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RUSSIA'S MARKET AND PRODUCT-BASED EXPORT DIVERSIFICATION[*]

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ABSTRACT

The Gini-Hirshman Index, Trade Concentration Ratio and Deviation Index has been used as the main measurement tools in this study. In the study, Russia has been analyzed in terms of market and product-based export diversifications between 2000-2016. Scores obtained at the end of the analyzes made reveal that the diversification of Russian exports is low on both market and product basis. It is obvious that high level of export concentrations will adversely affect the Russian economy. It is likely that Russia, which can not diversify its exports on a market and product basis will be influenced by the global crisis.of the future.

1. INTRODUCE

The export composition (in terms of market and product) is also important as far as countries' export quantities and amounts are important. The high exports of an country in terms of quantity and value does not mean that the competition power is high on a global scale. Although the ratio of exports of some countries seems to be high, it is seen that the countries generally have a narrow market (few countries). In addition, although the export volume of certain countries is high, it is seen that these countries have realized foreign sales

[*] This study has derived from the master thesis titled " Export Concentration of Turkey and BRICS Countries: Comparative Analysis " completed by Zekai Fatih Sunay under the consultancy of Assoc. Prof. Dr. Birol Erkan on 21.09.2017

with a limited number of products. This situation, which is called both market and product concentration, is a major obstacle in the context of the development, growth and development of the competitiveness of the country's economies and not being exposed to global economic crises.

In the world trade where global competition is increasing day by day, if the export revenues of countries depend on a certain amount of product and the technological equipment of these products is not high, the possibility of the countries being affected by the global economic crises increases. This is because the conjuncture that emerged after the economic crisis has narrowed external demand and leads to a decrease in raw material and product prices (deflation). Nevertheless, the fact that global economic crises mostly originate in the United States (US) and the European Union (EU) is a major problem in the exports of emerging economies. In this context, it is inevitable that developing countries will reduce market concentration with product concentration in their exports.

2. CONCEPT OF EXPORT DIVERSIFICATION

Export diversification can be defined as the change in the mix of current export products of the country (Samen, 2010). In addition, export diversification can also be described as the change in the mix of exporting country composition (Erkan, 2014). In short, export diversification is spreading to many sectors and countries of the country’s export. The main objective of export diversification is to reduce risk by expanding portfolio on the basis of product and market (Goldfarb, 2006). In other words, the underlying philosophy of an country's diversity in the export basket is its desire to achieve policy objectives that are focused on stability and growth (Ali, Alwang, & Siegel, 1991). To concentrate in exports of several products and in a few markets poses serious economic and political risks (Samen, 2010).

As economic risks, problems that may arise in macro economic indicators (economic growth, employment, investment planning, export and import capacity, inflation, debt repayment, capital outflows, etc.) can be shown as a result of volatility and instability in foreign exchange earnings. As political risks, management’s worsening and instability in the country can be mentioned. In this context, together with increasing diversification of product and market in the export, reduction of political instability and risks that may arise in economic activity and foreign exchange in the country can be achieved (Wilhelms, 1967).

According to Kenji and Mengistu (2009), export diversification occurs in two ways, horizontal and vertical diversification. Export diversification is called horizontal diversification if it depends on product diversity among different types of industries. In the opposite case, it is also called vertical diversification (Yokoyoma & Mengistu, 2009).

Factors affecting export diversification are the low economic performance of developing countries, investments as the main contributing factor to the economic growth process, industrial and trade policies applied by the countries, growth, new technology and factor productivity (Hammouda, Karingi, Njuguna, & Sadni-Jallab, 2006). The dependence on primary product exports, which is observed in developing countries and which has a significant weight on the output of these countries, leads them to specialize on the primary product; but also expose them to risks and insecurities that are caused by product price imbalances (Chambers & Gordon, 1966).

3. MEASURING THE EXPORT CONCENTRATION OF COUNTRIES

The most common methods used to measure the concentration of exports of countries are the Gini-Hirchman Index and Trade Concentration Rate. In addition, Deviation Index, etc. can also be used.

3.1. Gini-Hirschman Index (GHI)

The most commonly used concentration index for exports is the Gini-Hirschman Index (Tegegne, 1991). The Gini-Hirschman Index is an important concentration criterion used especially in the comparison between periods (Kovacs, 2004). The index shows the product (or country) distribution of the exports of an country (Hirschman, 1945).

$$GHI_{i,j,t}^{X} = 100\sqrt{\sum_{i=1}^{n}\left(\frac{X_{it}}{X_t}\right)^2}$$

In the formula,

$GHI_{i,j,t}^{X}$ =: Gini-Hirschman Index value

n: number of sectors covered

X_{it}:: export of product i of country j in the period t

X_t: total export of country j in the period t (Hirschman, 1964).

