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Non-oil trade of Turkey and Russia in the Middle East: Trends and potential

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Abstract. Over the last years Turkey has rediscovered trade opportunities with Middle Eastern countries, enjoying a trade surplus with most of them. As one of the big players in the region, Russia has also experienced remarkable trade relationship with Middle Eastern countries. The purpose of this paper is to analyze the competitiveness and trade pattern of Turkey and Russia in non-oil commodities vis-à-vis Middle Eastern countries using both Revealed Comparative Advantage (RCA) index and Trade Complementarity (TC) index. The paper also aims to examine their role and position as trading actors in the region and lays downs future cooperation opportunities based on main empirical findings.
Keywords. Turkey, Russia, Middle East, Revealed Comparative Advantage, Trade Complementarity Index, Non-oil trade.
JEL. F13, F14, L60.

1. Introduction

Turkey and Russia have a long historical background with each other and they have also tough cooperation and competition in their own region. In political sense, there are plenty of studies belong to two countries that examine their relationship with each other and with other neighboring countries. However, there is a lack of studies that analyze these countries trade relationships with each other and with Middle Eastern countries. This study aims to address this particular gap in the literature by analyzing their trade relationship with Middle Eastern countries. Actually, Turkey and Russia are considered highly integrated in global trade and trade relations with the EU still play a substantial role in both countries. Taking into account the recent regional trends and developments, there is a tendency to increase both nations' trade relations towards close-by regions such as the Middle East. Thus, both Turkey and Russia may have potential for expansion of trade for the rest of the neighbouring countries. For instance, over the last years Turkey has been growing the interest in new regional markets. In this respect, the Middle East has been an important trade partner for Turkey over the last decade, enjoying a trade surplus with most countries in the region. Middle East, as one of the major oil supplier of the world, bilateral trade ties are defined by its trade partners energy demands. In this respect, it becomes more crucial to examine the structure of trade beyond oil.

Recently, it is obvious that Turkey and Russia have been increasing their economic as well as geopolitical power in the Middle East. While each of the countries aims to remain economic/political power regionally, it is necessary to analyse the trade potential and the degree of competitiveness between the parties. In the past decades, the concept of competitiveness has appeared to be an important

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feature of international comparison. The purpose of this paper is to analyse the international competitiveness and the structure of specialization in non-oil trade - all merchandise trade other than petroleum products - of Turkey and Russia in the Middle East. The structure of the paper is as follows. The following section presents an overview of trade relations of Turkey and Russia in the Middle East market by taking into consideration selected trade indicators. The next section reviews the empirical literature on the competitiveness of Turkey and Russia in the region. Section 3 outlines the data and methodology. Using both Revealed Comparative Advantage (RCA) index and Trade Complementarity (TC) index, section 4 focuses on the results of the analysis on competitiveness of Turkey and Russia in the Middle East market. The final section draws conclusions based on the main empirical findings.

2. An overview of trade relations of Turkey and Russia with the Middle East

With their growing economies, increasing incomes and young populations, the emerging markets of Turkey and Russia have been two important actors in their region both in (geo) political and economic terms. As an emerging market, the last decade has witnessed the transformation of the Turkish economy. As a result of a series of reforms initiated in the aftermath of the economic crisis of 2000 and 2001, there was shift to more stable macroeconomic environment in Turkey. Indeed, Turkey has enjoyed high growth rates, with GDP growth rate of 7 % percent during 2000-2007 and 4.2 % for 2000-2010. (Eken and Schadler, 2012, p. 2). Turkey graduated from lower-middle-income status to upper middle-income country in 2005. Over the last decade, Turkey's GDP per capita has increased from 4,215 US Dollars in 2000 to 10,434 US Dollars in 2017 which means more than doubled. Although Turkey failed to move into the high-income group, the World Bank (2014) indicate Turkey as being on the upper end of the middle-income level and concluded that the country is at the threshold of a high-income economy. As of 2017, Turkey ranks 68th in the world according to GDP per capita and it is in front of Russia ($10,248) in order.

Russia, on the other hand, is another emerging market that plays an increasingly important role in the region. After the dissolution of the Soviet Union in 1991, Russia experienced a dramatic change from a centrally planned to a free market economy. Since then Russia transformed into one of the biggest emerging economies of the world. Russia's rapid economic growth, especially in the early 2000s, was fueled by sustained oil price growth and a global investment boom. However, this changed with the advent of the 2008-2009 global financial crisis as real GDP in Russia fell by 7.8 % (Drobyshevsky, 2016, p. 146). Over the last three decades GDP per capita in Russia more than doubled. GDP per capita in Russia averaged over 8,000 US dollars from 1990 until 2015, reaching an all time high of 15,552 US dollars in 2013 and a record low of 1,330 US dollars in 1999. In 2017, the GDP per capita in Russia was around 10,248 US dollars. From the perspective of the countries' international trade, since 2001 Turkey's imports and exports increased by around 20% and 21% respectively and Russia's imports and exports increased by 22% and 29% (Table 2). Foreign trade is both vital for Turkish and Russian economies. The average value for openness to trade of Turkey and Russia after the 2000 was 51.6 % and 53.9 % respectively. Considering their share of merchandise trade in GDP, trade openness in these commodities is very crucial for both economies, however it is below 50% of their GDP (Table 1).

Table 1. *Selected Economic and Trade Indicators for Turkey and Russia*

		1990	1995	2000	2005	2010	2015
GDP growth (%)	Turkey	9,2	7,8	6,7	8,4	9,1	3,9
	Russia	-3,0	-4,1	10	6,3	4,5	-3,7
GDP per capita (current $)	Turkey	2790	2896	4215	7117	10111	9125
	Russia	3485	2665	1771	5323	10674	9092
Trade (% of GDP)	Turkey	30,9	44,2	43,1	47,2	47,9	58,7
	Russia	86,1	55,1	68,0	56,7	50,3	50,7
Merchandise trade (% of GDP)	Turkey	23,4	33,8	30,8	39,3	40,9	48,9
	Russia	29,8*	35,1	57,8	48,3	42,5	40,1
Fuel exports (% of merchandise exports)	Turkey	2,2	1,2	1,0	3,6	3,9	3,0
	Russia	-	43,1**	50,5	61,4	65,6	62,9
Fuel imports (% of merchandise imports)	Turkey	20,8	13,0	13,9	14,0	8,6	7,1
	Russia		2,7**	4,1	1,7	1,3	1,8
High tech exports (% of merchandise exports)	Turkey	1,2	1,2	4,8	1,4	1,9	2,1
	Russia	-	9,6	16,0	8,4	9,6	13,7

Source: World Bank Data; *1994, **1996.

Russian economy is based on natural resources such as oil and gas; actually this is both a luck and a curse. Although the world demand for fuel is high, Russian economy is directly exposed to price fluctuations. Thus, the lack of diversity is one of the biggest challenges in Russian economy. As natural resources are rich in Russia, they constitute a major portion of overall exports. As shown in Table 1, while a great share of Russia's exports belong to oil and petroleum products, on the other hand, Turkey is a net importer of fuels. By this means Russia is the world's 10th largest exporter, while Turkey ranks 31st in terms of imports, Russia is 17th and Turkey is 21st importers in the world rank. This import composition of Turkey reveals another important result; a major problem in Turkish economy is the current account deficit which is caused by high level of imports resulting mainly from the dependency on imported energy such as oil and gas.

In order to reduce the dominance on natural resources, Russia promotes high technology production and exports. Turkish government has been also promoting to increase the share of high-technology products in total exports, however the values are lower compared to Russia. The share of high-technology exports in manufacturing exports in Turkey and Russia was 2,1 % and 13,7 % respectively as of 2015. In Russia, its highest value over the 2000s was 19.1 % in 2002, while its lowest value was 6.47 % in 2008. While in Turkey, the highest value over the past years was 4.8 in 2000, while its lowest value was 1.4 in 2005.

