

The Impact of Export Restrictions on Iran's Non-oil Export with an Emphasis on the Mining Sector

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Abstract

The present study, by estimating supply and demand functions, investigated the factors affecting Iran's non-oil exports especially in export of mineral products with an emphasis on export restrictions. The results show that Iran's non-oil exports have decreased as a result of the international sanctions despite the foreign exchange surge in Iran in 2012. In addition to these sanctions, the structure of Iran's non-oil export has not undergone any manifest changes in terms of the extent of the factor intensity of production, while as far as technology is concerned, the exportation of higher-technology products has been impacted by the sanctions to a greater extent. Using two stages least squares method, non-oil export supply and demand functions in the period from 1987 to 2017 have been estimated. Estimated coefficients show that foreign prices and income of other countries are the most important factors affecting Iran's export demand, and the price and income elasticities in the minerals export sector have been obtained as higher than those of the total non-oil exports. The coefficient of the dummy variable as a determinant of the effect of sanctions is negative and significant for all non-oil exports of Iran while it is positive for the export of mineral products. According to the achievements of the present study, more than two-thirds of Iran's non-oil exports are primary and resource-based products. Iran's non-oil exports are more demand-driven, and factors such as global prices, other countries' incomes, and sanctions are more influential than supply-side factors such as investment or productivity. The results of the model and the analysis of the structure show that the sanctions are ineffective in exporting mineral products.

Keyword: Export restrictions, Non-oil export structure, Export demand and supply, Mineral products export, Two-stage least squares (2SLS).

JEL Classification: F31, F13.

1. Introduction

The present paper seeks to analyse the effect of export restrictions on Iran's non-oil exports. A government may place some obstacles on the way of exportation for some different reasons including protecting the natural resources or

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generating revenue and, at times, one or more countries may impose some export restrictions on a certain country's exportation because of different political and economic reasons. The investigations suggest that Iran's foreign trade has been subject to both of these restrictions over the last decade. On the other hand, Iran's government has imposed some restrictions based on some considerations such as prevention from economic rent or creation of greater value added. Also, the international community has imposed some restrictions on Iran's foreign trade to put political pressure. Does the imposition of international sanctions have the same impact on all sections of Iran's exports? This is the question the present study tries to answer, and it is assumed that the sanctions have had the same impact on all sections.

To prove the research hypothesis and to find the answer to the research question, the present paper was designed as follows. In the next section and using descriptive statistics, the structure of Iran's non-oil export was determined based on the factor intensity of production and technological level using the common classifications in the international trade. In this section, the model was specified in the framework of Simultaneous Equation Model (SEM) in order to evaluate the main factors affecting the demand and supply in exports of Iran, and the data used in the model and resources used to access them were introduced. The results of model estimation and the interpretation of the coefficients of the demand and supply functions of Iran's non-oil exports were analysed in the third section. The conclusion and policy recommendations were presented in the fourth section.

2. The Effect of Export Restriction Policy on Iran's Non-Oil Exports from the Perspective of Descriptive Statistics

- Non-oil exports classification based on the factor intensity of production

Generally, it can be concluded that the workforce share in Iran's non-oil exports has diminished in the period under study, and the share of the raw materials and high technology goods has increased. From factor intensity point of view, non-oil export has not experienced any significant changes before and after the restrictions.

- Non-oil exports classification based on the technology level

From technology point of view, export of higher-technology products has been impacted by the sanctions to a greater extent.

In this regard, for identification of Iran's export structure and in the framework of a descriptive analysis, the non-oil export was classified based on the factors intensity of production and technology level where the results showed that two thirds of Iran's non-oil exports are include the raw materials and low technology goods and the higher technology products are more impacted by the sanctions as far as level of technology is concerned.

3. The Effect of Export Restriction Policy on Iran's Non-Oil Exports Based on Inferential Statistics

3.1. Method

Since we intended to estimate the functions of export demand and supply, and to further estimate the price and income elasticities, the structure of the equations were defined as the linear logarithm and the dummy variable was added to the right side of the first equation to determine the impact of sanctions on Iran's non-oil exportation. The error term was also added to the equations.

$$\text{Ln}X_t^d = a_0 + a_1 \text{Ln}P_{xt} + a_2 \text{Ln}P_{wt} + a_3 \text{Ln}Y_{wt} + D\text{sanction}_t + e_t \quad (1)$$

$$\text{Ln}X_t^s = b_0 + b_1 \text{Ln}P_{xt} + b_2 \text{Ln}P_{dt} + b_3 \text{Ln}Inv_{wt} + b_4 \text{Ln}Pro_t + v_t \quad (2)$$

The results indicated that Iran's non-oil export is sensitive to the prices of the exported goods from other countries and the global revenues. The negative coefficient of dummy variable in the demand function shows that Iran's non-oil exports were impacted by the sanctions imposed in 2012. The equations used to estimate the demand and supply in the export of raw minerals also show the high price and income elasticity of demand. The noteworthy point is that the positive coefficient of the dummy variable of the effect of sanctions on exporting minerals, which indicates that Iran's export of minerals has not affected by sanctions.

4. Conclusion and Policy Recommendations

Generally, the results show that Iran's non-oil exports are demand-oriented and the factors affecting the demands determine the amount of Iran's export. The descriptive analyses showed that two thirds of Iran's non-oil exports are composed of the raw and resource-oriented goods that generally provide the raw materials for the industries of other countries. With regard to the strong role of the demand factors, the export policymakers should pay attention to the fact that non-oil exports, in general, and mineral exports, in particular, are affected by external factors. Thus, considering the calculated price and income elasticities, non-oil exports require a roadmap to drive the structure of the country's exports from primary products to the higher added value products. Estimated global price and income coefficients show that as we move toward the raw and lower value-added goods, the global demand for Iranian goods increases, and the exogenous factors that are formed in the world have completely overshadowed Iran's non-oil exports. These results suggest that in order to reach the desired point in export, especially in the mining sector, which is highly demanded by the world, temporary export restriction policies only confuse foreign customers and provide the ground for rent-seeking behavior by domestic exporters. Given that the necessary condition for the development of mineral resources is the large volume of investment, it is suggested that a coherent, sustainable and transparent framework be defined for the implementation of the policy of restricting exports

in the field of minerals and raw materials. The experience of successful countries in this field shows that this framework should have a particular structure:

- The mechanism of spending revenues from taxes or export duties in the mining industry should be clear and the share of the mining industry should be specified in this respect;
- The political position of trade partners in international relations is a factor that is crucial in drawing up a roadmap for the development of non-oil exports, especially in the mining industry.

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