Concentration coefficients are at a certain limit. The maximum value of the coefficient is 100, and in this case the export consists of a single product. The minimum value of the coefficient is $100/\sqrt{n}$. If the concentration level is high, the index value is close to 100. In this case, it is likely that the country will be affected by the risks in international markets. The low density index indicates that the index is close to 0, and in this case the product variety is high. As a result, the effect of the risks is reduced (Erkan & Sunay, 2016).

The Gini-Hirschman Index also shows concentration in imports of goods. In this case, the formula is as follows (Hirschman, 1964):

$$GHI_{i,j,t}^{M} = 100\sqrt{\sum_{i=1}^{n}\left(\frac{M_{it}}{M_t}\right)^2}$$

To analyze country concentration in exports, "country" is written instead of "i product" in the $GNI_{i,j,t}^{X}$ formula. In this case, the rate will decrease with the increasing number of exporting countries. However, If export is carried out in only one country, this rate will be 100.

The Gini-Hirschman Index is also the square of the Herfindahl Index multiplied by 100 (DİE, 2003).

3.2. Trade Concentration Ratio (CR)

Trade concentration ratio (CR) is a measure used extensively because it is simply calculated. Trade concentration ratio is a concept that expresses the total shares of a certain number of firms, products, industries or countries. (CR) takes a value between 0 and 100 and can be calculated according to the formula below (Küçükkiremitçi, Karaca, & Eşiyok, 2010).

$$CR = \sum_{i=1}^{k} P_i \times 100$$

In the formula, CR denotes the trade concentration ratio, Pi denotes the share of firm, product, sector or country. According to this:

CR(1) : Share of the most exported country (product) in total exports

CR(2) : Share of the two most exported country (product) in total exports

CR(4) : Share of the four exported country (product) in total exports

CR(8) : Share of the eight most exported country (product) in total exports

CR(12) : Share of the twelve most exported country (product) in total exports

3.3. Deviation Index (DI)

Deviation index (DI) is obtained by dividing to export which is out of that country of a country's export of goods to another country (Erkan, 2014).

$$DI_{jk} = \frac{X_{jk}^{m}}{X_{jk}^{w-m}} 100$$

X_{jk}^{m} → export value of product k to country m of country j

X_{jk}^{w-m} → export value of product k to out of country m of country j

When the base year is called as 100, if the DI is higher than 100 in other years, it means that the export of product k of country j tends to development in favor of country m. If the DI is less than 100, it indicates that the export of product k of country j moves out of country m (Yıldız & Delice, 2001).

4. LITERATURE REVIEW

The first studies on export diversification in the literature were made by McLaughlin after the 1929 Crisis (Hammouda, Karingi, Njuguna, & Sadni-Jallab, 2006). McLaughlin found a meaningful relationship between concentrations of industrial activities in American cities and the severity of their impact from cyclical fluctuations (McLaughlin, 1930).

Krugman (1979) evaluated the relationship between agricultural exports diversification and economic growth over the product cycle (Krugman, 1979). In addition, MacBean ve Nguyen (1980) emphasized that the concentration of exports for developing countries was not a significant influence on the stability of export earnings. Along with the increase in concentration, the relationship was getting weaker and weaker (Macbean & Nguyen, 1980).

Stanley ve Bunnag (2001) emphasized that Under the export diversification initiative, there was the aim of encouraging economic growth and the stability provided by the export incentives. According to the results obtained in Central America by 20-year data from Costa Rica, El Salvador, Honduras and Guatemala, it has been reached that the diversification of exports can reduce instability in foreign exchange earnings (Stanley & Bunnag, 2001).

Agosin (2007), using cross-sectional data from 1980 to 2003 for Asian and Latin American countries, emphasized that export growth alone was not sufficient on economic growth and that it was possible to realize export growth together with diversification (Agosin, 2007). Kösekahyaoğlu (2007) analyzed Turkey's export and import concentrations for the period 1980-2005 by using the Gini-Hirschman Index as well. Accordingly, in the 1980s and after the Customs Union, product diversification increased in exports. In contrast, changes in imports were relatively less frequent. Market-based diversification, on the other hand, remains low (Kösekahyaoğlu, 2007).

