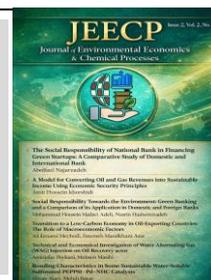




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## A Model for Converting Oil and Gas Revenues into Sustainable Income Using Economic Security Principles

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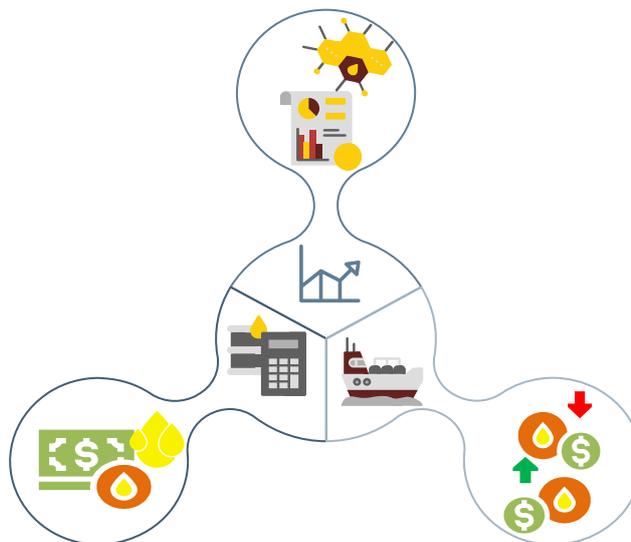
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### ABSTRACT

Economic security has become a crucial concept in the modern world, attracting considerable attention from policymakers across various fields. This paper delves into one of the major challenges faced by oil-producing countries: transforming oil and gas revenues into sustainable income within the framework of economic security. We first introduce different methods for converting oil revenues into sustainable income. Subsequently, we employ the Ordered Priority Approach (OPA) and consult with a specialized community to assign weights to these methods based on established economic security criteria. Among the six methods evaluated, the approach involving forward contracts and the establishment of oil funds receives the highest score, identifying it as the most suitable method for converting oil revenues into sustainable income within the context of economic security. Based on our findings, employing a combination of diverse methods while emphasizing investment-based strategies and adhering to economic security principles can significantly contribute to enhancing a country's long-term economic security. This is particularly relevant for countries heavily reliant on oil and gas revenues.



### 1. Introduction

Rising Concerns Drive Exploration of Sustainable Income Strategies in Oil-Rich Nations. The oil price shocks of 2014 and 2015, coupled with growing environmental considerations increasingly impacting policies and business practices, have prompted oil-producing countries to explore strategies for income stabilization and, critically, the conversion of oil and gas revenues into sustainable income streams. The intricate relationship between revenue volatility and the long-term benefits derived from oil and gas sales is a complex and multifaceted issue influenced by a range of economic, political, social, and cultural factors.

**Oil's Unique Complexity:** Oil's unique status as the most political and simultaneously crucial commodity influencing diverse sectors injects added complexity. This intrinsic complexity, when interwoven with the intricate nuances of economic knowledge, creates multi-faceted challenges exceeding those associated with other commodities.

**Economic Security, A Vital Pursuit:** Converting national income into stable income streams underpins economic security and fosters national economic stability, ultimately leading to sustainable development and resilience against economic shocks, including sanctions.

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investigated autonomous vehicles and their performance in the field of metaverse using the OPA method. The OPA model is a linear programming model that does not have high complexity. The steps of this method are as follows:

The first stage: identifying the experts and determining the priority of the experts based on the level of work experience or educational qualification.

The second stage: identifying the criteria and determining the priority of the criteria by each expert.

The third stage: Identifying the options and determining the priority of the options in each criterion by each expert.

The fourth stage: forming the linear programming model and solving it by optimization software such as Gems, Lining, and MATLAB.

### 3. Results and Discussion

#### 3.1. Investigating the ratio of revenues from oil sales in Iran's economy

In the last years before the Islamic revolution, due to global developments and the sharp increase in oil prices, Iran's oil income Suddenly there was a significant increase. This increase in income and its injection into the society increased the consumption demand of the society. In order to respond to this amount of demand, the government had to import consumer goods. In addition, the government implemented welfare plans and increased salaries. All this caused the country's budget to become heavily dependent on oil revenues. Incomes that did not go to the production sector but to the import of consumer goods. Now the government's expenses had increased so much that only rich oil revenues could answer it [14-16].

Before the 1950s, agriculture had a significant share in Iran's economy, but with the influx of income, it was the oil and gas sector that had the largest share. In 1346, the share of agriculture was 66.13% and in 1353, it was 47% of the GDP. While the share of oil revenues from the government budget increased from 46 to 50 percent in 1345 to 1350 to 85.5 percent in 1353 .

Shajari and his colleagues have investigated the relationship between the budget and the balance of payments, budget and liquidity, and finally oil revenue and the government budget in Iran using the ordinary least squares method and with the help of the simultaneous equations system. According to their results, with a one percent increase or decrease in oil revenue, the government budget increases or decreases by 47 percent. This shows a significant relationship between the government budget and oil revenues in Iran) (Shajari, Houshang; Ustadi, Hossein; Pir Moradian, Ilham 1388.

