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Examining the effect of oil price shocks and the role of government size in oil exporting and importing countries

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Abstract

Oil price shocks are the main source of economic fluctuations in oil producing and exporting countries, but many factors affect the intensity of the impact of these shocks in countries. In this regard, the aim of the present study is to investigate the effect of oil shocks on macroeconomic variables in oil exporting and importing countries in 14 countries selected from among oil exporters and importers and to examine the role of government size using a vector autoregression model in panel data space based on annual data during the period 1980-2021. The results of the model estimation using STATA software show that according to the results, the effects of shocks on macroeconomic variables are different and in oil importing and exporting countries, the magnitude and direction of these changes are different. In oil exporting countries, the response of most of the variables under study to oil price shocks does not eventually dissipate after fluctuations. In importing countries, the response of the variables under study to shocks is eventually discharged after fluctuations. In the case of oil exporting countries, an increase in oil prices from both sides, the demand side through the government budget and the supply side by affecting the investment of the public and private sectors, stimulates the economies of these countries, which in turn has an increasing or decreasing effect on the economic growth of oil exporting countries, and the result of these two effects is known as the net effect of oil revenue on the economies of these countries. In oil exporting countries, the income from the export of this product constitutes a significant part of the government's income. In these countries, the amount of government spending is related to oil revenues. Therefore, it seems that the size of the government in these countries is affected by the price of oil in world markets. From the perspective of policy recommendations, governments should develop and diversify non-oil production and service sectors to reduce economic dependence on oil.

Keywords: Oil price Shocks, Consumer Price Index, Gross Domestic Product, Government Size.

JEL Classification: A10, A19, C10, C19.

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1. Introduction

Oil is one of the world's strategic commodities and one of the important production inputs for every country; as a result, severe price fluctuations, which are called oil shocks (positive and negative effects), have significant effects on the economies of developing and developed countries. Oil price shocks are the main source of economic fluctuations in oil producing and exporting countries, but many factors affect the severity of the impact of these shocks in countries. In this regard, the aim of the present study is to examine the effect of oil shocks on macroeconomic variables in oil exporting and importing countries in 14 selected countries from among oil exporters and importers and to examine the role of government size using a vector autoregression model in a panel data space based on annual data over the period 1980-2021.

2. Theoretical framework

The economic growth rate is one of the determining factors in estimating oil demand. Another cause of oil price fluctuations lies in the composition of imported goods and the dependence of the industrial sector on imports of intermediate capital goods and raw materials from abroad. The negative effects of a shock to the oil price will appear in the economy more quickly and intensely than the positive effects of a shock to the oil price.

Other mechanisms of more severe impact of negative oil shocks are changes in the exchange rate and the foreign trade system. With the emergence of a positive oil shock, the exchange rate generally decreases and the national currency strengthens. The aforementioned factor, along with the reduction of import restrictions, reduces the competitiveness of the domestic economy against other countries.

The next factor is limited access to capital markets. With a decrease in foreign exchange earnings, if the aforementioned countries have free access to foreign financial markets, they can reduce the effects of the aforementioned shock by borrowing abroad.

3. Methodology

This research is applied in terms of purpose, in terms of its research design it is semi-experimental and uses a post-event approach. In terms of nature and method it is descriptive.

The statistical sample of the research includes 14 oil exporting and importing countries, the exporting countries include Saudi Arabia, the United Arab Emirates, Iraq, Canada, the United States, Iran, Kuwait and the importing countries include Spain, India, Japan, South Korea, Chile, Turkey and France.

This research is conducted in terms of the method of collecting information and data in a library manner. In this research, databases, documents, records and reports related to the status of macroeconomic variables of selected oil exporting and importing countries are used to collect information. After collecting statistical data, Excel software is used to summarize and calculate the required descriptive statistics,

and Stata software is used to analyze and analyze the data.

Due to the nature of the data used in this study, reliable global databases and reports on macroeconomic variables are used to collect information.

Also, macroeconomic data of countries has been extracted and collected from the World Bank database (WDI) and bank balance sheet information from Bank Scope.

4. Discussion

Many macroeconomic issues and problems, such as examining the impact of shocks and fluctuations in macroeconomic variables, financial variables, and other variables, arise in a way that the data required over a long period of time to analyze those shocks and fluctuations in the form of time series models cannot be found. On the other hand, in some areas, the effects of economic variables (especially financial variables, shocks, and fluctuations in capital markets) are also transmitted to the economies of other countries. Analysis of these issues is possible in the form of panel vector autoregression models (especially with a statistical econometric approach). With the introduction of VAR settings in panel data, the Panel VAR model has been used in numerous applications.

The model used for data analysis is the panel vector autoregression model (panel VAR). Panel VARs are built with the same logic as standard VARs, but with the addition of a cross-section, VARs are a much more powerful tool for answering interesting policy questions.

5. Conclusion and Suggestions

According to the research results, the effects of shocks on macroeconomic variables are different, and the magnitude and direction of these changes are often different in importing and exporting countries.

In importing countries, an oil price shock directly increases the cost of oil imports for these countries. This increase can reduce foreign exchange reserves and put pressure on the balance of payments. Also, as import costs grow, the trade balance can show a larger deficit. Oil price shocks Increase in production costs, especially in industries that depend on energy, can increase the cost of exports and reduce the competitiveness of products in international markets. An increase in oil prices usually leads to an increase in the consumer price index, because energy costs directly and indirectly affect the price of goods and services. In particular, transportation and production costs that depend on energy can increase. On the other hand, governments may have to increase spending to offset the effects of an oil shock on public welfare, such as by paying energy subsidies or providing support packages to industries. If economic growth slows, government tax revenues could fall, putting further pressure on government budgets. Also, rising oil import costs and reduced consumer purchasing power could reduce GDP growth. Energy-dependent industries may face reduced

productivity and increased costs. Higher energy prices could also lead to reduced household consumption and aggregate economic demand, which in turn would have a negative impact on GDP.

In general, the effects of an oil price shock on oil-importing countries depend on the extent to which these countries are dependent on oil, as well as their ability to be flexible and adapt to rapid price changes.

In exporting countries, an oil price shock directly increases the export earnings of oil-exporting countries. This can strengthen their fiscal position and trade balance. Increased oil revenues may lead to a strengthening of the national currency and reduced exchange rate volatility, which can lead to greater economic stability. With increased oil revenues, oil-exporting countries will be able to increase their imports and invest in a wider range of goods and services. Some oil-exporting countries may become dependent on imports due to economic and social realities, especially if domestic industry is underdeveloped. In the short term, an oil price shock may increase energy costs and, consequently, the consumer price index. This may lead to higher prices for consumer goods and services. Some oil-exporting governments may, due to high oil revenues, provide subsidies to control prices and protect consumers, which can reduce the effects of inflation. Increased oil revenues can lead to increased government budgets, which in turn allows for investment in infrastructure, public services, and social programs. On the other hand, increasing revenues can lead governments to become more dependent on oil revenues, which makes the economy vulnerable to future price fluctuations. Also, additional revenues from oil sales can lead to economic growth and an increase in GDP. This can lead to attracting domestic and foreign investment, although if economic growth is only due to oil sales and there is no development in other sectors, this situation can lead to economic instability.

6. Ethical Considerations

6.1. Compliance with ethical guidelines

In this article, the principles of confidentiality have been fully observed, and all matters have been included in the text of the research, citing their sources.

6.2. Funding

All costs of this research were covered by the authors and there was no financial support.

6.3. Conflict of interest

The authors declare that there are no conflicts of interest in this research.

6.4. Acknowledgments

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