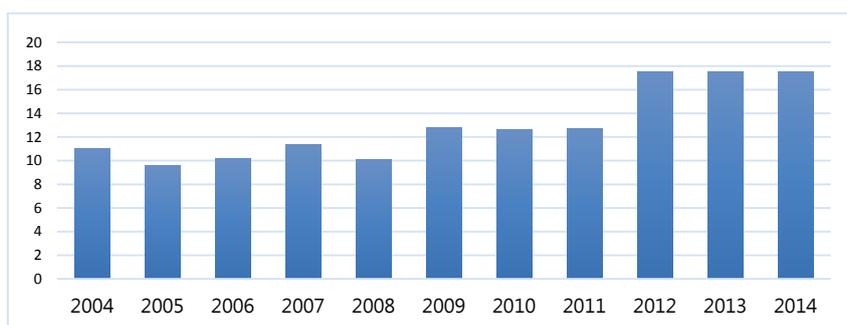


Figure 1: Changes in Health Expenditure in Iran

Source: World Bank.

The trend of changes in government health expenditure and government education expenditure in Iran has been shown in Figures (1) and (2). An examination of the trend of changes in health expenditure in Iran shows up until 2011. After this date, there has been a leap in these expenditures. The research on health indicators and economic growth in Iran shows the positive effect of health expenditures on economic growth. The share of government education expenditure in the total government budget has been showing a steady and steady decline in these expenditures. Considering health expenditures as one of the factors that reduce class differences and motivation, has also played a major role in research on economic growth.

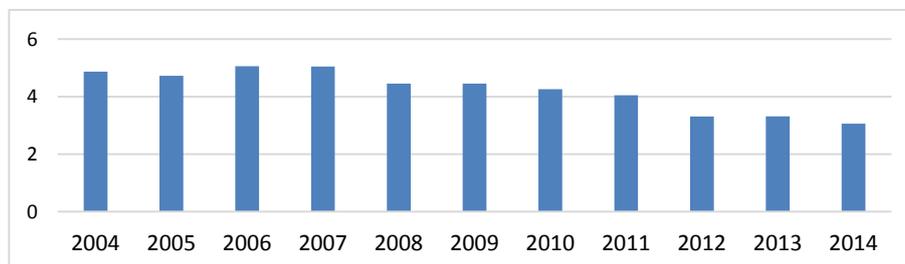


Figure 2: Changes in Government Expenditure on Education in Iran

Source: World Bank.

Health indirectly affects growth through performance education preformation. Health increases the level and performance of education. Barro (1990) argues that there are incentives for investment in education due to the increase in indicators of health. A strong relationship between education and the protection of human health as a component of capital. Sorkin (1977) shows that in areas where adverse health condition hinders economic activity, investing in health programs can be used to promote development. Bryant (1969) showed that economic development and social changes in developing countries can be increased with an increase in health and health care.

In oil-exporting countries, oil revenues had an important role in export revenues due to the government's structure; this revenue is often considered as government expenditure. So the impact of oil revenues on economic growth in oil-exporting countries is very important (Olomola, 2006). This study examines The Role of Government Health and education expenditures in economic growth in oil-exporting countries and Iran. In this paper, after the introduction of the theoretical foundations of the relationship between government expenditure in the health and education sector, government expenditure on education toward economic growth occurs. In the third part, the history of researches and done studies are considered. In the fourth part, the method, models, and parameters will be discussed. In the fifth part estimation of models and at the end, conclusions and recommendations will be expressed.

2. Theoretical Foundations

The relationship between government expenditure and economic growth has created a series of discussions among researchers.

Government is responsible for security and certain public goods provision (Abdullah, 2000) and (Al-Yousif, 2000). Security performance includes the creation of property rights and the rule of law. This is to minimize the risks of crime and protect the life and property of the nation against external aggression, under the provision of public goods, defense, roads, education, health, and power. Some researchers believe that the increase in government expenditure on social, economic, physical infrastructures and encourage economic growth. For example, government expenditure on health and education level increased labor productivity and thereby increases economic growth. Similarly, the cost of infrastructure, such as roads, reduces production costs and thereby increases private sector investment and profitability, and thus boosts economic growth. The researchers like (Al-Yousif, 2000 and Abdullah, 2000; Ranjan & Sharma, 2008; Corey, 2009) showed that an increase in government expenditures is positively related to economic growth. The various studies suggest that the relationship between economic growth and government expenditure may be positive or negative. (Javaid Attari and Javed, 2013).

