

Exporting Iranian pharmaceutical products to Russia's market: Potentials and Barriers

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Article Info	Abstract
<p>Original Article Main Object: Economics Scope: Iran & Russia</p> <p>Received: 26 May 2024 Revised: 30 June 2024 Accepted: 06 July 2024 Published online: 29 June 2024</p> <p>Keywords: cosine index, export, pharmaceutical products, revealed comparative advantage index, Russian market, trade plan index.</p>	<p>The pharmaceutical market is one of the most important and lucrative industries in the trade world. The expansion of non-oil exports and shifting away from the mono-product economy and its problems (high volatility in the oil market and, consequently, the country's revenue, as well as the issue of sanctions on Iran's oil sales by the West) have made it inevitable for Iran to expand its export of pharmaceutical products. Meanwhile, the Russian Federation, for historical reasons, has a high potential to become a destination for Iran's pharmaceutical products due to the geographical proximity of the two countries and the possibility of direct shipment of goods to Russia via the Caspian Sea. Russia is a large consuming market with the population of 145 million and high volume of pharmaceutical imports (over 10.5\$ billion in 2018). The article analyses the pharmaceutical export potential of Iran to the Russian Federation using the indicators of revealed comparative advantage index, cosine index and trade plan index. The findings of this study indicate the high potential of Iranian pharmaceutical products for export to the Russian consuming market and the lack of utilization and the neglect of the Iranian pharmaceutical manufacturers and exporters from the Russian market. As policy implications, the authors recommend making pharmaceutical products a priority for export to the Russian market, which will lead to more efficient use of Iran's productive potential.</p>

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Extended Abstract

Background

Iran has a long history of political and economic relations with Russia. While the two nations appear to have strong political ties, talking about trading, we're not witnessing that kind of coherence in this regard. As of the year 2018, things are quite the same; indeed, the shape of this relation has changed in many ways. According to Trade Map, the latest statistics available, which belong to the year 2018, suggest that a heavy trade imbalance exists between two countries. In 2018, Russia has exported a nearly 1.2\$ billion worth of products to Iran, while the vice versa figures are around 280\$ million. The numbers have dropped for Russia compared to the previous year, in which about 1.3\$ billions worth of products was imported by Iran and the same has happened for Iran with about 285\$ million worth of products exported to the Russian Federation in 2017.

Table 1. Total export of commodity group code 3004 from Iran to Russia, USD

Year	Export value	Year	Export value
2001	0	2010	0
2002	43,000	2011	51,000
2003	86,000	2012	12,353,000
2004	110,000	2013	15,322,000
2005	79,000	2014	28,561,000
2006	90,000	2015	518,000
2007	0	2016	17,680,000
2008	5,000	2017	18,824,000
2009	0	2018	6,867,000

Source: Authors' compilation from Trademap.org

Aims

The aim of this paper is to find out export potential and comparative advantage of Iran to deal in trade with Russia with pharmaceutical product.

Methods

We carry out three popular indices, namely Cosine index, NRCA (Normalized Revealed Comparative Advantage) index and Trade Plan index for the data of pharmaceutical trade over the period of 2001–2018. The applied indexes are explained as follows.

a) The Cosine index

This index proposed by Allen (1956: 135) is an appropriate measure to evaluate the complementarity of trade between countries. The cosine index that represents the angle between the exports of pharmaceutical commodities of Iran (country *i*) with the imports of

pharmaceutical commodities of Russia (country j) can be estimated by Equation 1.

$$Cos_{ij} = \frac{e_i \cdot m_j}{[e_i][m_j]} \rightarrow Cos_{ij} = \frac{\sum E_{ik} \cdot M_{jk}}{\sqrt{\sum E_{ik}^2 \cdot \sum M_{jk}^2}} \quad (Eq. 1)$$

K= 1,2,3,...,n-1

b) NRCA index

The NRCA index measures the degree of deviation of a country's actual export from its comparative-advantage-neutral level in terms of its relative scale with respect to the world export market and thus, provides a proper indication of the underlying comparative advantage.

The key to the derivation of the NRCA index is the comparative-advantage-neutral level (point). The existing RCA measures indeed have a consensus on this situation (Yu et al., 2008: 267–268; Bojnec & Ferto, 2014: 6156). In the situation of a comparative-advantage-neutral, country i's export of commodity j (or E^{ij}), would equal $E_i E_j / E$. Country i's actual export of commodity j in the real terms, E_{ij} , would normally differ from E^{ij} ; and the difference can be stated in Equation 2.

$$\Delta E_{ij} = E_{ij} - E^{ij} = E_{ij} - (E_i E_j) / E \quad (Eq. 2)$$

Normalizing ΔE_{ij} by the world export market (E), we obtain the NRCA index as Equation 3.

$$NRCA = \Delta E_{ij} / E = E_{ij} / E - E_i E_j / E E \quad (Eq. 3)$$

c) Trade plan index

UNCTAD (United Nations Conference on Trade and Development) International Trade Center uses the Trade Plan to analyze the exporting of different commodity groups. A Trade plan compares export growth with global demand growth. More precisely, the growth of export of product i by a country (δ_{ij}) is compared with the growth of world imports of the same product (r_i) and total growth of the whole world imports (r).

