

TURKEY IS AT A CROSSROAD IN THE AGE OF GLOBALIZATION: TESTING THE ROLE OF TURKEY'S TRADE COMPETITIVENESS IN HER REGION

Feride DOĞANER GÖNEL*
Barış VARDAR**
Fikret ÖZER***

ABSTRACT

After 1980, Turkey has taken important steps in order to create an open and competitive economic structure and the position held by Turkey in the region has risen very quickly. To take account of this growing importance of Turkey's economy in the region and the world, the paper questions whether Turkey can be a role model for the region's countries, particularly MENA countries and the new EU-12 members or not, in terms of competitiveness and other trade performance indicators. In this respect, the paper focuses on quantifiable aspects of trade performances such as Balassa's Revealed Comparative Advantage (RCA) index, Trade Intensity and the Spearman's Rank Coefficient that help to explain the changing patterns of trade specialization of the country.

Key Words: Turkey, MENA Countries, CEECs, Trade Competitiveness, Trade Intensity, Spearman Rank Correlation.

ÖZET

1980'den sonra Türkiye, açık ve rekabetçi bir ekonomik yapı kurmak için önemli kararlar almış ve bunun sonucu bölgede Türkiye'nin rolü de artmıştır. Dünyada ve bölgesinde Türk ekonomisinin artan önemini düşündüğümüzde, bu çalışma Türkiye'nin bölge ülkeleri için, rekabet ve diğer ticaret performans ölçümleri açısından bir rol model olup olamayacağını araştırmaktadır. Bu anlamda çalışma, Balassa'nın RCA endeksi, Ticaret Yoğunluğu ve Spearman Sıra Korelasyonu gibi ölçülebilir göstergelerle, ülkenin ticaretteki değişen uzmanlaşmasını açıklamaya çalışmaktadır.

* Yıldız Teknik Üniversitesi, Ekonomi Bölümü

** Yıldız Teknik Üniversitesi, Ekonomi Bölümü

*** Heidelberg Üniversitesi, Psikoterapi Araştırmaları Merkezi

YDÜ Sosyal Bilimler Dergisi, C. III, No. 2, (Ekim 2010)

We are very grateful to Engin VARDAR. He provided excellent computational assistance. However, the responsibility of any error is that of authors alone.

Anahtar Kelimeler: *Türkiye, MENA Ülkeleri, Doğu ve Orta Avrupa Ülkeleri, Ticarete Rekabet, Ticaret Yoğunluğu, Spearman Sıra Korelasyonu.*

Introduction

At the beginning of 1980s, a more liberal trade regime has been taken in Turkey. The main objective of this regime was to promote export and to encourage private sector attending the regime. Because of these attempts, the increasing rate of export growth is linked to the increasing integration of Turkey into global economy. At the same time, Turkey's export structure shifted from labor-intensive and light manufactures to low-tech-intensive manufactures. Together with Turkey, many Middle East and North African (MENA) countries have experienced a considerable progress in liberalization. On the other hand, Central and East European Countries (CEECs), Russian Federation and Turkic Republics have transformed from planned economy to capitalist and more liberal economy. They are still on the way of this severe transformation progress.

In this study, after giving brief explanation about trade between Turkey and other three sub-area (MENA, CEECs and Turkic Republics), Turkey and region's countries' competitiveness (within this certain region) are analyzed and discussed in the context of several measures such as Revealed Comparative Advantage (RCA), Trade Intensity (TI) and Complementarity Indices (CI). The study provides an analysis of export specialization and export competitiveness of the Turkish economy at three-digit Standard International Trade Classification (SITC) product category. In other words, in this paper with the help of these analytical tools, we are trying to provide to benchmark the performances of these countries' trade and industries. The other purpose is to discuss Turkey's role in the region as a role model. To address these issues, the study looks into the degree of association in export specialization by estimating the Spearman's Rank Correlation Coefficients of revealed comparative advantage indices between Turkey and a regional group of different countries.

The outline of the study is as follows. The first section provides an overview of economic structures of examined countries and takes a close look at the trade figures of Turkey with MENA, Russia, Turkic Republics, old EU-15 and new EU-12 members. After this first section, the first part of the second section reviews the relevant trade measures. Then, in the second part of this section, we made several calculations and we think the results will be important in

determining trade specialization pattern with high-tech industries' components. Then, we try to assess these results for the possible trade strategies of Turkey.

1. Economic Performances of the Sample Countries

Turkey is surrounding with important areas such as the Middle East, the Balkans countries (or mostly we call them as Central and Eastern European Countries-CEECs), Central Asia, Caucasian and Mediterranean Countries. In this study, the region includes roughly three different categories of countries: CEECs and Russia Federation (we put two Mediterranean EU countries, Cyprus and Malta into this category), MENA and Israel, and Turkic Republics.

The first group of countries¹ is already member of European Union (EU-12). Their liberalization period started at the end of 1980s and the beginning of 1990s. Following the political changes of 1989 and 1990, the countries of CEECs have considerably transformed from planned economy to capitalist economy and now they are on the prolonged process of capitalist reforms. In spite of the short history of liberal process, they have substantial capabilities in exports of their goods to the EU market. We extend this group with adding Russian Federation.

The second group covers² mostly Arabian countries that we call them Middle East and North African (MENA) countries. Actually, in terms of economic development Israel does not belong to this group however, we extended this group with Israel and Iran.

The third group³ includes another type of transition countries, which are called as Turkic Republics.⁴

When we look at the general picture of these countries' economic performances, particularly some MENA countries show a downward presence. For example, in terms of GDP ranking and the share of world GDP, the figures of Algeria, Egypt, Iran, Syria, Tunisia, Bulgaria and Kyrgyz Republic have

¹ Countries are Bulgaria, Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Romania, Slovakia, Slovenia and Russian Federation.

² Countries are Algeria, Bahrain, Egypt, Iran, Jordan, Lebanon, Kuwait, Morocco, Oman, Qatar, Syria, Saudi Arabia, Tunisia, United Arab Emirates, Yemen.

³ Countries are Azerbaijan, Kazakhstan, Kyrgyzstan, Uzbekistan, Turkmenistan.

⁴ Due to the data constraints, Iraq, Libya, West Bank and Gaza, Tajikistan and Uzbekistan could not be covered.

decreased from 1980 to 2007 (Table 1). However, in spite of the Russian's biggest share in world GDP, the share of two countries, Turkey and Slovakia, has been hit a remarkable point; both countries' share of GDP have been double.

