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The Effect of Oil Revenues on Government Size and Economic Growth in Selected Countries (Iran, Norway, Saudi Arabia)

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Abstract

The present study evaluated the effect of oil revenues on government size and economic growth in Iran, Saudi Arabia, and Norway. Time series data for 1980-2010 were collected from the Central Bank and the World Bank. For this purpose, a system of simultaneous equations and 2SLS two-stage least squares method was used. The results show that the Iranian and Saudi oil income and capital positively and significantly influenced GDP. The government size negatively influenced GDP. In addition, oil revenues positively affected and GDP negatively influenced the government size. The results for Norway are similar to other countries except that oil revenue was removed from the model due to its insignificance. Finally, recommendations were provided for optimal allocation of oil revenues to the investment, transfer of non-governmental organizations to private sector and development in the currency funds.

Keywords: oil revenues, size of government, manufacturing, selected countries

Introduction

In general, one of the goals of economic development is economic growth with social welfare, which is not possible without the utilization of national resources and wealth. In this regard, countries try to make optimum use of their resources to achieve these goals. One of the resources in the economy of oil-rich countries is oil revenues. The importance and the role of oil revenues in oil-rich countries, particularly the effects of dependence on oil revenues, is a problem, which is not far from an economist's perspective.

The relationship between government spending and growth is important, especially for developing countries, most of all, those which experienced increased levels of government spending over time. The relationship between government spending and economic growth is essential in Iran from different aspects. Iran is both a developing country and experiencing increased levels of government spending over time. Moreover, Iran relies on oil revenues. Therefore, it is important to be aware of the effects of oil revenues on government size and effect of government spending on economic growth to orient better use of oil revenues.

One of the problems faced by Iranian financial system is dependence on revenues from oil export. This means that increase in oil revenues will increase direct and indirect revenues whereby enlarge the government size. Two characteristics of oil and oil revenues are challenging for oil-rich countries. First, the volatility of oil prices is highly turbulent and unpredictable. Secondly, these resources are non-renewable and exhaustible. In most oil producing countries, oil revenues are one of the main sources of government revenue. Thus, the key factor for fiscal policy makers who are

responsible to regulate financial plan and government budget is to deal with these two characteristics. The more share of oil in the basket of government revenue causes more dependence of government fiscal policy on changes in oil prices. Thus, widespread and unpredictable changes in oil prices are a key challenge for fiscal policy. Finitude oil resources mean that a significant component of public wealth and thus the main source of government revenues have a limited life. Therefore, governments need to estimate oil inventories and costs of extraction to set a budget in their financial planning horizon in addition to estimate the future oil prices. Due to the significant effect of oil revenues in the process of economic growth, countries dependent on oil revenues need to review growth models of these countries for a better fitness into behavioural regulations of the oil-rich countries. In order to examine growth models for oil-rich countries, this study includes oil revenues in models of growth and government size. This study attempts to measure the influence of oil revenues on economic growth and government size in the three selected countries, Iran, Saudi Arabia, and Norway. The results can be useful for policy makers and economic actors to adopt appropriate policies; they also can provide policy-makers and decision-makers with solutions for correct use of oil revenues. The guidelines will be presented in this regard.

Research Background

Proper role and appropriate size of government began as a controversial debate between economists and political leaders of the classical period and theories of Adam Smith in the eighteenth century, although economic ideas and policies have changed significantly in the last century. In the classical system, the market forms balance and efficiency; compliance with self-interest is followed by social interest. Government presence in the economy restricts freedom, upsets balance, and eliminates efficiency. The government is present only in cases where the market is not efficiently present such as, the lack of economic freedom, lack of appropriate social contexts like equality and security, violation of human rights and individual freedom through monopolies or unhealthy activities without ensuring social justice and anti-discrimination in the granting of facilities (Naderan, 2002).

Neoclassical view is various, particularly by evolution of the theories occurred in the twentieth century. In this view, the government is allowed to intervene in a situation which causes deviation in function of economic actors; this is possible by fixed taxes and transfer payments. Market failure and the failure to achieve perfect competition permit state intervention. Production of public goods, such as the legal system, defence, transportation system, education and research, monopolies, foreign issues, incomplete information, and inequality in the distribution are the main problems of market failure. The priority is market activity; only in the case of its deviation from efficiency in resource allocation, the government will intervene. The government aims to maximize the welfare of the society and acts as a public lawyer (Dadgar, 2001).