In general, petroleum exporting countries and Iran, the shocks of oil revenues cause high vulnerability of government financial condition. The government cannot easily adjust their current prices on oil negative market. In such circumstances, when oil prices are reduced since the government is unable immediately to reduce the volume of its activities, the government budget deficit increases, this situation could lead to inflation and reduce economic growth (Farzanegan, 2011).

Directly in an oil-dependent economy, an exogenous increase in oil export revenues lead to foreign exchange incomes limitation and stimulate economic activities on both supply and demand sides and create the Dutch Disease (Devlin and Levine, 2004).

Human capital growth leading to increased productivity and economic growth. The concept of human capital, along with concepts such as education and workforce training was developed, but then investment in health raised human capital So that today the promotion of the health of the workforce is one of the main ways of improving human capital known. Enjoying good and durable health is an integral

part of the human experience. healthy people have more energy and freshness and a positive attitude towards life. This feature not only has a positive impact on social infrastructure but also can affect economic growth and development. Therefore, health promotion can lead to an increase in the effectiveness of the workforce and economic growth (Emadzadeh et al., 2011).

Health can produce the country through various channels that affect them. The first channel in many studies referred to the relationship between health and productivity so that healthy people are more productive compared to other people. Healthy people work better and more than others and have a more creative and ready mind. Health, In addition to the direct effects, has indirect effects on the production and improvement of human health. Improving health conditions will involve a motivation to continue education, gain better skills, and increase learning ability, increase investment attraction, and create educational opportunities. Similarly, increases in health indicators in society will further encourage people to save money by reducing mortality and increasing life expectancy in people. So that increase in savings will increase the physical capital of the community and increase indirectly labor force productivity and economic growth (Weil, 2005).

Education is considered one of the most important investments in human capital. Education affects growth through mechanisms such as increasing labor productivity, reducing inequality, promoting health, reducing, fertility levels, better conditions for good governance, increasing knowledge and capacity of innovation of economy (Aghion, et al., 1999; Castello- Climent & Domenech, 2008; Lipset, 1960; Castello-Climent, 2008; Benhabib & Spiegel, 1994; Hanushek & Woessman, 2008).

3. Background Research and Studies

Devarajoun et al. (1996) in a study entitled combination of public spending and economic growth using data from 43 developing countries during the period 1970 to 1990 provided data by panel method. In this study, government expenditure was divided into two parts, capital, and consumption. According to the results, per capita, consumption expenditures harm GDP growth, and per capita, capital spending has positive effects on GDP growth. But not so strong.

Owoeye and Adenuga's (2005) study examining the relationship between economic growth, education, and health costs, during the period 1970 to 2000 on Nigeria data within the framework of Vecm and var. The results showed that a long-term relationship between GDP growth and the cost of health and education.

Afonso and Jalles (2011) studied economic performance and the size of government for 108 countries over the period 2008-1970 Based on their data panel. The results showed that the size of the government has a significant negative effect on economic growth.

Wang (2011) in a study examines the impact of government health spending on economic growth during the period 2007- 1986 for 31 selected countries, using the OLS method. The results showed that government health spending has a significant positive effect on economic growth in these countries.

Ademola et al. (2015) the study examines the relationship between government spending oil revenues and economic growth in Nigeria during the period 1982-2011 using the OLS method. The results showed that oil revenues were positively correlated with economic growth. Also, there's a positive relationship between economic growth with health and education expenditures.

Elmi and Jamshidnezhad (2007) studied the effects of education on economic growth during 1972-2003. In this study to show the effect of education on economic growth in the theoretically Lucas models was used and in functional study average years of training workforce as an indicator of education and human capital was used, the results showed a significant positive impact of education on the economic growth of Iran.

Golmorad and Anjamashoa (2015) examined the short and long term effects of government spending inflation on economic growth by using Auto-Regressive Lag (ARDL) and Granger in Iran for the period (1980-2010) the results of their research show that between variables Inflation, government spending and economic growth is a long-term relationship so that government spending has a positive external impact on Iran. Short-term and long-term inflation has not a positive effect on economic growth, but government expenditure has a positive effect on economic growth. Granger causality test shows that there is a one-way causal relationship between inflation and economic

growth, as well as between government spending and economic growth.

