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AUTUMN 2017/NUMBER 83
1-26

Analysis of Bilateral Trade Relations between Turkey and Russia Federation

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Abstract

Trade relations between Turkey and Russia Federation (Russia afterwards) have steadily developed over the last 23 years and the total trade volume reached $23.9 billion in 2015.Tourism and energy sectors are growing significantly. However, in 2015, Turkey's exports to Russia decreased by 39% while imports fell by 19%. The aim of this paper is to represent sector based trade information between Turkey and Russia in order to provide a comprehensive analysis of bilateral trade of the two countries. Trade trend shows that without facing domestic or external political conflicts, the trade volume has increased between Turkey and Russia. Therefore, bilateral trade relations can have positive effects on these economies.

Keywords

Bilateral trade, Turkey, Russia Federation, trade complementarity index, revealed comparative advantage

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1. INTRODUCTION

Despite the fact that both countries have different political agendas in their foreign policies their economic relations have become stronger due to arising economic interests. Economic connections in trade, tourism and investments have rapidly developed over the years. Bilateral trade between Turkey and Russia has developed over the years although the trade balance between these countries has been mostly in the favor of Russia. Since 1992 Turkish imports from Russia have increased from $1,40 billion to $3,87 billion in 2000, $21,59 billion in 2010 and $20,33 billion in 2015, while its export to Russia in 1992 rose from $441,83 million to $639 million in 2000, $4,6 billion in 2010 and $3,5 billion in 2015. During this period, the exports have increased 8 fold while imports have grown 19.

Energy, construction and tourism have been the major investment fields between Turkey and Russia. One of the main projects between these countries is the Turkish stream announced by the President of Russia, Vladimir Putin in his visit to Turkey in December 2014. However, this project was temporarily stopped after the aircraft incident in November 2015. This project is a replacement project for South stream aiming to bypass Ukraine on delivering gas to Europe through Turkey. In 2015, Turkey, in total, attracted $11,77 billion foreign direct investment (FDI) $747 million (6.34%) of which came from Russia (a large amount went to energy sector regarding Akkuyu nuclear power plant). Russia was one of the largest markets for Turkish construction companies. To give an example, in 2014, Turkish construction companies undertook overall 277 projects in 44 countries worth $22,8 billion 14.8% of which is carry out in Russia. While analyzing tourism potential between the countries, it would also be useful to look at the cultural relations. These cultural relations such as mixed marriages alongside with the abovementioned areas have been the main areas in bilateral relations that led two countries have closer and warmer relations. For instance, a number of mixed marriages have reached to almost 200,000 until now and a large number of Russian citizens have settled in touristic southern region in Turkey. Furthermore, in 2014, 18.430 Russian citizens have gained the residence permit taking 6th place in the top-ten list. In 2014, 4,5 million Russian tourists accounted for %10 of total number of visitors and spent $2,7 billion which equals to 9.7% of total tourism revenues. However, in 2015, the number of Russian tourist reduced by nearly 18.5% to 3,64 million comparing with the same period in 2014, which results a decrease in revenues from $2,7 billion (9.7%) to $1,96

billion (7.4%). One of the main reasons here is related with the economic recession in Russia.

It is possible to analyze the relations between Turkey and Russia in many different fields like social, cultural, politic and others. However, this research has focused only on the increase in the trade relations between the two countries by using the trade data from post-independence period. In other words, the aim of this paper is to analyze the reasons of a significant increase in trade relations among countries despite the different preferences in their foreign policies. In this paper, different from the existing literature, we will use trade intensity index, trade complementarity index, revealed comparative advantage and bilateral revealed comparative advantage indexes simultaneously to evaluate the trade relations between Turkey and Russia in more detail.

This paper includes five sections. Introduction is the first section. Literature review is made in the second section. In the third section, the historical background of the relations, recent economic developments and the structure of trade between Turkey and Russia are analyzed regarding the main trade indicators. In the fourth section, trade pattern indices that are used to analyze bilateral trade between these countries are examined. In this section, trade intensity index, trade complementarity index, revealed comparative advantage and bilateral revealed comparative advantage measurements are used. The fifth section is the conclusion, which includes recommendations for improving bilateral trade between Turkey and Russia.

2. LITERATURE REVIEW

In this section, the trade relations between Turkey and Russia often covered by general trade volume analysis are examined. A number of studies have been conducted on various aspects of economic and trade relations between these countries. A brief review of literature is presented below.

Table 1. *Literature on Relations between Turkey and Russia*

Article	Method	Period
Pirincci M. (2009)	Trade Volume Analysis	1993-2008
Ozcelik, S, E., Erlat, G. (2013)	Revealed Comparative Advantage	1994-2010
Erguzel, O., S. et.al (2016)	The trade complementarity index	2002-2013
Ivanov, I. (2016)	Trade Volume Analysis	1995-2015
Tasbasi, A. (2017)	Game Theory Analysis	2015-2016
Frede, J., Yetkiner, H. (2017)	Panel data	1994-2010

Ozcelik and Erlat (2013) include 15 European Union (EU) countries and 15 non-EU economies comparative advantage between 1994-2010. Ozcelik and Erlat (2013) find that Turkey's revealed comparative advantage (RCA) is much higher than Russia's, while in terms of the share of RCA products in total exports Russia has a better ranking than Turkey. This finding is explained by the fact that Russia has a few number of RCA products that has a considerably large share in its exports meaning Russia has a small number of RCA products that has a majority share in its export. In addition, Erguzel et al (2016) indicate that Turkey has managed to diversify its product composition in its exports showing a better performance than Russia by increasing its revealed comparative advantage of new products like road vehicles and others.

In their research, Pirincci (2009) and Ivanov (2016) touch upon the complementarity structure of trade between Turkey and Russia stating that one of the reasons of a rapid development in trade volume between two countries is that both could provide each other's import requirements. This trade structure is beneficial for both economies. Regarding its economic growth, Turkey's energy consumption will continue to increase where Russia is an important supplier for Turkey. Russia will continue to import labor-intensive and capital-intensive goods from Turkey due to its comparative advantage in Russia.