In the twentieth century, the old doctrine of economic liberalism, like other schools, was modernized and adapted to the new social and economic environment. Economists attributed to this school believe that the government is taking a new role in the present circumstances of the world; that is, providing natural and free causes of flows and economic mechanisms to eliminate obstacles and problems. New school fans of freedom desire natural free prices as the best and the most effective guarantee for adjustment of economic life and consider government intervention as very dangerous. However, they believe that the government needs to provide a proper environment for free and natural economic activity and attempt for restricted and reasonable interventions, when necessary.

John Maynard Keynes, an eminent English economist, opened a new chapter in the history of economic thoughts, especially theories about government interference in economic matters.

Regardless of many components of traditional economic model and inclusion of many political and institutional factors which economists carefully screened them from their theories, Keynes could revive the relationship between economy and government policy. Keynes's explanation of the new capitalist economic downturn with imperfect market and the growing public sector resulted in a new approach. Perhaps, the most important aspect of Keynes for development and economic progress is a new concept and a positive role for government. Keynes is the first capitalist economist who analysed the importance and growing ability of the public sector in capitalism. According to an official theory, the task of government in a market economy was to guard (i.e., execute contracts, balance the budget and maintain stability of the currency). New dimensions of public sector and new institutional organization of the private sector (especially the concentration of production and the growth of trade unions) show that the economy can no longer simply play a passive role. Keynes realized that the power of government would force the government to create an economic boom by adjusting tax policies and its costs. Therefore, most of Keynes's work can be interpreted as an attempt to recognize the existence of the state as an economic factor, to justify its new role and thus to justify assignment of the economic conditions to the state.

Experimental studies on government size and economic growth are relatively abundant; moreover, studies are conducted on the effect of oil revenues on economic growth in recent decades. However, there is no practical study to consider all three aspects of government size, oil revenues, and economic growth. Most studies investigated the relationship between oil revenues and economic growth, and the relationship between government size and economic growth. In his thesis, Khodarahmi (1992) investigated the relationship between government size and economic growth in Iran using a two-pronged production function model. Results indicate a positive relationship between economic growth and growth in government spending during this period. Investment expenditures of the government had a greater influence on economic growth in Iran compared to its consumption expenditures. Ramezani (1999) examined the effect of government spending on economic growth in Iran from 1971-1996 using ordinary least squares (3SLS). The results showed that the elasticity of per capita output was positive to the relative share of total government expenditure and its components in the economy. Gaskari and Eghbali (2008) studied the effects of government spending on economic growth of Iran using the Cobb-Douglas function with constant returns and autoregressive method with distributional pauses. The results showed that government spending, either as consumption or capital, had a positive influence on economic growth. Komeyjani and Nazari (2009) explained the effect of government size on economic growth of Iran using a vector autoregressive model (VAR). The results showed that government spending had a positive effect on economic growth. Using panel data model in six countries membered in OPEC in the margin of Persian Gulf (Iran, Bahrain, Kuwait, UAE, Qatar, and Saudi Arabia), Heydari et al (2010) showed that the large size of government had a negative effect on economic growth and the small size of government had a positive, but insignificant, effect on economic growth. Falahi (2011) examined mutual effects and causal relationship between government consumption expenditure and non-oil GDP for nine selected OPEC countries. Results showed significantly negative effects of inflation and oil revenues on non-oil economic growth. Studying the effect of public spending on economic growth in Tanzania, Josaphatp Kweka and Oliver Morrissey (2000) showed that increase in productive expenditures (spending on physical capital) had a negative effect on growth; while, consumption spending had a positive effect on growth. Using VAR models, Olivier Blanchard and Roberto Perotti (2002) investigated the dynamic effects of changes in government spending and taxes on American production. When government spending increases, production also increases. Piter Sjoberg (2003) examined the effect of government spending on economic growth in Sweden. The results showed that the Swedish government might excessively consume and prevent economic

growth. Niloy Bose (2003) examined the relationship between public spending and economic growth for 30 developing countries. Results indicate that current spending has no effect on growth, while capital expenditures have a positive effect on growth. Using panel data model, Gregoriou and Ghosh (2009) studied the effect of government spending on economic growth. They found that total government spending had a positive effect on economic growth. Based on panel data technique, Samimi and Habibian (2011) showed a negative relationship between government consumption expenditures and economic growth, and a positive relationship between structural government expenditure and economic growth in developing countries. Minh Quang Dao (2012) developed a simultaneous equations model, which included equations of state spending growth and GDP growth. Results showed that some of the estimated coefficients had not the expected signs due to multicollinearity between independent variables.