Panahi and Al Imran (2016) in the study examined the effect of government health spending on economic growth in the countries of the Group D8, using Data Panels from 1995 to 2012 period. The result represents a significant and positive impact on government health spending on economic growth.

4. Research Methods and Introduction of Models and Parameter Estimation

This study analyzes the Role of Government Health Expenditure and Education Expenditure in Economic Growth in OPEC oil Exporting Countries and Iran, using Panel data analysis for the 2004-2016 periods. Granger causality test is used to determine the causal relationship between economic variables. Using the Panel Var Data model based on the actual price base year is 2010. To collect research data from World Bank sites and OPEC is used. The countries studied with Limited access to the data required, including Algeria, Indonesia, Iran, Libya, Kuwait, Nigeria, Saudi Arabia, Jordan, Venezuela, Iraq, and Qatar. For this reason, two regression models are presented. The first regression model with an emphasis on the paper of Hamdi and Sbia (2013) relates to total government expenditure and oil revenues and economic growth. The second model with an emphasis on paper Ademola, Olasode, & Raji (2015), is on correlation and analysis of government expenditure for education and government expenditure for health.

$$\text{Model (1): } LGDP = \beta_0 + \beta_1 LOIL + \beta_2 LCOV + \varepsilon_{i,t}$$

$$\text{Model (2): } LGDP = \beta_0 + \beta_1 LOIL + \beta_2 LEOV + \beta_3 LHEB + \varepsilon_{i,t}$$

In Models, LGDP is logarithm GDP, LEOV is logarithm government expenditure for education, LOIL is logarithm oil revenues, LHEB is logarithm government expenditure for health and LCOV is logarithm total government expenditure

4.1 The Reliability of the Test Results

To investigate the reliability of variables in panel data from specific

tests for this type of data can be used. The tests Lin, Levine, and Chu (LLC), Im, Pesaran, and Shin that are more applicable to the study of stationary variables are used in combination data. Since the H₀ hypothesis test indicates the presence of a unit root for each variable, as the calculated P-Value is less than five percent, the unit root hypothesis for that variable is rejected. Based on the results of Lin, Levin and chu and Im, Pesaran, and Shin all variables are static, because the null hypothesis based on the existence of a single root in all variables, is rejected.

4.2 Diagnostic Tests

In this study, the Chow and Hausman test is used.

According to the description above, to determine the use of a combined or integrated data model, the Chow and Hausman test has been used. The test results are represented in Table(1).

Table 1: Results of Chow and Hausman Test

	Result	Prob	Statistics	Model
Chow test	Rejection H ₀	000.0	285.64	(1)
	Rejection H ₀	000.0	286.42	(2)
Hausman test	Rejection H ₀	0.006	10.08	(1)
	Rejection H ₀	0.000	16...42	(2)

Source: Research Findings.

As seen in Table (1), in 5% error H₀ hypothesis is rejected and the pooled data model is rejecting and true models are panel. According to results in the reliability level, 95% of the Hausman test results should be used for both models to determine that the model is a random or fixed effect. To perform the Hausman test, at first random effects model is estimated and then the Hausman test is performed. The Hausman test results are shown in Table(1). Results in Table (1) confirm the fixed effects against random effects in both models.

4.3 Models Estimation

After determining and selecting the Chow and Hausman test, estimate the models will be discussed. The results of the two models are as follows.

4.3.1 The Results Models (1) and (2)

In this part, following determining desired panel models and their fixed effects, we will estimate the models. The results are shown in Table (2).

Table 2: The Results Estimation Models (1) and (2)

(Prob)	t	Coefficients	Coefficients	Variables	
0.000	19.14		0.34	LOIL	
0.000	3.58		0.26	LEOV	Model (2)
0.000	3.71		0.15	LHEB	
0.000	50.01		17.68	C	
0.000	13.69		0.47	LOIL	
0.000	3.28		0.21	LCOV	Model (1)
0.000	27.35		16.17	C	
The coefficient of determination	Durbin-Watson statistic	Prob F	Statistics F	Statistical	
0.98	1.95	0.000	715	Model (2)	
0.98	1.85	0.000	690	Model (1)	

Source: Research Findings.