Tasbasi (2017) focuses on potential outcomes of trade relations after the aircraft incident. Currently, relations between two countries normalized and Russia's ban on certain Turkish products are gradually lifting. In its game theory analysis, Tasbasi (2017) concludes that Turkey could appeal to World Trade Organization (WTO) if the cost of the ban is not negligible.

3. BILATERAL ECONOMIC RELATONS BETWEEN TURKEY AND RUSSIA: HISTORICAL BACKGROUND AND RECENT ECONOMIC DEVELOPMENTS

Bilateral relations between Turkey and Russia have long-established historical roots. Regarding the historical background of the bilateral relations between Turkey and Russia some important economic agreements are signed since 1925. For instance, on 25 December 1925 "Friendship and Neutrality Agreement," and on 8 October 1937 "Trade and Navigation Agreement," allowed Turkey and the Soviet Union to create moderate neutral relations during 1920s-1940s (Simsir, 1999: 149). However, bilateral relations soured after the II World War. Starting from early 1960s bilateral relations became warmer

again during 1960s-1980s. On 25 March 1967 "The Economic Technological Agreement" and on 09 January 1975 "The Second Economic Technological Agreement" were signed. Moreover, between 1965-1979 high-level diplomatic visits were made. In addition, agreement on the sale of natural gas by the Soviet Union to Turkey in 1985 improved the relations further (Kazgan 1998: 140).

After the collapse of the Soviet Union and the establishment of Russian Federation, a number of agreements were signed. "Agreement on Trade and Economic Cooperation" on 25 February 1991, "Agreement on Reciprocal Promotion and Protection of Agreements" and "Agreement on Avoidance of Double Taxation" on 15 December 1997 allowed favorable conditions for firms in both countries to conduct business (Kazgan 2002: 87). In addition to that, "The Joint Action Plan for Cooperation in Eurasia" signed between Turkey and Russia in 2001. This agreement has allowed both countries an opportunity to strengthen their relations by providing a channel for political consultations and economic cooperation in the Eurasian region. It could be said that this agreement was useful for strengthening the diplomatic relations on the topics related to Eurasia continent. In 2004 "Joint Declaration Between the Republic of Turkey and the Russian Federation on Deepening Friendship and Multi-Dimensional Partnership" has been signed. With this agreement, cultural and humanitarian relation between the two countries has gained a momentum for further development. Moreover, in the cultural sphere reciprocally declaration of culture years has allowed both nations to get familiar with the each other's culture. In 2007 declared as a Russian Culture Year in Turkey whereas 2008 was the Turkish Culture Year in Russia. This declaration has a positive effect on unifying the cultural connections between the peoples of Turkey and Russia (MFA, 2009; Cevikoz, 2016: 20). Moreover, the cooperation in the regional bloc, namely, the Organization of the Black Sea Economic Cooperation (BSEC) and the joint projects in energy sector such as Blue Stream have elevated the relations to a higher level. The developing economic relations also positively affected the political relations. For instance, the establishment of Turkish-Russian High Level Cooperation Council (HLCC) in 2010 created a platform to discuss the regional and international cooperation opportunities. HLCC serves an important platform to discuss political and economic events and cooperation prospects between the two countries in order to develop the bilateral relations.

It could be said that continuous growth in economic relations between the countries has become the major component of the bilateral relations. In their bilateral trade relations, Russia's export to Turkey is almost 6 times larger than Turkish exports to Russia. In terms of trade share, trade volume equals to 2.5% of Turkey's total trade in 2015 while this amount equals to 5.9% of Russia's total trade volume (UNComtrade 2015). In terms of FDI, Turkey invested $62 million FDI in Russia while Turkey received $747 million FDI from Russia which positions Russia as the 7th biggest country in top 10 FDI flow list (TCMB, Demir 2015: 3). At this point, it is necessary to express that most of the investment went to Akkuyu nuclear power station project. Tourism is one of the key fields in bilateral relations. While 3.6 million Russian tourists visited Turkey, 115 thousand Turkish citizens visited Russia in 2015 (TCMB 2015). On the other hand, in 2015 there were 25343 Russian citizens living in Turkey while 76812 Turkish citizens living in Russia (FMS, TUIK 2015).

Table 2. *Turkey-Russia Relations Main Indicators (2015)*

	Turkey to Russia	*Russia to Turkey*
***Total Trade** $ million*	23989,26	23989,26
Export $ million	*3589,46*	*20399,80*
Trade Share (%)	2,5	5,93
Investments		
Foreign Direct Investment $ million	62	747
Visitors thousands person	115,7	3649
Residents person	76812	25343

Source: Uncomtrade.com, Turkey Ministry of Interior. http://comtrade.un.org/, http://www.mia.gov.tr/ (Accessed: 15.02.2016).

Turkey's bilateral trade relations with Russia has grown steadily during the last 23 years both at the time of Russian ruble crisis (1998-1999) and the global financial crisis (2008-2009). In each year, there was an unbalanced trade structure between these countries in favor of Russia. However, after the 1998 crisis in Russia, this unbalanced trade structure between Turkey and Russia worsened. There are number of reasons. First, Russia is an important partner for Turkey regarding energy supplies. Regarding increasing price and natural gas consumption, natural gas imports from Russia increased which negatively affected trade balance between Turkey and Russia. Second, Russia's import substitution policy after the 1998 crisis has reduced the imports of Russia.

However, after 2001 trade volume between the countries continuously grew over the years due to complementarity structure of trade where Turkey heavily imports raw material goods especially petroleum products and exports manufactured products mostly labor intensive and capital intensive goods such as motor vehicles, fabrics, motor vehicle parts and food stuff (UN Comtrade 2016). In the following years, trade amount has fallen only twice due to 2008 global crises and aircraft incident in 2015. Trade dynamics between Turkey and Russia shows that if not interrupted by international or bilateral crisis, trade tends to grow.