A Trade plan is divided into four different quarters, according to which, the exported products are categorized into the groups of winners (two groups) or losers (two groups) based on their placement in the growing markets or in declining markets. The characteristics of each quadrant are showed in Table 2.

Table 2. The characteristics of each quadrant

1st quarter	Winners in growing markets	$\delta_{ij} > r_i > r$
2nd quarter	Losers in growing markets	$\delta_{ij} < r_i, r_i > r$
3rd quarter	Losers in declining markets	$\delta_{ij} < r_i < r$
4th quarter	Winners in declining markets	$\delta_{ij} > r_i, r_i < r$

Empirical findings

According to the results of the Cosine index for Iran's pharmaceutical exports and pharmaceutical Russia's imports, there is a high degree of

similarity between these two nations in three years among the period of 2001 to 2018. It has a maximum of 0.8511 and 0.8710 in 2001 and 2018, respectively, while its minimum was in 2017.

Table 3. The results of the Cosine index for Iran's pharmaceutical exports and pharmaceutical Russia's imports

2001	2002	2003	2004	2005	2006	2007	2008	2009
0.8511	0.7175	0.6774	0.6207	0.5593	0.5519	0.5507	0.5537	0.5492
2010	2011	2012	2013	2014	2015	2016	2017	2018
0.5454	0.5457	0.5528	0.5464	0.5470	0.5484	0.5559	0.5420	0.8710

According to the normalized revealed comparative advantage index calculations (Figure 1) for Iran's pharmaceutical exports, the country has a good relative advantage in exporting the commodity group 3004 and has been in the range of 0.7 to 0.9 in this regard since 2005.

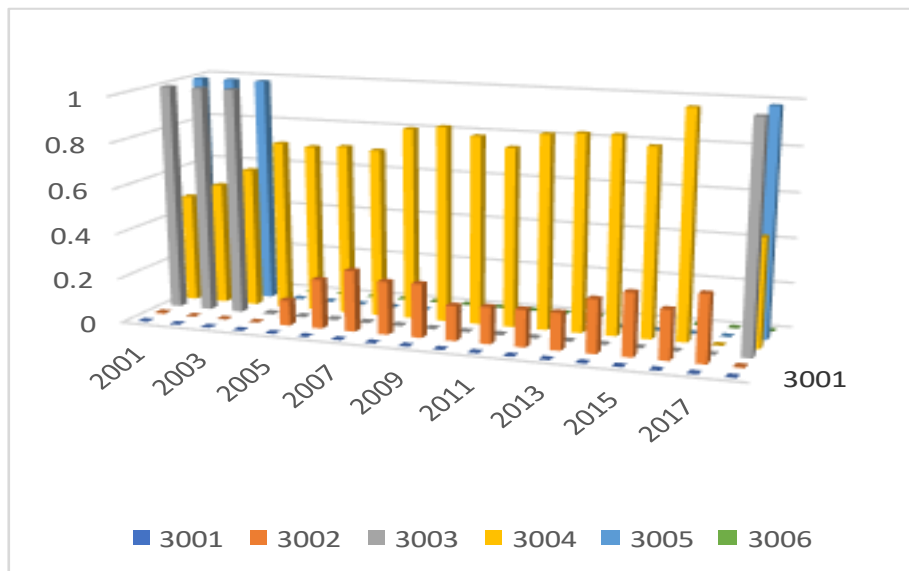


Figure 1. NRCA calculations

Based on the results of Trade Plan Index (Table 4), Iran is placed in the 1st quarter (winners in the growing markets) in three commodity groups (3002, 3004 and 3006), and the export growth of these commodity groups has been higher than the global growth in imports for the same commodities.

Table 4. The results of Trade Plan Index

1st quarter	3002-3004-3006	$\delta_{ij} > r_i > r$
2nd quarter	3001-3003	$\delta_{ij} < r_i, r_i > r$
3rd quarter		$\delta_{ij} < r_i < r$
4th quarter	3005	$\delta_{ij} > r_i, r_i < r$

Conclusion

The empirical findings revealed that Iran has a high potential in

exporting certain pharmaceutical products but has not used it over the last decades. One of the main obstacles of exporting of pharmaceutical products to the vast market of Russia is “Domestic Policies”. Domestic policies may occasionally lead to negative growth in exports of pharmaceuticals, such as the ban set on the exports of pharmaceutical products introduced in 2018 following the Iranian government's attempts to stop the sharp value loss of Iranian currency (Rial), resulting in a heavy decrease of country's export of pharmaceutical products to Russia.

Conflict of interest

The authors declared no conflicts of interest.

Authors' contributions

All authors contributed to the original idea, study design.

Ethical considerations

The author has completely considered ethical issues, including informed consent, plagiarism, data fabrication, misconduct, and/or falsification, double publication and/or redundancy, submission, etc.

Data availability

The dataset generated and analyzed during the current study is available from the corresponding author on reasonable request.

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