Table 2. *Turkey and Russia - Trade with Middle East, 2001-2015 (million USD)*

	Turkey				Russia			
	Total Imports	Imports from ME	Total Exports	Exports to ME	Total Imports	Imports from ME	Total Exports	Exports to ME
2001	41,399	2,903	31,334	3,313	41,865	730	99,868	6,527
2002	51,270	3,091	35,762	3,369	46,176	1,001	106,691	7,161
2003	69,340	4,248	47,253	5,340	57,345	1,278	133,655	9,077
2004	97,540	5,398	63,121	7,784	75,569	1,648	181,600	13,190
2005	116,774	7,658	73,476	10,072	98,707	2,402	241,451	17,390
2006	139,576	10,275	85,535	10,922	137,811	3,743	301,550	20,810
2007	170,063	12,702	107,272	14,290	199,725	5,362	352,266	22,272
2008	201,961	17,115	132,002	24,190	267,051	7,658	467,993	38,946
2009	140,869	9,196	102,139	19,663	170,826	4,420	301,796	24,863
2010	185,541	15,859	113,979	23,255	228,911	6,367	397,067	23,825
2011	240,842	21,245	134,907	27,538	306,091	8,734	516,992	26,700
2012	236,545	22,232	152,462	42,292	316,192	9,536	524,766	27,036
2013	251,661	23,307	151,803	34,569	314,945	10,428	527,265	25,520
2014	242,177	21,390	157,610	34,363	286,648	9,304	497,833	27,131
2015	207,207	14,334	143,850	31,206	182,781	5,945	343,907	21,394

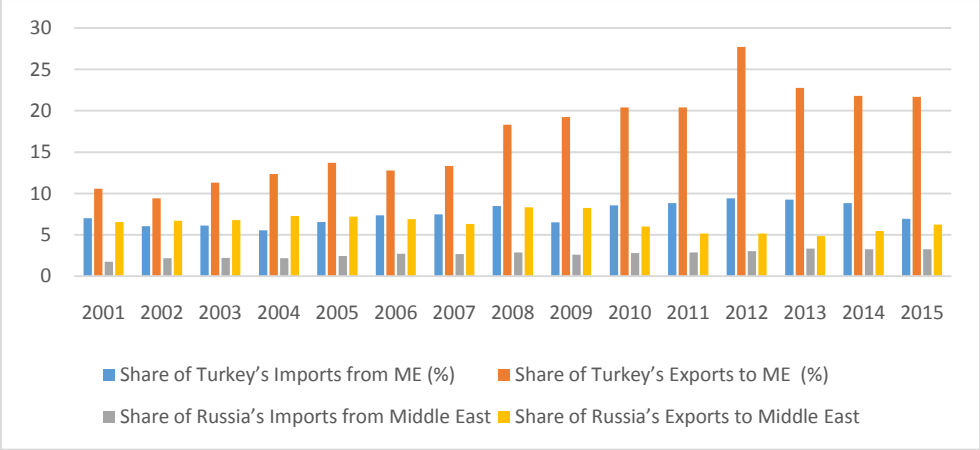
Source: ITC, Trade Map, Bilateral Trade between Turkey, Russia and Middle East.

Although many argue that Turkey and Russia's interest in the Middle East is purely political, Middle East has been a major region for trade both for Turkey and Russia. Since most of the countries in Middle East and Russia focus on oil trade, the potential for non-oil trade in the region is almost neglected. Thus, it is

necessary to understand the trade relations in general and the nature of non-oil trade between the parties in particular.

Since 1996 Turkey and the EU are economically linked by a Customs Union agreement making the EU biggest trade partner of Turkey. Since the beginning of 2000s, Turkey aims to make the Middle East countries its second largest trade partner after the EU. In terms of foreign trade, one of the most important developments has been market expansion and changes in the relative importance of various export markets in 2000s. Exports to the Middle East along with North Africa (MENA) and Central Asia have increased considerably during the decade owing to extensive outreach efforts to these regions (Eken and Schandler, 2012, p. 71; Civan et al., 2013, p. 107; Habibi and Walker, 2011, p. 1). Indeed, trade figures represent an increase in the volume of Turkey's bilateral trade with the Middle East countries and Turkey enjoyed trade surpluses. In 2001 the volume of imports of Turkey from the Middle East countries was above 2 million US dollars, increasing to 17 billion US dollars in 2008 and again to a peak of 23 million in 2013; by 2015 it had fallen to 14 million US dollars. Turkey's imports from these nations accounted for at around 7 % annually since 2001. As shown in Table 2, Turkey's exports to Middle East countries has increased considerably from around 3 million USD dollars in the beginning of 2000s to 31 million US dollars in 2015 while the share of exports has doubled (Figure 1).

Russia, on the other hand, has also witnessed dramatic changes in its trade policy following its transformation process in the early 1990s. After 1991, Russia's trade policy shifted from rigid protectionism to the excessively liberal principles of free market (Makeeva and Chaplygina, 2008, p. 2). Russia has also increased its economic and trade ties with the Western world and the WTO. The liberalization of foreign trade led to a substantial increase in Russia's exports and imports. As shown in Table 2, imports lagged behind exports in the 2000s.



Graph 1: *Share of Turkey and Russia's trade in the Middle East*
Source: ITC, Trade Map, Bilateral Trade between Turkey, Russia and Middle East.

The transformation of Russian economy from planned to market economy has also led to a change in its trade partners. While the share of non-CIS countries has decreased, the EU became the biggest trade partner of Russia.[1] In the case of Russia's trade with Middle East countries, Figure 1 shows that while the share of Russia's imports from the Middle East increased from 1.74 % in 2001 to a peak share of 10.4 % in 2013 and decreased to 5,9 % in 2015. Russia's imports from Middle East countries accounted for at around 6,4% annually during the period 2001-2015.

[1] For example, in top 5 export partners of Russian Federation, Netherlands, Italy and Germany account for 21.03 % in top 5 import partners, Germany and Italy account for 14.34%. Access: 07.02.2012. [Retrieved from].

Table 3. *Turkey's Top Export and Import Partners in the Middle East (million USD)*

Country	Top Export Partners				Country	Top Import Partners			
	2000*		2015			2000*		2015	
	Rank	Value	Rank	Value		Rank	Value	Rank	Value
Iraq	-	-	3	8550	Iran	19	814	9	6096
UAE	17	311	7	4681	S. Arabia	17	951	22	2117
Iran	23	234	9	3664	UAE	62	385	23	2008
S. Arabia	14	373	11	3472	Israel	26	503	28	1672
Israel	11	622	12	2698	Egypt	46	140	35	1215
Egypt	15	370	13	3124	Qatar	83	10	55	360
Syria	29	182	25	1522	Iraq	-	-	68	296
Lebanon	36	127	40	722	Kuwait	41	160	77	141
Jordan	45	99	42	834	Jordan	69	27	81	127
Yemen	54	69	48	395	Bahrain	65	30	85	104
Qatar	92	9	54	423	Lebanon	74	22	93	67
Kuwait	52	73	55	482	Oman	163	20	96	60
Oman	74	24	77	324	Syria	24	545	98	51
Bahrain	73	24	83	225	Yemen	122	758	122	10
Palestine	103	5	102	82	Palestine	144	128	144	2
World		27,485		143,850	World		54,149		207,206

Source: ITC Trade Map; *UNComtrade.

According to UN Comtrade data, EU is the top import and export partner for Turkey while Turkey ranks 6th in the EU's top import and 4th in export markets. Turkey's exports to the EU accounted for 38 % of its overall export, while imports accounted for 44.5 % of total imports. Turkey-EU trade is mostly dominated by industrial goods. Turkey's exports to the EU are mostly machinery and transport equipment, followed by manufactured goods. EU exports to Turkey are dominated by machinery and transport material, chemical products and manufactured goods. Along with the EU countries, Iraq, UAE, Saudi Arabia, Israel and Egypt are among the most important export destinations of Turkey (Table 3). It is also necessary to indicate that Russia is Turkey's most important import partner for energy such as oil and gas. Along Russia, Iran is another important trade partners for Turkey in the energy field. Thus, Turkey, as a major energy importer, recognizes the importance of establishing closer trade ties with the Middle East.