Table 3. *Turkey-Russia Bilateral Trade Volume and Growth (1992-2015)*

	Turkey's Export to Russia (million $)	Growth Rate (%)	Turkey's Import from Russia (million $)	Growth Rate (%)
1992	441,83		1040,80	
1993	505,27	14,35	1542,31	48,18
1994	820,19	62,32	1044,90	-32,25
1995	1232,04	50,21	2082,36	99,00
1996	1494,43	21,29	1900,21	-8,74
1997	2056,47	37,60	2174,23	14,42
1998	1347,46	-34,47	2154,97	-0,88
1999	588,60	-56,31	2374,10	10,16
2000	639,08	8,57	3879,86	63,42
2001	924,10	44,50	3435,67	-11,44
2002	1168,30	26,42	3863,17	12,44
2003	1367,59	17,05	5451,31	41,10
2004	1859,18	35,94	9033,13	65,70
2005	2377,04	27,85	12905,61	42,86
2006	3237,61	36,20	17806,23	37,97
2007	4726,85	46,00	23508,49	33,41
2008	6481,48	37,12	31364,47	33,43
2009	3202,37	-50,60	19718,96	-37,12
2010	4631,49	44,62	21599,56	9,53
2011	5992,71	29,39	23952,93	10,89
2012	6682,98	11,51	26625,02	11,15
2013	6964,20	4,20	25064,21	-5,86
2014	5945,71	-14,62	25293,39	0,91
2015	*3589,46*	-39,60	*20399,80*	-19,34

Source: Uncomtrade.com http://comtrade.un.org/ (Accessed: 17.02.2016).

Analyzing trade relations by years, the graph below shows that Russia stayed in the top 10 trade partners of Turkey during 1992-2015. Between 1992-1997, Russia, as an export destination, gained a momentum and jumped from 9th place in 1992 to 2nd place in 1997. However, after the Ruble crisis in 1998 it fell to 5th place and in 1999 to 10th place. Between 2000-2014, Russia's position in Turkey's top export partners changed between 4th and 11th place and settled in the 11th place in 2015. In terms of imports, Russia rapidly gained higher rankings in the top import partners climbing from 8th place in 1992 to 2nd place in 2005. Moreover, between 2006-2014, Russia kept its 1st place as an import partner however due to sharp fall in imports from Russia, it fell to 3rd place in 2015 (UNComtrade 2015).

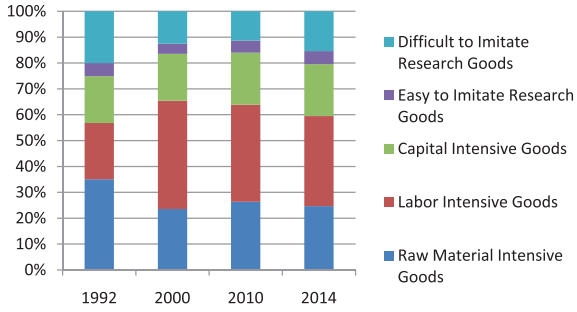
Graph 1: *Trade Partnership Ranking with Russia (1992-2015)*

Source: Uncomtrade.com http://comtrade.un.org/ (Accessed: 17.02.2016).

Graph indicatorsare lined from left to right.

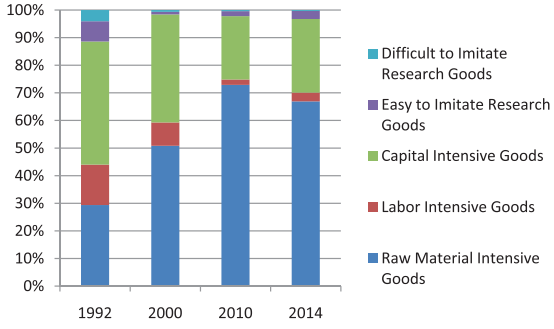
Regarding the structure of trade between Turkey and Russia, sectoral shares indicate that there is a shift from raw material intensive goods to labor-intensive goods. In addition, there is a gradual increase in capital-intensive goods and easy to imitate research goods. The share of difficult to imitate goods declined until 2000s afterward significantly increased during 2010-2014. Graph 2 shows that the structure of Turkish exports to Russia transform from low value added products to high value added products (UNComtrade.com 2015).

Graph 2: *Sectoral Share of Turkey's Exports to the Russia (1992-2014, %)*



Source: Calculated by authors using SITC Rev.3 from Uncomtrade.com http://comtrade.un.org/ (Accessed: 06.03.2016). Graph indicators are lined from top to bottom.

Graph 3: *Sectoral Share of Turkey's Import from Russia (1992-2014, %)*



Source: Calculated by authors using SITC Rev.3 from Uncomtrade.com http://comtrade.un.org/(Accessed: 06.03.2016). Graph indicators are lined from top to bottom.

Turkish imports from Russia mainly based on raw material intensive goods and capital-intensive goods. During 1992-2010, imports of raw material intensive goods remarkably increased consisting 72.8% of total imports, later facing a fall to 67% in 2014. Also, there is a sharp decrease in capital intensive goods and labor intensive goods. Easy to imitate research goods and difficult to imitate research goods reached its lowest level in 2014 (UNComtrade.com 2015).

Comparing the years between 2010 and 2014, there is a slight decrease in labor-intensive goods and raw material intensive goods while difficult to

imitate research goods is on the rise. Graphs show that during 2010-2014, 4% share of raw material intensive goods and labor-intensive goods shifted towards difficult to imitate research goods and machinery and equipment (UNComtrade.com 2015).

Regarding Turkish imports from Russia, there is a decrease in all industries where raw material intensive goods are still top imported products which are followed by capital-intensive goods. In 2014, the combination of petroleum products and aluminum stayed just below the half of the total imports. Other industries such as easy to imitate research goods and difficult to imitate research goods during the last couple years fell below 1%. (UNComtrade.com 2015). Comparing the trends in exports and imports, the graphs show that between 2010-2014, the shift towards exporting high-income products to Russia is rapidly increasing, while Turkey's imports of high-income products are decreasing its import of raw material intensive goods from Russia are increasing.

