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The Impact of the OPEC Summit on Iran's Oil Revenue (SVAR-Quantile Hybrid Model Approach)

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Abstract

Given the economic dependence of OPEC member countries, including Iran, on crude oil prices and export earnings, and considering the fact that one of the factors affecting crude oil prices is OPEC decisions, in this study, we investigate the impact of OPEC Summit Statements (increase, decrease and stabilization of production levels) focused on Iran's oil export earnings. Therefore, from the monthly data for the period 2018-1986 in 9the form of three quantities: West Texas crude oil prices are below $ 40 (Q-reg1), between $ 40 and $ 70 (Q-reg2) and above $ 70 (Q-). reg3) and Structural Vector Autoregressive Model (SVAR) were used in the quantile method. The results of the estimation of the instantaneous reaction functions (IRF) in the quintiles showed that the impact of Iranian oil export earnings on oil prices increased from $ 40 to $ 40 and then $ 70. Decreases. On the other hand, in quintiles of crude oil prices below $ 40, between $ 40 and $ 70 and above $ 70, first the shock caused by the statement declines, then the shock caused by the statement increases and finally, the shock caused by the level stability statement OPEC production affects Iran's oil export earnings. Also, as crude oil prices rise, the impact of these statements on Iran's oil earnings is diminished.

Keywords: OPEC Statement, Crude Oil Price, Structural Vector Auto Regression Model, Quantitative Method, Iranian Oil Export Revenue

JEL Classification: C32, F51, O17

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Introduction

Since more than 50 percent of the world's energy consumption comes from oil directly and indirectly, today oil plays an important role as a strategic economic commodity in global developments (Nazari et al, 2017). One of the most important variables considered in the crude oil market is the price of this commodity and the factors affecting it. The price of crude oil is of particular importance to all crude oil producing and consuming countries, especially OPEC members, most of whose revenues come from crude oil sales. Also, in addition to the formation of high prices, the developments in the oil market in the last two decades have been such that the world seems to have entered the volatile period of oil prices (Miao et al, 2018). One of the factors influencing the price of crude oil is OPEC's policies and decisions. The main purpose of this organization is to coordinate and integrate the oil policies of the member states and determine the best way to ensure their collective interests, design methods to ensure the stability of oil prices in the international market, special attention to the need to provide a stable income Oil-producing countries, and ultimately oil suppliers, are efficient, cost-effective, and permanent (Asali et al, 2015). OPEC is the world's largest and most important oil market organization, with about 70 percent of its known reserves, more than 40 percent of the world's oil production, and various executive and policy instruments, playing an important role in determining global oil prices and market control. OPEC policies, which include increasing, decreasing or stabilizing cartel production and member quotas, are published as news. The release of news about OPEC members 'agreements on the production ceiling of the cartel and the members' quota stimulates the price, because before the agreement and the publication of the news, a speculation is created about what OPEC will decide (Loutia et al, 2016). On the other hand, there is conflicting evidence about the impact of OPEC's policies and decisions on crude oil prices. In addition, the economies of most OPEC members, including Iran, are heavily influenced by oil revenues. 80 to 90% of export revenues and 40 to 50% of the government's annual budget are oil revenues. With 10.64% of the world's oil reserves and 9.7% of OPEC production, Iran is the second largest member of OPEC after Saudi Arabia, and therefore OPEC's policies affect the country's oil economy (Asna Ashari et al, 2016). OPEC policies can also be used to gain experience in dealing with future crises and price declines. Therefore, the study of OPEC policies and the identification of the benefits and problems affected by them is of particular importance for the country's economy and cash flows, which will be discussed in this study.

Statement of Problem

What has formed the basis of the researcher's main concern in this study is how the OPEC summit essentially affects Iran's oil revenues, and how is this

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identified from a scientific approach and a combined model of self-regression in the Quantile method?