Table 1: Region's GDP Ranking and the Share of World GDP

	1980		1990		2007	
	Rank	Share,%	Rank	Share,%	Rank	Share,%
Algeria	33	0,39	35	n.a.	50	0,25
Bahrain	87	0,03	106	n.a.	94**	0,03**
Egypt	44	0,21	43	n.a.	51	0,24
Iran	19	0,82	27	n.a.	28	0,52
Israel	47	0,20	37	n.a.	42	0,30
Jordan	79	0,04	107	n.a.	93	0,03
Kuwait	40	0,26	61	n.a.	52	0,21
Lebanon	n.a.	n.a.	122	0,01	78	0,04
Morocco	51	0,17	58	n.a.	55	0,04
Oman	70	0,05	71	n.a.	69**	0,07**
Qatar	62	0,07	87	n.a.	60**	0,11**
Saudi Arabia	14	1,50	26	n.a.	11	0,70
Syria	55	0,12	68	n.a.	70	0,07
Tunisia	60	0,08	69	n.a.	72	0,06
UAE	38	0,27	49	n.a.	37**	0,33**
Yemen	n.a.	n.a.	100	0,02	81	0,04
Bulgaria	50	0,18	60	n.a.	68	0,07
Cyprus	93	0,02	94	n.a.	83	0,04
Czech Rep.	n.a.	n.a.	48	0,16	39	0,32
Estonia	n.a.	n.a.	98	0,02	84	0,04
Hungary	46	0,20	50	n.a.	48	0,25
Latvia	n.a.	n.a.	85	0,03	76	0,05
Lithuania	n.a.	n.a.	74	0,05	69	0,07
Malta	110	0,01	134	n.a.	117	0,01
Poland	n.a.	n.a.	36	0,27	22	0,77
Romania	n.a.	n.a.	46	0,18	40	0,30
Russia Fed.	n.a.	n.a.	9	2,36	11	2,36
Slovakia	n.a.	n.a.	64	0,07	56	0,14
Slovenia	n.a.	n.a.	62	0,08	63	0,09
Azerbaijan	n.a.	n.a.	79	0,04	n.a.	0,06
Kazakhstan	n.a.	n.a.	56	0,12	54	0,19
Kyrgyzstan	n.a.	n.a.	124	0,01	135	0,01
Turkmenistan	n.a.	n.a.	113	0,01	97	0,02
Turkey	26	0,60	19	n.a.	17	1,20

* 1990; ** 2006

Source: World Bank, World Development Indicators (WDI) and own calculations from WDI.

Actually, Turkey is at the interface of this region and she has close historical, cultural and economic relationship with these countries. When we look at Turkey's trade figures with these countries, we can observe that the top three export partners are Russia, Romania and UAE, top three imports partners are again Russia, Romania and Iran (Table 2) in the region. In trade relationship with MENA countries, Turkey is mostly net exporter, on the other hand, with CEECs Turkey becomes sometimes net exporter sometimes net importer.

Table 2: Turkey's Trade Relation with the Region's Countries (million \$)

	1985		1990		2000		2007	
	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports
Algeria	160,70	108,89	287,04	200,68	1187,93	375,08	942,32	1209,18
Azerbaijan	n.a.	n.a.	35,10*	102,22*	95,60	226,80	185,49	993,77
Bahrain	1,78	1,21	8,22	3,53	30,68	15,92	118,94	74,13
Bulgaria	95,44	7,48	31,88	10,36	464,05	250,57	1922,79	1996,94
Cyprus	7,36	63,93	9,19	154,47	6,90	246,67	60,66	903,32
Czech Rep.	n.a.	n.a.	222,98	58,44	157,99	101,02	1128,20	570,68
Egypt	5,24	138,36	36,83	159,76	140,42	369,46	652,68	831,79
Estonia	n.a.	n.a.	0,58*	0,67	7,08	8,85	166,27	80,25
Hungary	51,09	3,74	110,32	30,59	215,42	109,83	1406,12	765,13
Iran	1264,65	1076,19	492,40	495,08	814,66	234,18	4858,36	1316,42
Israel	18,26	12,42	62,41	46,49	502,55	614,32	912,91	1622,60
Jordan	3,22	111,77	34,11	80,66	27,25	98,36	11,59	368,17
Kazakhstan	n.a.	n.a.	10,51*	19,36*	346,34	110,60	1284,04	1019,51
Kyrgyzstan	n.a.	n.a.	1,44*	1,83*	2,35	19,96	45,02	177,02
Kuwait	12,07	114,79	53,92	92,18	160,85	72,56	90,44	212,92
Latvia	n.a.	n.a.	0,00*	2,88*	11,94	16,01	35,59	97,92
Lithuania	n.a.	n.a.	4,47*	1,38*	71,50	23,69	116,55	234,18
Malta	0,73	3,43	1,27	16,20	34,16	67,77	98,79	611,92
Morocco	58,80	2,97	97,38	24,09	71,47	68,68	198,29	706,71
Oman	0,36****	1,06****	0,67****	4,54****	0,02	24,41	24,33	87,64
Poland	48,69	34,17	205,78	103,42	163,75	173,91	1587,12	1421,61
Qatar	3,24	8,42	0,69	6,11	10,73	9,83	29,64	442,67
Romania	62,50	46,93	202,30	83,03	671,42	323,80	3092,78	3572,91
Russia	n.a.	n.a.	1040,81	441,83	3879,86	633,67	16889,63	4586,37
S. Arabia	226,23	427,59	723,63	338,31	951,42	373,11	2439,89	1415,47

Slovakia	n.a.	n.a.	21,91	15,73	51,33	20,16	632,82	275,49
Slovenia	n.a.	n.a.	4,75	2,80	55,20	47,23	224,68	473,43
Syria	15,87	53,29	84,30	194,00	545,10	181,36	376,88	762,69
Tunisia	19,75	15,76	29,64	38,42	64,84	160,44	229,15	525,75
Turkmenistan	n.a.	n.a.	21,18*	7,48	97,81	106,05	396,71	313,85
UAE	4,43	117,01	192,51	75,35	38,57	310,20	468,24	3190,43
Yemen	n.a.	n.a.	7,83***	62,72	0,76	68,90	0,46	270,07

*1992; **1993; ***1991; ****1986

Source: COMTRADE data

On the other hand, since this paper mostly deals with evolution of trade structures and performances of these countries, their shares in world exports and imports are important. Table 3 provides the share of exports (imports) of these countries in world exports (imports). First, the regional countries share in world exports has increased from 4.4 % in 1992 to 11.7 % in 2007. During the same period, the region's share of imports has increased by similar figures (from 4.5 % in 1992 to 11.2 % in 2007). When we look at some details, we observe that the share of CEECs' exports and imports increases more than the other countries' shares. Apart from these CEECs, Turkey, Russia Federation, Turkmenistan, Kazakhstan, Qatar, UAE, Iran and Israel have also increased their shares in world trade. Particularly, Turkey, Qatar, UAE, Kazakhstan and Turkmenistan have shown substantially good performances (Table 3).

Table 3: The Share of Selected Countries' Exports (Imports) in World Exports (Imports) (%)

	1980	1995	2000	2007
Turkey	0,5 (0,7)***	0,49 (0,7) *	0,47 (0,86)	0,81 (1,25)
Qatar	n.a.	0,1 (0,06) *	0,15 (0,05)	0,32 (0,17)
UAE	0,1 (0,4)	0,07 (0,2)	0,62 (0,43)	1,19 (0,94)
Kazakhstan	n.a.	0,1 (0,08)	0,14 (0,14)	0,36 (0,24)
Turkmenistan	n.a.	0,01 (0,02)**	0,36 (0,03)	n.a.

* 1992; ** 1997; ***1985

Source: Own calculations from COMTRADE data

After 1980, as it is well known, the neo-liberalism has been on the agenda of many developed and developing countries' policies. These policies included trade liberalization, flexible exchange rate regime, perfect capital mobility and integration of global financial markets. Therefore, since 1980 many developing countries have made impressive advances in their export performances by relying on outward-orientation policies. The ratios of exports to GDP in the region's

countries have substantially increased. For example, in 1980 the share of export in Turkey's GDP was 4,17 % and in 2006 it was 22,81%. Similarly for Poland, these figures were 27,43 % and 34,41% respectively; for Egypt, figures were 6,33 in 1990 and 19,07 % in 2006. For Czech Republic, it was 52,35 % in 2000 and 70,56 % in 2006 and for Iran this ratio has increased from 3,86 % in 1990 to 33,81 % in 2006.