4. TRADE PATTERN INDICES AND RESULTS

In order to analyze the trade patterns between Turkey and Russia trade intensity index, trade complementarity index and revealed comparative advantage alongside with bilateral revealed comparative advantage measurements are used in this section.

4.1. Trade Intensity Index

The trade intensity approach which was developed by Brown (1949), was then revised and improved by Kojima (1964). Trade intensity index (TII) measures the intensity of trade between two countries comparing their trade with the other countries (Brown 1949, Kojima 1964: 19). It shows whether the reporter country exports more to its partner than the world does on average. It is calculated as

$$Tij = (xij/Xit)/(xwj/Xwt)$$

Where xij and xwj are the values of country i's exports and of world exports to country j and where Xit and Xwt are country i's total exports and total world exports respectively. An index of more (less) than one indicates a bilateral trade flow that is larger (smaller) than expected (WB, 2015).

Table 4. *Trade Intensity Index*

	Turkey		Russia	
	Export	Import	Export	Import
1996	3,76	3,81	4,78	3,00
1997	4,87	3,66	5,15	3,47
1998	3,68	5,78	5,88	3,61
1999	1,67	10,87	6,75	2,69
2000	1,42	13,78	8,64	2,27
2001	1,79	12,44	6,67	3,35
2002	1,95	10,66	6,46	3,22
2003	1,61	10,43	6,40	2,62
2004	1,46	11,37	7,11	2,34
2005	1,36	11,73	7,40	2,16
2006	1,49	11,22	8,21	2,04
2007	1,70	9,63	8,44	1,94
2008	1,65	9,36	7,97	1,93
2009	1,27	10,13	7,82	1,64
2010	1,52	7,68	7,11	1,65
2011	1,52	5,84	6,08	1,46
2012	1,49	6,41	5,93	1,61
2013	1,61	5,82	5,78	1,62
2014	1,36	6,62	5,78	1,56

Source: Calculated by authors using SITC Rev.3 from Uncomtrade.com http://comtrade.un.org/ (Accessed: 10.03.2016).

Trade intensity index (TII) measures the intensity of trade between two countries comparing their trade with the other countries. It shows whether the reporter country exports more to its partner than the world does on average. It is measured as country i's exports to country j relative to its total exports divided by the world's exports to country j relative to the world's total exports (WB 2015). If it is higher than 1 (TII>1) it is considered that country i's trade with its partner country is higher than the world on average and vice versa. Over 18 years, the trade between Turkey and Russia has been higher than their average trade with the rest of the world. Moreover, since Russia is the top import partner of Turkey, the import intensity is quite high. On the other hand, Turkey's export intensity with Russia ranged between 4.8 and 1.2 between 1996-2014.

4.2. Trade Complementarity Index (TCI)

Trade complementarity indices (TCIs) which measures a country's trade structure complementarity with other countries was introduced by Michael

Michaely (1996: 21). This index provides information to represent the export structure of one country with its trade partner's import structure which could be useful to predict the potential of trade agreements (WB 2015).

$$TCij = (1 - sum(|mik - xij| / 2))$$

Where xij is the share of good i in global exports of country j and mik is the share of good i in all imports of country k. The index is zero when no goods are exported by one country or imported by the other and 100 when the export and import shares exactly match (WB 2015).

Table 5. *Trade Complementarity Index 1996-2014*

Years	Turkey-Russia	Russia-Turkey
1996	0,38	0,39
1997	0,45	0,37
1998	0,35	0,37
1999	0,37	0,38
2000	0,45	0,41
2001	0,47	0,41
2002	0,36	0,40
2003	0,42	0,43
2004	0,41	0,46
2005	0,40	0,46
2006	0,43	0,48
2007	0,42	0,50
2008	0,45	0,49
2009	0,42	0,50
2010	0,39	0,51
2011	0,53	0,52
2012	0,54	0,52
2013	0,54	0,53
2014	0,52	0,53

Source: Calculated by authors using SITC Rev.3 from Uncomtrade.com http://comtrade.un.org/ (Accessed: 12.03.2016).

The trade complementarity index (TCI) tells us to what extent the reporter country's export pattern matches with its partner country's import pattern. A high degree of complementarity index is assumed to indicate that two countries benefit from increasing their trade volume. This index can also be useful to determine prospects of potential regional trade agreements (WB 2015). TCI ranges between 0 and 1. A score of 1 indicates that the export structure of country i perfectly matches with its partner country j's import structure

while a score close to 0 means that these countries are perfect competitors (WB 2015). Analysing TCI index between 1996-2014 for Turkey-Russia, table 5 indicates that during the late 1990s, Turkey and Russia were competitors rather than complementing. Starting from 2000, TCI level continuously raised to 0,5 levels which means that the trade structure of Turkey and Russia is highly complementary and both countries gain from bilateral trade. This is mostly because of Turkey's hydrocarbon imports from Russia.

4.3. Revealed Comparative Advantage (RCA)

Revealed Comparative Advantage index is used to measure a country's relative advantage or disadvantage in a specific industry in order to assess its export potential. In this paper, original Balassa's index which is based on Hecksher-Ohlin theory and which is most commonly accepted method to analyze trade data is used. In order to calculate the comparative advantage of a country, Balassa proposed not to include all elements which affect country's comparative advantage. Rather, he suggested that comparative advantage could be revealed by observed trade patterns that reflect differences in factor endowments across nations (Balassa 1965: 107). Balassa's comparative advantage index calculated as

$$RCA_{ij} = (x_{ij}/Xit) / (x_{wj}/Xwt)$$

Where xij and xwj are the values of country i's exports of product j and world exports of product j and where Xit and Xwt refer to the country's total exports and world total exports. A value higher than 1 indicates "revealed" comparative advantage, while when index is less than 1, the country has a comparative disadvantage (WB 2015).

