Bilateral Trade Potentials in Iran-Russia Relations: A Case Study of Food Trade

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Abstract

Signing a preferential trade agreement between Iran and the Eurasian Economic Union (EAEU) has created a suitable context for the expansion of trade interactions between the countries of this region. With respect to this context, this paper examines food trade potentials between Iran and Russia as two neighbors with significant economies. Product codes are chosen from the 21 categories of the integrated tariff system based on the global definition of food. Data analysis is based on four trade criteria including the Allen cosine measure, the Revealed Comparative Advantage measure, the simple estimate of trade potential measure, and the Drysdale index over the years 2001–2017. These indices illustrate that Iran and Russia have high trade capacities for some items in certain food groups, and that they can facilitate the process of economic integration through reinforcing regional interactions and intra-region trade expansion, while safeguarding national interests and improving national security. The paper concludes that Iran's food exports to Russia in a particular set of commodity codes enjoy the potential of expansion due to structural similarities between the countries' food exports, the increasing trend of Iran's food export potential to Russia, the increasing advantage of these commodity codes in Iran's export to the world, and the increasing trade expansion opportunities from Iran to Russia.

Keywords: Russia, Iran, Iran-Russia Relations, Food trade, International trade, Trade potential measure, Cosine measure, Revealed comparative advantage measure, Drysdale index, Eurasian Economic Union, *JEL:* F14, Q17

1. Introduction

The history of trade and commercial relations between Iran and Russia dates back to the Samanid era (Jamalzadeh, 1384 [2005 A.D.]), and since then, the relations, similar to any other, have waxed and waned over the years. International developments in the past decades, such as US and European sanctions on Iran and Russia have created a shared tendency for the two countries to seize regional cooperation opportunities and improve bilateral ties. Multiple summits at highest political levels and subsequent agreements have brought political convergence and emphasized the need to boost economic relations between Tehran and Moscow. However, the trading volume between Iran and Russia remains limited despite the existence of a large common sea border, the historical background of the two nations' relationship, and the countries' common geo-economic and geo-cultural status. Actions taken to flourish economic relations would improve bilateral ties, expand non-oil exports, and reduce dependency on energy exports, which seem to be significant parts of the macroeconomic policies of the two countries. In this regard, food trade can play a key role in achieving these objectives.

Signing the Preferential Trade Agreement between Iran and the EAEU in May 2019 provided a new economic opportunity for Iran and the member states of the Union to take advantages of bilateral economic potentials. Based on the agreement, the average rate of EAEU countries' import duties on industrial goods from Iran was reduced by 7% while the average rate of Iran's import duties on manufactured goods from these countries was reduced by 3.5%. However, these reduction rates on agricultural commodities were planned to be 19% and 5% respectively. This agreement, in nine chapters with more than 100 articles, contains tables of tariff concessions given to the EAEU by Iran, including 360 products

(based on the 8-digit HS code), and given to Iran by the EAEU including 502 products (based on the 10-digit HS code). From 862 tariff concession commodities, 223 commodity items are agricultural products, 369 are industrial products, and 270 are other products.

While the agreement could pave the way for rather improved trade relations between Iran and Russia, the overall achievement highly depends on raising awareness regarding the comparative advantages of the two countries' foreign trade sector, with the aim of realizing business opportunities, maintaining a highlighted and sustained presence in regional and international competitions, and transferring technology and capital. Accordingly, this study seeks to determine the advantage of building commercial capacities in agricultural and food products between Iran and Russia—a country that plays a pivotal role with 144 million population (from the 183 million in the Union). The first step in determining the Iran-Russia food trade advantages is to identify the countries' trade potentials and to explore the possibilities of developing trade between the two nations. Therefore, in this study, we seek to answer the following questions in order to investigate the possibility of trade development and the potential created by this agreement between Iran and Russia in the food industry.

- What is the trade potential between Iran and Russia?
- What are the degrees of trade similarity and trade complementarity of the two countries and those of the commodity codes that have the Revealed Comparative Advantage (RCA) in Iran's export to Russia and vice versa?
- What are the commodity codes that could expand trade between Iran and Russia in the food industry?

2. Review of Literature

Iran-Russia relations have been the subject of numerous studies by various scholars, including but not limited to Koolaee, Mousavi and Abedi (2020), Karami (1389 [2010 A.D.]), Barzegar (2014), Moore (2014), Jafari and Zulfaghari (1392 [2013 A.D.]), Sanaei (2014) and Kozhanov (2020). More relatedly, the role and different aspects of trade in the relations have grasped the attention of researchers, such as Jancikova (2019), Rasoulinezhad (2016), Saberi Haghayegh and Hassangholipoor (2018) and Karami, Rasoulinezhad and Shokri. (2019). A limited number of research addresses food trade between the two countries, including the study by Tahernejad and Mohammadi Kouchesfahani (1394 [2015 A.D.]). Touching upon the subject matter on a single-item basis, they discuss the factors, barriers, and marketing methods of kiwi exports to Russia and put forth the claim that by adopting appropriate tax policies, reducing tariffs on imports of Iranian kiwi to Russia, and facilitating bank transactions, one can help increase the share of Iranian kiwi exports in the Russian market. In this study, the advantages and disadvantages of exporting kiwi have been studied qualitatively, while quantitative economic indicators

Noruzi (1392 [2013 A.D.]) examined the competitiveness of exporting Iranian Halal food products in trade with China, India and Russia, and attempted to identify the weaknesses, threats, opportunities and strengths of exporting Iranian Halal food products to these three countries. Russia's dependence on importing Halal food could make it one of Iran's export partners in the Halal food trade due to the low domestic Halal food production. Examining the Russian consumer market with the Constant Market Shares method, Fathi (1392 [2013 A.D.]) attempted to measure and analyze the possibility of completion on the part of Iranian export

goods to Russia and the short-term trade development with this country. This research concluded that there is no general rule for the factors influencing exports to Russia; for some commodities, the competitiveness, for others, the commodity characteristics, have influenced Iran's export rates. Both of these studies were qualitative studies, focusing solely on Halal products and excluding other export commodities related to food category.

Related to the current research are also a number of quantitative works in the field of food trade such as that of Hasanpour and Haji Mirzaei's (1387 [2008 A.D.]). This study examined the possibility of expanding Iran's exports to the Commonwealth of Independent States. The authors employed composite indices such as the Adjusted Drysdale Index and the proposed UNCTAD method to illustrate that Iran has numerous export opportunities in non-oil exports, and that in the past decade, such opportunities have dramatically increased.

The present paper aims at conducting a comprehensive research on food trade potentials in Iran-Russia relation. Methodologically, what may distinguish the present paper from previous studies in the domain of Iran-Russia food trade research is the simultaneous implementation of four indices including the cosine measure for the simple estimate of trade potential, the RCA measure, and Drysdale index. These indices have been employed to compressively estimate the degree of trade similarity and complementarity, as well as the potential trade capacities between Iran and Russia for seventeen commodity groups that are generally defined as foods.

3. Methodology

Understanding the areas of trade cooperation between contiers has

long been a subject of interest for several scholars; Balassa (1965), Linnemann (1966), Finger and Kreinin (1979), Drysdale (1988) and Allen (1959), to name a few. Using different international trade theories and their empirical studies, these researchers have introduced indices and criteria that reveal trade potential and its development as well as the effect of presence or absence of trade potential at sectoral and commodity level through the analysis of trade performance in the field of world trade. These indicators are used to examine areas of trade cooperation between countries in several studies. Péridy (2005), Röttgers, Faße and Grote (2014), Kaur and Nanda (2010), and Pourrostami et al. (2018) based their works on econometric methods and approaches and Fieler (2011), Bandara and Yu (2003), Bayat and Sadeghian (1394 [2015 A.D.]), Abniki (1398 [2019 A.D.]) and Pourrostami and Sobhanian (2013) mostly employed quantitative indicators to investigate countries' economic integration and convergence.

Indicators and methods based on trade similarities are used to examine trade opportunities and estimate bilateral trade capacity between those countries that initially had low (or zero) volume of trade relationship. These methods can be divided into two categories. Some of these indicators illustrate the trade potential between the two countries and others explain the potential for trade expansion. Since the volume of trade between Iran and Russia is relatively low, the first step towards expanding trade between the two countries in the field of food, is to enhance the awareness of trade complementarities, the potential of trade opportunities, and the RCA. To this end, the indices introduced by Drysdale as well as Allen, and the index used in UNCTAD and Balassa will be used. The data for this study are obtained from the Trademap website based on HS2012 codes for the years 2001-2017.