Russia's trade ties with the EU countries also remain strong, as the EU account for about half of the total Russian imports and exports. According to UN Comtrade data the most important export partners among the EU countries are the Netherlands, Italy and Germany. China, Japan and Korea are also Russia's most important markets for its exports. Therefore it seems that Russia is more oriented towards different regions due to its geographical positions. When compared with Turkey and its trade relations with Middle East countries, it is seen from the Table 4 that Middle East countries has less importance.

Table 4. *Russia's Top Export and Import Partners in the Middle East (million USD)*

Country	Top Export Partners				Country	Top Import Partners			
	2000*		2015			2000*		2015	
	Rank	Value	Rank	Value		Rank	Value	Rank	Value
Egypt	37	449	19	3252	Israel	20	109	41	784
Israel	28	1045	39	1537	Egypt	76	4	56	425
Iran	33	633	43	1017	Iran	40	53	64	261
UAE	49	177	46	976	S.Arabia	87	1	71	183
S. Arabia	76	55	50	770	UAE	53	22	74	162
Lebanon	46	199	55	630	Jordan	92	0.6	103	18
Iraq	64	89	62	447	Qatar	156	0.03	104	16
Kuwait	112	6	68	303	Lebanon	81	2	114	8
Jordan	85	34	77	234	Bahrain	147	0.01	117	7
Yemen	88	29	80	208	Syria	60	11	125	5
Syria	61	95	82	186	Oman	88	1	131	2
Oman	156	0.4	95	103	Palestine	116	0.5	147	0.5
Qatar	172	0.01	134	13	Yemen	-	-	154	0.1
Bahrain	144	0.7	148	4	Kuwait	-	-	161	0.08
Palestine	-	-	155	2	Iraq	-	-	187	0.05
World		103092		343907	World		33880		182781

Source: ITC Trade Map; *UNComtrade.

UN Comtrade data shows that Russia's biggest import partners are China, Germany and the US. Middle Eastern countries had relatively less importance for Russian exports and imports. Although Russia's place in exports with most Middle Eastern countries increased, it experienced declines in its imports with most countries. In Middle Eastern market, Russia's most important import market has been Israel followed by Egypt and Iran.

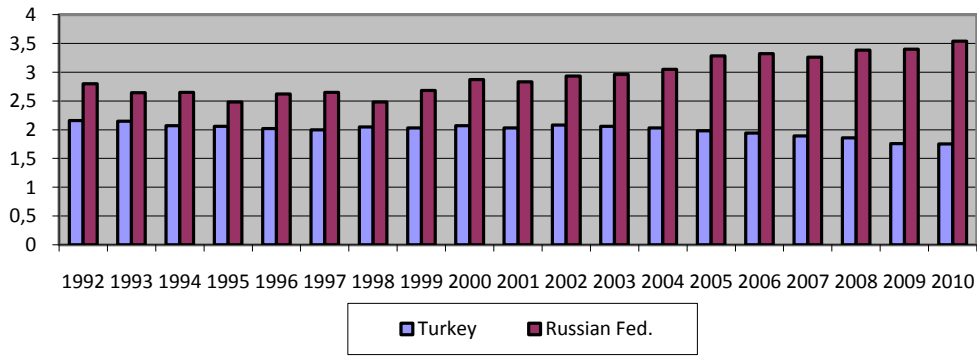
It is a well known fact that the rich oil reserves of the Middle East have increased the significance of the region as a crucial oil exporter. According to ITC data, during the beginning of 2000s developed countries such as the US and Japan dominate the top of the list, later in 2010s emerging markets such as China and India became the biggest import partners. As an import partner Middle East ranks below 30 both for Russia and Turkey. On the other hand, Middle East has been an important export market for Turkey which ranks as the 8th import market for the region in 2015. Although Russia has less importance as a trade partner than Turkey it ranks as 10th importer for the Middle East (Table 5).

Table 5. *Turkey and Russia as Trade Partners of the Middle East*

Importing markets for a product exported by Middle East (million USD)								
Country	2001		2005		2010		2015	
	Rank	Value	Rank	Value	Rank	Value	Rank	Value
Turkey	37	1081	40	45227	39	7068	30	14711
Russian Fed.	33	1197	48	3292	43	6090	47	5112
Supplying markets for a product imported by Middle East (million USD)								
Country	2001		2005		2010		2015	
	Rank	Value	Rank	Value	Rank	Value	Rank	Value
Turkey	20	2797	16	9039	12	21997	8	31062
Russian Fed.	10	6223	8	18051	8	28906	10	29886

Source: ITC Trade Map.

It is a well known fact that the expansion and diversification of exports and the strengthening of industrial competitiveness are important factors for economic growth and development. There are different measures of export diversification. A widely used measure is the Theil index[2], which is also used by the IMF (2014).[3]



Graph 2. *Export diversification index for Russia and Turkey, 1992-2010*
Source: IMF (2014) The Diversification Toolkit: Export Diversification and Quality Databases, Spring. [Retrieved from]. (07.3.2017)

[2] For more details on Theil Index method see; IMF, Measurement of Export Diversification Indices: Theil Index. Access: 07.03.2017. [Retrieved from].

[3] Trade Intensity Index (TII) is used to determine the total value of trade between any two countries. It can be defined as the share of one country's exports going to the partner country which is divided by the share of world exports going to the same partner. Lower values of the index reflect higher degrees of diversification; if it is zero exports are equally distributed among export trade partners of a country (i.e. perfect diversification) and if all exports is concentrated in one country that means perfect concentration (zero diversification).

Figure 2 shows the export diversification index calculated by the IMF for the years between 1992 and 2010. Russia represents higher rates than Turkey in export diversification. However, export diversification has also increased in Turkey over time (Aldan and Çulha, 2016, p. 20; Ekmen and Erlat, 2013, p. 208). Russia's exports, on the other hand, became further dominated by petroleum and natural gas since 2000s. Russia's trade composition represents a narrow and undiversified export basket and a lack of diversification toward new markets and products (World Bank, 2013, p. 11). Indeed, as Di Bella (2016) indicates, Russian export diversification has decreased over time with external trade coming from oil price volatility. Many agree that Russia should move towards a more diversified and competitive economy based on innovation and valued-added manufacturing. This requirement is also another necessity that drives Russia to the Middle East market.

3. Empirical literature on competitiveness of two big players with the Middle Eastern Countries

After the dissolution of the Soviet Union, Russia made its first appearance in international economic markets by entering the BRICS countries. In terms of this group, there is a high degree of trade intensity[4] among the BRICS countries however Russia is the weakest trading partner within this group. For example, with Brazil, Russia first showed a higher Trade Intensity Index (TII) but then after 2007 the index value declined. For India, Russia was actually a traditional trading partner but then it has been replaced by China and other East Asian economies such as Korea. Especially TII of China is the highest with Russia. According to the study of Raghuramapatruni (2015), despite this relatively weak relationship between Russia and other BRICS countries, Russia has strong RCA in fuels and mining with Brazil and South Africa and in iron and steel with India. Actually there are serious changes in RCA and Trade Specialization Index[5] of Russia while the country's exports increased more than four-fold during 1990-2000. This dramatic change has exhibited sharp increase at the beginning of 2000 due to the devaluation of ruble and Russian economy grew 7 % on yearly average. However when we look at the competitiveness of the country's export composition, it seems that few non-oil commodities have reached a strong international competitiveness that would enable them to make a leap in the trade of the country. Almost all exported commodities' competitiveness except fuels, fertilizers, wood, iron and steel, nickel and military hardware, has declined (Tabata, 2006, p. 754). Although the automotive industry seemed to recover after the devaluation of 1998, it lost its competitiveness afterwards (Ahrend, 2004, p. 11). According to Savin and Winker, in automobile sector the revealed disadvantages have significantly increased after 2002 (Savin and Winker, 2009, p. 27). As a matter of fact, according to our calculations in this study, the RCA index values of the Russian automotive industry have decreased over time in Middle East market (Table 6c). Similarly some other manufactured commodities such as clothing accessories, photographic apparatus, equipments and optical goods, office machines they all decreased their comparative advantage over the first decade of 2000s. Despite some manufactured commodities continued to protect its competitiveness over the same period (for example, fertilizers, organic and inorganic chemicals, iron and steel, cork and wood products, non-metallic mineral manufactures, power-generating machinery and equipments and some other transport equipments have highest RCA index values), average RCA for manufactured commodities has declined (Garanina, 2008, p. 12). As a large country, Russia exports various agricultural commodities but some of them such as wheat and sunflower seed have the largest share in the country's