Table 6. *Revealed Comparative Advantage Index 1992-2014 for Turkey (RCA)*

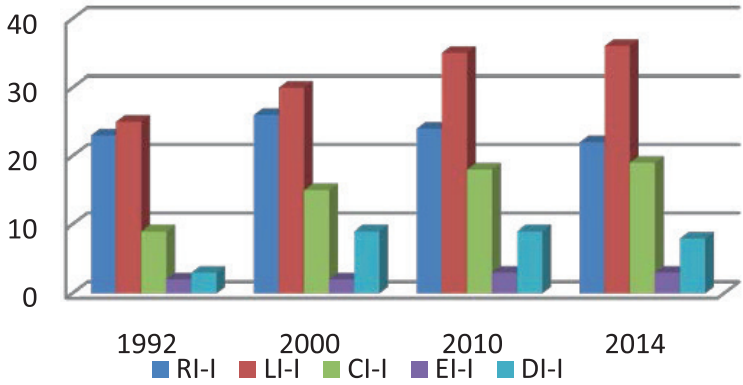
Year	Total	RCA<1	Export Share	RCA>1	Export Share
1992	244	182	18	62	82
1993	249	166	17	67	83
1994	247	166	19	64	81
1995	252	172	20	67	80
1996	254	173	19	71	81
1997	254	173	19	73	81
1998	255	176	21	75	79
1999	253	177	24	77	76
2000	253	175	22	80	78

2001	252	178	26	74	74
2002	252	176	24	76	76
2003	255	181	26	75	74
2004	252	175	23	75	77
2005	254	175	21	82	79
2006	254	178	24	80	76
2007	253	172	19	81	81
2008	254	175	21	86	79
2009	255	173	18	92	82
2010	254	175	21	89	79
2011	254	175	21	92	79
2012	253	177	24	85	76
2013	255	176	21	95	79
2014	253	176	23	88	77

Source: Calculated by authors using SITC Rev.3 from Uncomtrade.com http://comtrade.un.org/ (Accessed: 14.03.2016).

Turkey over the years has increased the number of industries that have comparative advantage in world market from 62 in 1992 to 88 in 2014, seeing a peak in 2013 with 95 industries. Although the number of RCA<1 industries are much higher than the number of RCA>1 industries, the export share of RCA>1 industries are greater than RCA<1 and consisted 77% in 2014.

Graph 4: *Turkey's RCA>1 Industries by Category 1992-2014*



Source: Calculated by authors using SITC Rev.3 from Uncomtrade.com http://comtrade.un.org/ (Accessed: 14.03.2016)
Graph indicators are lined from left to right.

Looking at the composition of RCA>1 industries between 1992-2014, labor intensive industries and raw material industries consist the majority where number of RCA>1 raw material industries decline and number of RCA>1 labor intensive goods increase while capital intensive industries and difficult to imitate research industries gradually increase.

Table 7. *Top 10 RCA Industries of Turkey (1992-2014)*

1992					*2000*				
Type	*Code*	*Name*	*RCA*	*Share*	*Type*	*Code*	*Name*	*RCA*	*Share*
RMI-I	91	Margarine	23,79	0,63%	CI-I	121	Tobacco	15,01	1,37%
LI-I	844	Women's clothes	20,87	6,86%	LI-I	658	Made-up articles, textile materials	12,90	3,71%
CI-I	672	Ingots and primary forms, of iron or steel	15,18	2,65%	LI-I	844	Women's clothes	11,34	3,30%
CI-I	121	Tobacco	14,31	2,20%	RMI-I	58	Fruit, preserved (excluding fruit juices)	9,93	0,96%
RMI-I	46	Meal and flour of wheat	12,43	0,75%	CI-I	676	Iron and steel bars	9,83	3,81%
RMI-I	57	Fruit and nuts (not including oil nuts)	10,29	5,74%	RMI-I	91	Margarine	9,18	0,22%
CI-I	676	Iron and steel bars	9,86	5,19%	RMI-I	46	Meal and flour of wheat	8,72	0,26%
LI-I	845	Textile fabrics	8,47	9,31%	LI-I	845	Textile fabrics	8,60	8,89%
RMI-I	278	Other crude minerals	8,16	1,38%	RMI-I	57	Fruit and nuts (not including oil nuts)	8,24	3,74%
LI-I	658	Made-up articles, textile materials	8,09	2,42%	LI-I	842	Women's clothes	7,68	5,50%
2010					*2014*				
Type	*Code*	*Name*	*RCA*	*Share*	*Type*	*Code*	*Name*	*RCA*	*Share*
RMI-I	46	Meal and flour of wheat	17,53	2,32%	RMI-I	46	Meal and flour of wheat	17,95	0,63%
RMI-I	273	Stone, sand and gravel	12	3,17%	LI-I	659	Floor coverings, etc.	15,06	1,55%
LI-I	659	Floor coverings, etc.	10,70	4,73%	RMI-I	273	Stone, sand and gravel	11,09	0,74%
LI-I	661	Cement	9,27	7,46%	EII-I	583	Monofilament	7,83	0,27%
CI-I	676	Iron and steel bars	8,99	19,27%	CI-I	676	Iron and steel bars	7,54	4,18%
LI-I	812	Sanitary, plumbing n.e.s.	7,04	3,01%	RMI-I	25	Egg	7,08	0,27%
CI-I	672	Ingots and primary forms, of iron or steel	6,82	7,38%	LI-I	812	Sanitary, plumbing n.e.s.	6,41	0,72%

RMI-I	58	Fruit, preserved (excluding fruit juices)	6,37	3,03%	RMI-I	58	Fruit, preserved (excluding fruit juices)	6,21	0,83%
EII-I	583	Monofilament	6,15	0,91%	LI-I	661	Cement	5,97	1,21%
LI-I	655	Knitted or crocheted fabrics	5,74	4,73%	RMI-I	47	Other cereal meals and flours	5,20	0,05%

Source: Calculated by authors using SITC Rev.3 from Uncomtrade.com http://comtrade.un.org/ (Accessed: 14.03.2016).