As seen in the table in the first model, the logarithm variable coefficient of oil revenues is equal to 0.47 percent and if there is a one percent rise in oil revenues, GDP will be increased by 0.47 percent. The coefficients of the logarithm of total government expenditure are equal to 0.21 and it shows by a one percent increase in total government expenditure, GDP in OPEC countries, and Iran will be raised by 21 percent.

The results in Model (1) show that total government expenditure and oil revenues have a significant positive correlation with the GDP of OPEC countries during the period of study.

The results on Model (2) also indicate that there is a positive relationship between oil revenues and GDP of OPEC countries. government expenditure on education and health also has a significant positive correlation with GDP in the period under study. So that if there is a one percent increase in government expenditure for

education, the GDP of OPEC countries and Iran rise by 26 percent. With the one percent increase in government expenditure for health, GDP rises by 15 percent.

The results show that health and education play an important role in economic growth in Iran, but the remarkable thing here is, the role of education is more leading than health on economic growth in these countries. To further improve economic growth and promote human capital, Iran needs to emphasize education.

So we can come to this conclusion that oil revenues have the most effect on the GDP of OPEC countries. Then, government expenditure on education and government expenditure on health respectively has the most effect on the GDP of OPECs countries and Iran.

4.4 Model Stability

To obtain long-term balance, stability is required. PVAR system is stable when the absolute value of roots is less than 1 within a circle in radius 1, otherwise, the results of the standard error of impulse response functions will not be worth it. So after the estimation of model Panel VAR, the special values of the model should be considered to ensure that the model is stable. The application shows this, with the message PVR Satisfies Stability Condition. According to Figures (3) and (4), there is a stable condition in the PVAR system and we can trust the result of an impulse response.

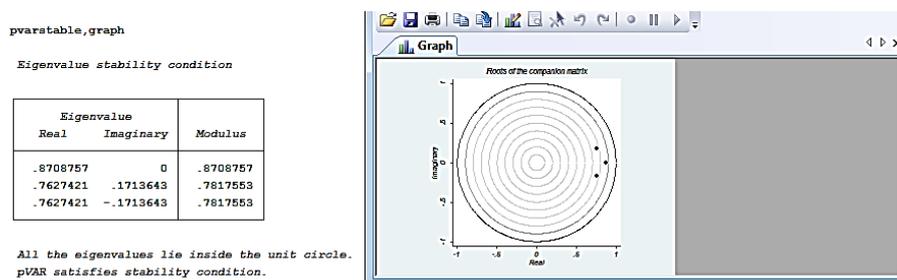


Figure 3: Stability Test of Model (1)

Source: Research Findings.

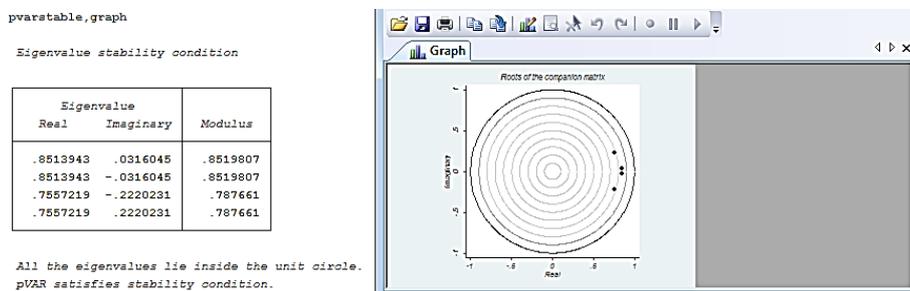


Figure 4: Stability Test of Model (2)

Source: Research Findings.

4.5 Analysis of Causality

In this section causal relationship between the variables of oil revenues, total government expenditure, government expenditure in education, and health to GDP in OPEC member countries and Iran will be discussed. The main issue is that which variable is the direction of causality, namely the review of pairwise variables which of these two variables change others. This test is used to assess causality.

To examine the causality between GDP and oil revenues should be rated using the Panel VAR model that is formed on the surface of these two variables, using criteria determined Schwartz.