[5] Trade Specialization Index measures the degree of specialization in the production or consumption of goods through trade. It is calculated by the comparison of the net flow of goods (exports minus imports) to the total flow of goods (exports plus imports) for each product/group.

agricultural export. In these two commodities, Russia is one of the leading producers and exporters of the world. In terms of comparative advantage, these commodities are the most important agricultural products for Russia and they have also gained strong positions on a number of markets but especially in the CIS (Commonwealth of Independent States). In trade with the CIS, Russia is in advantageous status; the country has strong comparative advantage in medicinal and pharmaceutical products, essential oils and perfume materials; toilet, polishing and cleansing preparations, office machines and automatic data processing machines due to their historical partnerships. As it is observed clearly Russia has comparative advantage in a given product *vis-à-vis* the CIS countries while being disadvantaged related the same product in its trade relations with the world or the EU-15. Similarly, besides the above mentioned manufactured commodities, Russia has positive RCA for paper, paperboard and articles of paper pulp in trade with China (Garanina, 2008, p. 16-17). Moreover the commodity structure of China-Russia trade is also characterized by complementarity of industrial manufactured commodities and resource products (Herrero and Xu, 2016, p.7). This reminds us that countries can have different comparative advantages with different trading partners. Therefore the economic relationships of Russia in the Middle East provide different competitive results for both sides in each non-oil commodities. At first glance, the group of commodities that Russia is most competitive in its trade with the Middle East is military goods (Naumkin, 2013, p. 37) According to the study of Naumkin; Russian exporters have started to gain some competitive advantage in Middle East food and agricultural market. Russia is trying to find different options to increase its trade with Middle East by offering "oil for food" transactions (Naumkin, 2013, p. 38). Iran, which has a geo-strategic position in the region, is another strategic player in trade with Russia. After the sanctions, Iran has started to cooperate with Russia in specific areas such as supplying equipment and technology for Iranian oil, gas and petrochemical companies (Belobrov, 2014, p. 18). During the sanctions period another country who help Iran is Turkey; more than 2000 firms are operating in Turkey. Despite the US pressures on Iranian trade partners, Turkey-Iran trade and investment relationship has somehow continued. Because of the sanctions, Iran is also using Turkey as a significant smuggling route for his machinery and products which he cannot import through normal channels (Habibi, 2012, p. 5).

Geopolitically, Turkey is located between European Union, Russia and MENA countries. As one of the big players in the region, Turkey has started to increase its regional role within a more activist policy framework particularly 1990. (Naaz, 2008, p. 1550). Of course behind this policy change, there were serious political and strategic concerns about regional chaotic affairs such as Gulf Crisis, water problems with Syria, Kurdish movements which are much related to Turkey and the never-ending peace processes of Arab-Israel relations. However, Turkey wanted to increase its trade with Middle East while expanding its political and military role in the region; thus between 1990 and 2004, Turkey's exports to the Middle East had increased approximately five-fold. AKP-led Turkey has attached importance to the relations with Middle East more than before and Turkey has eased its visa policy towards Middle Eastern countries in order to increase trade with them. As a result of these attempts, the country's export to the Middle East increased more than nine-fold in the period 2000-2015 (see Table 2).

In the literature, several studies have focused on the empirical findings on Turkey's international competitiveness and her trade structure by using various different measures. After the long and internationally uncompetitive manufacturing-based import substitution period, Turkey has rapidly adopted export-oriented strategy and as a result of this liberal economic transformation, the country's total trade reached about half of its GNP by 1985. This turning point has reflected in the composition of trade; as of 1980, 58% of the exports were agricultural products and 22 % was processed agricultural products and textiles, by

1990, the share of the latter group of products had increased to 82 %; Turkey was an exporter of industrial goods.

These figures also showed that there was serious change in comparative advantage. For example, according to the study of Kösekahyaoğlu, in pre-1980 period Turkey has comparative advantage mostly in labor-intensive commodities against EU-15 countries. During the post-1980 period, RCA index values of the most of these labor-intensive commodities (such as textile and clothing, ceramic, metal products) started to decrease while some capital-intensive commodities (such as glass, mineral products) has increased their RCA index values (Kösekahyaoğlu, 2003, p. 152). The result which shows the decreasing RCA of Turkey in textile products in the EU market verified by another study; Karaalp and Yılmaz resulted in that *both indices* (RCA and Vollrath's RXA index) *indicate that Turkey holds a significant comparative advantage and competitiveness. This trend* shows the *decline* (Karaalp and Yılmaz, 2012, p. 10) which is parallel to the similar decline in the competitiveness of cotton in the same period (Bashimov, 2015, p. 18). Karaalp has done the similar work for CIS countries and she found that Turkey is more competitive in CIS market than the world market and she has emphasized that some specific commodities such as chemicals, machinery and transport equipment, automotive products and textiles have increasing comparative advantage vis-à-vis CIS countries (Karaalp, 2011, p. 735). Considering the comparative advantage change in Turkey, Erlat and Erlat find that *non-traditional sectors had average RCA values greater than unity at the end of 1990s whereas less than half of the traditional sectors had average RCAs greater than unity* for the same years. They expect that the *non-traditional group appears with a promise of increasing comparative advantage* (Erlat and Erlat, 2012, p. 102-3). Despite these small evidences in favor of non-traditional or capital-intensive and relatively-high-technology-intensive groups' competitiveness, in 1990s and 2000s, Turkey has high RCA index value in labor-intensive commodities both in world and emerging countries. However, during the transition period from 1990s to 2000s, there are serious changes in index values in capital-intensive and high-technology-intensive commodities while there is a decline in agriculture-intensive group of commodities (Aydın et al., 2007, p. 39).

Since the AKP came to power, Turkey's has tried to diversified its trade partners; as mentioned above, as a result of this attempts, the share of Middle Eastern countries in total trade increased from 7.5 percent in 2002 to 13.1 per cent in 2010 (Tür, 2011, p. 593) with enjoying the favorable trade surplus vis-à-vis Middle Eastern countries. . In 2015 these figures have increased 21.6 per cent for exports and 13.5 per cent for import by MENA countries (TİM, 2016, p. 44 and 88). In addition to trying to diversify trade partners, Turkey has also worked on to create a Middle East Union; thus in 2010 free trade agreement with Syria, Lebanon and Jordan was signed. As of 2017, the ongoing political and military upheaval in Syria is likely to exert a negative impact on this agreement and trade relations. However we expect these impacts are likely to be temporary. Of course, the AKP's attitude towards the Middle Eastern countries can be interpreted by a pragmatic reckoning of the country's national interest, particularly with regard to protecting new investments and markets for growing Turkish economy, as well as by the strong Islamic sentiment of AKP's support base (Habibi and Walker, 2011, p. 6).

4. Data and methodology

Many studies have been undertaken using the concept of comparative advantage and in order to identify the commodities in which the country has comparative advantage, RCA index is used in various forms. The original Balassa index show how competitive is a commodity in country's export compared to the commodities share in world trade. In this study instead of world we use a set of countries, i.e. the Middle Eastern countries. Therefore we use the modified version of RCA by converted to regional level:

$$RCA_{ij}^{R} = (X_{ij}^{R} / X_{i}^{R}) / (X_{ij} / X_{i})$$

where, RCA_{ij}^{R} is the regional RCA for export of commodity *j* of country *i* into country (or region) X_{ij}^{R} is the exports of a commodity *j* of country *i* to a particular region *R*, X_{i}^{R} is the total exports of country *i* to a particular *R*, X_{ij} is the total exports of commodity j of country *i* and Xi is the total exports of country *i*. Similarly, if the value of RCA_{ij}^{R} is greater than 1, it means that country *i* has comparative advantage in the export of commodity *j* in this particular region, *R*. In our study the particular region is a set of Middle Eastern countries. Meanwhile since the RCA index calculations are based on observed trade data, it is difficult to distinguish and measure the effects of government's interventions such as subsidies. However for the simplicity of calculations, we assume that this effect is negligible.