Kuşat (2015) examined the concentration of trade between Turkey and the BRICS countries in the framework of the Customs Union. According to the results obtained, the Customs Union did not adversely affect bilateral trade relations and trade was turning from Russia to China and India (Kuşat, 2015).

In his work on the years 1995-2012, Vahalik (2015) comparatively analyzed the export diversification of the EU and BRIC countries and used the Herfindahl-Hirschman index in his analysis. Accordingly, when compared with the EU, China, India, Brazil and South Africa, Russia's export diversification is low (Vahalik, 2015).

In the study conducted by Hattendorff (2015) for the years 2005-2011, the relation between the economic concentration of Russia and financial development was examined. The high level of concentration negatively affects financial development and causes low growth. In addition, The impact of concentration on finance was substantial (Hattendorff, 2015).

Erkan and Sunay (2016) used the Trade Concentration Ratio and Gini-Hirschman Index covering the years from 2000 to 2014 and determined the product and market concentration levels in Turkey's exports (Erkan & Sunay, 2016). Herzer and Nowak-Lehnmann (2007) also predicted the expanded Cobb Douglas function based on Chilean data from 1962-2001, and concluded that export diversification had an impact on economic growth (Herzer & Nowak-Lehmann D., 2006).

5. MARKET-BASED CONCENTRATION ANALYSIS OF RUSSIAN EXPORT

Market-based concentration analysis of Russian export is made by using Gini-Hirschman Index and Trade Concentration Ratio.

5.1. Gini-Hirschman Index Analysis

When the market concentration of exports from Russia to 226 countries between 2000-2016 is calculated by GHI (Table 1), while the GHI value was 19.5% in 2000, it is seen that this value increased in general in the following years (Graph 1).

Table 1. Market Concentration of Russia (GHI, %)

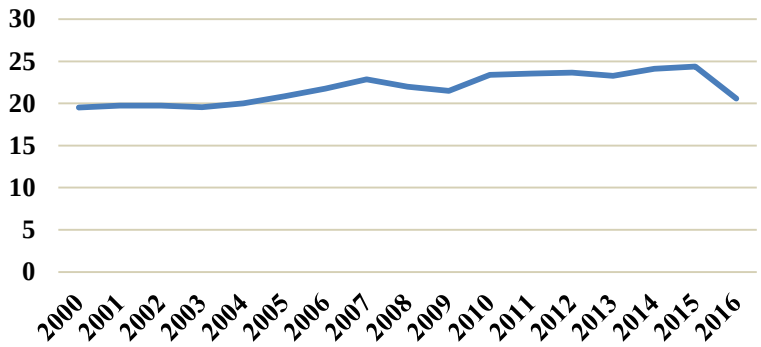
Year	2000	2001	2002	2003	2004	2005	2006	2007	2008
GHI	19,52	19,74	19,73	19,58	20,03	20,84	21,77	22,86	21,99

Year	2009	2010	2011	2012	2013	2014	2015	2016
GHI	21,49	23,40	23,55	23,64	23,28	24,10	24,40	20,59

Source: (United Nations Comtrade Database, 2017)[†]

This shows that Russia had been exporting to a limited number of markets (countries) and that it had not been able to diversify its market in exports.

Graph 1. Market Concentration of Russia (GHI, %)



5.2. Trade Concentration Ratio Analysis

Russia's exports to 226 countries during the 17 years increased in country-based concentration (Table 2 and Graph 2). In other words, export diversification decreased.

The country with the highest exports of Russia in 2000 was Germany with 9.2 billion dollars. The CR (1) value is 9%. The country with the largest export of Russia in 2008 and 2009 was the Netherlands with 57 and 36.2 billion dollars respectively and the CR (1) value of these years were 12%. Also in 2013 and 2016, Russia's most exporting countries were again the Netherlands.

[†] GHI values were calculated by using data from the UN Comtrade database.