3.1. The Cosine Measure

Allen (1959) examined the degree of trade complementarity by comparing the compatibility between the exports of a country with the imports of a trading partner, and introduced the degree of trade complementarity as a measure of the export-import similarity of two countries. He defined the cosine measure as:

(1)

$$\text{Cos}_{ij} = \frac{e_i.m_j}{[e_i][m_j]}$$

$$\rightarrow \quad \cos_{ij} = \frac{\sum_{k=1}^{n} E_{ik}M_{jk}}{\sqrt{\sum_{k=1}^{n} E_{ik}^2 \sum_{k=1}^{n} M_{jk}^2}}$$

$$k=1,2,3,\ldots,n-1,n$$

Where,

E_{ik} refers to the exports of country i in commodity k to the world, and M_{jk} is the imports of country j in commodity k from the world. In this respect, i, j and k are related to the exporting country, the importing country, and the commodity group, respectively. X_{ijk} is the trade flow of commodity k from country i to country j.

The value of the measure lies between extremes of zero and one, respectively in the absence of any complementarity and in the presence of perfect complementarity. The movement from zero to one is an indication of increasing trade similarities between the two countries (Linnemann, 1966). The similarity measure (cosine) only provides the expected intensity of cross-trade flows from the exporting country i to the importing country j based on existing trade patterns (Panchamukhi, Nambiar, Mehta, Tadas & Mohanty, 1995).

3. 2. Simple Assessment of Trade Potential

Trade potential measure examines the composition of two countries' trade flows and determines the degree of correspondence between the export/import items of the two countries. The trade potential measure predicts the possible volume of future transactions based on the current exchange rates and the type of goods to be exchanged.

To calculate the export potential of country A to country B, it is necessary to have the export value of country A for each commodity code (k) to the world (w) in a specific time period (t) (E^A_{kwt}). It is also required to have the import value of country B for each commodity code (k) from the world (w) in the same time period (t) (M^B_{kwt}). After identifying the codes of the commodities exported by country A and imported by country B, the maximum potential (maximum export potential of country A to country B) is determined using the following equation:

(2) Max Potential= $\sum_{k=1}^{n} Min(E^A_{kwt}, M^B_{kwt})$

However, the Max Potential cannot be considered as the trade potential of the two countries because exporting countries often avoid export dependence on a single country. Therefore, the normal potential is considered to be between 20% and 30% of the maximum potential (Arnon et al., 1996). Normal Potential is defined as follows.

(3) Normal Potential=$\%30 * \sum_{k=1}^{n} Min(E^A_{kwt}, M^B_{kwt})$

3. 3. Revealed Comparative Advantage (RCA) Measure

Theoretically, comparative advantage is a country's ability to produce and export goods at a lower cost compared to competing

countries. In addition, as calculations indicate, comparative advantage is not constant over time and fluctuates with changes in the global market structure, competitor production methods, and cost structure changes. In general, the main factors involved in determining the comparative advantage of a commodity can be summarized in three areas of production, export and demand. To take advantage of the trade potential between the two countries, it is important to consider the comparative advantage and to identify the commodities that are superior in foreign trade. To calculate the comparative export advantage, post-trade statistical data is employed. One of the indices that measure comparative advantage with an indirect approach is the Revealed Comparative Advantage (RCA) measure of exports, which was initially presented by Balassa (1965) and later expanded and applied in various studies (Balassa & Noland, 1989; Felipe, Kumar, & Abdon, 2013; Laursen, 2015). Balassa defined the following measure in which the ratio of a country's export performance is compared to the commodity structure of global exports.

$$(4)\ RCA_{ik} = \frac{\left(\frac{X_{ik}}{X_i}\right)}{\left(\frac{X_{wk}}{X_w}\right)}$$

In this respect, RCA_{ik} is the Revealed Comparative Advantage measure of country i in the exports of commodity k, where, X_{ik} is the export value of commodity k by country i, Xi is the total value of the country i's exports, X_{kw} is the world export value of commodity k, and X_w is the total value of world exports. Therefore, RCA illustrates the export performance of a country in exporting a commodity compared to the global export performance of that commodity. When, RCA_{ik} is less than one, the country i is not specialized in exporting the commodity k and therefore has no comparative advantage. When RCA$_{ik}$ is greater than one, the

country i has Revealed Comparative Advantage in the export of commodity k. This means that the increasing trend of the measure indicates the country's progress towards specialization in the export of the goods under consideration.

Thus, the value of this measure reflects the comparative advantage status of a product in the actual export market. In addition, fluctuations over time in this criterion illustrate changes in the relative cost of production, changes in exchange rate fluctuations, or changes in the trade barriers of the countries. Comparing the comparative advantage measure of different countries can conclude that the smaller the number of commodities with identical codes in which the two countries have a comparative advantage greater than one is, the greater the possibility of trade between the two countries is expected to be.

3.4. Drysdale Index

Using post-trade data, Drysdale (1967) introduced an index that illustrates the feasibility and intensity of cross-country trade using the concept of complementary trade. The index is an appropriate measure to incorporate in the gravity equation to capture the trade structure of countries (Pourrostami, Kalhor & Golshan, 2018) since it compares the trade structure of two countries in relation to the world trade (Drysdale & Garnaut, 1982).

The overall relationship of the Drysdale index is as follows.

$$(5)\ C_{ij} = \sum_{k=1}^{n} \left[\frac{X_{iw}^k}{X_{iw}^t} \cdot \frac{M_{ww}^t - M_{iw}^t}{M_{ww}^k - M_{iw}^k} \cdot \frac{M_{jw}^k}{M_{jw}^t} \right]$$

Where,

C_{ij} is the index of trade complementary between two countries i

(export country) and j (import country); X_{iw}^k is the export value of commodity k from country i to the world, X_{iw}^t is the total export value of country i to the world, M_{iw}^k and M_{jw}^k are the import values of commodity k of countries i and j from the world, M_{iw}^t and M_{jw}^t are the total import value of countries i and j from the world, M_{ww}^t and M_{ww}^k are the total import value from the world and world import value of commodity k.

This indicator illustrates the degree of compatibility of a country's export with the partner country's imports compared to global imports. In this regard, Drysdale (1967) argues that the complementarity index reflects the comparative advantages of countries and their specialties on exporting commodities, assuming that the pattern of imports and exports reflects the abundance of factors of production. As such, this indicator measures trade potential, rather than trade competition. This index is always greater than zero; values greater than one indicate similarity in export and import patterns of countries i and j, as well as the presence of trade potential between the two countries, and values less than one indicate a lack of similarity or potential of trade patterns of the two countries. In fact, this index indicates the possibility of developing trade between the two countries.

4. Findings

Most economists believe that the volume of trade between two countries will increase when the trade complementarity is high, meaning that the export structure of one country is similar to the import structure of another. As a matter of fact, the degree of trade complementarity is not a sufficient reason to establish high trade relations between two countries. Rather, other factors, such as

similar consumption pattern, geographical proximity, and political issues are effective in shaping these trade relationships (Hosseini, 1398 [2008 A.D.). In order to examine the trade relations between Iran and Russia, it is necessary to determine the degree of trade potential between the two countries.
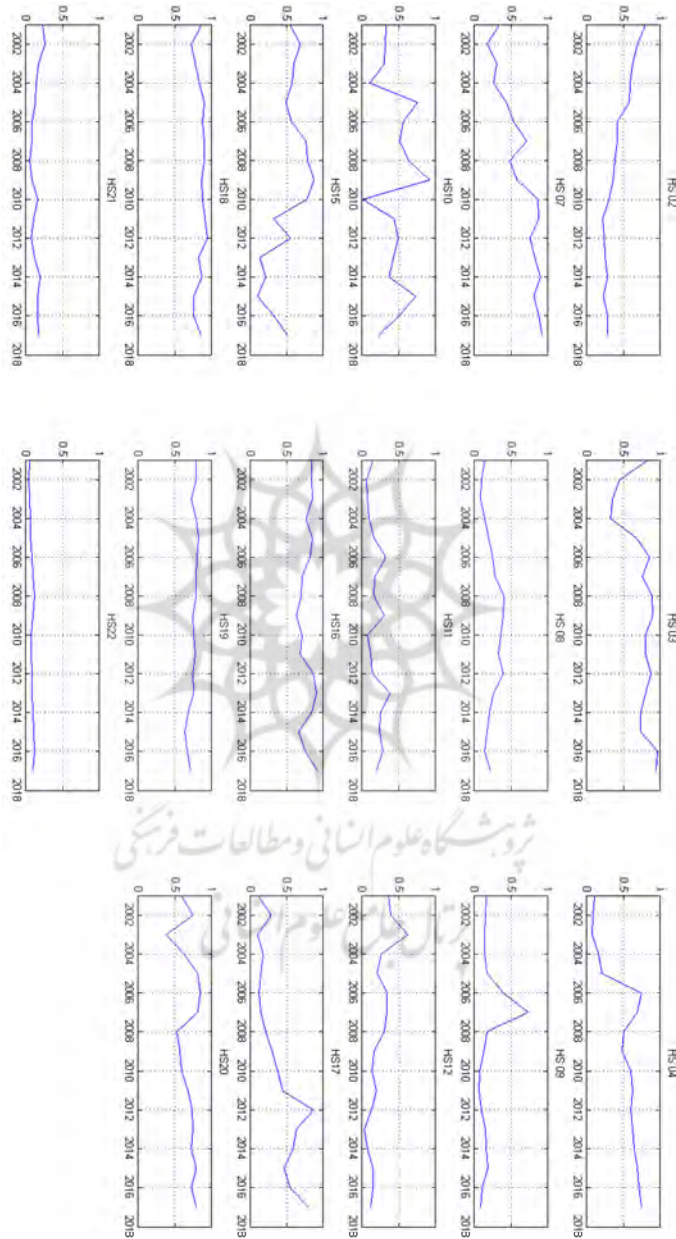
Figure 1: Cosine measure of Iran's total food export trend to Russia
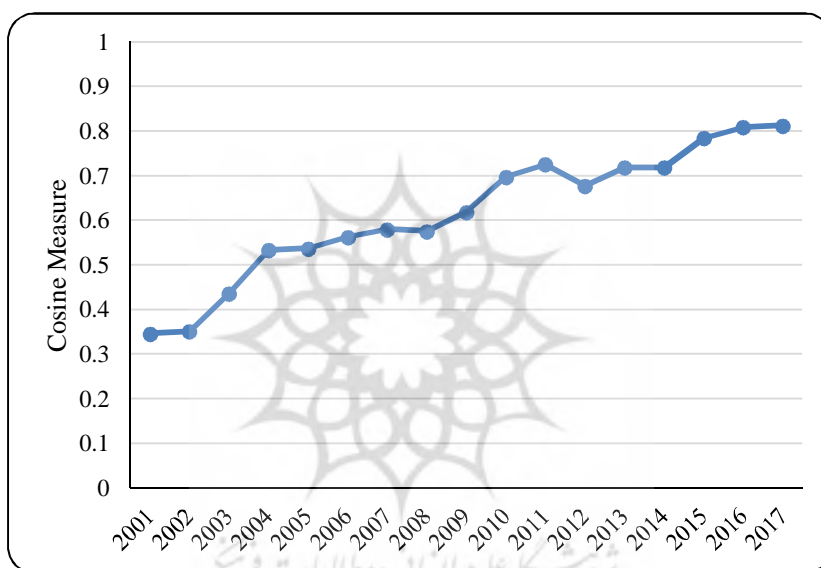
Source: Calculations by authors, based on Trademap data