Another index we used to measure comparative advantage of these two countries in the Middle East market is the another version of RCA. We calculate both countries' particular commodities' shares in their exports to the particular market and compare with each other;

$$RCA = \ln [(X^{j}_{tr->me} / X_{tr->me}) / (X^{j}_{rus->me} / X_{rus->me})]$$

where, $X^{j}_{tr->me}$ is Turkey's exports of commodity j to the Middle Eastern countries, $X_{tr->me}$ is Turkey's total exports to the Middle Eastern countries, $X^{j}_{rus->me}$ is the rival country's export of commodity j to the same destination and $X_{rus->me}$ is the rival country's total exports to this market. In our study, rival country is considered as Russian Federation. A positive value of RCA means Turkey's comparative advantage against Russian Federation in the Middle Eastern countries' market and *vice versa*.

Finally, another motivation for this study is to observe the potential trade cooperation as well as the possible agreements in the region. In this regard, the level of trade complementarity between trading partners may be a significant indicator to provide the possible outcomes from free trade agreements or such cooperation. The Trade Complementarity Index (TCI) indicates the situation of two trade partners with each other; it calculates how well the trade partners' imports and exports match.

$$TXI = 100 [1 - (\Sigma | \mu_{\varphi}^{A} - \xi_{\varphi}^{B} | / 2)]$$

where, m_{j}^{A} is commodity *j*'s share in country *A*'s total imports from world and x_{j}^{B} is commodity *j*'s share in *B*'s total exports to the world. Therefore we compare exports of Turkey (and Russia) to Middle Eastern countries imports in order to understand how well Turkey's (and Russian Federation's) exports fit Middle Eastern countries needs. It provides us valuable information on the potential of intra-regional trade. In our study, *A* represents Middle Eastern countries and *B* represents Turkey and Russia separately. The higher index shows us the perfectly matching one country's (i.e. Turkey) export of a specific commodity to the other country's (i.e. Middle Eastern countries) import of the same specific commodity (*j*).

The analysis uses data from United Nations Commodity Trade Statistics (UN Comtrade) 2-digit level SITC data for Turkey, Russia, Middle Eastern countries and concentrates on non-oil trade only. The annual data for Turkey covers the period 1990–2015, while the data for Russia covers the period of 1996-2015. The reason for the selection of 1996 as the starting year is the trade data limitation of Russian Federation. Middle Eastern countries consist of 15 countries namely; Egypt, Iraq, Jordan, Lebanon, Saudi Arabia, United Arab Emirates, Bahrain, Iran, Israel, Kuwait, Oman, Qatar, Syria, Yemen, State of Palestine. The detailed trade data set covers in a large extent of 97 product groups except oil products. In order to have a deeper analysis of the manufacturing industries subject to trade between

the trading partners, product categories are classified according to the breakdown of activity. In calculating aforementioned indices, SITC values are divided into four categories;[6] these categories are:

Raw material-intensive commodities: SITC (rev.2) 0, (2-26), (3-35), 4, 56
Labor-intensive commodities: SITC 26, (6-62, 67, 68), (8-87,88)
Capital-intensive commodities: SITC 1, 35, 53, 55, 62, 67, 68, 69, 78
Technology-intensive commodities: SITC (5- 53, 55), (7-78), 87, 88.

5. The competitiveness of two big players in the same market: Turkey versus Russia

Previous studies on the relationship between Turkey and Middle Eastern countries and/or Russia and Middle Eastern countries paid little attention on intraregional comparative advantage in the Middle East, with EU-Turkey trade receiving better coverage.

As we mentioned in the Introduction part of this study, the objective of this study is to make a comparison between Turkey and Russia in trade relation with Middle Eastern countries using two indicators; Revealed Comparative Advantage and Trade Complementarity.

Table 6 provides specific product information to determine these two countries' competitiveness structure with respect to the Middle Eastern countries in selected years within the 1996-2015 periods. The value of the index less than unity indicates a comparative disadvantage and a value above unity represents comparative advantage in Middle Eastern market. In terms of a comparison between Turkey's export structure and Russian's export structure vis-à-vis the Middle Eastern countries; our first observation is the relatively weak status of Russian structure. In other words, we find that Turkey has reached a comparative advantage in a few more groups of commodities than the Russian Federation in these selected years For example; the index values reveal that Turkey has specialization mostly in raw material-intensive commodities in this market. However, Russian comparative advantage is quite strong in cereals and cereal preparations (SITC 04) both in Middle East market and rest of the world. Russia has also gained competitiveness in vegetables and fruit (SITC 05) and sugars, sugar preparations and honey (SITC 06). During the aforementioned period, Turkey has increased the number of labor-intensive commodities that give advantage in the market while Russian has lost its advantage in labor-intensive commodities. For example, in 1996 Russia has comparative advantage in SITC 26, 63, 65, 66 and 89 but in 2015 only two labor-intensive commodities (SITC 63 and 66) has sustained its advantage. In other categories of commodities, both countries are not very strong in Middle East market; in technology-intensive commodities, Turkey has lost its comparative advantage in inorganic chemicals (SITC 52) and specialized machinery (SITC 72) in Middle Eastern countries while Russia has lost its advantage in some commodities (SITC 73, 74, 75) but increased in others (SITC 57, 59, 76). In capital-intensive commodities Turkey has more comparative advantage than Russia in the Middle Eastern market; except rubber manufactures (SITC 62), non-ferrous metals (SITC 68) and road vehicles (SITC 78) Turkey has comparative advantage in all these category commodities in Middle East market. Interestingly, Russia has started to increase it s advantage in these commodities.

[6] According to product classification based on Yılmaz (2003), SITC (3-35) covers SITC 3 products except for SITC 35; SITC (5-53,55) covers all SITC 5 products except for SITC 53 and 55; SITC (6-62, 67, 68) covers SITC 6 products except for SITC 62, 67 and 68; SITC (7-78) covers all SITC 7 products except for SITC 78; SITC (8-87,88) covers all SITC 8 products except for SITC 87 and 88.