Table 2. Market Concentration of Russia (CR, %)

Year	$CR_{(1)}$	$CR_{(2)}$	$CR_{(4)}$	$CR_{(8)}$	$CR_{(12)}$
2000	8,95	15,99	26,49	44,72	59,03
2001	9,21	16,62	27,51	45,96	59,54
2002	7,55	14,61	27,99	47,86	60,81
2003	7,80	14,29	26,84	46,26	59,91
2004	8,41	15,73	28,57	48,41	61,56
2005	10,19	18,37	31,66	49,95	62,82
2006	11,90	20,23	33,58	51,65	64,93
2007	12,29	24,17	35,87	53,51	66,78
2008	12,17	21,13	34,14	53,07	65,41
2009	12,02	20,33	32,07	51,73	63,88
2010	13,41	26,04	37,16	52,80	65,09
2011	14,04	25,88	37,99	54,81	66,24
2012	14,49	26,39	38,54	54,03	65,30
2013	13,14	25,90	38,18	53,21	64,99
2014	13,44	26,84	40,18	56,13	67,55
2015	15,44	27,13	40,08	56,35	67,96
2016	10,25	20,06	32,43	48,22	60,45

Source: (United Nations Comtrade Database, 2017)‡

The volume of exports had declined from $ 69.3 billion to $ 29.3 billion over the years. The CR (1) value increased to 13.1% in 2013 and to 15.4% in 2015. In 2016, it decreased to 10.25%.

Russia's second largest export destination in 2000 and 2009 was Italy with 7.2 and 25 billion dollars. The CR (2) values for these years were 16% and 20.3%. The second largest export destination for Russia was the Netherlands with 40.2 billion dollars in 2015 and China with 28 billion dollars in 2016. The CR (2) for the mentioned years first rose from 26% to 27.1%, decreased to 20.1% later.

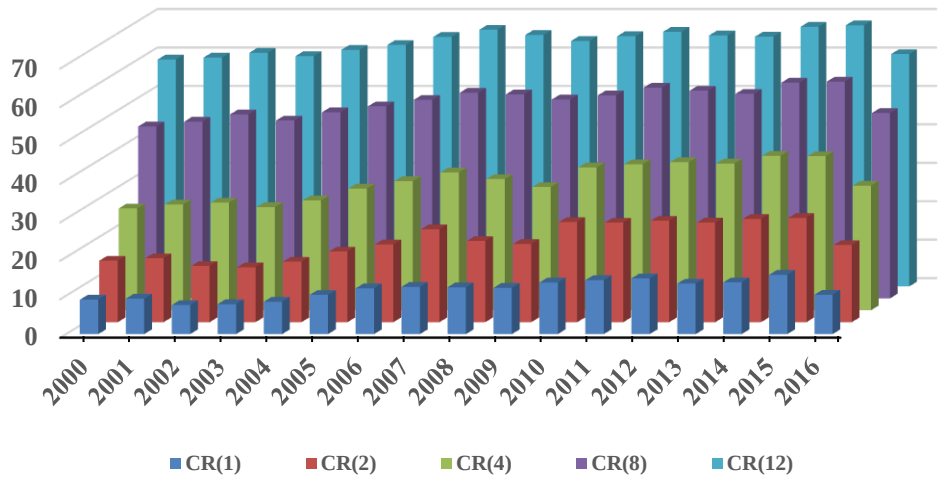
The fourth country that Russia exports most in 2000 was China with 5.2 billion dollars. The CR (4) value of this year was 26,5%. In 2009, Russia exported $ 18.7 billion to Germany and $ 16.7 billion to Belarus. In 2010, Russia exported 24.3 billion dollars to Italy and 19.8 billion dollars to China. While the CR(4) value 32,1% in 2009, it rose to 37,2% in 2010. By the year 2016, Russia exported 21.2 billion dollars to Germany and 14 billion dollars to Belarus. While the CR(4) value 40,1% in 2015, it decreased to 32,4% in 2016.

The fifth country that Russia exports most in 2000 was Ukraine. Following Ukraine, the United Kingdom, the United States and Poland came from. The CR (8) value was 44.7%. The fifth country that Russia exports most in 2015 was Germany. The countries behind Germany were Japan, South Korea and Belarus. The CR (8) value for this year was 56.4%.

While Russia's biggest fifth exporter was Turkey in 2016, Italy, South Korea and Kazakhstan followed to Turkey. The value of CR (8) decreased to 48.2%.

‡ CR values were calculated by using data from the UN Comtrade database.

Graph 2. Market Concentration of Russia (CR, %)



The ninth country that Russia exports most in 2000 was the Netherlands. The countries following this country are Switzerland, British Virgin Islands and Finland. CR (12) value for this year is 59%. While Russia's biggest ninth exporter was USA in 2016, Japan, Poland and the United Kingdom followed to USA respectively. While the value of CR (12) 68% in 2015, it dropped to 60.5% in 2016.