According to neoliberal approach, openness to trade helps countries utilize their resources better in several ways; for example, it allows a country to specialize in most suitable production areas, and then take an opportunity to exploit her comparative advantage. Similarly, openness increases countries' income levels and the efficiency of resource allocation with the help of economies of scale. When we look at the current openness ratios of the countries under review, we can observe the similar result of the above figures. For example, in 1980 the openness ratio of Iran was 29,75 and this figure has increased to 55,69 in 2007. For Morocco, these figures were 35,47 and 51,96; for Syria 53,66 and 93,34; for Turkey 25,94 and 42,25 respectively. Particularly for CEECs and Turkic Republics, the openness figures were higher than MENA countries (Table 4).

Table 4: Current Trade Openness Ratios

Countries	1996	2000	2007	Countries	1996	2000	2007
Algeria	43,02	56,94	65,89	Lithuania	98,04	81,15	108,54
Azerbaijan	107,91	63,34	44,20	Malta	136,98	150,58	108,83
Bahrain	86,86	136,53	126,82*	Morocco	35,47	44,31	51,96
Bulgaria	88,22	81,74	118,19	Oman	47,12	79,84	91,08*
Cyprus	81,74	118,19	146,41	Poland	39,10	46,43	71,55
Czech Rep	79,73	114,45	130,90	Qatar	80,99	69,69	95,77*
Egypt	31,56	20,47	33,51	Romania	53,96	63,93	68,66
Estonia	112,21	138,64	129,60	Russia	38,07	52,53	42,50
Hungary	62,40	129,50	136,37	S. Arabia	20,76	22,02	35,94
Iran	29,75	52,58	55,69	Slovakia	80,11	125,92	152,32
Israel	48,49	54,32	70,06	Slovenia	n.a.	94,67	119,45
Jordan	n.a.	75,37	120,31	Syria	53,66	54,91	93,34
Kazakhstan	47,09	75,43	76,85	Tunisia	72,81	74,18	98,41
Kyrgyzstan	70,59	66,58	94,53	Turkey	25,94	30,96	42,25
Kuwait	74,74	70,83	17,11	UAE	n.a.	92,12	147,40*
Latvia	61,09	64,51	55,81	Yemen	n.a.	n.a.	9,7

*data for 2006

Source: World Bank, World Development Indicators (WDI) and own calculations from WDI

Over the years, there has been an increase in the number of countries importing this region's commodities; the number of export partners for each country in the region increased (Table 5).

However, for some of them, the export market remains concentrated to the same countries over the past two decades.

Table 5: The Number of Export Partners over the Years

Algeria	1980: 107	2007: 171	Azerbaijan	1996: 72	2007: 126
Bahrain	1980: 89	2007: 131	Kazakhstan	1995: 141	2007: 184
Egypt	1981: 125	2007: 184	Kyrgyzstan	1995: 61	2007: 120
Iran	1997: 150	2006: 155	Turkmenistan	1997: 64	
Israel	1980: 107	2007: 203	Bulgaria	1992: 143	2007: 198
Jordan	1980:105	2007:147	Cyprus	1980: 104	2007: 194
Kuwait	1988:83	2004: 150	Czech Rep.	1993: 205	2007: 231
Lebanon	1997: 200	2007:195	Estonia	1995: 148	2007: 169
Morocco	1980: 128	2007: 179	Hungary	1980: 109	2007: 198
Oman	1980: 80	2007: 149	Latvia	1994: 119	2007: 185
Qatar	1980: 67	2007: 150	Lithuania	1992: 72	2007: 181
S.Arabia	1980: 152	2007: 211	Malta	1980: 104	2007: 174
Syria	1980: 106	2007: 143	Poland	1980: 120	2007: 232
UAE	1980: 115	2007: 189	Romania	1989: 123	2007: 192
Tunisia	1980:120	2007: 181	Russian Fed.	1996:189	2007: 214
Yemen	1995: 95	2007: 132	Slovakia	1994: 186	2007: 225
Turkey	1981: 91	2007: 222	Slovenia	1992: 178	2007: 190

Source: Authors own calculations from COMTRADE database

Finally, this integration with the world economy appears with the relationship between GDP growth and export growth (Table 6-8). As we can see from these tables, the impressive trade growth has accompanied by high GDP growth for some decades. Except MENA countries, CEECs and Turkic Republics support this specific relationship. Among MENA countries, only Iran, Israel and Lebanon reflect the above GDP growth-export growth linkages.

Table 6: CEECs and Russia Fed. GDP and (Export) Growth (%)

	1980-1985	1986-1990	1991-1995	1996-2000	2001-2007
Bulgaria	3.35 -	1.75 -	-2.50 -	-0.66 (10.0)	5.56 (21.5)
Cyprus	5.55 (-10.0)	6.95 (51.8)	4.56 (0.9)	3.83 (32.4)	3.51 (27.4)
Czech Rep.	-	-	-0.78 (31.8) ²	1.51 (8.7)	4.59 (21.1)
Estonia	2.83 -	0.69 -	-6.31 -	6.11 (11.3)	8.0 (18.3)
Hungary	1.77 (-0.6)	0.55 (-0.3)	-2.21 (4,10)	4.03 (20.2)	3.78 (18.7)
Latvia	3.43 -	1.98 -	-9.69 (34.5) ²	5.68 (9.4)	9.08 (19.2)
Lithuania	-	-	-9.93 (11.7)	4.16 (8.6)	7.94 (24.1)
Malta	1.7 -	6.17 -	5.48 (12.0)	4.51 (6.2)	1.61 (4.2)
Poland	- (-6.7)	- (4.3)	2.32 (13.7)	5.42 (6.9)	4.06 (23.8)
Romania	3.33 -	-1.74 (-45.7) ¹	-1.82 (9.4)	-1.2 (9.2)	6.07 (22.7)
Russia Fed.	- -	-3.00 ¹ -	-8.99 -	1.78 (6.1)	6.6 (19.9)
Slovakia	3.5 *	1.42 -	-2.58 (-47.6) ³	3.91 (9.5)	6.22 (25.6)
Slovenia	-	-	-0.51 -	4.36 (1.1)	4.42 (17.6)

¹The figure belongs to 1990

²The figure belongs to 1994-1995

³The figure belongs to 1995

Source: Own calculations from COMTRADE data and World Development Indicators (WDI)

Table 7: MENA Countries GDP and (Export) Growth, (%)