Table 6a. *Raw Materials-Intensive Commodities: RCA_{ij}^{R} Turkey & Russia ME*

Codes	Turkey					Russia				
	1996	2000	2005	2010	2015	1996	2000	2005	2010	2015
00	**8.9**	0.2	0.06	**3.3**	**4.1**	**27.3**	**14.7**	**6.0**	0.7	**1.5**
01	**2.8**	**3.7**	**1.2**	**3.0**	**3.2**	**1.2**	0.06	0.0	0.04	0.03
02	**3.6**	**7.3**	**4.5**	**4.2**	**4.0**	0.5	0.09	0.0	0.09	0.02
03	0.1	0.2	0.1	0.3	0.5	0.08	0.1	0.02	0.0	0.0
04	**2.5**	**2.3**	**3.5**	**2.5**	**2.5**	**4.6**	**7.3**	**6.0**	**11.3**	**10.6**
05	0.8	0.9	0.4	0.6	0.6	0.03	0.4	0.3	**1.6**	**4.4**
06	0.8	**2.3**	**1.5**	**1.8**	**1.6**	0.2	0.08	0.4	**1.2**	**1.8**
07	**1.2**	**1.9**	**1.9**	**1.8**	**2.1**	0.1	0.2	0.09	0.1	0.2
08	**1.6**	0.9	**2.7**	**2.1**	**3.1**	**1.5**	**9.9**	**3.6**	**5.0**	**3.4**
09	**3.7**	**3.0**	**2.3**	**1.4**	**1.9**	0.01	0.1	0.07	0.5	0.4
21	0.02	0.0001	0.02	0.1	0.5	**2.7**	0.02	0.1	0.6	0.9
22	0.4	0.6	0.1	0.1	0.2	**8.9**	**9.4**	**2.6**	**2.4**	**2.9**
23	**1.6**	**1.8**	0.6	0.4	0.7	0.4	0.4	0.6	**1.2**	0.7
24	**4.7**	**2.6**	**2.5**	**1.3**	**1.7**	**2.7**	**2.1**	**1.3**	**2.3**	**1.9**
25		**5.1**	0.1	0.4	2.7	**1.0**	0.2	0.2	0.4	0.3
27	0.3	0.9	0.6	0.3	0.3	0.1	0.7	0.5	0.9	0.7
28	0.1	0.2	0.02	0.01	0.07	**1.3**	**2.6**	**2.6**	**2.5**	**2.8**
29	0.1	0.1	0.1	0.5	0.3	**1.4**	0.1	0.1	0.3	0.2
32	**2.0**	**8.0**	**1.3**	**4.1**	0.6	**6.1**	**5.7**	**1.3**	**1.9**	**1.4**
33	0.5	0.001	**2.0**	**2.0**	**2.0**	0.1	0.3	0.5	0.7	0.5
34	**7.9**	0.01	**6.1**	0.4	0.4	-	-	-	0.06	0.05
41		0.3	0.1	0.006	0.1	-	-	-	-	-
42	**1.2**	**3.6**	**0.6**	**2.5**	**3.8**	**7.1**	**7.9**	**4.8**	**3.3**	**6.4**
43	**3.7**	**7.6**	**6.1**	**4.3**	**3.0**	0.0	0.0	0.2	0.7	**3.1**
56	0.05	**3.1**	0.6	0.2	**1.3**	**1.1**	**1.5**	**1.0**	0.8	0.5

Source: Authors' calculations based on data from UN Comtrade; Raw materials intensive commodities cover; **00** Live animals other than animals of division 03; **01** Meat and meat preparations; **02** Dairy products and birds' eggs; **03** Fish (not marine mammals), crustaceans, molluscs and aquatic invertebrates, and preparations thereof; **04** Cereals and cereal preparations; **05** Vegetables and fruit; **06** Sugars, sugar preparations and honey; **07** Coffee, tea, cocoa, spices, and manufactures thereof; **08** Feeding stuff for animals (not including unmilled cereals); **09** Miscellaneous edible products and preparations; **21** Hides, skins and furskins, raw; **22** Oil-seeds and oleaginous fruits; **23** Crude rubber (including synthetic and reclaimed); **24** Cork and wood; **25** Pulp and waste paper; **27** Crude fertilizers, other than those of division 56, and crude minerals (excluding coal, petroleum and precious stones); **28** Metalliferous ores and metal scrap; **29** Crude animal and vegetable materials, n.e.s.; **32** Coal, coke and briquettes; **33** Petroleum, petroleum products and related materials; **34** Gas, natural and manufactured; **41** Animal oils and fats; **42** Fixed vegetable fats and oils, crude, refined or fractionated; **43** Animal or vegetable fats and oils, processed; waxes of animal or vegetable origin; inedible mixtures or preparations of animal or vegetable fats or oils,n.e.s; **56** Fertilizers (other than those of group 272).

Table 6b. *Labour Intensive Commodities: RCA_{ij}^{R} Turkey & Russia ME*

Codes	Turkey					Russia				
	1996	2000	2005	2010	2015	1996	2000	2005	2010	2015
26	0.3	**1.9**	0.3	0.2	0.4	**10.1**	**15.5**	**7.2**	**1.4**	**0.6**
65	**1.1**	**1.1**	0.6	0.6	0.8	**3.2**	0.7	0.8	**1.0**	0.5
61	0.2	0.5	0.4	0.2	0.2	0.0	0.02	0.09	0.1	0.1
63	**1.2**	**1.7**	**2.9**	**1.5**	**1.9**	**4.1**	**1.4**	0.9	**2.0**	**2.4**
66	**1.9**	**1.7**	**1.4**	**1.5**	**1.1**	**3.4**	**1.7**	**1.8**	**1.9**	**2.5**
81	0.5	0.5	0.3	0.3	0.3	0.4	0.8	0.3	0.1	0.3
82	0.6	**1.6**	**1.3**	**1.4**	**1.7**	0.03	0.08	0.06	0.05	0.09
83	0.1	0.1	0.1	0.1	0.7	0.0	0.2	0.03	0.6	0.04
84	0.1	0.3	0.1	0.2	0.5	0.1	0.1	0.06	0.3	0.2
85	0.9	**2.9**	**1.7**	**1.2**	**1.6**	0.1	0.06	0.02	0.4	0.1
89	0.4	**1.1**	**1.3**	**1.5**	**2.3**	**2.5**	**2.1**	0.7	0.6	0.8

Source: Authors' calculations based on data from UN Comtrade; Labor Intensive commodities cover; **26** Textile fibres (other than wool tops and other combed wool) and their wastes (not manufactured into yarn or fabric); **65** Textile yarn, fabrics, made-up articles, n.e.s., and related products; **61** Leather, leather manufactures, n.e.s., and dressed furskins; **63** Cork and wood manufactures (excluding furniture); **66** Non-metallic mineral manufactures, n.e.s.; **81** Prefabricated buildings; sanitary, plumbing, heating and lighting fixtures and fittings, n.e.s.; **82** Furniture, and parts thereof; bedding, mattresses, mattress supports, cushions and similar stuffed furnishings; **83** Travel goods, handbags and similar containers; **84** Articles of apparel and clothing accessories; **85** Footwear; **89** Miscellaneous manufactured articles, n.e.s.

Table 6c. *Capital Intensive Commodities: RCA_{ij}^{R} Turkey & Russia ME*

Codes	Turkey					Russia				
	1996	2000	2005	2010	2015	1996	2000	2005	2010	2015
11	0.3	0.6	3.0	**1.4**	**1.7**	**1.3**	0.2	0.1	0.4	0.4
12	0.5	**1.9**	0.8	**1.2**	**2.1**	-	0.03	0.2	0.1	1.7
35			**6.3**	**4.9**	**2.1**	-	-	-	-	-
53	**1.6**	**1.8**	**1.4**	**1.5**	**1.3**	0.06	0.1	0.07	0.3	0.5
62	**1.4**	0.8	0.8	0.5	0.5	0.4	0.7	0.2	0.4	0.2
64	**1.1**	**2.1**	**2.0**	**1.9**	**1.9**	**6.8**	**6.8**	**2.2**	**2.8**	**1.9**
67	**2.3**	**2.1**	**2.7**	**2.4**	**1.6**	**2.9**	**4.9**	**2.8**	**3.5**	**3.4**
69	**1.1**	**1.4**	**1.3**	**1.0**	**1.0**	0.6	0.5	0.6	0.9	0.4
68	**1.4**	**1.6**	0.8	0.6	0.5	**2.1**	0.5	0.5	**2.0**	**1.6**
78	**1.1**	0.8	0.5	0.3	0.3	**3.3**	**3.3**	**1.0**	**1.3**	**2.2**

Source: Authors' calculations based on data from UN Comtrade**;** Capital Intensive commodities cover; **11** Beverages; **12** Tobacco and tobacco manufactures; **35** Electric current; **53** Dyeing, tanning and colouring materials; **62** Rubber manufactures, n.e.s.; **64** Paper, paperboard and articles of paper pulp, of paper or of paperboard; **67** Iron and steel; **69** Manufactures of metals, n.e.s.; **68** Non-ferrous metals; **78** Road vehicles (including air-cushion vehicles).