Figure 1 reveals that the total cosine measure is increasing between the Iranian food export and the Russian food import in 17 HS codes. The index rose from 0.35 in 2001 to 8.1 in 2017, indicating an increase in similarities in the structure of Iranian exports and Russian imports.
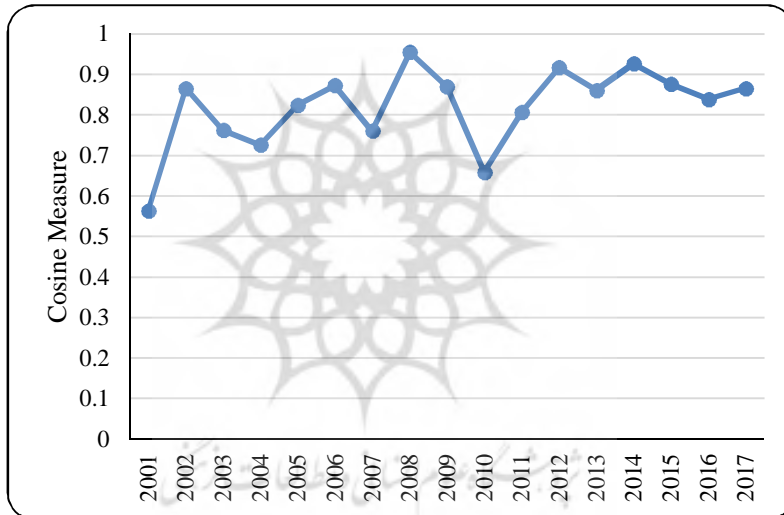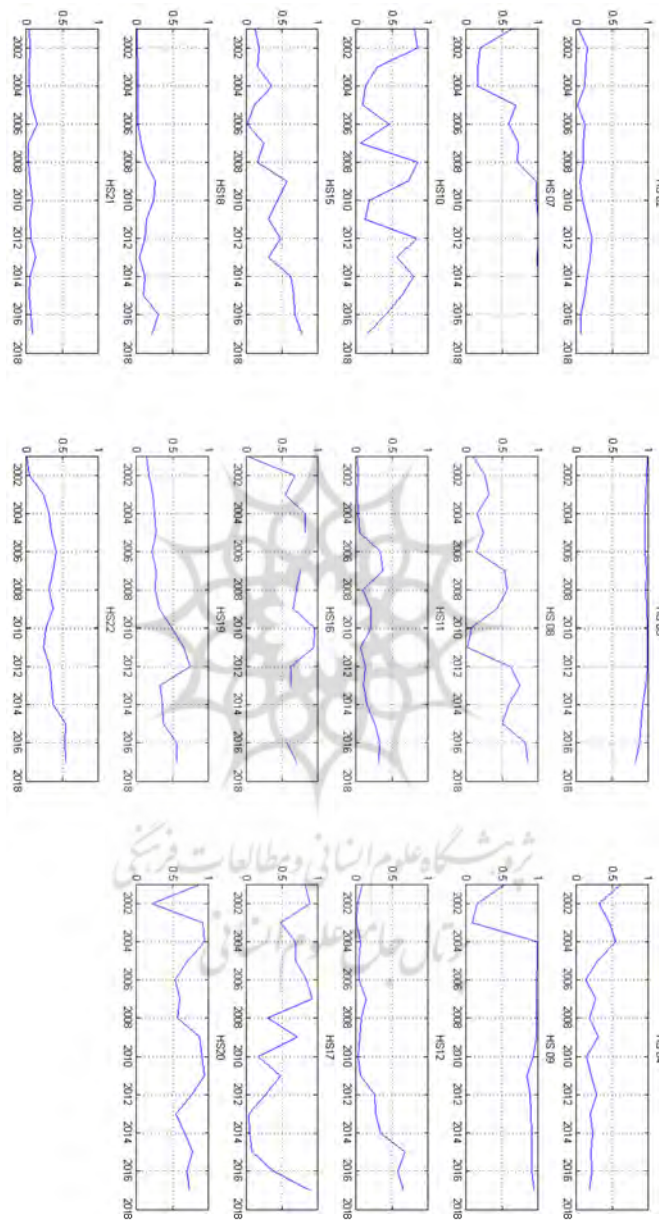
Figure 2: Cosine measure of Iran's food export to Russia for 17 HS codes

Source: Calculations by authors, based on Trademap data

Figure 2 indicates that Iran's export in the following commodity codes has the highest similarity to Russia's imports: codes 03, 04, 07, 16, 17, 18, 19 and 20. The trend of changes in codes 04, 07 and 17 indicates that these codes achieved a similar trend in the higher export structure. In commodity groups 02, 08, 09, 10, 11, 12, 15, 21 and 22, there is little similarity between Iran's export structure and that of Russia's import.

Figure 3: Cosine measure of Russia's total food export trend to Iran

Source: Calculations by authors, based on Trademap data

As illustrated in Figure 3, the cosine measure between the total food export of Russia and the total food import of Iran is always at a high level, indicating that there is a high degree of similarity between Russia's export and Iran's import in these commodity codes.

**Figure 4:** Cosine measure of Russia's food export to Iran for 17 HS codes

Source: Calculations by authors, based on Trademap data

As illustrated in Figure 4, the degree of trade complementarity between Russia's exports in the following commodity codes with Iran's imports in the same commodity groups has always been low: codes 02, 04, 11, 18 and 21. In addition, the degree of trade complementarity between Russia's exports in the following commodity codes is similar to that of Iran's import: codes 03, 07, 08, 09, 12, 15, 16, 19, 20 and 22. Codes 10 and 17 have risen and fallen due to changes in Russia's export patterns and fluctuations in those of Iran's import.
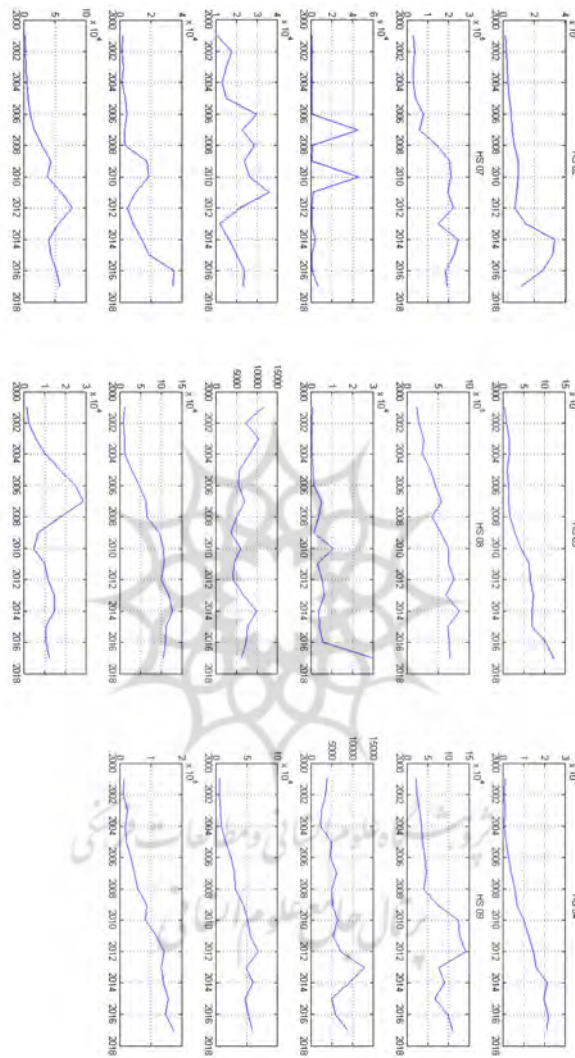
Normal Potential measure of Iran's food export to Russia (and vice versa) are calculated using formula number 3. Figure 5 reveals that Iran's food Normal Potential export has been rising over the period 2001-2017. The measure has drastically increased from 0.27 billion US$ in 2001 to 1.83 billion US$ in 2017.