Table 3: Determining the Optimal Interval between GDP and Oil Revenues

HQ	SC	AIC	FPE	LR	LOGL	Lag
3.041089	3.079480	3.015743	0.069948	NA	-105.0589	0
-4.630805	-4.515631	-4.706844	3.10e-05	532.7979	173.0930	1
-4.896819	-4.7048864	-5.023551	2.26e-05	28.33929	188.3361	2
-4.784372	-4.515634	-4.961797	2.40e-05	3.258998	190.1438	3
-4.652266	-4.306746	-4.880383	2.61e-05	1.938286	191.2536	4
-4.635427	-4.213125	-4.914237	2.53e-05	8.791808	196.4554	5
-4.737218	-4.238134	-5.066721	2.18e-05	15.37927	205.8686	6
-4.604999	-4.029133	-4.985195	2.37e-05	1.744396	206.9744	7
-4.624540	-3.971891	-5.055428	2.23e-05	9.877099	213.4677	8

Source: Research Findings.

According to the results in Table (3) and according to Schwartz criterion, the optimal lag between GDP and oil revenues is two. The results of the panel Var model with a lag of two are as follows.

Table 4: Causality Test Results between GDP and Oil Revenues

Possibility	χ^2 Statistics	H_0	Effective variable	The dependent variable
0.021	7.67	$\beta_{1i} = 0$ (i=1,...,2)	LOIL	LGDP
0.000	15.29	$\alpha_{2i} = 0$ (i=1,...,2)	LGDP	LOIL

Source: Research Findings.

As shown in Table (4), observations indicate that the null hypothesis is rejected for both hypotheses which mean that oil revenues cause Granger of GDP; on the other hand also GDP causes Granger of oil revenues. Indeed there is a two-way causal relationship between them.

To examine the causality between GDP and total government expenditure, must rank Panel Var using the VAR model formed on the surface of these two variables, using determined Schwartz criteria.

Table 5: Determining the optimal interval between GDP and total government expenditure

HQ	SC	AIC	FPE	LR	LOGL	Lag
2.990277	3.028668	2.964931	0.066482	NA	-103.2550	0
-4.075941	-3.960768	-4.151980	5.39e-05	491.6119	153.3953	1
-4.424556	-4.232600	-4.551288	3.62e-05	33.79092	171.5707	2
-4.376171	-4.107433	-4.553595	3.61e-05	7.358960	175.6526	3
-4.2992740	-3.947220	-4.520858	3.74e-05	4.956179	178.4904	4
-4.273787	-3.851485	-4.552597	3.63e-05	8.664930	183.6172	5
-4.383559	-3.884475	-4.713062	3.10e-05	15.84219	193.3137	6
-4.288049	-3.712183	-4.668244	3.26e-05	3.800070	195.7227	7
-4.170077	-3.517429	-4.600966	3.51e-05	2.451445	197.3343	8

Source: Research Findings.

According to the results in Table (5) and based on the Schwartz criterion, the optimal interval lag between GDP and total government expenditure are two. The results of Panel Var with a lag of two are as follows.

Table 6: Causality Test Results between GDP and Total Government Expenditure

Possibility	χ^2 Statistics	H_0	Effective variable	The dependent variable
0.10	9/02	$\beta_{1i} = 0$ (i=1,...,2)	LCOV	LGDP
0.04	11/32	$\alpha_{2i} = 0$ (i=1,...,2)	LGDP	LCOV

Source: Research Findings.

As shown in Table(6) observations indicate that the null hypothesis of both hypotheses is rejected (the first test at the 90 percent confidence level is significant) which means that the total expenditure of government cause Granger of GDP and on the other hand GDP causes Granger of total government expenditures in OPEC countries. The result indeed there is a two-way causal relationship between them.

To examine the Granger causality between GDP and government expenditure in education using panel var, the first Var model formed on the level of these two variables should be rated, using criteria determined Schwartz.

Table 7: Determining the Optimal Lag between GDP and Government Expenditure in Education

HQ	SC	AIC	FPE	LR	LOGL	Lag
5.151586	5.188113	5.127235	0.577807	NA	-195.3986	0
-8.034592	-7.925010	-8.107644	1.03e-06	987.0694	318.1443	1
-11.06976	-10.88712	-11.19151	4.73e-08	229.5188	440.8731	2
-13.69640	-13.44071	-13.86686	3.26e-09	194.5471	547.8740	3
-14.57746	-14.24872	-14.79662	1.29e-09	70.28891	587.6699	4
-14.83417	-14.43237	-15.10203	9.51e-10	27.01432	603.4282	5
-14.83115	-14.35630	-15.14771	9.11e-10	9.572729	609.1868	6
-14.96019	-14.41228	-15.32545	7.65e-10	17.46133	620.0298	7
-14.86803	-14.24706	-15.28199	8.03e-10	3.626213	622.3566	8

Source: Research Findings.