During the years when oil became the most important part of Iran's economy, there were jumps in the price of oil.

It is expected that if the income resources are used correctly and the resource curse phenomenon does not occur, the increase in oil prices will improve the economic indicators of the countries that have this resource.

However, the examination of economic indicators shows that the increase in oil prices and the consequent increase in the country's income through the sale of oil, either had a small positive effect on the indicators or had no positive effect at all. In some cases, it has even had a negative impact. Regarding the poverty index, according to statistics, although the increase in oil prices had short-term effects on reducing poverty, the general trend of the years after the 1950s, which in general increased The accompanying price shows a decrease in the per capita income of Iranians .This means that the people are getting poorer. This issue, along with the increase in inflation, which is partly caused by the sudden increase in the price of oil, shows it. At least the increase in oil revenues has not been able to have a serious impact on poverty reduction. In the case of the unemployment index, like the poverty index, although there has been a temporary improvement in periods with the increase in the price of oil, it has not had a significant and lasting effect. In the case of the inflation index, too. As it was said, during this period, it has always been one of the serious problems of Iran's economy. Finally, the increase in oil prices has had a significant negative impact on the inequality index and has caused an increase in inequality

The graph below shows the dependence of the GDP on oil and gas production, based on these statistics, the highest dependence is in 1974 with more than 47% dependence and the lowest in 1986 with almost 5% dependence, which can be said as an average. The dependence of Iran's GDP on crude oil is close to 30%.

Chart 2: The degree of dependence of national gross production on oil and gas production Source: World Bank

The graph below also shows that countries whose budgets rely more on natural resources such as oil usually have less variety of economic products. The following figure shows the variety of manufactured products between Iran and Turkey in 2018.

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Table 1. Expert experimental expertise (year)

0.340847	10	E1
0.116355	5	E2
0.083433	3	E3
0.200413	6	E4
0.258951	7	E5

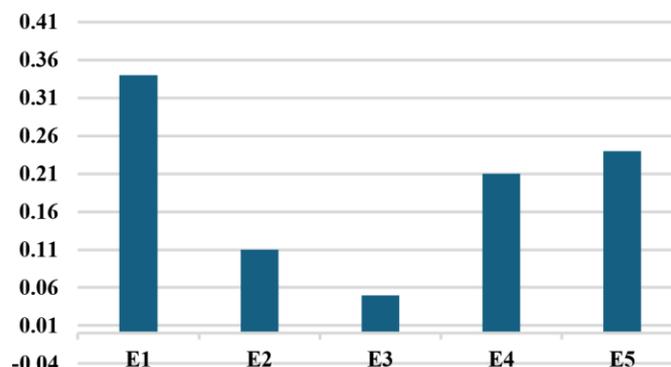


Fig 1. Expert experimental expertise

In the next section, the weight of the criteria should be extracted. For this purpose, experts from 1 to 4 to these criteria rated these criteria in economic security.

Table2. Expert experimental expertise

access to resources	0.116499
Power upgrade	0.286346
Wealth growth	0.196184
independency	0.400971

And finally, all the experts based on the above criteria (economic security criteria) have scored the patterns of converting the incomes from the sale of oil and gas into sustainable incomes.

Table 1. Expert experimental expertise

The pattern of converting revenues from oil and gas sales into sustainable revenues	0.183376
Establishment of oil funds	
Attracting foreign investment in the energy sector	0.122243
Sale of oil futures	
Exchange with strategic goods	
Buying shares of refineries in other countries	0.204426
Oil and gas swap	
Exchange with strategic goods	
Buying shares of refineries in other countries	0.172418
Oil and gas swap	
Buying shares of refineries in other countries	0.160883
Oil and gas swap	0.156654

### 4. Conclusions

In this research, the patterns of converting oil revenues into sustainable revenues were analyzed using 6 methods of documentary and library study. These methods include: oil and gas swaps; buying shares of refineries in other countries; clearing with strategic goods; selling oil futures; attracting foreign investment in the energy sector and establishing oil funds. In the following, by referring to the opinion of experts and confirming the opinion of Athar, the criteria of economic security were examined and weighted by referring to the elite society. The weight of these criteria is according to their role in converting the resulting income From the sale of oil and gas to sustainable incomes, these experts were examined. According to this index (the role of these criteria in converting the incomes from oil and gas into sustainable incomes), in order of the highest weight are: non-dependency, promotion of power, The growth of wealth and access to resources. [17]

After confirming and weighting these components, the experts of this research, whose weight is determined based on their experience, the methods of converting oil and gas revenues into sustainable incomes were ranked, and based on this, the mentioned methods were ranked in order of priority. It consists of: 1) sale of oil futures; 2) establishment of oil funds; 3) exchange with strategic goods; 4) purchase of shares of refineries in other countries; 5) oil and gas swap and 6) attraction of foreign investment in the sector. Energy.

What is obtained from the process of this research is that if the policy makers of the oil and gas industry want to take action in accordance with the criteria of economic security in order to convert the incomes from the sale of oil and gas

into sustainable incomes, they should do so in accordance with the output of this article and according to the weighting of the experts. Make policy. [18].

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