Figure 5: Iran's food Normal Potential export to Russia
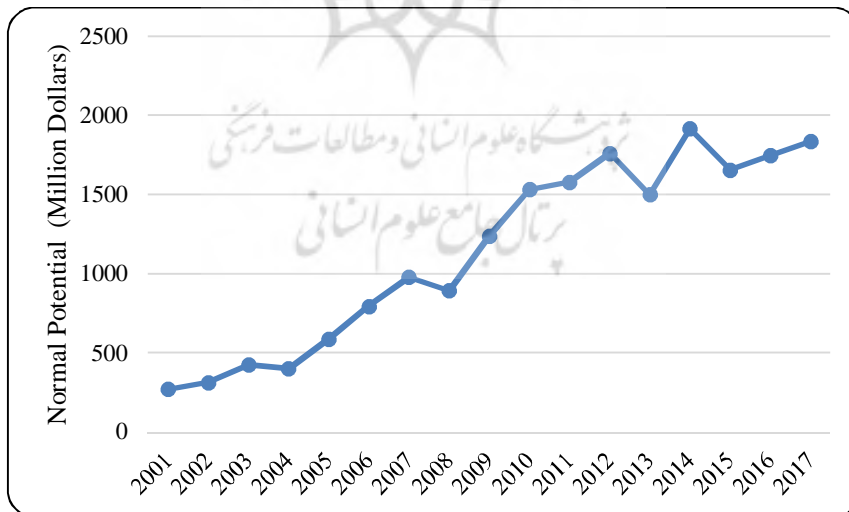
Source: Calculations by authors, based on Trademap data

Figure 6: Iran's food Normal Potential export to Russia for 17 HS codes
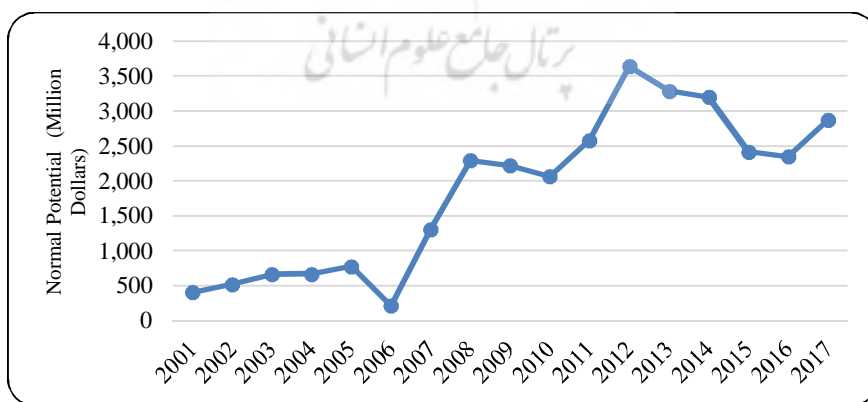

Source: Calculations by authors, based on Trademap data

The percentage of Iran's food export realization to Russia is calculated as follows.

$$\text{The percentage of realization} = \frac{\text{The actual Iran's food export to Russia}}{\text{The Normal Potential of Iran's food export to Russia}} * 100$$

As illustrated in Table 1, although the total realized potential of Iran's food exports to Russia has increased slightly from 0.48% in 2001 to 1.23% in 2017, this rate seems rather low. Evaluation of this rate for the 22 commodity codes indicates that the percentage of realization varies widely among the commodity codes. The ratio is high for commodity codes of 07, 20, 08 and 04 during the period 2001-2017. Although Iran has used some of its export potential in the above commodity codes, it still has an insignificant share of Russia's market. In 2017, for example, Iran achieved 63% of its export potential in commodity code 07, while this export constituted only 6.6% of Russia's market. That is, Iran was ranked seventh in exporters of this code to Russia. China, with 28% and Azerbaijan with 12%, were the first and second largest exporters to Russia. In commodity code 08, Iran acquired only 2.6% of Russia's market in 2017, ranking 12th in Russia in this commodity group, while Ecuador held 24% and Turkey 17% of this market. In 2017, Iran's exports of commodity code 04 stood at 17th place with a 0.4% share of the Russian market. Belarus, with 73%, New Zealand with 5%, and Argentina with 3.7%, were the first three main exporters to Russia.

Figure 7: Russia's food Normal Potential export to Iran

Source: Calculations by authors, based on Trademap data

Figure 8: Russia's food Normal Potential export to Iran for 17 HS codes
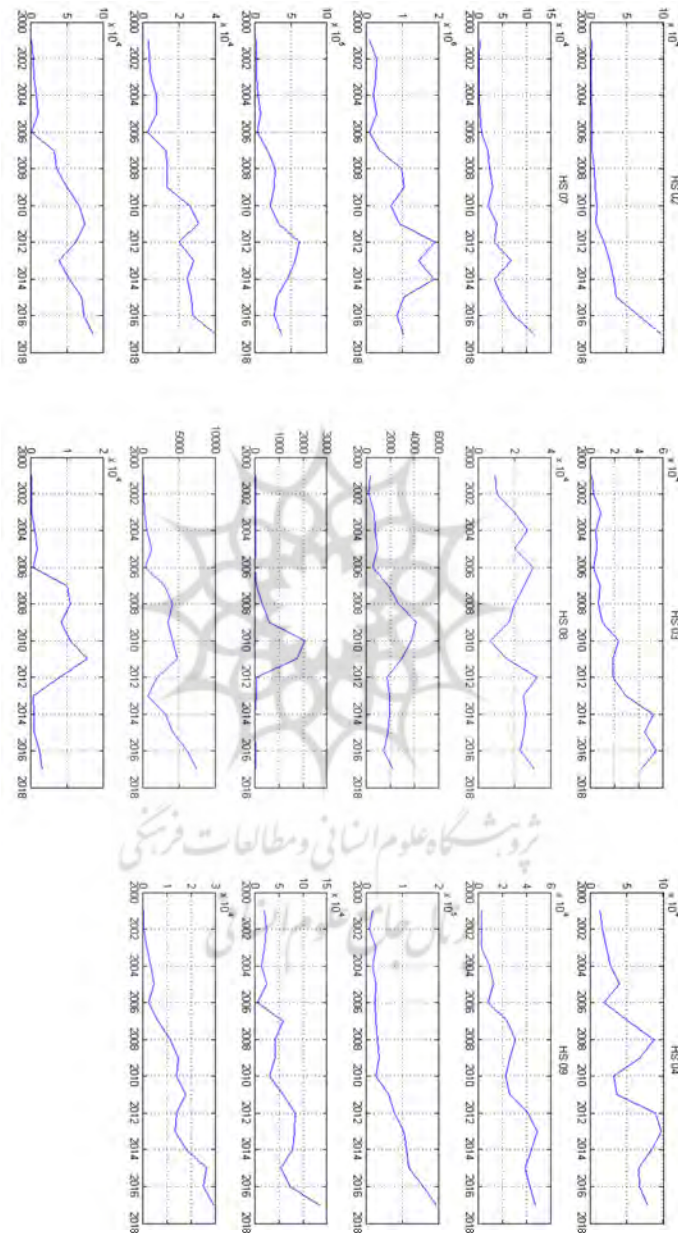
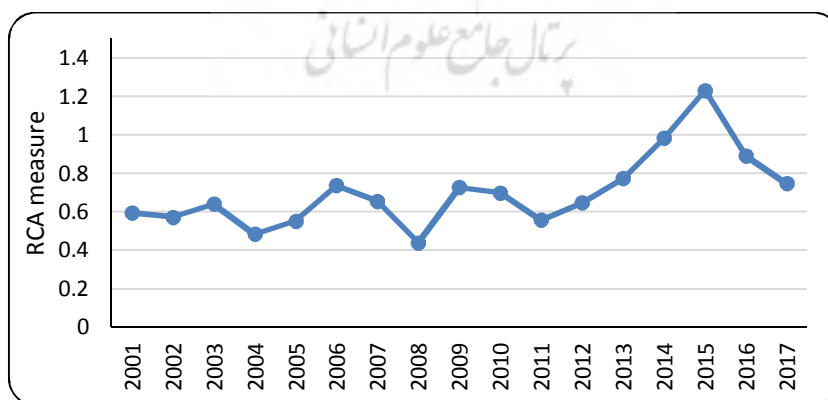Source: Calculations by authors, based on Trademap data

