

AN ECONOMIC ANALYSIS OF MUTUALLY BENEFICIAL EXPORT POTENTIAL BETWEEN GREECE AND TURKEY

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ABSTRACT

Greece as a member of the EU is a traditional trading partner of Turkey. But, the trade volume between the two countries is quite low, despite geographical proximity. Recently, government officials from Greece and Turkey held a formal meeting, and they expressed their wish to realize stronger trade relations between the two countries. They also determined a \$10-billion target for volume of trade between the two countries. Increasing trade between Greece and Turkey has a great potential to result in mutually beneficial consequences. Indeed, Greece can find it even more beneficial to increase its exports to Turkey, especially at a time when Greece has been suffering from serious economic hardship. The main aim of this paper is to provide an academic and economic analysis of the export potential between Greece and Turkey. The main research questions are: “Which of Turkey’s export products have the highest export potential in the Greek market?”, and “Which of Greece’s export products have the highest export potential in the Turkish market?” Export potential can be measured in several ways. In this paper, the methodology of Revealed Comparative Advantage developed by Balassa (1965) and the methodology of Dynamic RCA index developed by Edwards and Schoer (2002) will be used to measure export potential of trade between Greece and Turkey. To my knowledge, this will be the first academic contribution to focus on this subject-matter by using that methodology. It is hoped that, this paper will be helpful in the development of a sector-specific and mutually beneficial export strategy between these two neighbor countries.

Keywords: Export potential, RCA, Turkey, Greece

JEL Classification: F14

1. Introduction

Globalization process urges countries, especially the developing ones, to increase their competitiveness in international markets. One of the most practical ways of increasing competitiveness is to increase export revenues. By this way, countries can gradually shift to a path of sustainable growth and development.

Turkey has been trying to increase its export revenues by increasing exports to the existing trading partners and also by attempting to export to new export markets. In this regard, Greece as a member of the EU is a traditional trading partner of Turkey. But, the trade volume between the two countries is quite low, despite geographical proximity. Recently, government officials from Greece and Turkey held a formal meeting, and they expressed their wish to realize stronger trade relations between the two countries. They also determined a \$10-billion target for volume of trade between the two countries. Increasing trade between Greece and Turkey has a great potential to result in mutually beneficial consequences. Indeed, Greece can find it even more beneficial to increase its exports to Turkey, especially at a time when Greece has been suffering from serious economic hardship.

This study aims to provide an academic and economic analysis of the export potential between Greece and Turkey. More specifically, from Turkey's point of view; we analyze the position of Greek market in Turkey's export structure and the change in this position over time especially parallel to the enlargement process of EU and prospective membership of Turkey in the EU. Similarly, from Greece's point of view, we analyze Greece's export patterns to Turkey as well as to the world market. By this way, we are able to observe promising export relations between Turkey and Greece.

In this paper, analysis of export performance between Turkey and Greece will be based on evaluation of Revealed Comparative Advantage (RCA) index, which was developed by Bela Balassa (1965), and dynamic RCA index, additional newer methodology developed by Edwards and Schoer (2002) to analyze the performance and market positions of Turkey's exports in Greek market as well as those of Greece's exports in Turkish market over time.

This study covers the period 2005-2014. The data is based on five-digit Standard International Trade Classification (SITC Rev.3) industries and the data source is United Nations Commodity Trade Statistics ("UN-comtrade").

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2. Descriptive Statistics

In this part, we provide some general and preliminary descriptive statistics for exports of Turkey and Greece. Table-1 and Table-2 provides information for the total export performances of Turkey and Greece, respectively.

According to Table-1, on average, Turkey's export volume to the world market is 121 billion\$ and nearly 57% of these exports goes to the EU market. On the other hand, the share of Greece in Turkey's exports to both the world market and the EU-market are 1.7% and 1.4%, respectively and these shares are relatively very low.

Table-1 also shows that Turkey's exports to the world increases over time (from 72.9 in 2005 to 157 billion\$ in 2014). The share of EU in these exports also increases from 41.5% in 2005 to 68.6% in 2014. However, the share of Greece in Turkey's exports to the world and to the EU decreases from 2008 to the end of the period despite the increase between 2005 and 2008. Therefore, according to the table, we can claim that Turkey's export volume to the world market has been increasing over time and the highest share of these exports goes to the EU market. However, Turkey's exports to Greece and the EU follow a different pattern; namely, Turkey is unable to benefit from the Greece market during the period. The reasons behind this fact can be related to the Turkey's export strategies or the developments in Greece itself.