According to the results in Table (7) and based on the Schwartz criterion, the optimal lag in GDP and government expenditure in education is five. The results are as follows Panel Var with a lag of five.

Table 8: The Results of Causality between GDP and Government Expenditure in Education

Possibility	χ^2 Statistics	H_0	Effective variable	The dependent variable
0.33	5.72	$\beta_{1i} = 0$ (i=1,...,5)	LEOV	LGDP
0.06	10.19	$\alpha_{2i} = 0$ (i=1,...,5)	LGDP	LEOV

Source: Research Findings.

As shown in Table (8) observations show that the null hypothesis of the first model is not rejected, it means that government expenditure in the education sector doesn't cause Granger of GDP of OPEC countries. But, the second hypothesis has a 90% reliability level, which means GDP causes Granger of domestic government spending in the education sector in OPEC countries, indeed there is a one-way causal relationship between them.

To examine the causality between GDP and government spending in the health sector using panel Var, the first Var model formed on the surface of these two variables, should be rated using Schwartz criteria.

Table 9: Determine the Optimal Lag between GDP and Government Expenditure in Health

HQ	SC	AIC	FPE	LR	LOGL	Lag
2.449873	2.487304	2.425032	0.038746	NA	-87.72620	0
-3.768118	-3.655825	-3.842641	7.35e-05	452.6805	148.1777	1
-4.061824	-3.874669	-4.186029	5.22e-05	31.15325	164.8831	2
-4.024541	-3.762525	-4.198429*	5.15e-05	8.074016	169.3419	3
-3.905783	-3.568904	-4.129352	5.53e-05	2.537053	170.7860	4
-3.901606	-3.489865	-4.174858	5.29e-05	9.677660	176.4697	5
-3.799132	-3.312529	-4.122066	5.60e-05	3.374274	178.5164	6
-3.672804	-3.111340	-4.045420	6.07e-05	1.856289	179.6805	7
-3.627507	-2.991181	-4.049806	6.07e-05	6.412138	183.8428	8

Source: Research Findings.

According to the results in Table (9) and based on Schwartz criteria, the optimal interval lag between GDP and government expenditure in health are two. So the results of panel var with a double break are as follows

Table 10: The Results of the Causality Test between GDP and Government Expenditure on Health

Possibility	χ^2 Statistics	H_0	Effective variable	The dependent variable
0.28	2/50	$\beta_{1i} = 0$ (i=1,...,2)	LHEB	LGDP
0.09	4/76	$\alpha_{2i} = 0$ (i=1,...,2)	LGDP	LHEB

Source: Research Findings.

As shown in Table (10) observations indicate that the null hypothesis of the first model is not rejected, namely government expenditure in health doesn't cause Granger of GDP in OPEC countries. But the second hypothesis has 90 percent confidence which means that GDP causes Granger in domestic government expenditure in health in OPEC countries. There is a one-way causal relationship between them.

4.6 Impulse Response Functions Review

The dynamic response functions to achieve information on the effect of the interplay between dynamic pattern variables are the perfect tool. Impulse response functions show, the dynamic behavior of the model's variables when impacting each variable over time.

Impulses are elected one standard deviation, so they called a blow or shock. Origin or starting point for the variable response is steady-state values of the device (without impulse). In this diagram, the horizontal axis shows time and the vertical axis shows the size of the deviation from the initial value. Given the subject matter, in this part of oil revenues variables shocks effects, government expenditures in education, government expenditures in health on GDP will be examined.