The percentage of Russia's food export realization to Iran is calculated as follows and the results are illustrated in Table 2.

$$\text{The percentage of realization} = \frac{\text{The actual Russia's food export to Iran}}{\text{The Normal Potential of Russia's food export to Iran}} * 100$$

Figure 8 indicates that the potential of Russia's food export to Iran has increased for all commodity codes except for commodity codes 16 and 22. However, according to Table 2, the potential of Russia's total food export has decreased from 16.61% in 2001 to 4.55%, indicating that Russia has not used its potential for food export to Iran; this decreasing trend has continued over the years 2001-2017. Russia's largest food export to Iran is for the group 10 (cereals), which, in 2016, accounted to 31% of its potential. In 2017, Russia exported 355 million US$ of cereals to Iran, making Iran the country's third export partner after Egypt and Turkey. For the commodity code 07, Russia exported 8.5 million US$ to Iran, making Iran its 11th export partner.

As illustrated in Figure 9, the overall RCA measure of Iran's total food exports has been growing despite the ups and downs during the years 2001-2017.

Figure 9: Revealed Comparative Advantage of Iran's total food export to the world

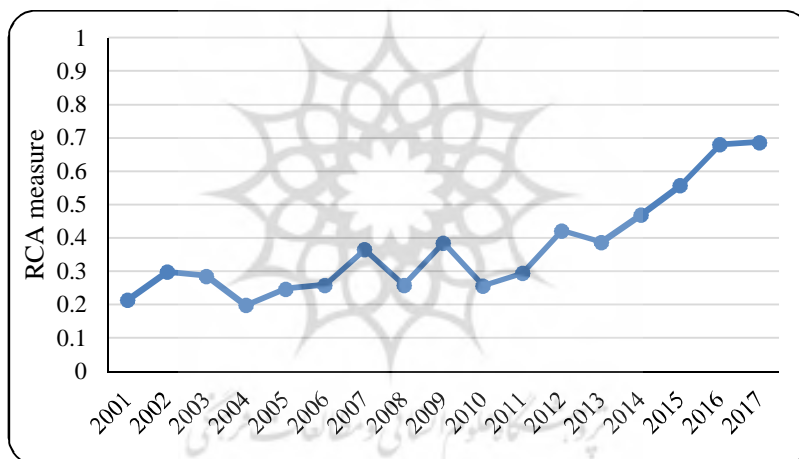Source: Calculations by authors, based on Trademap data

Figure 10: Revealed Comparative Advantage of Iran's food export to the world for 17 HS codes
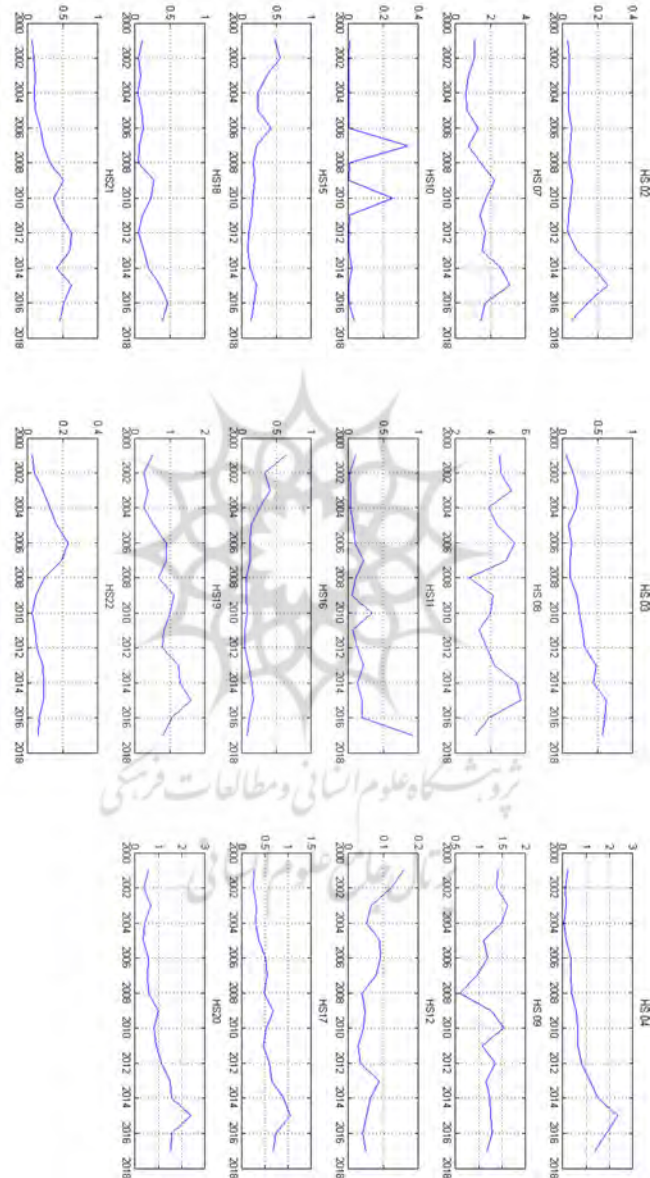
Source: Calculations by authors, based on Trademap data

Figure 10 reveals that Iran's comparative advantage measure in the six commodity groups of 07, 04, 08, 09, 19, and 20 is greater than one, meaning that Iran has a comparative advantage in these six commodity groups. Iran's RCA in commodity codes 07, 08 and 09 has always been greater than one during the years 2001-2017. Iran is moving towards specialization for codes 03, 11, 17, 18 and 21, but when it comes to codes 12, and 16, it seems to be losing its specialized status.

**Figure 11:** Revealed Comparative Advantage of Russia's total food export to the world

Source: Calculations by authors, based on Trademap data

As depicted in Figure 11, Russia had no obvious comparative advantage in food exports over the period under study; nonetheless, the increasing trend in this chart indicates that Russia has managed to increase its RCA from 0.2 in 2001 to 9.6 in 2017.

Figure 12: Revealed Comparative Advantage of Russia' food export to the world for 17 HS codes
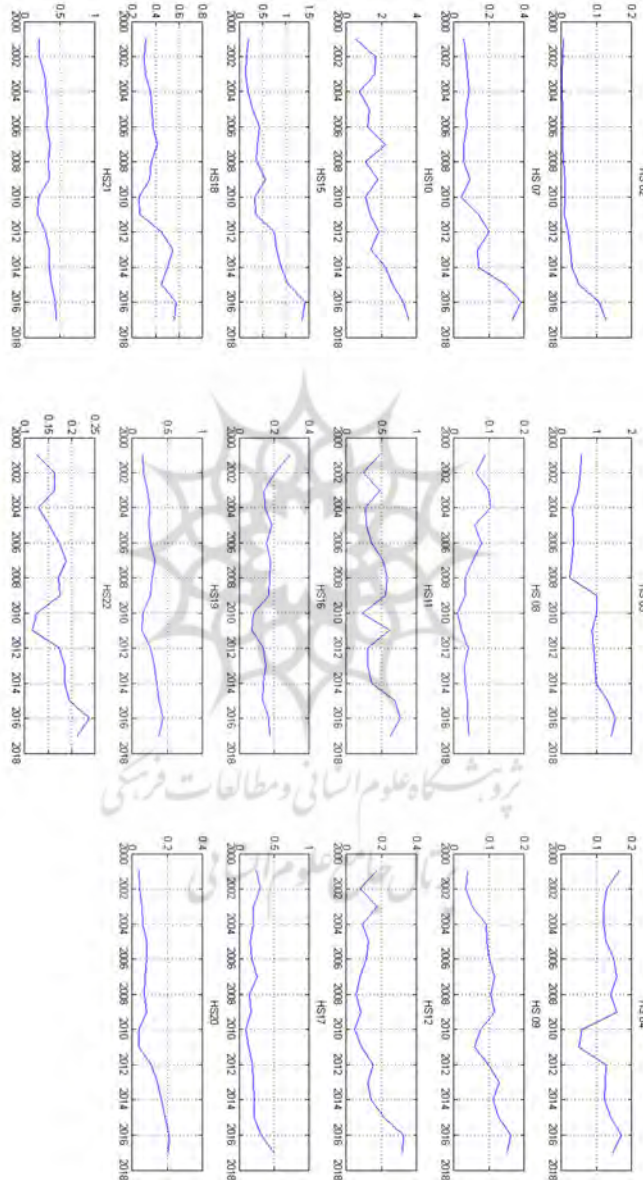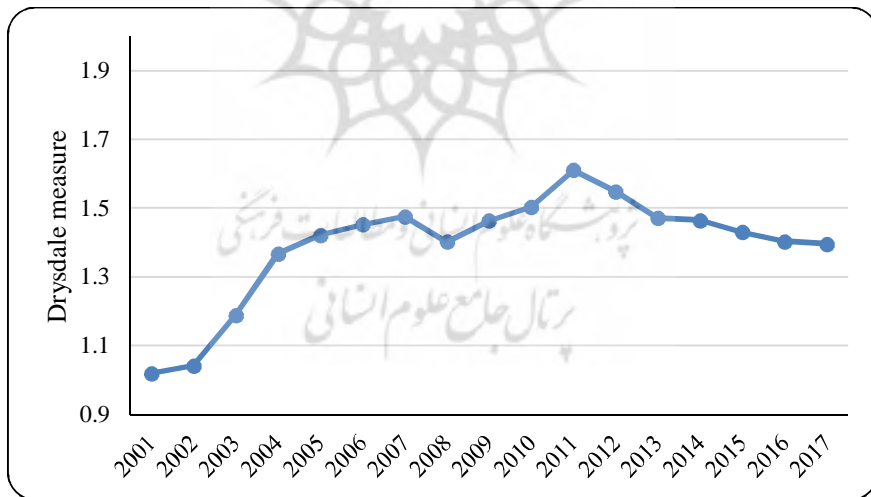