Although there is a decrease in the number of raw material industries in general within the top 10 RCA>1 industries list, raw material intensive industry still takes the lead in the list except 2000. For instance, in 2014 five raw material intensive industry entered the list while only three labor intensive industries managed to enter the top 10 list and only one capital intensive and easy to imitate research industries took place in the list.

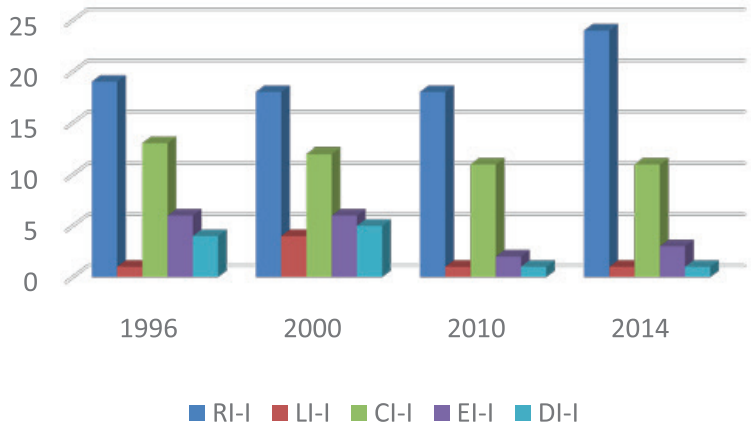
Table 8. *Revealed Comparative Advantage Index for Russia (RCA) (1996-2014)*

Year	Total	RCA<1	Export Share	RCA>1	Export Share
1996	251	208	16	43	84
1997	246	200	14	46	86
1998	252	198	15	54	85
1999	248	200	15	48	85
2000	249	204	15	45	85
2001	250	203	16	47	84
2002	249	206	15	43	85
2003	249	207	14	42	86
2004	251	211	13	40	87
2005	248	208	10	40	90
2006	249	216	12	33	88
2007	249	216	12	33	88
2008	249	219	12	30	88
2009	250	211	9	39	91
2010	249	216	11	33	89
2011	250	217	11	33	89
2012	251	212	12	39	88
2013	251	212	13	39	87
2014	251	211	14	40	86

Source: Calculated by authors using SITC Rev.3 from Uncomtrade.com http://comtrade.un.org/(Accessed: 15.03.2016).

Russia's industries which have comparative advantage showed a fluctuated growth during 1996-2014. In 1996, 46 industries had comparative advantage while this number fell to 40 in 2014. Between 1998-2011, RCA>1 industries gradually declined from 54 to 33 and only after 2012 the number of RCA>1 industries started to increase.

Graph 5: *Russia's RCA>1 Industries by Category (1996-2014)*



Source: Calculated by authors using SITC Rev.3 from Uncomtrade.com http://comtrade.un.org/ (Accessed: 15.03.2016). Graph indicators are lined from left to right.

The composition of Russia's RCA>1 industries shows that raw material intensive goods and capital intensive goods are the major groups in terms of numbers within Russia's RCA>1 industries where the combination of these two groups consist almost 80% of total RCA>1 industries.

4.4. Bilateral Revealed Comparative Advantage Index (BRCA)

Bilateral Revealed Comparative Advantage could be calculated with modifying the RCA formula in order to calculate the comparative advantage score of an industry of the reporting country in partner country's market. BRCA tells us how much a reporter country exports to a partner country comparing with how much the world exports to the partner country (Phan et al. 2012: 16). It is calculated as

$$BRCA^{j}_{ik} = (x^{j}_{ik}/X_{itk}) / (x^{j}_{wk}/X_{wtk})$$

Where x^{j}_{ik} and X_{itk} are the country i's export of goods j and its total export to country k and x^{j}_{wk} and X_{wkt} are the world's export of goods j and world's total export to country k.

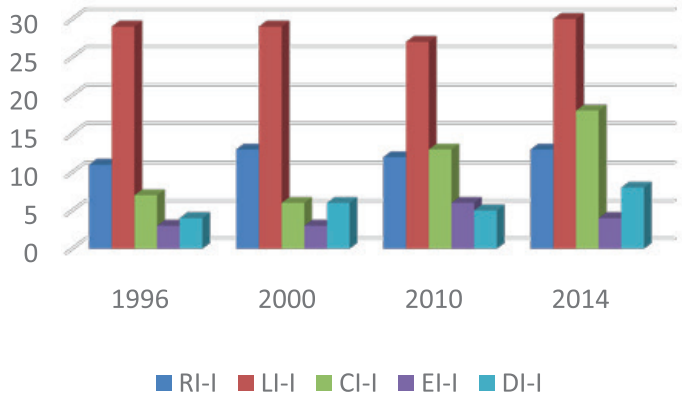
Table 9. *Bilateral Revealed Comparative Advantage (BRCA) Index for Turkey (1996-2014)*

	Turkey's Exports (Number of product groups)				
Year	Total	BRCA<1	Export Share	BRCA>1	Export Share
1996	221	167	0,15	54	0,85
1997	223	178	0,15	45	0,85
1998	217	163	0,15	54	0,85
1999	197	140	0,15	57	0,85
2000	256	199	0,15	57	0,85
2001	206	156	0,15	50	0,85
2002	199	149	0,15	50	0,85
2003	206	149	0,15	57	0,85
2004	208	148	0,16	60	0,84
2005	204	139	0,18	65	0,82
2006	205	136	0,17	69	0,83
2007	205	144	0,26	61	0,74
2008	208	149	0,20	59	0,80
2009	199	143	0,22	56	0,78
2010	204	141	0,19	63	0,81
2011	217	153	0,20	64	0,80
2012	213	144	0,24	69	0,76
2013	213	146	0,25	67	0,75
2014	221	148	0,21	73	0,79

Source: Calculated by authors using SITC Rev.3 from Uncomtrade.com http://comtrade.un.org/(Accessed: 15.03.2016).