	1980-1985	1986-1990	1991-1995	1996-2000	2001-2007
Algeria	4.82 (-0.13)	0.78 (5.3)	0.2 (4.2)	3.14 (23.2)	4.2 (17.3)
Bahrain	-1.3 -	4.67 -	6.89 -	4.32 -	6.09 (12.7)
Egypt	6.75 (46.4)	4.22 (41.4)	3.40 (20.3)	5.2 (6.5)	4.51 (17.1)
Iran	4.17 -	0.6 -	3.51 -	4.06 (12.3)	5.96 (15.5)
Israel	2.96 (2.5)	4.34 (13.6)	6.49 (10.1)	4.91 (10.6)	3.07 (8.7)
Jordan	5.24 (0.6)	-0.88 (110.6)	7.3 (21.0)	3.21 (-4.1)	6.16 (23.9)
Kuwait	-4.0 -	8.14 ¹ (-2.0)	15.76 ² (84.8)	1.93 (12.9)	8.23 (-8.5)
Lebanon	- -	-7.96 ³ -	12.84 -	2.47 (4.5)	3.21 (38.3)
Morocco	3.39 (-2.0)	4.51 (-7.3)	1.12 (3.35)	3.95 (21.5)	5.06 (9.2)
Qatar	-	-	-	-	8.17 -
Oman	- (-3.9)	-	-	-	- (35.3)
Saudi Arabia	-4.4	3.54	2.92	2.58	3.67
Syria	3.02 (-5.1)	1.78 (38.1)	7.99 -	2.35 (60.2) ⁴	4.69 (18.1)
Tunisia	4.22 (-7.1)	3.00 (13.2)	3.88 (18.1)	5.62 (1.7)	4.88 (15.0)
UAE	-2.6 (-10.9) ⁵	3.23 (74.3)	3.45	5.19	7.25 (24.4)
Yemen	-	-	5.63 -	5.52 -	3.99 -

¹ Average figure belongs to 1987-1990

² Average figure belongs to 1991-1994

³ Average figure belongs to 1989-1990

⁴ Average figure belongs to 2000

⁵ Average figure belongs to 1985

⁶ Average figure belongs to 1997-2000

Source: Authors own calculations from COMTRADE database and World Development Indicators (WDI)

Table 8: Turkic Republics and Turkey GDP and (Export) Growth, (%)

	1980-1985	1986-1990	1991-1995	1996-2000	2001-2007
Azerbaijan	-	-11.7	-15.58	7.12 (23.1)	18.3 (61.7)
Kazakhstan	-	-	-9.26	2.56 (13.0)	10.2 (28.6)
Kyrgyz Rep.	-	6.24 ² -	15.76 ³ -	1.93 (0.5)	8.23 (17.9)
Turkmenistan	-	2.5 ¹ -	-8.9 -	4.82 (42.5)	-
Turkey	4.87 -	5.67 (10.8)	3.32 (11.8)	4.13 (6.0)	5.0 (21.0)

¹ Average figure belongs to 1988-1990

² Average figure belongs to 1987-1990

³ Average figure belongs to 1993-1995

Source: Own calculations from COMTRADE data and World Development Indicators (WDI)

2. Trade Performances of the Region's Countries

2.1 Methodology and Data

In this study our purpose is not to measure just the actual current export specialization of Turkey and the other countries of the region, but rather to compare Turkey with other regional countries in terms of competitiveness and to understand the role of Turkey in the region. In other words, we are investigating the potential of Turkey's leadership. For example, one of the main questions that we examine is to what extent does competition or complementarities exist in world market between Turkey and other regional countries. On the other hand, we are also analyzing the convergence in export specialization between Turkey and the others; so we make a comparison of Turkey's specialized export products with other regional countries. In order to find the answers of these questions, we analyze changes in export specialization of three group of countries with the help of well-known measure, Revealed Comparative Advantage (RCA-Balassa Index).

$$RCA_{xki} = (X_{ki} / X_i) / (X_{kw} / X_w)$$

where, X_{ki} is the value of country i 's exports of commodity k , and X_i is the value of country i 's total exports. w denotes the world. The calculation of the index of RCA is based on observed trade data and it has a relatively simple interpretation. If it takes a value greater than one, the country has a revealed comparative advantage in that product or *vice versa*.

On the other hand, in order to explore the potential of Turkey's role in the region, we are looking for a kind of competitiveness measure, which is called as Complementarity Index (CI). In this measure, each country's export composition is benchmarking to the EU's composition which the Union is the biggest trade partner of each country in this region. One of the simplest ways of measuring the degree of complementarities between the countries is to examine the extent of similarity and/or complementarity in their trade structures. Therefore, Complementarity Index estimates the complementarity of trade between pairs of countries, in another words, it gives some results for the matching possibility of exports structure of one country with the import structure of the other one and *vice versa*:

$$CI_i = \frac{\sum_{k=1}^n [(X_{ki} / X_i) / (X_{kw} / X_w)]}{\sqrt{\sum_{k=1}^n (X_{ki} / X_i)^2} \sqrt{\sum_{k=1}^n (X_{kw} / X_w)^2}}$$

where, X_{ki} is the value of country i 's exports of commodity k to the EU-15 and X_i is total exports from country i to the EU-15. w denotes the world. The coefficient of complementarity can vary between zero and one, depending upon the factor of variability between EU import from country i and from the world. A higher value of CI implies higher degree of complementarity between country i 's export pattern and EU's global imports.

In this paper, in order to determine the potential of countries' new markets, export diversification examines. For this purpose, we have used the measure called Hirschman-Herfidahl Index (HHI):

$$HHI_{xij} = \sum_{k=1}^n [100 * (X_{ijk} / X_{ij})^2]$$

$$HHI_{xij} = \sum_{k=1}^n [100 * (M_{ijk} / M_{ij})^2]$$

where n is the number of exported (imported) commodities between i and j . As it is seen from these two formulas, HHI is calculated by squaring the market share of each commodity traded between i and j and then summing the resulting numbers. The HHI number is between zero and 10,000. For example, if there were only one commodity covers the trade of a specific export destination, then

HHI would equal to 10,000. If there were infinite numbers of commodities sharing the trade of a specific export destination, then HHI would equal to zero.

Finally, the intensity of trade is another important and standard measure to determine the role of Turkey's (or any other country belongs to the region) trade pattern within the region.

$$TI_{xij} = \left[(X_{ij} / X_i) / (M_j (M_w - M_i)) \right] * 100$$

$$TI_{mij} = \left[(M_{ij} / M_i) / (X_j (X_w - X_i)) \right] * 100$$

where, X_{ij} is the exports of country i to trading partner j and M_{ij} is the imports of country i from trading partner j . The trade intensity index (TI) uses for the analysis of two countries' propensity to trade with each other. In another words, trade intensity index is defined for country i 's exports to country j as the share of i 's export going to j relative to the share of j 's imports in world imports. If the value of trade between two countries is greater (smaller) than what would be expected based on their share in world trade then these two countries have a higher (lower) than expected intensity of trade between them.

For data, Standard International Trade Classification (SITC) is the most commonly used classification of traded goods in the international arena. Products classify under a series of digits in increasing order of disaggregation. We use three-digit level that consist 265 groups of commodities. We have collected the data from COMTRADE database and World Development Indicators (WDI). In the paper, the analysis on trade structures of the region uses the annual data during the period 1980-2007. However, some countries are absent for 1980s so their data begins at the beginning of 1990s. Some others have a problem of data availability; for example, the most limiting obstacle facing in this analysis is the lack of data for Middle East.

2.2 Empirical Findings

Our analysis starts with the well-known competitiveness measure, RCA. It is a commonly accepted method to measure a country's comparative advantage. Region's competitiveness analysis estimates for the period 1980 to 2007. The distribution of the RCA figures of the region's countries, which are greater than one by the years, is shown in Table 9. In this table, the numbers indicate that countries hold comparative advantage (CA) in such amount of the sectors in

international market. The numbers suggest that three countries, Czech Rep. Poland and Lithuania enjoy maximum number of commodities in CA.

Table 9: The Distribution of the Number of Commodities RCA>1 CEECs and Russia Fed.