Source: Calculations by authors, based on Trademap data

Russia's comparative advantage measure indicates that it enjoys comparative advantages in the commodity codes 03, 10 and 15. During the years 2001-2017, Russia has experienced an increasing trend in the commodity codes 02, 03, 07, 09, 10, 11, 12, 18, 22, 15, and more specifically in code 10, where it has moved toward greater specialization.

Values in this index are always greater than zero; values greater than one indicate a similar pattern in the export of country i with those of the import by country j. Values less than one indicate a lack of similarity or potential in trade patterns (export and import) between the two countries. Indeed, this index indicates the possibility of expanding trade between countries.

Figure 13: Drysdale index of Iran's total food export to Russia

Source: Calculations by authors, based on Trademap data

According to data depicted in Figure 13, Iran's total export of food products to Russia has been rising from 2002 to 2011, but has

declined from 2011 to 2017. However, the important point is that this indicator has always been more than one during the period of 2001-2017, which indicates the high capacity of Iran's food export to Russia.

Figure 14: Drysdale index of Iran's food export to Russia for 17 HS codes
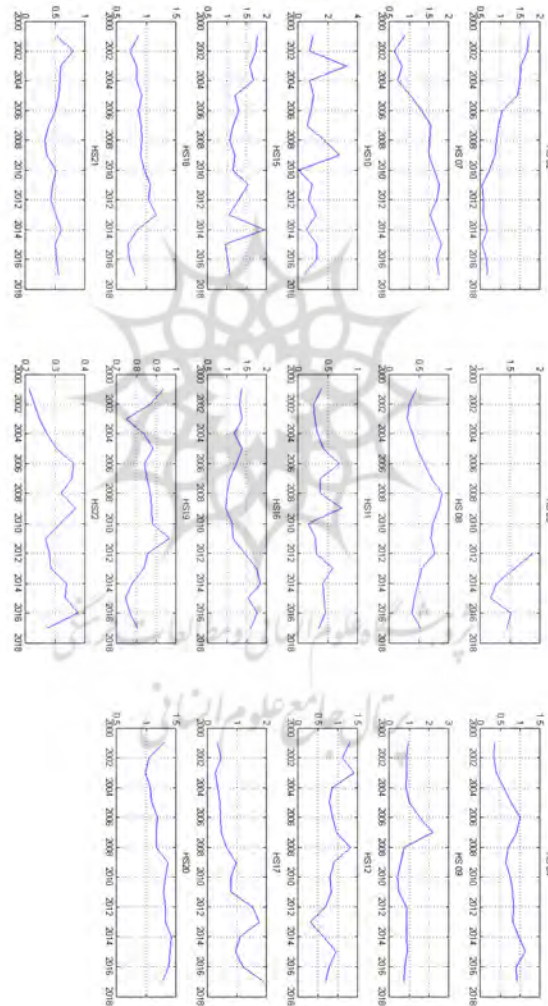
Source: Calculations by authors, based on Trademap data

The Drysdale index by commodity codes in Figure 14 reveal that during the years 2000-2017, the values of the index in the commodity codes of 03, 07, 16, 15, and 20 have 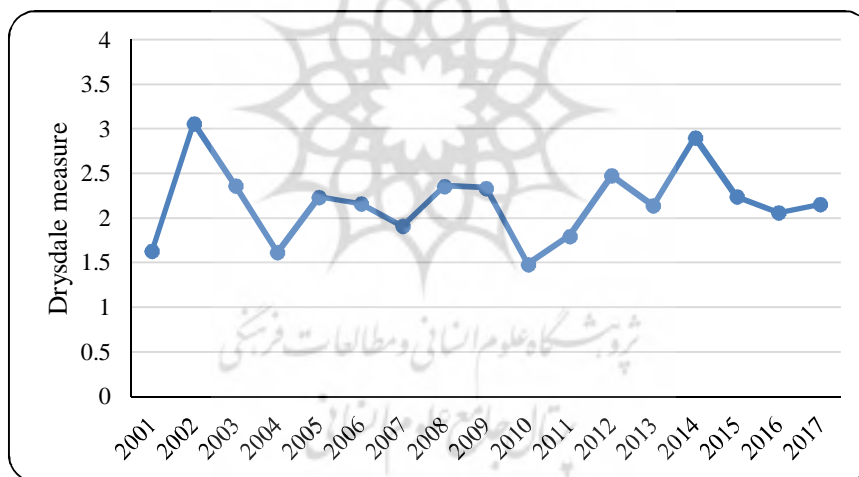always been greater than one, indicating the possibility of expanding trade between Iran and Russia through the export of Iran's food products to Russia. According to this index, Iran's export to Russia in commodity codes 02, 12, and 08 has decreased. In other words, in these commodity groups, Iran has lost its export potential to Russia. However, Code 04 has experienced an increasing trend, gaining momentum to expand exports to Russia.

Figure 15: Drysdale index of Russia's total food export to Iran

Source: Calculations by authors, based on Trademap data

Figure 15 indicates that although the Drysdale index of total Russia's food exports to Iran has fluctuated over the period under study, its value has always been greater than one. This means that Russia has also been able to expand its food exports to Iran during the period under review.

Figure 16: Drysdale index of Russia's food export to Iran for 17 HS codes
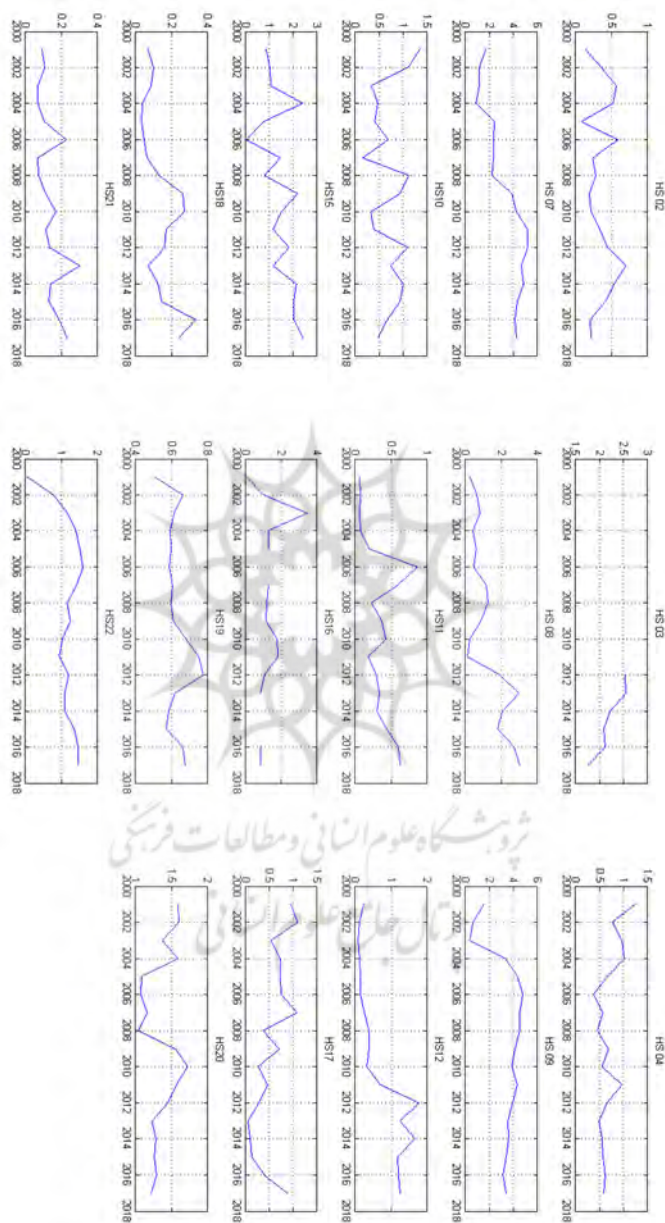
Source: Calculations by authors, based on Trademap data

Figure 16 illustrates that based on the Drysdale index, Russia has the opportunity to export commodities to Iran in codes 03, 07, 08, 09, 12, 15, 16, 20 and 22.