Methodology

The present study use the technique of simultaneous equations system and two-stage least squares (2SLS) estimation method for time-series variables. This study used Barro model to examine the effect of oil revenues on government size and economic growth. In addition, Wagner law in which economic growth is the main factor of government size growth was used to formulate simultaneous equations. To localize these equations for the selected oil-rich countries, oil revenue was inserted in the model as an independent variable.

AK model is a production function with constant returns to scale with respect to capital for endogenous growth theories. In AK model, anything which changes technology will have a positive effect on the long-term growth rate. One can show that different activities of the government can alter coefficient k whereby influence growth rate; these activities include investment in infrastructure services, private property rights and taxes on private activities. Thus, government activities are effective on long-term growth, because the models which consider the state's role in the endogenous models can be considered. It is assumed that government spending is a part of the private sector production. Let G be considered as government purchases (government spending) and production function be considered as Cobb-Douglas function; we have:

$$Y = AL^{1-\alpha}.K^{\alpha}G^{1-\alpha} \quad (1)$$

To obtain the production growth, the natural log of (1) was obtained as follows:

$$LnY = LnA + (1-\alpha)LnL + \alpha LnK + (1-\alpha)LnG \rightarrow$$

$$LnY = \beta_0 + \beta_1 LnL + \beta_2 LnK + \beta_3 LnG \quad (2)$$

By total differential of (2), growth equation is as follows:

$$\dot{Y} = +\beta_1\dot{L} + \beta_2\dot{K} + \beta_3\dot{G} \quad (3)$$

Implicit function of growth is:

$$growth = f(K, \frac{G}{GDP}, L, \varepsilon) \quad (4)$$

where, K is physical capital, $\frac{G}{GDP}$ is the ratio of government expenditure to GDP, L is the number of work forces and ε denotes the effect of other variables. Wagner Act was used to formulate simultaneous equations. The act considers economic growth as a determinant of public spending growth. Wagner's first studies focused on the growth of economic activities as a source of growth in government size (Wagner, 1883). Therefore, government spending (government size) is considered as a function of economic growth and government spending in the last periods:

$$\frac{G}{GDP} = f(growth, (G/GDP)_{-1}, (G/GDP)_{-2}, ...) \quad 5)$$

One of the main revenues of the studied countries is the income from oil exports; for functionality of the above equations for these countries, the oil revenue was inserted as an exogenous and uncontrolled variable in growth and government size equations. The general equation for this study is as follows:

$$growth = f(K, \frac{G}{GDP}, L, oil)$$

$$\frac{G}{GDP} = f(growth, (G/GDP)_{-1}, oil) \quad 6)$$

Where, $growth$ is variable of economic growth representing the logarithm of GDP; K denotes gross capital accumulation; $\frac{G}{GDP}$ represents government size as the ratio of expenditure to GDP; oil denotes oil revenues measured as a weighted average of monthly prices and supply of crude oil in one year; L is the number of workers.

As a result, the final simultaneous equations model is stipulated for the studied countries as follows:

$$\log(gdp) = \beta_0 + \beta_1 \log(gdp_{-1}) + \beta_2 L + \beta_3 K + \beta_4 oil + \beta_5 (G/GDP) + \varepsilon$$

$$\log(G/GDP) = \alpha_0 + \alpha_1 \log(oil) + \beta_5 (G/GDP)_{-1} + \varepsilon \quad 7)$$

All information and data were analysed by Eviews and the model was estimated.

Data and Variables

Variables include the size of government, capital, GDP, and oil revenues. For the index of government size, the ratio of general government expenditure to GDP was used. Gross fixed capital formation was used to calculate investment for which, the amount of gross fixed capital was taken at current prices; then, real gross fixed capital was obtained using a price index with base year 2005. GDP growth in one year was used for economic growth. Due the lack of immediate oil revenue, for oil revenues, the supply of crude oil by studied countries was initially extracted from Energy Information Administration (EIA[1]); then, oil revenue was calculated by extracting monthly prices of Brent crude for the studied period using the weighted average method. All data and variables of time series 1980-2010 were collected the Iran Statistics Centre and Central Bank and the World Bank for the Iran, Norway, and Saudi Arabia.