	1992	2000	2007		1992	2000	2007
Bulgaria	2	93	76	Malta	28	21	26
Cyprus	17	49	26	Poland	89	106	111
Czech Rep	116*	107	102	Romania	69	66	78
Estonia	61***	62	78	Russia	41****	42	33
Hungary	93	77	67	Slovakia	37**	82	85
Latvia	61**	65	90	Slovenia	86	89	86
Lithuania	45	77	102				

* for 1993; ** for 1994; ***for 1995; ****for 1996

MENA Countries

	1980	1990	2000	2007		1980	1990	2000	2007
Algeria	6	9	10	9	Oman	11	6	10	15
Bahrain	n.a.	20	15	9	Qatar	1	13	14	12
Iran	n.a.	n.a.	18	27	S.Arabia	11	24	33	39
Israel	42	43	50	34	Syria	21	28	26	52
Jordan	56	44	78	46	Egypt	16	41	51	46
Kuwait	n.a.	8	7	38	Tunisia	27	44	45	61
Lebanon	n.a.	n.a.	69	74	UAE	63*	55	20	23
Morocco	41	46**	42	46	Yemen	n.a.	9	52	12

*for 1984; ** for 1988

Turkic Republics and Turkey

	1995	2000	2007
Azerbaijan	16*	18	21
Kazakhstan	47	33	34
Kyrgyz Rep.	57	40	49
Turkmenistan	18**	20	n.a.
Turkey	69	81	91

* for 1996; ** for 1997

Source: Collected from calculated RCA figures

When we group the number of commodities, which have bigger RCA, figures in Table 9, almost half of the countries have more than 50 commodities,

which have RCA values bigger than unity. It is not surprising that CEECs except Malta and Cyprus have more than 50 commodities, which have strong CA. Meanwhile some MENA countries such as Jordan, Lebanon, Syria, Tunisia, UAE and Yemen with Turkey and Kyrgyz Republic are also in this group. Another important observation is that almost half of the countries' number of commodities, which have been strong CA, have increased during 1990s but decreased after 2000. Particularly, in some countries such as Czech Republic and Hungary, the number of commodities, which have strong RCA, has decreased. We can attribute this development to increasing tough competition in international trade.

Using RCA, we examine the groups of commodities into five different categories:⁵ A: Primary products, B: Natural Resource Intensive Products, C: Unskilled Labor Intensive Products, D: Technology Intensive Products and E: Human Capital Intensive Products.

The empirical findings suggest that Turkey has still strong CA in primary commodities (group A) but she has relatively comparative disadvantages in natural resource-intensive products (group B) and technology-intensive products (group D). Over the period, Turkey has started to improve its CA in human-capital intensive products (group E). In this region most of the countries share the same export structure with Turkey; 28 countries have strong CA in primary products. Among 34 countries only four of them, Slovenia, Slovakia, Czech Republic and Poland seem to establish competitiveness in technology-intensive and human capital-intensive products. Malta and Israel are the only countries that have a CA in exporting unskilled labor-intensive products (Table 10).

⁵ see Hinloopen and van Marrewijk (2004) and (2005) for details about the classification.

Table 10: The Distribution of Groups of Commodities by Countries

	1985					1990					2000					2007				
	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E
Algeria	4	1		1	1	5	4				7	2		1		7	2		1	
Azerbaijan						10 ⁷	1 ⁷	1 ⁷	4 ⁷		13	1	1	2		16	1	1	2	
Bahrain						7 ⁵	2 ⁵	5 ⁵	3 ⁵	2 ⁵	7	1	3	4		2	1	2	3	1
Bulgaria						29 ⁷	8 ⁷	17 ⁷	17 ⁷	12 ⁷	37	8	17	21	9	30	6	17	14	8
Cyprus	18	3	10	6	9	7	1	8		3	23	2	8	8	8	22 ⁸	2 ⁸	1 ⁸	13 ⁸	9 ⁸
Czech Rep.						34 ⁴	7 ⁴	15 ⁴	32 ⁴	28 ⁴	26	8	17	30	25	20	6	15	34	27
Egypt	11	1	2		1	18	4	10		8	22	4	11	3	10	26	4	4	4	6
Estonia						24 ⁶	7 ⁶	14 ⁶	8 ⁶	7 ⁶	22	7	17	9	7	32	6	13	16	10
Hungary	11	3	5	3		11	3		1	1	28	2	14	18	15	18	4	5	22	17
Iran											14	1	1	1	1					
Israel	11	1	6	22	7	10	1	4	21	7	3	5	26	6		8	3	1	16	5
Jordan	13	3	5	7	9	14	4	5	12	9	25	2	13	20	18	20	2	7	11	5
Kazakhstan						25 ⁶	11 ⁶	1 ⁶	7 ⁶	3 ⁶	19	7		2	4	19	9		2	3
Kuwait	3 ¹			4 ¹		3	1		4		5			2			1	7	13	17
Kyrgyzstan						23 ⁶	8 ⁶	11 ⁶	9 ⁶	6 ⁶	20	4	2	11	2	28	7	5	4	4
Latvia						26 ⁵	5 ⁵	13 ⁵	7 ⁵	8 ⁵	24	7	15	9	10	42	7	15	10	16
Lebanon											24	5	12	13	14	26	4	6	21	15
Lithuania						38 ⁵	7 ⁵	12 ⁵	13 ⁵	10 ⁵	37	8	17	12	3	47	6	16	18	14
Malta						7	2	10	8	7	4	1	4	6	6	5	1	4	10	6
Morocco	17	4	13	3	3	23 ²	4 ²	13 ²	3 ²	3 ²	22	3	10	5	2	20	3	14	6	3
Oman	17	2	1	4	7	5					7	1	1		1	10	2		2	
Poland	18	6	11	19	17	26	8	9	20	15	36	10	14	21	25	39	10	13	22	26
Qatar	1					7			5	1	7		1	3	3	7			5	
Romania						6	4	14	12	9	17	8	16	16	9	16	9	19	18	15
Russian Fed.						19 ⁷	8 ⁷	1 ⁷	7 ⁷	5 ⁷	17	7	1	9	7	15	8		4	5
Saudi Arabia	8			8	5	9	1		7	7	10	2	2	10	9	15	2	3	11	8
Slovakia						24	11	11	29	20	15	10	11	24	21	18	9	11	22	24
Slovenia						19 ³	11 ³	17 ³	16 ³	23 ³	11	12	16	25	25	17	9	12	25	22
Syria	11		3		2	18	1	8		1	19	1	4	1		28	3	13	5	2

Tunisia	10	2	10	6	2	16	4	12	7	5	19	5	12	7	2	24	4	15	11	7
Turkey	25	6	17	6	13	22	4	17	4	8	31	5	20	8	17	28	5	23	13	21
Turkmenistan											14		5	1						
U.A.E	18	5	7	12	15	22	4	7	6	15	11	1	4	1	3	10	4	3	1	3
Yemen												3	3	7	6	10	1			1

¹1987

²1988

³1992

⁴1993

⁵1994

⁶1995

⁷1996

⁸2006

A: Primary products, B: Natural Resource Intensive Products, C: Unskilled Labor Intensive Products, D: Technology Intensive Products, E: Human Capital Intensive Products.