5. Summary and Discussion

To investigate the trade potentials between Iran and Russia, the corresponding conventional measurements were introduced and calculated for the period of 2000-2017. The results are illustrated in Tables 3 and 4. Iran's food exports to Russia in commodity codes 07, 19 and 20 have the potential of expansion based on the following reasons:

1. Structural similarity between the food exports of Iran and the food imports of Russia based on the cosine measure;
2. The increasing trend of Iran's food export potential to Russia, based on the trade potential estimate measure;
3. The increasing advantage of these commodity codes in Iran's export to the world; and,
4. The increasing trade expansion opportunities from Iran to Russia.

Iran's exports in commodity codes 02, 10, 11, 12, 18, 21 and 22 are not recommended since Iran has no obvious Revealed Comparative Advantage of export to the world regarding these codes. Moreover, Iran is not capable of expanding its export to Russia, and there are not structural similarities between Iran's exports and Russia's imports for these commodity groups.

For the commodity codes 03, 15, 16 and 17, Iran lacks Revealed Comparative Advantage in world exports. However, for these codes, 1) Iran is able to expand its exports to Russia, and 2) there exists a structural similarity between Iran's exports and Russia's

imports. It is recommended to promote policies in order to take steps toward Iran's exports to Russia regarding the above-mentioned commodity codes.

Moreover, for the commodity codes 04, 08 and 09, Iran has export Revealed Comparative Advantage to the world. Calculations, however, indicate that Iran is not capable of expanding its exports to Russia with regard to these commodity groups. To analyze this result, further information revolving around the specific type and method of support on the part of the two countries is required; information which necessitates further research and investigation.

Russia can export commodity codes 03, 10 and 15 to Iran for 1) there exists structural similarities between Russia's exports and Iran's imports for these three commodity codes, 2) Drysdale index reveals the possibility of export expansion from Russia to Iran, 3) Russia has Revealed Comparative Advantage in terms of world exports in these three groups, and 4) it has a great portion of unrealized export potential toward Iran.

Russia lacks Revealed Comparative Advantage for the commodity codes 02, 04, 11, 17, 18, 19 and 21 regarding world exports, and it does not have the ability to expand exports to Iran. Given the possibility of export expansion to Iran, however, regarding the commodity codes 07, 08, 09, 12, 16, 20 and 22, Russia can lay out the groundwork to achieve an advantage regarding the export of these commodities to Iran.

Policymakers and planners need to devise plans and determine export roadmaps for priority commodities and take measures to move toward non-oil exports with the aim of exploiting trade capacities and promoting economic relations between the two countries, both of which are known as influential states in regional

and international arenas. Achieving this objective, however, is rather demanding, as it implies numerous challenges facing the trade relations, and in particular food trade relations between Iran and Russia.

The competitive nature of food trade necessitates the exporters to pay closer attention to optimized production in order to guarantee a maximum quality, an acceptable set of standards, a reasonable price, and sustainability in supply. Factors such as inflation, volatile exchange rates, and bureaucratic complexities put an institutionally negative impact on production processes, and inevitably on food trade. Infrastructural deficiencies, such as those related to transportation and packaging impose an additional levy on the exporters who already suffer from lack of a comprehensively effective trade structure. While further intercultural communication could improve the trade, lack of well-trained and well-informed workforce such as marketing strategists, merchants and trade specialists hinders an improved perception of food market and impedes the opportunity of increasing trade.

6. Concluding Remarks

Insofar as countries increasingly encourage exports due to wide spectrum of causes, it has been a critically significant objective for them in economic policy-making to overcome trade obstacles. That said, this research investigated food trade between Iran and Russia. Due to its geopolitical situation, Russia faces barriers in agricultural production, such as cold climates for more than seven months a year, poor agricultural soils, short days, and insufficient sunlight.

Due to such challenges, food products have become a substantial share of Russia's imports. However, Russia has made

considerable efforts in increasing greenhouse and organic productions, redistribution of land based on priority of productions with higher added value, and maximized use of land for agricultural and animal husbandry purposes. These courses of action, in addition to attempts made to prevent agricultural land-use change, increased supports for producers, and festivals to introduce and promote Russian food productions have all caused the country's Revealed Comparative Advantage index to increase in the related commodity codes.

As for most of the goods investigated in this research, Iran enjoys a comparative advantage in production due to its favorable agricultural climate; nonetheless, it seems that due to a range of domestic and foreign barriers, the country has yet to fully utilize its capacity in production and export to Russia. Among the domestic barriers for Iran are the high cost of the products and their relatively low quality in some occasions, lack of liquidity among producers and exporters, weaknesses in the marketing and packaging, insufficient awareness about consumer culture in Russia, weaknesses in logistics and export and supply chains, as well as transportation inefficiencies. Iranian exports have also faced barriers from the Russian side such as challenges with border control and distribution laws, beside the rigorous measures, tightened standards, and higher customs taxation for Iranian goods compared to other competitors. Other challenges include difficulties for business persons and drivers to obtain visa, complicated and time-consuming bureaucratic processes for customs clearance, cargo loading and unloading delays, and extra-legal bureaucracy such as bribery and brokerage fees, and under-invoicing instances. Nevertheless, regardless of the aforementioned barriers and due to the sanctions placed on the two heavily oil-dependent countries, Iran and Russia have both been looking for

increasing non-oil exports to turn sanction threats into potential opportunities. Being both among the world's top oil exporter countries, Iran and Russia have not been able to sufficiently address the significance of non-oil commodities in their bilateral trade. Accordingly, food trade has remained one of the many less explored—if not unexplored—areas with a significant capacity to improve the relations.

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Annex 1: HS codes

02 Meat and edible meat offal

03 Fish and crustaceans, mollusks and other aquatic invertebrates

04 Dairy produce; birds' eggs; natural honey; edible products of animal origin, not elsewhere specified or included

07 Edible vegetables and certain roots and tubers

08 Edible fruit and nuts; peel of citrus fruit or melons

09 Coffee, tea, maté and spices

10 Cereals

11 Products of the milling industry; malt; starches; inulin; wheat gluten

12 Oil seeds and oleaginous fruits; miscellaneous grains, seeds and fruit; industrial or medicinal plants; straw and fodder

15 Animal or vegetable fats and oils and their cleavage products; prepared edible fats; animal or vegetable waxes

16 Preparations of meat, of fish or of crustaceans, mollusks or other aquatic invertebrates

17 Sugars and sugar confectionery

18 Cocoa and cocoa preparations

19 Preparations of cereals, flour, starch or milk; pastry cooks' products

20 Preparations of vegetables, fruit, nuts or other parts of plants

21 Miscellaneous edible preparations

22 Beverages, spirits and vinegar

Annex 2: Tables

Table 1: The percentage of Iran's food export realization to Russia

Code	Value in 2001	Value in 2002	Value in 2003	Value in 2004	Value in 2005	Value in 2006	Value in 2007	Value in 2008	Value in 2009	Value in 2010	Value in 2011	Value in 2012	Value in 2013	Value in 2014	Value in 2015	Value in 2016	Value in 2017
'02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
'03	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.79	0.88	1.57
'04	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.61	4.67
'07	0.04	2.65	3.92	10.00	14.96	16.52	51.24	23.72	22.05	32.60	53.46	45.27	78.41	47.83	47.65	56.37	63.06
'08	6.08	8.92	8.91	13.34	11.81	26.09	29.60	43.28	20.14	22.63	24.32	24.79	26.06	12.39	12.74	16.27	17.77
'09	0.17	0.00	0.00	0.31	0.25	0.07	0.02	0.14	0.36	0.31	1.55	2.06	3.63	2.51	4.34	0.95	0.75
'10	2.29	0.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
'11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
'12	4.77	5.54	6.08	1.81	0.32	1.33	0.00	0.00	0.06	0.22	0.44	0.40	0.69	0.22	1.16	1.61	1.35
'15	1.26	1.30	0.22	0.36	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00
'16	0.03	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
'17	0.14	0.34	0.00	0.00	0.18	0.02	0.00	0.17	0.10	0.00	0.05	0.45	0.32	0.44	0.07	0.21	0.26
'18	0.00	0.00	0.09	0.08	0.00	0.02	0.00	0.00	0.01	0.00	0.00	0.13	0.20	0.16	0.17	0.35	0.94
'19	1.16	0.58	0.13	0.05	0.00	0.00	0.00	0.01	0.03	0.00	0.08	0.07	0.11	0.10	0.41	0.24	1.25
'20	89.39	93.80	68.47	76.16	68.58	80.36	52.09	33.87	22.44	13.89	8.43	11.54	17.42	17.11	6.24	7.19	7.96
'21	5.24	0.05	0.67	0.43	0.20	0.14	0.00	0.06	0.00	0.00	0.09	0.00	0.15	0.59	3.44	5.83	6.97
'22	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.03	0.04	0.01	0.11	0.44	0.07
Sum	7.96	9.02	9.60	12.09	10.85	19.72	21.95	24.91	13.93	14.92	17.56	17.24	20.11	12.90	12.36	13.23	14.85
Total	0.48	0.60	0.62	0.77	0.69	1.25	1.39	1.25	0.92	0.83	0.85	1.08	1.57	1.31	1.45	1.21	1.23