In particular, when the CR (4) scale is examined, it is observed that Russia had been concentrating at a high rate on a country basis for 17 years. When the market concentration of exports is assessed as a whole with the Trade Concentration Rate, it is seen that the concentration of Russia was high and generally did not decrease. This suggests that the country could not diversify its exports on a country basis.

When Russia's market-oriented export diversification is interpreted with the Gini-Hirchmann Index and Concentration Rate, it can be seen that the results of these two indicators calculated for the years 2000-2016 support each other. Accordingly, Russia's export diversification remained limited over the years. In other words, Russia's exports concentrated in certain markets. It is evident that this situation is negative in the context of Russia's economic growth and development. Likewise, Russia, which can not diversify its exports on a market basis, is more likely to be affected by possible global crises.

6. PRODUCT-BASED CONCENTRATION ANALYSIS OF RUSSIAN EXPORT

Product-based concentration analysis of Russian export is made by using Gini-Hirschman Index and Trade Concentration Ratio.

6.1. Gini-Hirschman Index Analysis

Concentrations increase according to the GHI values of the product-based calculated for export of Russia. The value of GHI on the basis of product exported by Russia was 40.4% in 2000. This value increased to 50.4% in 2005 and to 56.5% in 2012. By 2016, with a relative improvement, the value fell to 46.1% (Table 3).

Table 3. Product Concentration of Russia (GHI, %)

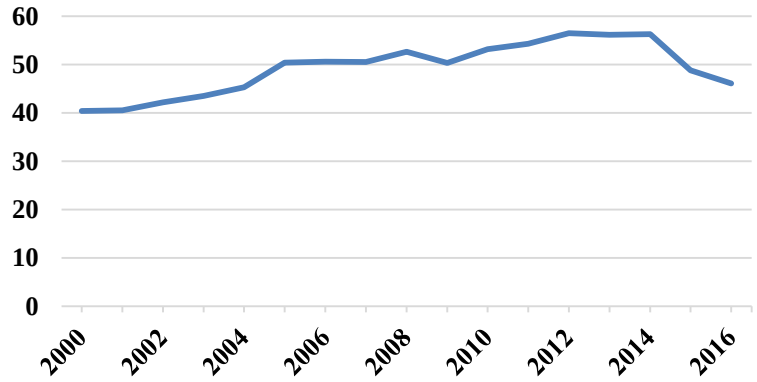
Year	2000	2001	2002	2003	2004	2005	2006	2007	2008
GHI	40,44	40,56	42,20	43,53	45,34	50,39	50,58	50,51	52,65

Year	2009	2010	2011	2012	2013	2014	2015	2016
GHI	50,33	53,17	54,30	56,49	56,17	56,29	48,81	46,13

Source: (United Nations Comtrade Database, 2017)[§]

Considered over the years, according to GHI values, it appears that Russia had failed to diversify its products in exports (Graph 3).

Graph 3. Product Concentration of Russia (GHI, %)



6.2. Trade Concentration Ratio Analysis

When the concentration of 66 product groups exported by Russia for 17 years (2000-2016) is examined according to the Trade Concentration Rate, a negative picture emerges.

The largest group of products exported by Russia during 2000-2016 was "petroleum, petroleum products and related materials". Russia's product-basis CR (1) value was 33.5% in 2000; this value increased to 41% in 2004, to 47.1% in 2005 and to 54.4% in 2014. owever, the value of CR (1) decreased to 45.9% in 2015 and to 42.25% in 2106 (Table 4).

[§] GHI values were calculated by using data from the UN Comtrade database.

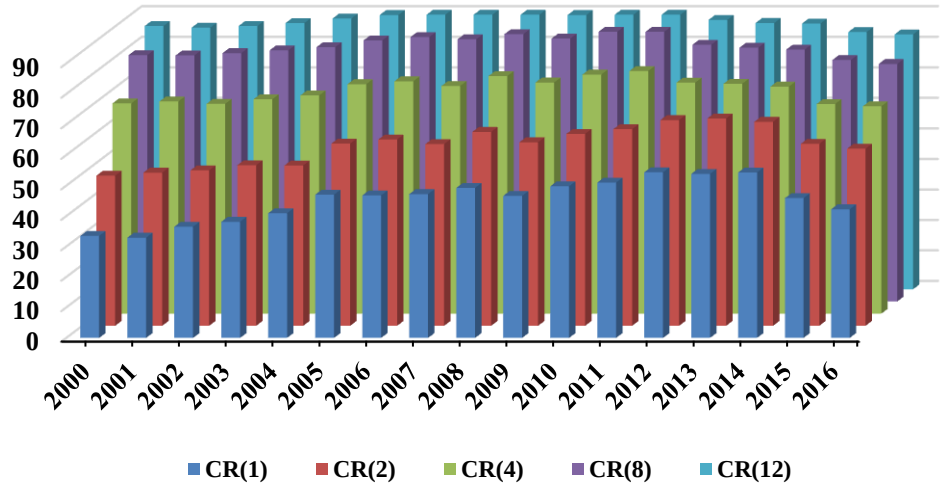
Table 4. Product Concentration of Russia (CR, %)