Source: Collecting from calculated RCA figures

As it is observed from Table 11, this calculation gives us useful supplement to analysis the competitiveness by focusing on industry. In terms of 3-digit technology-intensive products, three CEECs and Israel have strong CA over the period. Contrary to them, some MENA countries such as Algeria, Iran, Bahrain, Qatar, Kuwait, Syria, UAE and Turkmenistan has CA in only one commodity. For example Algeria, Iran and Turkmenistan have CA in (SITC 522) inorganic chemical elements, oxides, halogen salts; Bahrain and Qatar have CA in (SITC 562) fertilizers, manufactured; Kuwait and Syria have CA in (SITC 883) cinematogph film, exposed-developed and UAE has CA in (SITC 711) steam and other vapor power generating boilers and parts. Among CEECs, for instance, Czech Republic has CA on 20 technology intensive products such as (SITC 724) textile and leather machinery, (SITC 752) automatic data processing machines such as magnetic or optical readers and (SITC 775) household type electrical and nonelectrical equipment. Similarly, Slovenia has CA on 19 technology intensive product such as (SITC 542) medicaments, (SITC 718) power generating machinery and parts n.e.s. and (SITC 778) electrical machinery and apparatus n.e.s. On the other hand, Turkey has CA on 9 technology intensive products such as (SITC 727) food processing machines and (SITC 775) household type electrical and nonelectrical equipment (Table 11).

Table 11: Regional Countries' Comparative Advantage in Technology Intensive Products

Countries	Technology Intensive Products
Algeria	522
Azerbaijan	512, 575
Bahrain	562
Bulgaria	583, 718, 727, 735, 747, 773, 775, 882, 883
Cyprus	541, 542, 593, 764, 891
Czech Rep.	581, 593, 712, 716, 723, 724, 741, 742, 743, 744, 747, 748, 749, 752, 772, 773, 775, 778, 873, 893
Egypt	562, 571, 573
Estonia	513, 581, 716, 725, 744, 764, 771, 773, 873, 893
Hungary	514, 713, 716, 742, 743, 748, 751, 764, 772, 773, 775, 873, 874, 893
Iran	522
Israel	512, 514, 523, 542, 562, 582, 591, 747, 751, 774, 872, 873, 874, 893
Jordan	522, 523, 562, 581, 591, 792
Kuwait	883
Kyrgyzstan	522, 883
Latvia	522, 582, 718, 737, 893
Lebanon	716, 725, 775, 893
Lithuania	523, 562, 574, 582, 583, 721, 722, 727, 747, 773, 893
Malta	542, 772, 873, 893
Morocco	522, 562, 581, 772, 773, 776
Oman	562, 773
Poland	581, 583, 711, 712, 713, 746, 747, 748, 773, 775, 778, 893
Qatar	562
Romania	574, 718, 735, 771, 772, 773, 775
Saudi Arabia	511, 512, 516, 562, 571, 575, 773
Slovakia	575, 583, 711, 737, 746, 748, 771, 773, 873, 893
Slovenia	542, 575, 591, 712, 716, 718, 723, 735, 737, 743, 744, 745, 747, 748, 749, 771, 775, 778, 893
Syria	883
Tunisia	523, 562, 581, 772, 773, 778, 873
Turkey	581, 583, 713, 727, 733, 773, 775, 891, 893
Turkmenistan	522
UAE	711

Source: Collecting from calculated RCA figures

In our study, the complimentarity index values for each country with EU have increased for only few countries, during the period under consideration. In Table 12, these countries are Slovakia, Slovenia, Cyprus, Czech Rep., Estonia, Poland, Romania and Turkey. They all belong to CEECs except Turkey and they show an extremely high trade complimentarity for its overall trade with EU-15 in all products.

Table 12: Complimentarity Index in All Products Between Region's Countries and EU CEECs and Russia Fed.

	1992	2000	2007		1992	2000	2007
Bulgaria	0,46**	0,40	0,42	Malta	0,16	0,23	0,23
Cyprus	0,09	0,30	0,19	Poland	0,39	0,59	0,69
Czech Rep	0,69	0,81	0,70	Romania	0,44	0,34	0,54
Estonia	0,48*	0,47	0,70	Russia	0,26*	0,28	0,27
Hungary	0,49	0,63	0,71	Slovakia	0,27*	0,77	0,67
Latvia	0,26*	0,16	0,45	Slovenia	0,72	0,68	0,75
Lithuania	0,27	0,39	0,58				

* for 1995; ** for 1996

MENA Countries

	1980	1990	2000	2007		1980	1990	2000	2007
Algeria	0,30	0,21	0,08	0,11	Oman	0,32	0,12	0,10	0,18
Bahrain	n.a.	0,16*	0,21	0,28	Qatar	0,90	0,13	0,07	0,15
Iran	n.a.	n.a.	0,06	0,07	S.Arabia	0,69	0,31	0,20	0,32
Israel	0,17	0,23	0,30	0,34	Syria	0,35	0,26	0,15	0,22
Jordan	0,31	0,33	0,37	0,35	Egypt	0,44	0,27	0,23	0,43
Kuwait	n.a.	0,11	0,18	0,69	Tunisia	0,25	0,23	0,18	0,28
Lebanon	n.a.	n.a.	0,23	0,63	UAE	0,36**	0,41	0,12	0,36
Morocco	0,29	1,00	0,19	0,20	Yemen	0,22	0,36	0,20	0,11

* for 1995; ** for 1984

Turkic Republics and Turkey

	1995	2000	2007
Azerbaijan	0,08*	0,13	0,17
Kazakhstan	0,13	0,09	0,08
Kyrgyz Rep.	0,22	0,04	0,29
Turkmenistan	0,27	0,19	n.a.
Turkey	0,31	0,36	0,62

* for 1996

Source: Estimated from COMTRADE data

The above calculations and information do not take into account the size of the partner country markets. Therefore, when we make an assessment concerning the extent of concentration of trade within the region, we have used trade intensities (TI_{xij} and TI_{mij}). The indices show us how much the two economies have strong trade ties. From our calculations we understand for each sub-area trade seems to concentrate on its own area (Table 15). Since the index is greater than 100, trade within each sub-area would be regarded as highly intense. On a country-by-country basis, some important details can observe. First, countries historical, cultural and previous economic connections due to previous existence within the Soviet Union still seem to matter. For example, Czech Republic and Slovakia or Latvia and Lithuania remain important markets for each other. Their respective intensities for export are quite high but after 2000, the export intensity figures of these countries are decreasing. For some countries, export intensities are the highest with each other. For example, for Azerbaijan, Turkmenistan has the highest indices and for Turkmenistan, the same is true. The same situation is valid for Kazakhstan-Kyrgyzstan trade relationship. Our analysis shows, some countries become an important market for each other over the years; for example, in 2007, Jordan's import intensity from Kuwait is significantly higher than its export intensity so this indicates Jordan is an important market for Kuwait. However, in 1990, the opposite was true; Kuwait's import intensity was higher than export intensity so Kuwait was a market for Jordan. Similar situation is valid for Latvia and Lithuania; Latvia's import intensities from other Baltic countries and Lithuania are significantly higher than its export intensities, therefore Latvia is an important market for them.

