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The Impact of Oil Shocks on Iranian Tax Revenue Using the BVAR Model

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Abstract

Oil shocks, due to economic sanctions and income restrictions, have cost the government dearly in recent years, and it is important to examine their effects, especially in terms of declining tax revenues. Unfortunately, the imposition of various international sanctions on Iran in recent years and declining oil revenues due to declining oil exports on the one hand, as well as declining crude oil prices globally, have had devastating effects on macroeconomic variables such as taxes, government spending and economic growth. The purpose of this study is to investigate the effects of oil shocks on Iran's tax revenues using the Bayesian self-regression (BVAR) method and considering the variables of the total tax, indirect tax, direct tax, government expenditure, and GDP during the years 1991-2019. The results of the study of instantaneous reaction and analysis of variance functions show that oil revenue shocks, at a declining rate, have a positive effect on direct and indirect tax revenues, indicating the government's tendency to rely on tax revenues and expand tax bases. With declining oil revenues, if tax bases are not strengthened, tax revenues will fall and, assuming other conditions remain stable, will lead to a larger government budget deficit. The results indicate that the response of direct and indirect taxes to oil shocks is significant but small, that shows the poor performance of the country's tax system in response to oil developments. Therefore, any decline in oil revenues, in addition to reducing tax revenues, also leads to a decrease in GDP and other government revenues; therefore, to increase tax revenues, fundamental measures and changes must be taken and strengthened within the government structure.

Keyword: Oil Shock, Tax Revenue, Fiscal Policy, BVAR.

JEL Classification: C11, H26, H27.

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1. Introduction

Oil shocks, due to economic sanctions and income restrictions, have cost the government dearly in recent years, and it is important to examine their effects, especially in terms of declining tax revenues. The major economic strategies of oil-importing countries, especially in the 1990s, were designed to mitigate the effects of macroeconomic shocks and oil price fluctuations on macroeconomic variables such as GDP, inflation, and unemployment. While the major oil-exporting countries have not been able to introduce a new economic strategy to deal with the destructive effects of oil shocks and price fluctuations in oil products on their macroeconomic variables; So that for developing countries with highly underdeveloped circuits in the economy, the increase-decrease fluctuations of oil prices, on the one hand, can be used by efficient institutionalization to industrialize the country and increase national wealth, and on the other hand or neglect and abuse. Resource management can hinder long-term economic prosperity. Looking at the economies of developing oil-exporting countries in recent decades, we find that oil revenues and the reliance of oil-rich communities on this source of income, along with its sharp price fluctuations at the international level, have adverse and detrimental economic effects, including; Promoting the traditional single-product economy and not paying attention to the sources of income of other economic sectors such as technology and information, tourism services, agriculture, and industrial products. The negative consequences of this trend of unbalanced growth can be an increase in the general level of prices or inflation, a decrease in the purchasing power of the minimum wage, a decrease in the value of the national currency against foreign currencies, an increase in government size and expansion of government ownership and a weakening sector. Private pointed to the function of the effect of algebraic substitution. Among the developing oil-exporting countries, Iran's economy has a special feature due to its high dependence on oil revenues and the sale of petroleum products; So that a large share of government revenues in meeting the general and capital needs of the country is based on revenues from the export of crude oil and its products.

2. Objectives

Iran's economy is currently experiencing a growing trend of fiscal domination influenced by external economic factors, a phenomenon in which, like many developing countries, monetary policy is influenced by fiscal policy and especially cost pressures to meet current and general needs. The government policy for management of transfer payments to reduce poverty and implement adjustment policies, are subject to more equitable income distribution. Oil exports and revenues from it are considered as an exogenous factor and a driver of economic prosperity and recession in Iran. In oil-exporting countries such as Iran, where government budgets depend on foreign exchange earnings from oil sales and important macroeconomic variables are affected by oil revenues, such standard indicators can no longer be used as a good measure of financial dominance, and financial dominance is even possible. Despite the budget surplus and low level of government debt, there is also. The purpose of this study was to investigate the effects of oil shocks on Iran's tax revenues using the Bayesian self-regression (BVAR) method and considering the variables of total tax, direct and direct tax, government expenditure, and GDP during the years 1991-2019.