Yıl	$CR_{(1)}$	$CR_{(2)}$	$CR_{(4)}$	$CR_{(8)}$	$CR_{(12)}$
2000	33,49	49,29	68,96	80,75	86,30
2001	32,91	50,30	69,58	80,65	85,76
2002	36,51	51,01	68,82	81,43	86,32
2003	38,14	52,73	70,29	82,33	87,28
2004	40,97	52,63	71,58	83,38	88,76
2005	47,05	59,79	75,25	85,57	89,89
2006	46,80	61,14	76,20	86,69	90,45
2007	47,23	59,64	74,65	85,94	90,16
2008	49,28	63,62	77,89	87,64	91,05
2009	46,66	60,22	75,80	86,19	89,90
2010	49,79	62,97	78,41	88,41	91,70
2011	51,02	64,50	79,56	88,39	92,10
2012	54,37	67,49	75,75	84,18	88,30
2013	53,86	68,02	75,38	83,21	87,30
2014	54,35	66,93	74,46	82,58	87,13
2015	45,90	59,72	68,76	79,17	84,34
2016	42,25	58,11	68,03	77,88	83,53

Source: (United Nations Comtrade Database, 2017)**

The second largest group of goods exported by Russia between 2000 and 2016 was natural gas and its derivatives. While the CR (2) value was 49,3% in 2000, this value increased to 52,6% in 2004 and to 59,8% in 2005. Exports of natural gas and its derivatives fell from $ 62.6 billion in 2014 to $ 47.5 billion in 2015. While the CR (2) value was 67% in 2014, it was down from 59.8% in 2015 to 58.1% in 2016.

Graph 4. Product Concentration of Russia (CR, %)



** CR values were calculated by using data from the UN Comtrade database.

The third largest group of goods exported by Russia between 2000 and 2012 is non-classified by special processing and type. Nevertheless, the third largest group of goods exported between 2012 and 2016 was iron and steel. While the CR (4) value of Russia in 2000 was 69%, this value increased to 79.6% in 2011. CR (4) value declined to 68.8% in 2015 and to 68 in 2016.

The fifth largest product group exported by Russia in 2000 was iron and steel. Following this product group were cork and wood, inorganic chemicals and other metal manufactures. The CR (8) value for the year 2000 was 80,75%. In 2011, CR (8) increased to 88.4%. Russia's fifth largest export group in 2016 was coal, coke and briquettes. This product is followed by fertilizers, cereals and grain products and non-metallic mineral products, respectively. CR (8) fell to 77.8% in 2016.

The ninth product group, which Russia exported most in 2000, was other transportation means. This product group is followed by fertilizers, generators and organic chemicals. The value of CR (12) for 2000 was 86.3%. In 2011, Russia's product-based CR (12) was 92.1%. With this very high concentration rate, Russia has an unusual statistic. Russia's product-based CR (12) fell to 83,5% in 2016.

When the Trade Concentration Rates of Russia's products are examined, it is seen that concentrations were extremely high. However, the concentration of CR (1) and CR (2) in Russia had been increasing in particular. This demonstrates Russia's dependence on exports of oil and natural gas.

The high concentration of raw materials in Russia's exports is a major obstacle to the development of the economy. In fact, in recent years Russia has been suffering from it. After the 2008 Global Crisis, demand in the world has been inadequate. With the global recession that occurred during this time, oil prices have fallen by about 3/4. In this situation, countries with high product concentration in the context of petroleum products have been severely affected negatively. Russia has also been one of the countries most affected by this situation.

When Russia's product-oriented export diversifications are interpreted with the GHI and the CR, it can be seen that the results of these two indicators calculated for the years 2000-2016 support each other. Accordingly, Russia's export diversification remained limited over the years. In other words, Russia's exports concentrated in certain products.