Table 15: Trade Intensities, 2007

Country	Partner	ITx	ITm	Country	Partner	ITx	ITm
Algeria*	Tunisia	542,86	768,38	Lithuania*	Estonia	3962,37	5440,76
Azerbaijan	Kazakhstan	168,44	1056,82	Malta	Ireland	342,18	1060,91
Bahrain	Kuwait	530,16	4052,92	Morocco	Egypt	155,44	1061,85
Bulgaria	Greece	1589,94	3460,61	Oman	UAE	1233,79	2199,43
Cyprus	Greece	1718,91	5440,95	Poland	Slovenia	150,86	217,14
Czech Rep.	Azerbaijan	117,24	1516,95	Qatar	Bahrain	176,85	771,66
Egypt	S. Arabia	377,85	1991,01	Romania	Hungary	754,57	936,47
Estonia	Lithuania	3061,31	4743,87	Russian	Kyrgyzstan	1378,52	1688,56
Hungary	Slovenia	416,66	420,24	S. Arabia	Lebanon	475,43	812,95
Iran	UAE	250,43	660,89	Slovakia	Russian	153,10	362,59
Israel	Ireland	185,23	1092,55	Slovenia	Austria	676,12	1053,30
Jordan	Kuwait	1076,94	7645,26	Syria	Egypt	1466,42	2554,31
Kazakhstan	Kyrgyzstan	4133,41	6368,51	Tunisia	Malta	118,63	1296,79
Kuwait**	Jordan	203,29	4392,11	Turkey	S.Arabia	211,99	349,48
Kyrgyzstan	Russian	1445,27	1517,50	Turkmenistan	Turkey	1302,99	2726,63
Latvia	Estonia	15704,5	16349,56	UAE	Lebanon	112,16	558,88
Lebanon	Morocco	167,62	251,56	Yemen	S.Arabia	363,66	2535,55

* for 1996, ** for 1990

Source: Authors own calculations

In the context of these countries' trade performances and competitiveness, commodity concentration ratios measure the share of export or import of the i^{th} country. We use Hirschman- Herfindahl Index (HHI) for exports. Since, the calculated HHI data for every country is so large, we examine only Turkey's data in Table 17.

Table 17 points that, Turkey's export concentration has significantly declined for region's almost all countries except, Malta, Qatar, Slovenia and UAE. That means Turkey has improved her export diversification towards those countries. On the other hand, there is not such strong tendency for Turkey's import concentration; for some countries, we found declining figures, for some it has not changed significantly.

Table 17: Hirschman- Herfindahl Index for Turkey

	Export		Import	
	1982	2007	1982	2007
Algeria	2277	466	5472	6358
Azerbaijan	1662*	195	5322*	2468
Bahrain	2641	2323	10000	8118
Bulgaria	1893	256	1892	734
Cyprus	3750	429	5347	1408
Czech Rep.	818**	402	698**	629
Egypt	3286	305	4223	599
Estonia	2330*	430	1750*	8814
Hungary	2049	575	5376	1389
Iran	614	294	7264	7488
Israel	4205	455	1931	651
Jordan	2811	292	5329	1395
Kazakhstan	472*	260	1954*	3627
Kuwait	5146	814	10000	5057
Kyrgyzstan	5189*	743	3642*	4558
Latvia	1677*	741	3259*	6062
Lebanon	2455	1262	8270	4303
Lithuania	1612*	672	6180*	3807
Malta	4348	4499	8406	3642
Morocco	5457	1095	9951	1130
Oman	3465	1008	4306	4251
Poland	2121	299	2994	912
Qatar	2299	3736	5461	6842
Romania	2421	351	4687	1085
Russian Fed.	645*	286	1086*	1704
Saudi Arabia	3095	534	7579	5048
Slovakia	1132*	699	1262*	955
Slovenia	2389*	4064	898*	454
Syria	850	364	3369	2492
Tunisia	4174	793	9210	3458
Turkmenistan	635	327	8497	2463
UAE	1878	3021	8508	1602
Yemen	5514*	3854	8765*	3117

Source: Authors own calculations

At the final stage, the Spearman's Rank Correlation (SRC) estimates the degree of export competition. At the same time, this correlation uses for

supporting the complementarity of the two countries. In this study, we use RCA indices between region's countries and Turkey in international market.

$$r_s = 1 - \frac{6 \sum_{i=1}^n d_i^2}{n(n^2 - 1)}$$

where d_i is the difference between any pair of RCA ranks.

Such an analysis is significant to determine the trade policy for improving the export competitiveness of Turkey's economy. The SRC coefficient makes a comparison between the two sets of RCA. If SRC coefficient takes a value of +1, that means there is a perfect positive association between two series of RCA. A higher positive value indicates intense competition for targeted export market between the two countries. On the other hand, if SCR coefficient takes -1, that means there is a disagreement between the two series. If there is no relationship between the two countries, SRC coefficient will be zero.

Table 18: Spearman's Rank Correlation Coefficients of RCA between Turkey and Region's Countries

	1985	1990	1995	2000	2007
Algeria	0,0158	-0,0153	0,0520	-0,0845	0,1141
Azerbaijan	n.a.	n.a.	n.a.	0,0660	0,1919*
Bahrain	n.a.	n.a.	0,2554*	0,1623**	0,3255*
Bulgaria	n.a.	n.a.	n.a.	0,3385*	0,3193*
Cyprus	0,1958*	0,1610**	0,3037*	0,1879*	0,1220
Czech Rep.	n.a.	n.a.	0,2593*	0,2968*	0,2363*
Estonia	n.a.	n.a.	0,2924*	0,2679*	0,2387*
Hungary	0,1264	-0,0364	0,3615*	0,2469*	0,1331**
Iran	n.a.	n.a.	n.a.	0,4835*	n.a.
Israel	0,2101*	0,1525**	0,1234	0,0457	0,0578
Kazakhstan	n.a.	n.a.	0,1338**	0,1700*	0,0369
Jordan	0,2935*	0,2618*	0,2535*	0,3999*	0,3068*
Kuwait	n.a.	0,2446*	0,1512**	0,1526**	0,2212*
Kyrgyzstan	n.a.	n.a.	0,3080*	0,3569*	0,3181*
Lebanon	n.a.	n.a.	n.a.	0,4068*	0,3497*
Latvia	n.a.	n.a.	0,2311*	0,2391*	0,2540*

Lithuania	n.a.	n.a.	0,3331*	0,2880*	0,3480*
Malta	n.a.	0,0892	0,1178	0,1630**	0,0325
Morocco	0,4144*	n.a.	0,3841*	0,2948*	0,4524*
Oman	0,0835	0,0962	0,1780**	0,2778*	0,2896*
Poland	0,0401	0,1808*	0,3031*	0,3244*	0,3377*
Qatar	0,1859	-0,0719	0,1307	0,2133*	0,1328**
Romania	n.a.	0,2037**	0,3510*	0,3328*	0,3316*
Russian Federation	n.a.	n.a.	n.a.	-0,0822	-0,0202
Saudi Arabia	0,1869**	0,2824*	0,2782*	0,1775**	0,1609
Slovakia	n.a.	n.a.	0,3387*	0,3330*	0,2896*
Slovenia	n.a.	n.a.	0,2677*	0,2734*	0,2226*
Syria	0,2725*	0,3548*	n.a.	0,1998**	0,3417*
UAE	0,1524**	0,2481*	n.a.	0,3204*	0,3962*
Tunisia	0,4071*	0,4958*	0,4609*	0,3709*	0,4671*
Turkmenistan	n.a.	n.a.	n.a.	0,2288*	n.a.
Egypt	0,4104*	0,5008*	0,4777*	0,3153*	0,2471*
Yemen	n.a.	n.a.	n.a.	n.a.	0,1265

Note:* Coefficients are significant at 1% level ** Coefficients are significant at 5% level

Source: Authors own calculations

Table 18 shows that Turkey's RCA series have statistically significant association with almost all of her region's countries. When we analyze the results, we can see that Turkey has higher SRC coefficients with MENA countries - such as Morocco, UAE, Tunisia and Syria - than other countries in her region. This means that, Turkey has similar export specialization and in competition with these countries more than others. For example, when we compare the RCA series, we can see that almost all of these countries have high RCA indexes for same industries such as 269, 273, 421, 642, 658, 773, 844, 846 and so on. These industries include raw material products such as stone, sand and gravel, vegetable fats and oils, paper products, textile products, electricity distribution materials. In a similar way, Turkey also seems to have strong competition with some CEEC countries such as Bulgaria, Lithuania, Romania and Poland.