3. Methodology

The model used in this study is inspired by the models introduced by Heller, Liethold, Qora (1998), Mahdavi (2008), and Zaranejad et al. (1993). According to the specific conditions of Iran's economy and the state of government revenues and expenditures, government revenues are divided into three categories: oil revenues, tax revenues, and other revenues, among which, oil revenues account for a large share of government revenues. Give other government revenues, it should be noted that although taxes are the most common and important source of government revenue; But the sources of revenue in annual budgeting are not limited to taxes, but the government also has other sources of revenue. The most important sources of income under the headings of other incomes are income of private property and assets, ownership of raw materials and monopolies, borrowing from the people, borrowing from the central bank, borrowing from foreign countries, borrowing from economic institutions International and other revenues from government services. In this study, to investigate the effects of oil shocks on Iran's tax revenues by Bayesian self-regression (BVAR) method and considering the variables of the total tax, direct and direct tax, government expenditure, and GDP, over the years 1991-2019 was used.

4. Findings and Results

Due to the nature of the time series of the data, at first, the static variables of the tested model were investigated using the generalized Dickey-Fuller test and it was observed that all the model variables were not stationary at level (I_0) and turned to remain stationary at level (I_1). The results of this test showed that there is an augmented relationship between the studied variables. Based on the results, the occurrence of oil revenues shock has a positive but declining effect on tax revenues at first, and gradually this declining effect is slightly reduced until the shock effect disappears in a stable direction. The increase in tax revenues following the oil shock is not uniform and the fluctuations have continued for four periods (four seasons) and then the impact of the shock has been decreasing and finally after a few seasons, the shock has lost its effect. The results of the study of the impulse response functions and analysis of variance show that oil revenue shocks, at a declining rate, have a positive effect on direct and indirect tax revenues, indicating the government's tendency to rely on tax revenues and Expanding the tax base. The results indicate that the response of direct and indirect taxes to oil shocks is significant but small, which indicates the poor performance of the country's tax system in response to oil developments. Based on the obtained results of instantaneous reaction functions, the occurrence of oil revenue shock will have a positive effect on tax revenues. The increase in tax revenues following the oil shock is not uniform, and after the oil revenue shock, the government's tax revenues increase and decrease continuously. These fluctuations continued for nine periods and after that, the effect of shock had a decreasing trend that finally the shock loses its effect after thirty seasons.

5. Conclusions

In the Iranian economy, due to the systemic approach to the tax system and structural problems that originate from a set of economic, cultural, and political factors, the importance and effectiveness of taxes in the economic system, especially in annual budgets, has not received much attention. The revenues from the sale of crude oil, it has weakened the serious and explicit action to solve the problems in the tax system and have faced major problems. With declining oil revenues, if tax bases are not strengthened, tax revenues will fall and, assuming other conditions remain stable, will lead to more government budget deficits. The major share of Iran's exports depends on the income from the export of crude oil and its products, and the occurrence of oil revenue shocks due to falling oil prices or reduced oil exports, especially due to economic sanctions can have a significant impact on Have macro variables. In addition to declining tax revenues, declining oil revenues will also lead to declining GDP and other government revenues. Therefore, to increase tax revenues, fundamental measures and changes must be taken and strengthened within the government structure. According to the results of the study, the volatile and exogenous nature of a significant part of oil revenues and the dependence of the Iranian economy on this source of income have adverse and irreparable consequences on the country's economy. The continuation of the single-product economy, the experience of persistent inflation rates, the steady rise in the exchange rate and the devaluation of the national currency, the expansion of public sector inefficiency, and the weakening of the private sector are examples of these adverse consequences. ; It is, therefore, necessary to seek to replace other revenues with oil revenues. One of these types of revenues is tax revenues. Taxes are not only a means of financing government budgets but also play a regulatory role in the implementation of macroeconomic policies and strategies. Also, to increase tax revenues, fundamental measures and changes must be made within the government structure and the tax base must be strengthened. If oil revenues and GDP fall, if tax bases are not strengthened, tax revenues will fall and lead to more government deficits. Also, according to the obtained results, the decrease in oil revenues, in addition to the decrease in tax revenues, leads to a decrease in GDP and other government revenues; therefore, it is necessary to pay more attention to the export of other goods and reduce dependence on oil revenues.

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