Results and Discussion

As previously explained, the model to examine the relationship between oil revenues, government size, and economic growth is a system of equations with two equations for economic growth and the size of government. Independent variables of the first equation include the logarithm of oil revenues, investment, and government size and the explanatory variable is the logarithm of oil revenues and GDP. Economic growth is a function of oil revenues, investment and government size, and government size is itself under influence of economic growth and oil revenues. Oil revenues may influence economic growth in two ways; one directly as they increase exchange revenues; the other is that government size may enlarge because of increase in oil revenues (second equation), and enlargement of government size causes inefficiency and reduced economic growth. Because the logarithm of the number of workers was not significant for the three countries, it was removed from the model.

[1] http://www.eia.gov/

Model of Iran

The results from estimation of Iran's model are shown in Table 1. The results of the production model indicate that the log of oil revenues and capital has significant positive effects on the log of GDP and hence economic growth. For every one percent increase in oil revenues and capital, the log of GDP will increase by 0.19 and 0.57 percentage, respectively. The results indicate that government size has a negative effect on GDP. In other words, the enlargement will have a negative effect on economic growth. The results indicate that one percent increase in government size leads to 0.21% reduction in logarithm of GDP. In the model of government size, the results indicate that increase in oil revenues has a significant positive effect on the size of government. In other words, the increase in oil revenues leads to enlargement of the government. One percent increase in oil revenues leads to 0.41% increase in the size of government. In contrast, increase in GDP reduces the size of government. The results indicate that government size in the previous period (with interruptions) has a positive and significant effect on the size of government in the current period.

Table 1: results of model estimation for Iran

Equation	Variable	Coefficients	p-value
The first equation (production)	Intercept	6.2320	0.1496
	Log of oil revenues	0.1936	0.0003
	Logarithm of capital	0.5764	0.0028
	Logarithm of the government size	-0.2145	0.0025
R^2=0.94			
The second equation (government size)	Intercept	24.6818	0.0178
	Log of oil revenues	0.4196	0.0418
	Logarithm of GDP	-1.2704	0.0198
	The dependent variable with lag	0.4715	0.0128
R^2=0.65			

Model of Norway

The results from estimation of Norway's model are shown in Table 2. Oil revenue was removed, because it was not significant. The results of the production model indicate that capital has a significant positive effect on the economic growth. For every one percent increase in investment, GDP will increase by 2.02%. The results indicate that government size has a negative effect on economic growth. The results indicate that one percent increase in government size leads to 0.65% reduction in economic growth. For Norway, the auto regression has also a positive and significant effect on economic growth. Auto Regression factor indicates that GDP is inserted the mode with a lag. This coefficient represents the effect of GDP in the previous period on the dependent variable which is also positively correlated with the dependent variable. In the model of government size, the results indicate that economic growth rate and previous size of government have an effect on the size of government. In other words, the increase economic growth leads to enlargement of the government. One percent increase in economic growth leads to 0.39% increase in the size of government. In addition, one percent increase in the size of government during the previous period will lead to increase in the current size of government by 0.78%.

Table 2: results of model estimation for Norway

Equation	Variable	Coefficients	p-value
The first equation (production)	Intercept	-6.1950	0.0584
	Logarithm of capital	2.028	0.0002
	Logarithm of the government size	-0.6521	0.030
	First-order auto regression (AR1)	0.6920	0.0000
R^2=0.95			
The second equation (government size)	Intercept	-9.5194	0.0281
	The log of dependent variable with lag	0.7813	0.0000
	Log of GDP	0.3944	0.0282
R^2=0.94			

Model of Saudi Arabia

The results from estimation of Saudi Arabia's model are shown in Table 3. Obviously, all coefficients of both equations, except the intercept of the second equation, are significant. In the production model, capital has significant positive effects on economic growth. For one percent increase in investment, GDP will increase by 0.42%. Government size has a significant negative effect on economic growth. One percent increase in government size leads to 0.39% reduction in economic growth. For Saudi Arabia, oil revenues have a significant positive effect on economic growth; so that, one percent increase in oil revenues will lead to 0.23% increase in economic growth. In the model of government size, the results indicate that oil revenues have a significant positive effect on government size. In other words, the increase in oil revenues leads to enlargement of the government. One percent increase in oil revenues leads to 0.18% increase in the size of government. Logarithm of GDP has a significant negative effect on government size; that is, one percent increase in GDP reduces government size by 0.74%. The results indicate that government size of Saudi Arabia is under influence on the government size in the previous period.