Conclusion

At the beginning of 1980s, a more liberal trade regime has been taken in Turkey in order to promote export and to encourage private sector attending the regime. In a similar manner, many MENA countries have experienced a

considerable progress in liberalization. On the other hand, CEECs, Russian Federation and Turkic Republics have been also transformed from planned economy to capitalist and more liberal economy. Thus, because of liberalization efforts, the ratios of exports to GDP in these countries have increased substantially. Trade openness, which helps countries' to exploit their comparative advantage, has also increased in the region considered. In a similar manner, the number of export partners for each country in the region increased. Within this framework, the paper mostly deals with evolution of trade structures and performances of these countries.

The main objectives of this paper are (i) to provide to benchmark the performances of the region's countries trade and (ii) to discuss Turkey's role in the region as a role model. In this context, the key objective of this paper was to identify the role of Turkey's trade in the region. We used several measures such as Revealed Comparative Advantage (RCA), Trade Intensity (TI) and Complementarities Indices (CI). The study employs three-digit SITC data for 34 countries from UN COMTRADE Database and World Development Indicators (WDI). Our data covers annual data for 1980-2007 period and consist of 265 group of commodities.

By using RCA indices, on the first hand, about half of the countries' number of commodities which have strong comparative advantage have increased in 1990s, however, it started to decrease after 2000s because of increased competition in international trade. On the second hand, we found that Turkey has still strong comparative advantage in primary products and she has relatively comparative disadvantages in natural resource-intensive and technology-intensive products. However, over the period, Turkey has started to improve its comparative advantage in human-capital intensive products. Our estimates also suggest that most of the countries share the same export structure with Turkey in the region. Secondly, by looking at the complimentarity index, we found that among the regions countries CEECs show an extremely high trade complimentarity for its overall trade with EU in all products. Generally, the value of the indexes tends to increase over the time. Therefore, that means EU-15 members and some new members are becoming to compete with each other towards the third market. Finally, Hirschman-Herfindahl Index for Turkey is measured for the period 1982-2007. According to Hirschman-Herfindahl Index, Turkey's export concentration has declined for region's almost all countries except, Malta, Qatar, Slovenia and UAE. That means Turkey has improved her export diversification towards those countries for the period considered. In the case for imports, there is not such

strong tendency for Turkey's import concentration; for some countries, it has declined, for some it has not changed significantly.

The study also aimed at looking into the degree of association in export specialization by estimating the Spearman's Rank Correlation Coefficients of revealed comparative advantage indices between Turkey and regional countries. Three MENA countries', Tunisia, Morocco and Egypt, export specialization is related with export specialization of Turkey. Moreover, their export patterns converge to Turkey's export patterns. Thus, these economies are competing with Turkey in international market. Besides, export patterns of Syria, UAE, Kuwait, Oman, Kyrgyzstan, Latvia, Lithuania, Romania, Poland and Turkey are competing with each other.

All these indices are important in determining the trade pattern and competitiveness of Turkey. They also offer additional information on Turkey's role in the region. Indeed, Turkey is at the interface of this region and she has close trade relations with these countries. Together with other countries in the region, Turkey play an important role in international trade. Since 1980s the role of region's countries as major trade partners is steadily increasing both in exports and imports. CEECs are emerging as potentially important trade destinations in the context of Turkey's EU relations.

Since 1980s, the structure of Turkish exports has been in a process of transformation. Human-capital intensive products emerge as important export industries. In case of technology-intensive products, it is seen that three CEECs (Czech Republic, Slovenia and Hungary) and Israel have strong CA, while MENA countries have weak CA. Since the other countries in the region have similar export structures, Turkey has to shift towards technology-intensive products in order to increase its competitiveness within the region.

BIBLIOGRAPHY

Balassa, B. (1979), "The Changing Pattern of Comparative Advantage in Manufacturing Goods", *Review of Economics and Statistics*, 61, 259-66.

Grubel, H. G. and P. J. Lloyd (1975), *Intra-Industry Trade: The Theory and Measurement of International Trade in Differentiated Products*, John Wiley, New York.

Hinloopen J. and van Marrewijk, C. (2005), "Empirical relevance of the Hillman condition for revealed comparative advantage: 10 stylized facts", *Tjalling C. Koopmans Research Institute, Discussion Paper Series nr: 05-24* http://www.uu.nl/uupublish/content/05-24_2.pdf (accessed on 13 August 2009)

Hoekman, B. and S. Djankov (1997), "Determinants of the Export Structure of Countries in Central and Eastern Europe", *World Bank Economic Review*, 11, 471-87.

Lall, S. (2004), "Turkish Performance in Exporting Manufactures: A Comparative Structural Analysis", *QEH Workig Paper Series*, WP No. 47.

Mahmood A. (2000), *Trade Liberalization and Malaysian Export Competitiveness: Prospects, Problems, and Policy Implications*, University of Newcastle, Australia

Newbold, P. (1994), *Statistics for Business and Economics*, 4th ed., Prentice Hall, New Jersey.

Sharma, M. (2006), *Textile industry of India and Pakistan*, New Delhi: A. P. H. Publishing Corporation.

United Nations, UN Comtrade, United Nations Commodity Trade Statistics Database <http://comtrade.un.org/db/>

Utkulu, U. and Seymen, D. (2004), "Revealed Comparative Advantage and Competitiveness: Evidence for Turkey vis-à-vis the EU/15", *Paper presented at the European Trade Study Group 6th Annual Conference, ETSG 2004*, Nottingham, September 2004.

<http://www.etsg.org/ETSG2004/Papers/seymen.pdf> (accessed on 10 August 2009)

Veeramani, C. (2008), "India and China: Changing Patterns of Comparative Advantage", in R. Radhakrishna (ed.), *India Development Report 2008*, Oxford University Press.

Vollrath, T.L. (1991), "A Theoretical Evaluation of Alternative Trade Intensity Measures of Revealed Comparative Advantage", *Weltwirtschaftliches Archiv*, 130, 265-79.

World Bank, World Development Indicators, Key Development Data and Statistics, www.worldbank.org/data

Yeats, A.J. (1985), "On the Appropriate Interpretation of the Revealed Comparative Advantage Index: Implications of a Methodology Based on Industry Sector Analysis", *Weltwirtschaftliches Archiv*, 121(1), 61-73.

Yılmaz, B. (2003), "Turkey's Competitiveness in the European Union: A Comparison with Five Candidate Countries -Bulgaria, The Czech Republic, Hungary, Poland, Romania- and the EU15", *Ezoneplus Working Paper*, No. 12, February. <http://www.econturk.org/Turkisheconomy/ezoneplus.pdf> (accessed on 5 August 2009)

Yılmaz, B. and S. J. Ergun (2003), "The Foreign Trade Pattern and Foreign Trade Specialisation of Candidates of the European Union", *Ezoneplus Working Paper*, No. 19, September. <http://www.ezoneplus.org/archiv/ezpwp19.pdf> (accessed on 5 August 2009)