Table-2 shows Greece's exports to the world, to the Extra-EU (non-EU28 countries) and to Turkey. It also shows the shares of Extra-EU and Turkey in Greece's total exports to the world as well as shares of Turkey in Greece's total exports to the Extra-EU.

According to Table-2, Greek exports to the world nearly doubled from 2005 to 2014. Actually, world exports of Greece increased remarkably between 2005 and 2008. There is a deep decline in 2009 and 2010, and then it starts to increase until 2014. The sharp decline in Greece's export performance in 2009 and 2010 may be related to the world financial crisis in those years.

On the other hand, the share of Extra-EU in Greece's total exports increases over time during the period. The share of Turkey in those exports also increases over time especially after 2007. This shows that exports of Greece have been moving towards non-EU countries rather than the EU countries. There may be several reasons

Table 1. Turkey's exports to World, EU-28, Greece and their shares; 2005-2014

2005	WORLD	EU-28	GREECE		2010	WORLD	EU-28	GREECE
Exports (billion US\$)	72.9	41.5	1.1		Exports (billion US\$)	114.3	53.0	1.5
Share in World (%)		57.0	1.5		Share in World (%)		46.3	1.3
Share in EU-28 (%)			2.7		Share in EU-28 (%)			2.7
2006	WORLD	EU-28	GREECE		2011	WORLD	EU-28	GREECE
Exports (billion US\$)	85.0	48.1	1.6		Exports (billion US\$)	135.6	62.6	1.6
Share in World (%)		56.6	1.9		Share in World (%)		46.2	1.1
Share in EU-28 (%)			3.3		Share in EU-28 (%)			2.5
2007	WORLD	EU-28	GREECE		2012	WORLD	EU-28	GREECE
Exports (billion US\$)	106.7	60.7	2.3		Exports (billion US\$)	153.2	59.4	1.4
Share in World (%)		56.9	2.1		Share in World (%)		38.8	0.9
Share in EU-28 (%)			3.7		Share in EU-28 (%)			2.4
2008	WORLD	EU-28	GREECE		2013	WORLD	EU-28	GREECE
Exports (billion US\$)	131.0	63.7	2.4		Exports (billion US\$)	152.6	63.0	1.5
Share in World (%)		48.6	1.9		Share in World (%)		41.3	1.0
Share in EU-28 (%)			3.8		Share in EU-28 (%)			2.4
2009	WORLD	EU-28	GREECE		2014	WORLD	EU-28	GREECE
Exports (billion US\$)	101.8	47.2	1.6		Exports (billion US\$)	157.4	68.6	1.5
Share in World (%)		46.4	1.6		Share in World (%)		43.6	1.0
Share in EU-28 (%)			3.5		Share in EU-28 (%)			2.2
AVERAGE (2005-2014)					WORLD	EU-28	GREECE	
Exports (billion US\$)					121.1	56.8	1.7	
Share in World (%)						48.2	1.4	
Share in EU-28 (%)							3.0	

Table 2. Greece's exports to World, Extra-EU, Turkey and their shares; 2005-2014

2005	WORLD	Extra-EU	TURKEY		2010	WORLD	Extra-EU	TURKEY
Exports (billion US\$)	17.7	7.8	0.9		Exports (billion US\$)	27.8	14.5	1.7
Share in World (%)		43.9	5.3		Share in World (%)		52.4	6.0
Share in Extra-EU (%)			12.1		Share in Extra-EU (%)			11.5
2006	WORLD	Extra-EU	TURKEY		2011	WORLD	Extra-EU	TURKEY
Exports (billion US\$)	21.3	9.0	1.1		Exports (billion US\$)	32.5	17.5	2.6
Share in World (%)		42.3	5.0		Share in World (%)		53.8	8.1
Share in Extra-EU (%)			11.9		Share in Extra-EU (%)			15.0
2007	WORLD	Extra-EU	TURKEY		2012	WORLD	Extra-EU	TURKEY
Exports (billion US\$)	23.4	9.5	0.9		Exports (billion US\$)	33.5	20.0	3.8
Share in World (%)		40.5	3.6		Share in World (%)		59.8	11.3
Share in Extra-EU (%)			9.0		Share in Extra-EU (%)			18.9
2008	WORLD	Extra-EU	TURKEY		2013	WORLD	Extra-EU	TURKEY
Exports (billion US\$)	31.3	14.4	1.3		Exports (billion US\$)	34.6	20.2	4.3
Share in World (%)		46.1	4.2		Share in World (%)		58.3	12.3
Share in Extra-EU (%)			9.2		Share in Extra-EU (%)			21.1
2009	WORLD	Extra-EU	TURKEY		2014	WORLD	Extra-EU	TURKEY
Exports (billion US\$)	24.4	12.1	1.2		Exports (billion US\$)	34.3	19.7	4.3
Share in World (%)		49.5	4.9		Share in World (%)		57.4	12.7
Share in Extra-EU (%)			9.9		Share in Extra-EU (%)			22.1
AVERAGE (2005-2014)					WORLD	Extra-EU	TURKEY	
Exports (billion US\$)					28.1	14.5	2.2	
Share in World (%)						50.4	7.3	
Share in Extra-EU (%)							14.1	