The purpose of the research

In this study, several goals have been considered, which are as follow:

1. Investigating the effect of OPEC statements on Iran's oil revenues using the vector self-regression model in the form of Quantile method
2. Investigating the nature of the impact of OPEC meetings on supply market management and oil revenues in the world
3. Investigating the effect of OPEC meetings on the pattern of behavior of oil producers in oil-rich countries

The importance and necessity of research

In terms of importance, it can be said that decision-making meetings at OPEC can go a long way in the direction of oil production and supply and the world's energy resources as a whole. In these meetings, the level of supply and demand, the political conditions of different countries and such issues are monitored on a regular basis, which can be vital for countries with oil resources.

It is also important to note that the need for intelligence aristocracy over OPEC meetings and their detailed analysis in the form of a scientific model is an undeniable necessity. Any action without an information background and international monitoring, countries may suffer heavy losses. Also, the use of vector self-regression model in the form of quantum method has not been used in other studies before, and therefore its vacancy is quite noticeable and the necessity of writing it has been evident.

Methodology

In this study, the impact of OPEC policy shocks (increase, decrease and stability of production level) on Iran's oil revenues has been investigated using the (SVAR) self-regression vector model in the form of quantum method. The main advantage of SVAR models over the original VAR models is that, unlike the VAR model, in which structural impulses are identified implicitly and tastefully. The SVAR model explicitly has an economic logic based on economic theories for applying constraints and constraints. On the other hand, in early VAR models, Cholesky analysis is used to achieve instantaneous reaction (IRF) functions. Cholsky's analysis implies a causal arrangement, so it may be unacceptable if the researcher's goal is to examine the effects of more than one shock. Blanchard (2004) developed the SVAR model by applying theoretical constraints to the simultaneous effects of impulses, and then other researchers identified, in their view, instantaneous reaction functions by applying theoretical constraints to the long-term effects of impulses. Using the SVAR model, the impact of various dimensions of shocks resulting from OPEC policies on Iran's oil revenues can be assessed. To do this, it is necessary to calculate the

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instantaneous reaction function or IRF. Using this criterion, the duration of the shock effect and its maximum effect after occurrence can be determined.

Conculsion

Given the dependence of the economies of most OPEC members, including Iran, on the price of crude oil and its export earnings, as well as the fact that it is one of the factors influencing the price of crude oil, OPEC policies and decisions, in this study, The impact of OPEC statements on Iran's oil export revenues was examined. Therefore, given the declining impact of OPEC statements on Iran's oil export earnings in recent years and its impact on off-market factors, especially political factors and the country's strong dependence on oil export revenues, the country's executive policies are strongly recommended. And to implement the reduction of the dependence of the country's economy on oil revenues during a well-codified and accurate schedule.

References:

Alasi.M, Ghasemi, A.R, Taklif. A, Madadi,S.(2015). The effect of OPEC news on the price of crude oil with considerations in virtual variables, Journal of Energy Economics Studies, 10 (44): 14-1.

Asna ashari. A, Nadri. K, Abolhasani.A, Merhgan.N, Babaie semiromi.M.R.(2016). The effect of oil price shocks on inflation, growth and money, Iran Case Study, Economic Growth and Development Research, 6 (22): 102-85.

Blanchard, O. (2004). "Fiscal Dominance and Inflation Targeting: Lessons from Brazil". NBER Working Paper (10389): 1-35.

Loutia, A. Mellios, C. Andriosopoulos, K. (2016), Do OPEC announcements influence oil prices?, Energy policy, 90: 262-272.

Miao, H. Ramchander, S. Wang, T. Yang, J. (2018), The impact of crude oil inventory announcements on prices: Evidence from derivatives markets, Journal of Future Markets, 38: 38-62.

Nazaru, R, Khodaparast Mashhadi,M, Seifi, A.(2017). Analysis of Iran's Behavior in OPEC: Application of Markf Switching Models, Sustainable Growth and Development, 17 (2): 175-145.

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