Source: Calculations by authors, based on Trademap data

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Table 2: The percentage of Russia's food export realization to Iran

Code	Value in 2001	Value in 2002	Value in 2003	Value in 2004	Value in 2005	Value in 2006	Value in 2007	Value in 2008	Value in 2009	Value in 2010	Value in 2011	Value in 2012	Value in 2013	Value in 2014	Value in 2015	Value in 2016	Value in 2017
02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.87	0.00	0.00	0.00	58.13	5.45	0.00	0.00	0.00	10.49
'03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.27	0.00	0.00	0.00	0.00	0.00
'04	0.00	0.00	0.00	0.00	0.00	0.00	0.23	0.00	0.00	2.36	3.59	4.49	3.23	4.12	0.11	0.00	0.00
'07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.35	8.53	1.06	0.00	1.13	6.22	9.78
'08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.00	0.00	1.01	2.76	0.00	0.00	0.00	0.00	0.00
'09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.83	0.00	0.00	0.00	0.00	0.00
'10	9.81	3.24	5.08	13.37	8.73	0.00	0.24	8.80	7.27	4.78	12.14	31.27	20.36	13.34	30.23	31.23	16.22
'11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
'12	0.00	0.00	0.00	0.00	0.06	0.00	0.04	0.01	0.75	0.51	2.07	11.26	9.12	15.91	1.39	9.91	7.09
'15	0.00	0.00	0.00	0.00	0.00	0.00	13.97	3.98	5.33	0.06	0.07	1.24	1.35	16.11	10.74	16.41	28.12
'16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	290.78	0.00
'17	0.00	0.00	0.00	0.00	0.00	0.00	0.36	0.00	0.00	0.32	0.00	5.12	0.00	0.01	0.00	0.00	0.05
'18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.03
'19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
'20	0.00	33.44	0.00	0.00	0.00	0.00	0.04	0.00	0.97	0.00	0.00	0.44	0.00	0.00	0.00	0.00	0.09
'21	1.09	0.00	0.42	0.00	0.00	0.00	0.04	0.00	0.56	0.68	0.02	0.22	0.13	0.41	0.38	0.35	0.29
'22	0.00	0.00	0.00	2.60	2.24	0.00	3.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2315.10	1.49
Sum	1.96	1.69	2.02	3.88	3.23	0.00	2.00	4.23	4.05	1.64	4.33	17.20	9.50	10.66	14.37	13.86	10.58
Total	16.61	14.40	13.67	8.14	9.06	0.00	5.95	7.20	5.45	2.59	4.49	10.62	5.14	4.13	4.80	12.05	4.55

Source: Calculations by authors, based on Trademap data

Table 3: Summary of the measures for Iran's export to Russia and policy implications

Item Code	Cosine measure *	Simple estimate of trade potential measure	Revealed Comparative Advantage of Iran to the world**	Drysdale Index of Iran to Russia***	Policy implications for Iran
02	Low value, Decreasing trend	decreasing trend	No RCA, Decreasing trend	No Complementarity, Decreasing trend	Export not recommended
03	High value, Increasing trend	Increasing trend	No RCA, Increasing trend	Complementarity exists, Decreasing trend	Supporting export recommended
04	High value, Increasing trend	Increasing trend	RCA exists, Increasing trend	No Complementarity, Increasing trend	Export recommended
07	High value, Increasing trend	Increasing trend	RCA exists, Increasing trend	Complementarity exists, Increasing trend	Export recommended
08	Low value, Constant trend	Increasing trend	RCA exists, Constant trend	No Complementarity, Decreasing trend	Export not recommended
09	Low value, Constant trend	Increasing trend	RCA exists, Constant trend	No Complementarity, Constant trend	Export not recommended
10	Fluctuating trend	Constant trend	No RCA, constant trend	No Complementarity, Constant trend	Export not recommended
11	Low value, Constant trend	Increasing trend	No RCA, Constant trend	No Complementarity, Constant trend	Export not recommended
12	Low value, Decreasing trend	Increasing trend	No RCA, Decreasing trend	No Complementarity, Decreasing trend	Export not recommended
15	Low value, Decreasing trend	Increasing trend	No RCA, Decreasing trend	Complementarity exists, Decreasing trend	Supporting export recommended
16	High value, Constant trend	Decreasing trend	No RCA, Decreasing trend	Complementarity exists, Increasing trend	Supporting export recommended
17	High value, Increasing trend	Increasing trend	No RCA, Increasing trend	Complementarity exists, Increasing trend	Supporting export recommended
18	High value, Constant trend	Increasing trend	No RCA, Increasing trend	No Complementarity, Constant trend	Export not recommended
19	High value, Constant trend	Increasing trend	RCA exists, Increasing trend	Complementarity exists, Decreasing trend	Export recommended
20	High value, Increasing trend	Increasing trend	RCA exists, Increasing trend	Complementarity exists, Increasing trend	Export recommended
21	Low value, Constant trend	Increasing trend	No RCA, Increasing trend	No Complementarity, Constant trend	Export not recommended
22	Low value, Constant trend	Increasing trend	No RCA, Constant trend	No Complementarity, Increasing trend	Export not recommended

* Values 0 -.5 is considered as low and .5-1 as high

** No RCA for values 0-1 and RCA exists for values higher than one

*** No complementarity for values 0-1 and complementarity exists for values higher than one

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Table 4: Summary of the measures for Russia's export to Iran and policy implications

Item Code	Cosine measure *	Simple estimate of trade potential measure	Revealed Comparative Advantage of Russia to the world**	Drysdale Index of Russia to Iran***	Policy implications for Russia
02	Low value, Constant trend	Increasing trend	No RCA, Increasing trend	No Complementarity, Constant trend	Export not recommended
03	High value, Constant trend	Increasing trend	RCA exists, Increasing trend	Complementarity exists, Decreasing trend	Export recommended
04	Low value, Decreasing trend	Increasing trend	No RCA, Constant trend	No Complementarity, Decreasing trend	Export not recommended
07	High value, Increasing trend	Increasing trend	No RCA, increasing trend	Complementarity exists, Increasing trend	Supporting Export recommended
08	High value, Increasing trend	Increasing trend	No RCA, Decreasing trend	Complementarity exists, Increasing trend	Supporting export recommended
09	High value, Constant trend	Increasing trend	No RCA, increasing trend	Complementarity exists, Constant trend	Supporting export recommended
10	Fluctuating trend	Increasing trend	RCA exists, Increasing trend	Complementarity exists, Constant trend	Export recommended
11	Low value, Increasing trend	Increasing trend	No RCA, Constant trend	No Complementarity, Increasing trend	Export not recommended
12	High value, Increasing trend	Increasing trend	No RCA, increasing trend	Complementarity exists, Increasing trend	Export recommended
15	High value, Increasing trend	Increasing trend	RCA exists, Increasing trend	Complementarity exists, Increasing trend	Export recommended
16	High value, Increasing trend	constant trend	No RCA, Decreasing trend	Complementarity exists, Constant trend	Supporting export recommended
17	High value, Decreasing trend	Increasing trend	No RCA, Constant trend	No Complementarity, Decreasing trend	Export not recommended
18	Low value, Constant trend	Increasing trend	No RCA, Increasing trend	No Complementarity, Increasing trend	Export not recommended
19	Low value, Increasing trend	Increasing trend	No RCA, Increasing trend	No Complementarity, Constant trend	Export not recommended
20	High value, Constant trend	Increasing trend	No RCA, Increasing trend	Complementarity exists, Decreasing trend	Supporting Export recommended
21	Low value, Constant trend	Increasing trend	No RCA, Increasing trend	Complementarity exists, Decreasing trend	Export not recommended
22	Low value, Increasing trend	Constant trend	No RCA, Increasing trend	Complementarity exists, Increasing trend	Supporting export recommended

* Values 0 -.5 is considered as low and .5-1 as high

** No RCA for values 0-1 and RCA exists for values higher than one

*** No complementarity for values 0-1 and complementarity exists for values higher than one