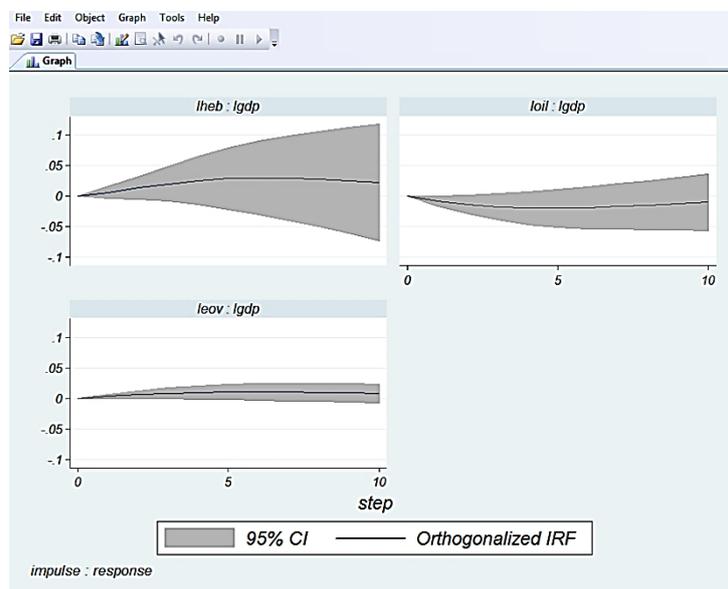


Figure 5: Variable Dynamic Response of the logarithm of GDP against the Impulses of the Explanatory Variables (Model 2)

Source: Research Findings.

Figure (5) indicates the variable dynamic response of GDP logarithm to research explanatory variables impulses. As can be seen Government spending in the health sector) (LHEB, has a positive effect during the 10-year-old logarithmic index of gross domestic product (LGDP). The momentum against the log of oil revenues (LOIL), has a positive effect on the logarithm of GDP (LGDP), respectively. In less than 5 years peaks and then the impact of increased momentum over time to zero (i.e. log of oil revenues (LOIL), the logarithm of GDP (LGDP) temporary effects). On the other hand, also log the momentum of government expenditure on education (LEOV) has positive effects and a consistent trend over 10 years on the log index GDP (LGDP).

5. Conclusions and Recommendations

The result of selection tests of the fixed-effect model to estimate both models has been shown. The results of the model coefficients estimation indicate that all coefficients have a positive and significant effect on the GDP of OPEC countries in the period under review. And there are stable conditions in both models. The causal relationship

between the variables and functions as well as impulsive reactions was also examined. The Results of causality showed that Between GDP variables and oil revenues in OPEC countries, there is a two-way causal relationship. There is a two-way causal relationship Between GDP and total government spending variables. But between GDP and government spending in the education sector, there is a one-way causal relationship, and GDP causes Granger in government spending on education. Also, there is a one-way causal relationship between GDP and government spending in the health sector, and GDP cause Granger and government spending in the health sector.

In Iran during the study period, educational expenditures have not had a significant effect on economic growth due to the low productivity of manpower. Accordingly, paying attention to the quantity and quality of education at different educational levels is a major step towards economic development. On the other hand, the role of health expenditures on economic growth in Iran is also high. Although economic growth has greatly influenced the growth of health expenditures in Iran, attention to health expenditure, its impact, and attention to the lower classes of society are effective in economic growth.

According to this survey results and positive effect of expenditure of education and health on economic growth, it is suggested that government in development planning give more attention to the role of education and health, especially as regards education and health are components of human capital, Improvement of these variables means improving human development. Also, due to the positive correlation between total government expenditure and oil revenues to economic growth, It is necessary to reduce the economic dependence on oil. Also, these relationships should be considered in planning.

References

- Abdullah, H. A. (2000). The Relationship between Government Expenditure and Economic Growth in Saudi Arabia. *Journal of Administrative Science*, 12(2), 173-191.
- Ademola, I. S., Olasode, O. S., & Raji, O. A. (2015). Government Expenditure, Oil Revenue, and Economic Growth in Nigeria. *International Journal of Economics, Commerce and Management*, 3(5), 180-202.

Afonso, A., & Tover Jalles, J. (2011). Economic Performance and Government Size. *Working Paper Series. 1399*, 4-29.

Aghion, P., Caroli, E., & Garcia-Penalosa, C. (1999). Inequality and Economic Growth: The Perspective of the New Growth Theories. *Journal of Economic Literature*, 37(4), 1615-1660.

Al-Yousif, Y. (2000). Does Government Expenditure Inhibit or Promote Economic Growth: Some Empirical Evidence from Saudi Arabia. *Indian Economic Journal*, 48(2), 92-96.

Barro, R. J. (1990). Government Spending in a Simple Model of Endogenous Growth. *Journal of Political Economy*, 98(5), 103-125.