Like the high concentration of exports in international markets, Russia's product concentration is also high. It is evident that this situation is negative in the context of Russia's economy. It is great likely that Russia, which can not diversify its exports on a market and product basis, will be influenced by the global crisis.

7. DEVIATION INDEX (DI) ANALYSIS

The analysis is made with reference to the European Union and the United States.

7.1. Deviation from the European Union

The exports and deviation index that Russia carried out in the European Union and other countries over the 17 years (2000-2016) period is shown in Table 5.

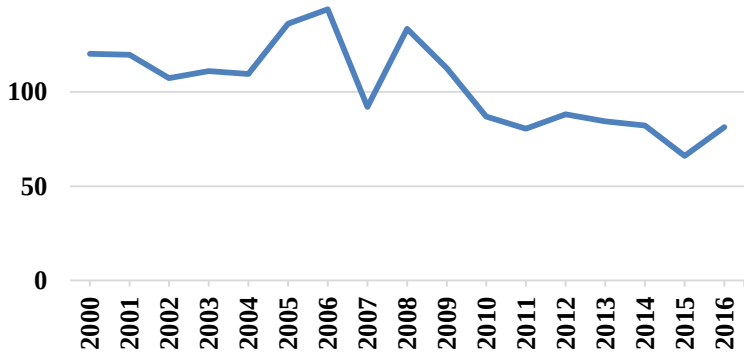
Table 5. Russia's Deviation Index from the European Union (EU-28)

	Total	EU-28	Other Countries	Deviation Index (DI)	DI (2000=100)
2000	103.092.748	56.252.090	46.840.658	120,09	100,00
2001	99.868.397	54.383.644	45.484.753	119,56	99,56
2002	106.691.998	55.210.819	51.481.179	107,24	89,70
2003	133.655.685	70.316.222	63.339.463	111,01	103,52
2004	181.600.379	94.916.434	86.683.945	109,50	98,63
2005	241.451.657	139.148.971	102.302.685	136,02	124,22
2006	301.550.666	177.816.306	123.734.360	143,71	105,65
2007	352.266.399	168.731.948	183.534.451	91,93	63,97
2008	467.993.955	267.462.896	200.531.059	133,38	145,08
2009	301.796.059	159.781.722	142.014.337	112,51	84,36
2010	397.067.521	184.669.480	212.398.041	86,95	77,28
2011	516.992.618	230.540.422	286.452.197	80,48	92,57
2012	524.766.421	245.699.139	279.067.282	88,04	109,40
2013	527.265.919	241.237.216	286.028.703	84,34	95,79
2014	497.833.529	224.404.048	273.429.481	82,07	97,31
2015	343.907.652	136.779.828	207.127.824	66,04	80,46
2016	285.491.052	127.996.073	157.494.979	81,27	123,07

Source: (United Nations Conference On Trade And Development (UNCTADSTAT), 2017)[††]

Russia's deviation index values for the European Union were unstable. Because, this value had been 120,1 in 2000, 92 in 2007, 133,4 in 2008, 80,5% in 2011, 66% in 2015 and 81,3% in 2016. In other words, as seen in Graph 5, the DI value was at the bottom in 2002, 2007 and 2015, and at the peak in 2006 and 2008.

Graph 5. Russia's Deviation Index from the European Union (EU-28)



7.2. Deviation from the United States

The exports and deviation index that Russia carried out in the United States and other countries over the 17 years (2000-2016) period is shown in Table 6.

Russia's total exports rose from $ 103.1 billion in 2000 to $ 468 billion in 2008. Nevertheless, Russia's exports declined by $ 301.8 billion in 2009. Although Russia increased its total exports in 2013 by 527.3 billion dollars, this value has decreased by 285.5 billion dollars in 2016.

[††] Values related to Deviation Index were calculated by using data from the UN Comtrade database.