Table 6d. *Technology Intensive Commodities: RCA_{ij}^{R} Turkey & Russia ME*

Codes	Turkey					Russia				
	1996	2000	2005	2010	2015	1996	2000	2005	2010	2015
51	**1.3**	0.8	0.9	0.4	0.5	0.4	0.4	0.9	**1.7**	**2.0**
52	**1.3**	**2.0**	**1.4**	0.9	0.9	0.5	0.9	**1.0**	0.2	0.3
54	0.2	0.3	0.3	0.4	0.6	0.2	0.3	0.1	0.4	0.1
57	0.0	**3.9**	0.2	**1.5**	**1.4**	0.8	0.3	0.1	0.7	**3.8**
58	**2.6**	**2.3**	**1.2**	0.9	**1.0**	**3.6**	**2.6**	0.7	**1.4**	**1.0**
59	**2.6**	**2.9**	**1.9**	**1.4**	**1.7**	0.1	0.6	0.3	**1.4**	**2.5**
71	0.3	0.3	0.6	0.5	0.4	0.7	0.8	0.3	0.2	0.4
72	**1.0**	0.9	**1.1**	**1.0**	0.8	0.8	**1.5**	0.7	0.8	0.6
73	**1.4**	**1.4**	0.8	**1.4**	**1.1**	**2.1**	0.9	0.5	1.0	0.5
74	**1.4**	0.9	**1.1**	**1.0**	**1.0**	**1.3**	2.0	0.7	0.5	0.6
75	0.4	0.8	0.4	0.4	0.6	0.0	1.0	0.5	1.5	0.1
76	0.4	0.8	0.4	0.4	0.6	**1.4**	1.3	0.1	0.6	2.4
77	0.9	0.9	**1.2**	0.9	0.9	0.9	1.4	0.7	0.5	0.5
79	0.3	0.01	0.2	0.3	0.4	0.4	1.1	0.5	0.9	0.7
87	0.6	0.7	0.9	**1.0**	0.8	**1.2**	1.1	0.7	1.5	1.0

Source: Authors' calculations based on data from UN Comtrade**;** R&D Intensive commodities cover; **51** Organic chemicals; **52** Inorganic chemicals; **54** Medicinal and pharmaceutical products; **57** Plastics in primary forms; **58** Plastics in non-primary forms; **59** Chemical materials and products, n.e.s.; **71** Power-generating machinery and equipment; **72** Machinery specialized for particular industries; **73** Metalworking machinery; **74** General industrial machinery and equipment, n.e.s., and machine parts, n.e.s.; **75** Office machines and automatic data-processing machines; **76** Telecommunications and sound-recording and reproducing apparatus and equipment; **77** Electrical machinery, apparatus and appliances, n.e.s., and electrical parts thereof (including non-electrical counterparts, n.e.s., of electrical household-type equipment); **79** Other transport equipment; **87** Professional, scientific and controlling instruments and apparatus, n.e.s..

Table 7 presents the RCA index values of Turkey and her rival country Russian Federation calculated for the four categories of commodities from another perspective. We expect that the results of Table 6 and Table 7 are consistent with each other. For the five selected years, Turkey was found to have a comparative advantage in various commodities over its rival country, as was obvious from the positive values of RCA. At the end of aforementioned period, the comparative advantage changed and Turkey had lost its advantage particularly in raw material-intensive commodities (such as SITC 4, 23, 27, 42, 56). These results are consistent with regional RCA results of the above. In other categories Turkey has started to lose its advantage; for example, in labor-intensive group, SITC 63 (Cork and wood manufactures) and 66 (Non-metallic mineral manufactures –*cement, ceramics, glass and lime*); in R&D intensive group, SITC 57 (Plastics in primary forms), 71 (Power-generating machinery and equipment) and 75 (Office machines and automatic data-processing machines). In the category of capital-intensive commodities, Turkish manufactıuring in SITC 68 (Non-ferrous metals) lost its edge over its rival. Generally these results are compatible with the above results we found it (see Table 6).

Table 7a. *Raw materials-intensive Commodities: RCA Turkey vs Russia*

		1996	2000	2005	2010	2015
00	Live animals other than animals of division 03	**3.6**	-4.5	-3.3	**3.2**	**2.4**
01	Meat and meat preparations	**1.4**	**4.6**	**6.5**	**7.0**	**6.6**
02	Dairy products and birds' eggs	**2.1**	**4.0**	-	**6.1**	**7.1**
03	fish (not marine mammals), crustaceans, molluscs and aquatic invertebrates, and preparations thereof	**1.2**	**0.2**	-	**4.3**	**5.3**
04	Cereals and cereal preparations	**1.7**	**1.0**	**12.9**	-0.6	-1.4
05	Vegetables and fruit	**8.2**	**5.2**	**12.1**	**4.1**	**1.3**
06	Sugars, sugar preparations and honey	**3.0**	**6.0**	**8.7**	**2.9**	**1.8**
07	Coffee, tea, cocoa, spices, and manufactures thereof	**4.2**	**4.3**	**12.3**	**4.6**	**3.1**
08	Feeding stuff for animals (not including unmilled cereals)	**1.5**	-1.8	**2.7**	-1.9	-1.3
09	Miscellaneous edible products and preparations	**9.4**	**5.3**	**8.4**	**3.0**	**2.7**
21	Hides, skins and furskins, raw	-7.8	-3.9	-	-2.8	-3.0
22	Oil-seeds and oleaginous fruits	-4.6	-3.5	-	-1.2	-2.6
23	Crude rubber (including synthetic and reclaimed)	-0.8	-0.6	-	-3.7	-2.7
24	Cork and wood	-2.6	-3.3	-	-4.0	-4.3
25	Pulp and waste paper	-	-	**5.4**	-3.1	-0.80
27	Crude fertilizers, other than those of division 56, and crude minerals (excluding coal, petroleum and precious stones)	**2.3**	**0.8**	**11.1**	**0.8**	**0.5**
28	Metalliferous ores and metal scrap	-3.1	-2.9	**1.4**	-4.4	-3.7
29	Crude animal and vegetable materials, n.e.s.	**0.8**	**2.5**	**16.2**	**3.0**	**1.7**
32	Coal, coke and briquettes	-6.7	-4.7	**3.3**	-5.2	-6.4
33	Petroleum, petroleum products and related materials	-1.6	-9.5	7.0	-1.5	-1.3
34	Gas, natural and manufactured	-	-	-	-2.4	-3.0
41	Animal oils and fats	-	-	-	-	-
42	Fixed vegetable fats and oils, crude, refined or fractionated	**1.0**	**0.5**	-	-0.01	-0.3
43	Animal or vegetable fats and oils, processed; waxes of animal or vegetable origin; inedible mixtures or preparations of animal or vegetable fats or oils,n.e.s	-	-	-	**5.7**	**0.9**
56	Fertilizers (other than those of group 272)	-4.1	-1.7	**3.2**	-2.1	-1.2

Table 7b. *Labour Intensive Commodities: RCA Turkey vs Russia*

		1996	2000	2005	2010	2015
26	Textile fibres (other than wool tops and other combed wool) and their wastes (not manufactured into yarn or fabric)	**0.2**	**0.8**	**8.5**	**1.3**	**2.4**
61	Leather, leather manufactures, n.e.s., and dressed furskins	-	-	**14.3**	**1.6**	**1.5**
63	Cork and wood manufactures (excluding furniture)	-1.3	-0.1	**6.8**	**0.1**	-0.2
65	Textile yarn, fabrics, made-up articles, n.e.s., and related products	**2.0**	**3.9**	**11.0**	**4.4**	**4.6**
66	Non-metallic mineral manufactures, n.e.s.	**1.5**	**2.4**	**5.4**	**1.0**	-0.2
81	Prefabricated buildings; sanitary, plumbing, heating and lighting fixtures and fittings, n.e.s.	**3.5**	**2.2**	**6.6**	**4.7**	**3.1**
82	Furniture, and parts thereof; bedding, mattresses, mattress supports, cushions and similar stuffed furnishings	**4.4**	**5.1**	**8.0**	**6.7**	**6.1**
83	Travel goods, handbags and similar containers	-	-	**10.6**	**2.3**	**5.4**
84	Articles of apparel and clothing accessories	**4.5**	**5.7**	-	**5.9**	**5.7**
85	Footwear	**4.4**	**6.8**	**13.6**	**5.0**	**5.0**
89	Miscellaneous manufactured articles, n.e.s.	-0.5	**0.8**	**8.4**	**3.5**	**3.1**