Table 3: results of model estimation for Saudi Arabia

Equation	Variable	Coefficients	p-value
The first equation (production)	Intercept	9.9782	0.0000
	Log of oil revenues	0.2348	0.0000
	Logarithm of capital	0.4222	0.0000
	Logarithm of the government size	-0.3923	0.0000
R^2=0.94			
The second equation (government size)	Intercept	4.2769	0.1374
	Log of oil revenues	0.1821	0.0013
	Logarithm of GDP	0.5555	0.0000
	The dependent variable with lag	-0.7491	0.0001
R^2=0.65			

As results of estimation for the three selected countries shows, capital is one of the main variables influencing the economic growth. The coefficient of capital is positive and significant for all three countries and this validates different economic theories which introduced investment as the driving force of economic growth. In Norway, investment has the most influence on economic

growth; so that, one percent increase in investment, GDP increases by 2.02%. In Iran and Saudi, the effect of investment is far less than that of Norway (0.57 and 0.42%, respectively).

Other factor influencing economic growth is government size; in the three countries, size of government has a significant negative effect on economic growth. The effect of government size on economic growth was -0.21, -0.39 and -0.65 for Iran, Saudi Arabia and Norway, respectively. This indicates that increase in the Norwegian government size has a higher negative effect on GDP. Therefore, enlargement of government will be suitable for economic growth of these countries.

The other variable influencing economic growth is oil revenues. In Norway, oil revenues do not have significant effect on economic growth; therefore, it was removed from the model. While in Iran and Saudi, oil revenues have a positive and significant effect on economic growth. The relationship between oil revenues and GDP, specified by ratio of oil revenue in the first equation, is 0.19 for Iran. The ratio is 0.23 for Saudi Arabia. These results mean that one percent increase in oil revenues increase production of Iran by 0.19%, while it increases by 0.23% in Saudi. In fact, a 0.04% difference is observed between these two countries. Thus, it is evident that oil revenues of Saudi Arabia cause more acceleration to the manufacturing sector compared to that of Iran. Saudi Arabia could better use the increase in oil revenues for production and economic growth. While Iran increased current and consumption costs rather than production. Increased oil revenues can increase government investment in economic infrastructure, and increase imports of capital and intermediate goods and new technologies whereby a positive effect on economic growth. In addition, it can increase public investment and private investment by increasing oil revenues. Because side effects of public investment in infrastructure cause increased productivity (or reduced production costs or transaction costs) and profitability thus increased private investment. All of these will result in increased oil revenues followed by increased economic growth.

Oil revenues are the main factor influencing the volatility of government expenditures. An excessive rise in oil revenues followed by the state budget and enlargement of the government size cause an effect on activities of the private sector and increase in share of the government in economy and its inefficiency. Therefore, further increase in oil revenues and non-optimal management of these additional revenues extend its negative effects on economic growth. The results of the second model show that oil revenues of Iran and Saudi have a significant positive effect on the size of government. This means that the increase in oil revenues leads to enlargement of the government in these countries. Variable coefficient of oil revenues is 0.18 and 0.41 for Saudi and Iran, respectively, in the government size model; this variable was discarded for Norway. Thus, Iran's oil revenues have a greater effect on the size of government.

Results of the model suggest that capital plays a more important role in Iran’s economy than oil revenues. The difference (0.38%) between the coefficients of these two variables indicates that Iran needs investment for production rather than oil revenues. In Iran, investment plays a determining role in production. This result is consistent with real-time conditions of Iranian economy, because the economy is rich in terms of work force, while the main weakness of Iranian economy is the lack of capital accumulation and the lack of effective investment for production.