Table 6. Russia's Deviation Index from the United States

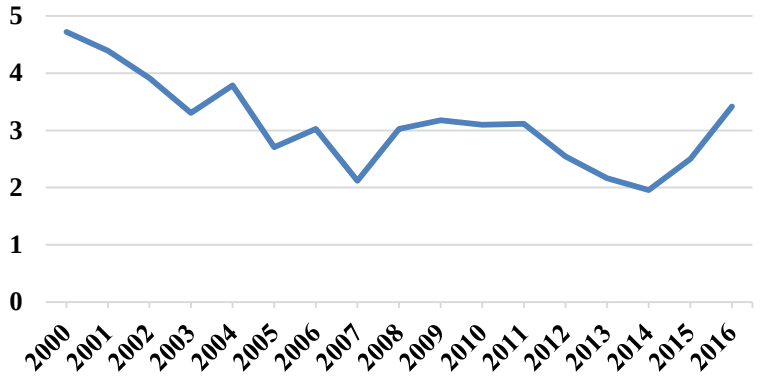
	Total	US	Other Countries	Deviation Index (DI)	DI (2000=100)
2000	103.092.748	4.648.016	98.444.733	4,72	100,00
2001	99.868.397	4.198.805	95.669.592	4,39	92,98
2002	106.691.998	4.019.994	102.672.003	3,92	82,95
2003	133.655.685	4.274.224	129.381.461	3,30	69,99
2004	181.600.379	6.625.955	174.974.424	3,79	80,23
2005	241.451.657	6.366.077	235.085.580	2,71	57,37
2006	301.550.666	8.851.517	292.699.148	3,02	64,07
2007	352.266.399	7.311.805	344.954.594	2,12	44,91
2008	467.993.955	13.752.790	454.241.164	3,03	64,14
2009	301.796.059	9.286.431	292.509.628	3,17	67,26
2010	397.067.521	11.933.020	385.134.501	3,10	65,64
2011	516.992.618	15.626.335	501.366.284	3,12	66,03
2012	524.766.421	13.022.324	511.744.096	2,54	53,91
2013	527.265.919	11.177.056	516.088.863	2,17	45,88
2014	497.833.529	9.553.488	488.280.040	1,96	41,45
2015	343.907.652	8.393.105	335.514.547	2,50	53,00
2016	285.491.052	9.425.802	276.065.250	3,41	72,34

Source: (United Nations Conference On Trade And Development (UNCTADSTAT), 2017)‡‡

As can be seen in Table 6, Russia's exports deviated from the US by years. The DI value, which was 4.72 in 2000, decreased in general in the following years. When the base year 2000 was adopted, the DI value of 100 dropped to 40 in the following year. In 2016, the DI increased. That is, Russian export deviated in favor of the US this year.

The DI values from the US in Russia's exports indicated the relative low level of bilateral trade (Graph 6). Nevertheless, the low trade linkage was further declining over the years.

Graph 6. Russia's Deviation Index from the United States



‡‡ Values related to Deviation Index were calculated by using data from the UN Comtrade database.

8. CONCLUSION AND EVALUATION

Although many countries have exported large amounts, they are unable to gain an international competitive advantage. One of the most important reasons for this problem is that portfolio diversification has not been done for the products exported by the countries in question. Another problem is that it has not been diversified in the global markets where exports are made. These problems lead to lower added value of the countries that have been created as a result of production and export. Naturally, these countries which are already competitive in exports of unprocessed products, are not included in the classification of developed countries. Considering the raw-material intensity and diversification in its exports, Russia can be shown as an example to those countries.

The main aim of the study covering the years 2000-2016 is to identify the export diversification of Russia on the base of product and market. In this context, Russian export concentration values have been obtained and interpreted by using Gini Hirschman Index (GNI), Trade Concentraten Ratio (CR) and Deviation Index (DI).

When the deviations of Russian exports from the EU and US markets are analyzed by the Deviation Index, the results with reference to the two markets appeared to be parallel. Likewise, Russia's Deviation Index is both unfavorable to the EU and the US.

If the market-based export diversification of Russia is handled with Gini-Hirchmann Index and Concentration Rate, it will be seen that the results of these two indicators calculated for the years 2000-2016 support each other. That is, Russia's export diversification remained limited over the years. In other words, Russia's exports concentrated in certain markets.

Like the low diversification of exports in international markets, Russia's product diversification is high too. It is obvious that this negative situation will harm the Russian economy. For example, as is known, since the 2008 Global Crisis, demand in the world has been inadequate. With the global recession that occurred during this time, oil prices have fallen by about 3/4. In this situation, countries with high product concentration like petroleum products have been severely affected negatively. Russia has also been one of the countries most affected by this situation. In this context, if Russia continues to address fewer countries with a smaller variety of products, it will likely to be exposed to global crises.

It is necessary for Russia to diversify its product and market composition in order to be able to gain more share of the world's added value, increase international competitiveness and become a more active global actor. However, Russia needs to diversify its products in favor of products with higher technological intensity, income elasticity and added value.

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