Table 9 shows that the number of industries which have comparative disadvantage (BRCA<1) is much higher than the number of industries which have comparative advantage in Russian market. However, the number of BRCA>1 industries increased from 54 in 1996 to 73 in 2014. In addition, RCA>1 industries in 2014 consisted 79% of total exports.

Graph 6: *Turkey's BRCA>1 Industries by Category (1996-2014)*



Source: Calculated by authors using SITC Rev.3 from Uncomtrade.comhttp://comtrade.un.org/ (Accessed: 15.03.2016). Graph indicators are lined from left to right.

The composition of BRCA>1 industries between 1996-2014 is dominated by labor intensive industries covering almost half of the total number. The number of raw material intensive industries and easy to imitate research industries stayed relatively same however, the number of capital-intensive industries and difficult to imitate industries has increased significantly especially after 2010-2014 period.

Table 10. *Turkey's Top 10 BRCA Industries in Russian Markets (1992-2014)*

1992					*2000*				
Type	*Code*	*Name*	*RCA*	*Share*	*Type*	*Code*	*Name*	*RCA*	*Share*
LI-I	844	Women's clothes	19,64	5,93%	LI-I	656	Tulles and other smallwares	30,88	2,34%
LI-I	656	Tulles and other smallwares	13,03	0,39%	RMI-I	223	Oil-seeds	25,54	0,44%
CI-I	554	Soap	10,45	4,65%	CI-I	554	Soap	15,01	4,84%
LI-I	845	Textile fabrics	10,40	7,82%	LI-I	844	Women's clothes	8,12	2,48%
LI-I	658	Made-up articles, textile materials	9,61	4,37%	LI-I	658	Made-up articles, textile materials	7,69	2,25%
CI-I	783	Road motor vehicles, n.e.s.	8,88	5,92%	RMI-I	287	Ores and concentrates of base metals, n.e.s.	7,65	2,63%
RMI-I	62	Sugar confectionery	7,96	4,82%	LI-I	655	Knitted or crocheted fabrics	6,49	1,71%
LI-I	841	Men's clothes	7,90	6,13%	RMI-I	57	Fruit and nuts	6,35	8,34%
LI-I	655	Knitted or crocheted fabrics	5,93	0,68%	LI-I	842	Women's clothes	6,26	5,48%

LI-I	842	Women's clothes	4,57	3,23%	CI-I	121	Tobacco	5,91	4,50%
		2010					*2014*		
Type	*Code*		*RCA*	*Share*	*Type*	*Code*	*Name*	*RCA*	*Share*
LI-I	655	Knitted or crocheted fabrics	29,21	8,16%	LI-I	655	Knitted or crocheted fabrics	21,39	3,98%
LI-I	656	Tulles and other smallwares	15,52	1,15%	CI-I	579	Waste, parings and scrap, of plastics	21,10	0,07%
LI-I	653	Man-made textile materials	11,36	4,77%	LI-I	656	Tulles and other smallwares	17,83	1,23%
LI-I	651	Textile yarn	8,910	2,11%	LI-I	653	Man-made textile materials	10,02	4,40%
EII-I	581	Tubes and pipes	8,84	2,22%	LI-I	659	Floor coverings, etc.	8,41	0,95%
CI-I	672	Iron or steel	8,84	0,17%	RMI-I	54	Vegetables	8,25	6,65%
LI-I	659	Floor coverings	8,15	0,89%	EII-I	581	Tubes and pipes	8,17	2,10%
RMI-I	54	Vegetables	8,02	6,75%	LI-I	651	Textile yarn	8,13	1,38%
LI-I	613	Furskins	7,12	0,18%	RMI-I	344	Petroleum gases and other gaseous hydrocarbons, n.e.s.	7,94	0,23%
RMI-I	57	Fruit and nuts (not including oil nuts)	6,67	12,67%	LI-I	263	Cotton	7,84	0,12%

Source: Calculated by authors using SITC Rev.3 from Uncomtrade.com http://comtrade.un.org/ (Accessed: 18.03.2016).

Labor intensive industries among the top BRCA>1 industries between 1992-2014 take the first place and consist half of the list by number, while from other industries only raw material and capital intensive industries managed to enter the list with more than one industry. In addition, the number of easy to imitate research industries is smaller than difficult to imitate research industries. Still, two different easy to imitate research goods entered the list in 2010 and 2014.

Table 11. *Bilateral Revealed Comparative Advantage (BRCA) Index for Russia (1996-2014)*

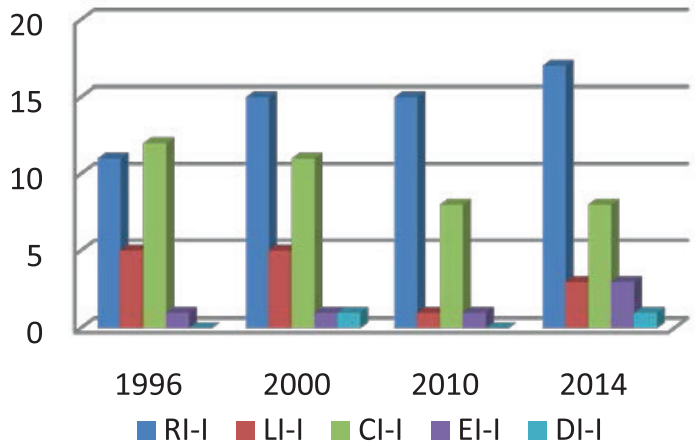
Russia's Exports (Number of product groups)					
Year	Total	BRCA<1	Export Share	BRCA>1	Export Share
1996	146	117	11	29	89
1997	164	133	8	31	92
1998	167	138	9	29	91
1999	162	132	10	30	90
2000	172	139	9	33	91
2001	182	157	7	25	93
2002	159	137	9	22	91
2003	158	137	8	21	92
2004	166	136	7	30	93

2005	162	137	8	25	92
2006	175	149	7	26	93
2007	185	163	6	22	94
2008	180	159	10	21	90
2009	176	151	8	25	92
2010	175	150	10	25	90
2011	181	155	11	26	89
2012	179	149	9	30	91
2013	194	165	10	29	90
2014	195	163	6	32	94

Source: Calculated by authors using SITC Rev.3 from Uncomtrade.com http://comtrade.un.org/(Accessed: 18.03.2016).