Benhabib, J., & Spiegel, M. M. (1994). The Role of Human Capital in Economic Development, Evidence from Aggregate Cross-Country Data. *Journal of Monetary Economics*, 34(2), 143-173.

Bryant, J. (1969). *Health and the Developing World*. Ithaca, NY: Cornell University Press.

Castello-Climent, A. (2008). On the Distribution of Education and Democracy. *Journal of Development Economics*, 87(2), 179-190.

Castello-Climent, A., & Domenech, R. (2008). Human Capital Inequality, Life Expectancy, and Economic Growth. *The Economic Journal*, 118(528), 653-677.

Cooray, A. (2009). Government Expenditure, Governance, and Economic Growth. *Comparative Economic Studies*, 51(3), 401-418.

Devarajoun, S., Swaroop, V., & Zou, H. F. (1996). The Composition of Public Expenditure and Economic Growth. *Journal of Monetary Economics*, 37, 313-344.

Devlin, J., & Lewin, M. (2004). Managing Oil Booms and Busts in Developing Countries. *Draft Chapter for Managing Volatility and Crises, a Practitioner's Guide*, Retrieved from <https://pdfs.semanticscholar.org/d2fd/9473ebf0f29c34ac08fc903af4c4c981895a.pdf>

- Elmi, Z., & Jamshidnezhad, A. (2007). The Effect of Education on Economic Growth in the Years 2003- 1971. *Journal of the Faculty of Humanities and Social Sciences*, 7(26), 135-154.
- Emadzadeh, M., Samety, M., & Safi, D. (2011). The Relationship between Health Expenditure and Economic Growth in the Provinces of Iran. *Health Information Management*, 7(7), 918-928.
- Farzanegan, M. R. (2011). Oil Revenue Shocks and Government Spending Behavior in Iran. *Energy Economics*, 33, 1055–1069.
- Glaeser, E. L., Laporta, R., Lopez-de-Silanes, F., & Shleifer, A. (2004). Do Institutions Cause Growth?. *Journal of Economic Growth*, 9(3), 271-303.
- Golmoradi, H., & Anjamashoa, S. (2016). Short-Term and Long-Term Effects of Government Spending and Inflation on Economic Growth. *Quarterly Financial and Economic Policies of the Third Year*, 10, 108-189.
- Hamdi, H., & Sbia, R. (2013). Dynamic Relationships between Oil Revenues, Government Spending, and Economic Growth in an Oil-Dependent Economy. *Economic Modelling*, 35, 118–125.
- Hanushek, E. A., & Woessmann, L. (2008). The Role of Cognitive Skills in Economic Development. *Journal of Economic Literature*, 46(3), 607-668.
- Javaid Attari, M. I., & Javed, A.Y. (2013). Inflation, Economic Growth, and Government Expenditure of Pakistan Procardia. *Economics and Finance*, 5, 58 – 67.
- Lipset, S. (1960). *Political Man: The Social Bases of Politics*. New York: Doubleday.
- Olomola, P. A. (2006). Oil Price Shock and Aggregate Economic Activity in Nigeria. *African Economic and Business Review*, 4(2), 48-61.
- Owoeye, T., & Adenuga, D. (2005). Human Capital and Economic Development: An Empirical Analysis of a Developing Economy (1970-2000). *Working Papers, Annual World Bank*, Retrieved from <https://halshs.archives-ouvertes.fr/halshs-00132531v2/document>.

1098/ The Role of Government Health and Education ...

Panahi, H., & Ale Imran, A. (2016). The Effect of Government Health Spending on Economic Growth in Countries of the Organization for Economic Cooperation Group D8. *Journal of Health and Development, 4*, 336-327.

Ranjan, K. D., & Sharma, C. (2008). Government Expenditure and Economic Growth: Evidence from India. *The IUP Journal of Public Finance, 3*, 60-69.

Sorkin, A. (1977). *Health Economics in Developing Countries, an Economic Perspective*. Lexington: Lexington Books.

Wang, K. M. (2011). Health Care Expenditure and Economic Growth Quintile Panel –type Analysis. *Economic Modeling, 28*(4), 1536-1549.

Weil, D. N. (2005). Accounting for the Effect of Health on Economic Growth. *National Bureau of Economic Research, NBER Working Papers*, Retrieved from <https://econpapers.repec.org/paper/nbrnberwo/11455.htm>.