Table 7c. *Technology-Intensive Commodities: RCA Turkey vs Russia*

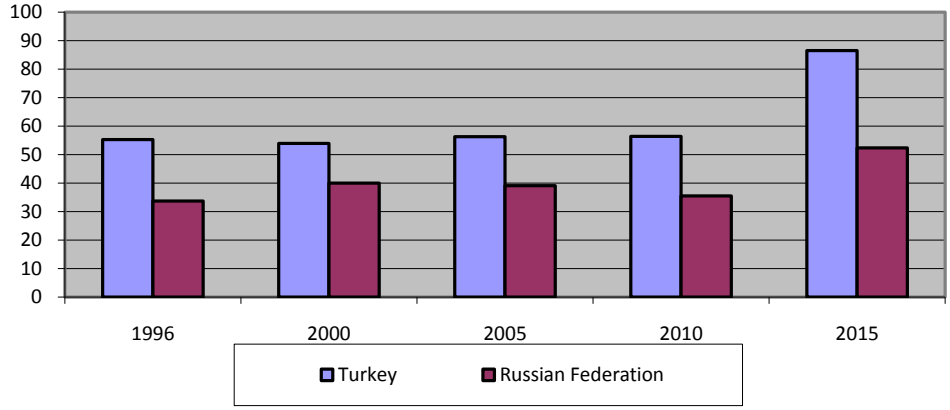
		1996	2000	2005	2010	2015
51	Organic chemicals	**0.2**	-0.3	-	-1.7	-2.7
52	Inorganic chemicals	**0.02**	-2.1	-	-0.1	**0.1**
54	Medicinal and pharmaceutical products	**1.0**	**1.5**	-	**1.9**	**2.6**
57	Plastics in primary forms	-	-	**4.2**	**0.8**	-1.8
58	Plastics in non-primary forms	**0.1**	**0.4**	**8.3**	**1.3**	**1.2**
59	Chemical materials and products, n.e.s.	**2.5**	**1.6**	-	**1.5**	**0.6**
71	Power-generating machinery and equipment	-0.9	-0.6	**2.8**	**1.5**	0.3
72	Machinery specialized for particular industries	**0.7**	**0.1**	**6.1**	**2.4**	**2.2**
73	Metalworking machinery	-0.2	**0.6**	**5.2**	**2.9**	**3.3**
74	General industrial machinery and equipment, n.e.s., and machine parts, n.e.s.	**0.008**	-0.3	-	**2.7**	**1.9**
75	Office machines and automatic data-processing machines	**2.2**	**1.1**	**5.2**	**0.1**	**0.6**
76	Telecommunications and sound-recording and reproducing apparatus and equipment	-0.1	**1.3**	**6.4**	**0.6**	-1.0
77	Electrical machinery, apparatus and appliances, n.e.s., and electrical parts thereof (including non-electrical counterparts, n.e.s., of electrical household-type equipment)	**1.8**	**1.2**	**8.2**	**3.4**	**2.7**
79	Other transport equipment	-2.0	-3.6	**7.9**	-0.1	-0.3
87	Professional, scientific and controlling instruments and apparatus, n.e.s.	-1.1	-1.6	**8.4**	-0.2	**0.06**

Table 7d: *Capital Intensive Commodities: RCA Turkey vs Russia*

		1996	2000	2005	2010	2015
11	Beverages	-0.4	**1.6**	**8.6**	**2.1**	**2.1**
12	Tobacco and tobacco manufactures	**-**	**-**	**10.8**	**3.9**	**1.2**
53	Dyeing, tanning and colouring materials	**4.6**	**3.8**	**-**	**4.0**	**2.7**
62	Rubber manufactures, n.e.s.	**2.1**	**1.9**	**7.4**	**2.3**	**2.1**
64	Paper, paperboard and articles of paper pulp, of paper or of paperboard	-2.1	-1.5	-	**0.7**	**0.8**
67	Iron and steel	-0.2	-0.7	**4.5**	0.3	-0.4
69	Manufactures of metals, n.e.s.	**1.8**	**1.2**	**5.2**	**2.6**	**2.7**
68	Non-ferrous metals	-2.2	-0.7	**3.1**	-2.0	-2.1
78	Road vehicles (including air-cushion vehicles)	**0.5**	**0.5**	**5.9**	**2.2**	**0.8**

Source: Authors' calculations based on data from UN Comtrade.

On the other hand, in order to determine the potential opportunity of trade agreement among Middle Eastern countries, we use trade complementarity index. As shown in Figure 3, Turkey has experienced progressive relationship with Middle Eastern countries.



Graph 3. *Trade complementarity index*
Source: Authors' calculations based on data from UN Comtrade.

As seen in Figure 3, Turkey achieved a noticeable increase by 86.49 index value in 2015. It shows the strong potential of possible close cooperation between Turkey and Middle Eastern countries. On the other hand, TC index of Russia has reached higher value in 2015 than the previous years which shows that Russia should be paid attention as a competitor of Turkey.

6. Conclusion

The last decade has witnessed an increase in the significance of Middle East as an economic and geopolitical partner. Indeed, the region has undergone a fundamental transformation both in economic and political aspects. As an important economic power in the region, Turkey's economic relations –especially trade relations- with Middle Eastern countries increased sharply. Along with Turkey, Russia's economic and political ties with the region have also witnessed significant developments. Actually, Middle East market would be a good opportunity for Russia while he wants to turn its oil-based economy into more efficient economic investments and activities. Because of its scientific and educational background from its Soviet heritage, Russia has a capacity to catch up such opportunity particularly in technology-intensive commodities with its neighbors. An important feature of Middle Eastern economies is the rich oil reserves and their international trade mostly concentrates on bilateral oil trade. Thus, this study aims to investigate the composition of trade of Turkey and Russia in the Middle East in non-oil industries.

Our analysis starts with the descriptive statistics of two countries' trade relations with Middle East. Over the last fifteen years, while Turkey's trade with Middle Eastern countries has increased from $ 3 billion in 2001 to $ 31 billion in

2015, Russian trade with the region has increased from $ 6.5 billion to $21 billion. As it is seen from Table 2 and Figure 1, Turkey has increased its trade with the region more rapidly than Russia. Table 3 and 4 reveal that the trade partners in the region of both countries are almost same (Iran, Israel, UAE, Saudi Arabia and Egypt)

The results of RCA analysis indicate that in general sense Turkey has more comparative advantage than Russia in the Middle East market. This is particularly true for almost all categories of commodities. In some commodities both countries started to lose its comparative advantage such as Russian automotive industry and Turkish coal, coke and briquettes industry in raw material-intensive group. Similarly, in terms of labor-intensive commodities, Russia and Turkey lost their advantage in cork and wood manufactures in the region. However, Turkey is quite strong in some of the capital-intensive commodities and she has a comparative advantage more than Russia while they have similar status in technology-intensive commodities. Although Turkey seems to have more advantage over many commodities against Russia, Russia is found to have a comparative advantage in various raw material-intensive commodities over its rival Turkey. It is understood from the negative values of RCA in Table 7. Turkey has lost its advantage in the following commodities; SITC 21, 22, 23, 24, 25, 28, 32, 42 and 56. Our result is consistent with the results of the study of Naumkin (2013).

One of the motivations of this study was to determine the opportunity of trade cooperation among Middle Eastern countries and Turkey and/or Russia. Based on the trade complementarity of Middle Eastern countries' export and Turkey's (and Russia's) import, the result of 2015 is quite surprising. In 2015 both countries' indices have increased. Findings of Turkey show strong potential for the kind of close cooperation between two sides.

Overall, for such natural resource-based country, it is very difficult to diversify its exports outside the oil and natural gas market for Russia. However, Russia is showing a progressive image on this way, while Turkey is already diversified toward new markets and products.

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