Another variable with an effect on the size of government and common among the three countries is GDP. The results indicate that the increase in GDP reduces government size of Iran and Saudi. Because, governments of both countries are influenced by increased oil revenues rather than increased GDP. However, increase in GDP increases the size of government in Norway, because the size of Norway's government is not under influence of oil revenues. Norway saves oil revenues in a fund called as the State Oil Fund. The main reasons for establishment of this fund are increase in government social payments, aging population, and gradual reduction of oil production. This fund was also established to provide a long-term financial condition while preserving the wealth for

future. The Norwegian policy on the use of oil revenues a conservative investment to maintain surplus oil revenues. The main goal of the Norwegian State from investing oil revenue the fund is to maximize its international purchasing power in consideration of acceptable risk. This is why economic growth of Norway is highly dependent on investment.

The Co-integration Test

One of the requirements for reliability of results and estimations is the regression co-integration. The following table co-integration shows co-integration tests for both equations for Iran. For the co-integration test, durability of the residual terms needs to be tested. Dickey Fuller statistic is used to test durability. In durability test, null hypothesis is defined as the unit root in the considered time series, which is residual here. The alternative hypothesis indicates the absence of a unit root or the presence of durable residual terms. Therefore, if the Dickey Fuller statistic is algebraically smaller than the critical value, the null hypothesis that there is a unit root will be rejected, and the time-series is durable; thus, the model is co-integrated.

Table 4: co-integration test for Iran

	Dickey Fuller statistic	Critical value	p-value
The first equation	-3.84	-1.95	0.0006
The second equation	-5.42	-1.95	0.000

As shown in Table 4, Dickey Fuller statistic for both equations of Iran is the -3.84 and -5.42. Since values of these statistics is lower than the critical value (-1.95), the model is co-integrated. In addition, p-value of these two tests is less than 5%, based on which, the model is co-integrated. For Saudi Arabia and Norway, similarly, Dickey Fuller statistic is less than the critical values; therefore, the models are the co-integrated.

Conclusions and Recommendations

This study examined the effect of oil revenues on government size and economic growth in the three selected oil-rich countries, Iran, Norway, and Saudi Arabia. For this purpose, a system of simultaneous equations, two-stage least squares method was used. Then, durability of the equations used in the model was examined. The results of the durability test indicated that residual terms or violation of equations system were durable for the three countries. Therefore, the regressions of the model were reliable.

Overall results of estimations indicated that oil revenues had a significant positive effect on economic growth and the size of government for Iran. Investment (capital accumulation) had a significant positive effect on economic growth. The results indicated that government size had a negative and significant effect on economic growth. Moreover, government size is influenced by government size in previous periods. In other words, the government size in the previous period had a positive effect on government size at the current period. The results showed that economic growth had a significant negative effect on the size of government. In Norway, the results showed that oil revenues did not have a significant negative effect on economic growth and government size. Physical investment was one of the main factors of economic growth in Norway. In addition, Norwegian government size had a significant negative effect on economic growth. The results indicated that Norwegian government size was under influence of government size in the previous period and increased GDP rather than oil revenues. The results indicated that oil revenues had a positive significant effect on economic growth of Saudi. In the Saudi Arabia, capital had a significant positive effect on economic growth. While, the effect of government size was negative

and significant on economic growth, meaning that enlargement of the government size had a negative effect on economic growth of Saudi Arabia. In the model, oil revenues had a positive effect on economic growth and government size increases by the increase in oil revenues. The government size was influenced by government size in the last period, which had a positive and significant effect on the government size in the current period. However, economic growth had a negative effect on government size.

Three main hypotheses were examined in this study. The first hypothesis was a positive relationship between government size and oil revenues. The results of the tests showed that this assumption is acceptable for Iran and Saudi Arabia, but it can be rejected for Norway. The second hypothesis investigated the positive relationship between economic growth and oil revenues for the selected countries. This assumption is acceptable for Iran and Saudi Arabia. The third hypothesis investigated the negative relationship between government size and economic growth. The hypothesis is supported for Iran, Norway, and Saudi Arabia.

According to results, it is recommended that policymakers try optimal allocation of oil revenues and invest them instead of spending them for current expenditures. By giving the necessary institutions to the private sector, government spending can be reduced; in this way, government spending and thus the size of government can be reduced too. Due to fluctuations in world oil prices, it is recommended to develop a currency fund, as Norway, to maintain stability of economy during periods of recession. By attracting domestic and foreign investments, the opportunity will be provided to increase constant investment and economic security.

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