Table 11 shows the number of industries which have a comparative advantage in Turkish market which slightly increased during 1966-2014 and these 32 RCA>1 products sustains 94% of Russia's export to Turkey. Comparing the number of Russian BRCA>1 industries in Turkish market and Turkey's BRCA>1 industries in Russian market, findings show that Turkey's BRCA>1 industries are strengthening in Russian market in number while Russian BRCA>1 goods stay relatively the same.

Graph 7: *Russia's BRCA>1 Industries by Category (1996-2014)*



Source: Calculated by authors using SITC Rev.3 from Uncomtrade.co http://comtrade.un.org/ (Accessed: 18.03.2016). Graph indicators are lined from left to right.

Looking at the composition of Russia's BRCA>1 industries, almost 80% of these industries consist of raw material and capital intensive goods. During 1996-2014, these two industries had the majority. However, the gap between these industries has significantly widened where the number of raw material intensive goods increased 15% while capital intensive goods fell 16%.

5. CONCLUSION

This paper analyzes the bilateral trade relations between Turkey and Russia between 1992-2014 in order to reveal the current situation of trade relations with an historical background. The main findings are as follows.

Russia has become one of the major trading partners of Turkey positioned in 1st place as an import partner between 2006-2014 and 7th export partner in 2014. The export and import trade values significantly increased where Turkey's export to Russia multiplied by 13 times and its import grew 24 times. During this period, the gap between export and import values raised from 2 to 4 times. Also several changes occurred in Turkey's commodity trade structure where labor intensive industries surpassed the raw material intensive industries after 1990s. Furthermore, during 2010-2014 period, there has been a significant increase in Turkey's export of difficult to imitate research goods. Import of raw material intensive goods has become even more dominant in import structure comparing 1992-2014.

Looking at the trade intensity between Turkey and Russia, we can clearly see that there is a strong import relationship for Turkey with Russia while its export intensity is a little higher than expected. Trade complementarity index between Turkey and Russia, showing a strong complementarity, means that the export structure of Turkey is compatible with import structure of Russia. However, this supply and demand has occurred for different products with different qualities.

As for Turkey's industries that have comparative advantage in world market (RCA) and in Russia's market (BRCA), the findings indicate that industries which have comparative advantage increased throughout the years. Moreover, Turkey's labor intensive industries are the major industry group which continuously increased its comparative advantages both in world and Russian market. Furthermore, difficult to imitate industries have increased their share in Russian market especially after 2010.

In general, there is a shift in commodity leadership from raw material intensive goods to labor capital intensive goods and significant increase in export

of difficult to imitate goods to Russia. TCI index and other measures that are used in this paper show that the further development of trade relations between Turkey and Russia would be economically beneficial for both countries.

The economic slowdown in Russia and the aircraft incident which occurred in November 2015 has a negative impact on trade relations between Turkey and Russia. Overall trade trend shows that if not interrupted by internal economic factors or external political events, the trade volume has increased between Turkey and Russia and this increase would continue without affected by political or international events. Therefore, bilateral trade relations can show constructive positive effects on the economies of both countries.

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Türkiye ve Rusya'nın İkili Ticaret İlişkilerinin Analizi

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Öz

Türkiye ve Rusya arasındaki ticari ilişkiler son 23 yılda istikrarlı bir şekilde gelişerek 2015'de $23.9 milyara ulaşmıştır. Bununla beraber turizm ve enerji sektörleri önemli ölçüde gelişmektedir. Fakat 2015'de Türkiye'nin Rusya'ya ihracatı %39 ithalatı ise %19 düşmüştür. Bu makalenin amacı Türkiye ve Rusya arasındaki sektör bazlı ticari ilişkileri incelemenin yanında iki ülke arasındaki ticaretin kapsamlı bir analizini sunmaktır. Ticaret trendi göstermektedir ki iç veya dış siyasal çatışmalarla karşılaşılmadığında Türkiye ile Rusya arasındaki ticaret artmaktadır. Bu nedenle, ikili ticari ilişkileri, ülkelerin ekonomilerinde olumlu etkiler oluşturabilir.

Anahtar Kelimeler

İkili ticaret, Türkiye, Rusya, ticaret tamamlayıcılık endeksi, karşılaştırmalı üstünlük

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АНАЛИЗ ДВУСТОРОННИХ ТОРГОВЫХ ОТНОШЕНИЙ МЕЖДУ ТУРЦИЕЙ И РОССИЕЙ

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АННОТАЦИЯ

Устойчивое развитие торговых отношений между Турцией и Россией в течение последних 23-х лет привело к тому, что в 2015 году общий объем торговли достиг 23,9 млрд. долларов. Наряду с этим, в настоящее время значительно развиваются туристические и энергетическиесекторы.Тем не менее, в течение первых девяти месяцев 2015 года экспорт Турции в Россию снизился на 39%, а импорт – на 19% по сравнению с аналогичным периодом 2014 года. Цель данной работы заключается исследовании торговых отношений между Россией и Турциейв разрезе секторов, что позволит дать всесторонний анализ торговли между двумя странами.Тенденция развития торговых отношений показывает, что, если бы не внутренние и внешние политические конфликты,объем торговли между Турцией и Россией стремится к росту. Двусторонние торговые отношения могут оказать конструктивное положительное влияние на экономики обеих стран.

Ключевые слова

Двусторонняя торговля, структура торговли, Турция, Россия, индекс торговой комплементарности, индекс выявленного сравнительного преимущества

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