behind this movement. This can be related to the preference of EU consumers towards the products of new members, or price differentials between Greek products and products of new member countries, or increasing demand for Greek products by the consumers in the non-EU countries etc.

When we compare Turkish exports to Greece and Greek exports to Turkey during the period, we can say that while Turkey becomes an important export market for Greece especially after 2008, the same for Greece is not valid.

Next we analyze Turkish exports to Greek market and Greek exports to Turkish markets in terms of fragmentation of production. Fragmentation of production refers that different stages of production take place in different countries and each country specialize in the individual stage of production in which it has a comparative advantage. So, we identify in what stages of the production process Turkish and Greek exports are specialized. To do so, we use The United Nations' classification of Broad Economic Categories (BEC). BEC classification groups products according to their end-use. The classification is the following: Primary goods, Intermediate goods (Semi-finished products and parts and components) and Final goods (capital goods and consumption goods)

Table-3 and Table-4 show the share of Turkish exports to Greece and the share of Greek exports to Turkey for primary, intermediate and final goods, respectively.

Table 3. Share of Turkey's exports to Greece (%), BEC, 2005-2014

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	AVERAGE
PRIMARY GOODS	3.2	3.7	3.0	5.5	8.8	3.2	3.7	3.3	3.5	2.0	4.0
INTERMEDIATE GOODS	46.7	56.6	58.0	55.4	48.7	57.8	62.0	66.9	63.5	59.3	57.5
<i>Semi-finished Goods</i>	42.6	52.8	54.9	52.0	45.0	52.9	57.4	61.5	58.0	54.1	53.1
<i>Parts and Components</i>	4.1	3.8	3.1	3.4	3.7	4.9	4.6	5.3	5.5	5.2	4.4
FINAL GOODS	50.1	39.7	39.0	39.1	42.5	39.0	34.3	29.8	33.0	38.6	38.5
<i>Capital Goods</i>	9.0	10.9	9.7	9.4	11.5	7.7	7.4	6.4	7.1	8.6	8.8
<i>Consumption Goods</i>	41.1	28.8	29.3	29.7	31.0	31.3	26.9	23.5	25.9	30.0	29.7

According to Table-3, Turkey's exports to Greece are concentrated in intermediate goods. Moreover, the share of those goods has been increasing over time. This shows that intermediate goods imported from Turkey have become more important for production in Greece over time. However, most part of Turkish intermediate exports consists of semi-finished goods rather than parts and components. This shows that Greece does not prefer to import from Turkey the technologically independent products in order to assemble into final goods. Table-3 also shows that 38.5% of Turkey's exports to Greece are final goods, especially the consumer goods. This shows that a significant part of Turkish exports meet the demand of Greek consumers for domestic use.

Table 4. Share of Greece's exports to Turkey (%), BEC, 2005-2014

According to Table-4, Greece's exports to Turkey are concentrated in intermediate goods, especially on semi-

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	AVERAGE
PRIMARY GOODS	20.4	21.6	17.7	15.0	24.5	21.8	8.1	8.8	8.5	5.8	15.2
INTERMEDIATE GOODS	70.4	70.8	68.1	72.3	63.5	64.8	84.9	86.9	87.4	88.2	75.7
<i>Semi-finished Goods</i>	68.3	68.3	65.1	70.0	60.0	62.0	82.5	85.9	86.5	87.1	73.6
<i>Parts and Components</i>	2.1	2.5	3.0	2.3	3.5	2.8	2.4	1.1	0.9	1.1	2.2
FINAL GOODS	9.2	7.6	14.2	12.7	12.0	13.4	7.0	4.3	4.1	6.0	9.1
<i>Capital Goods</i>	2.6	2.5	4.9	6.8	5.0	6.9	2.2	1.9	1.6	3.2	3.8
<i>Consumption Goods</i>	6.6	5.1	9.3	5.8	7.1	6.5	4.7	2.4	2.5	2.8	5.3

finished goods. Similar to Turkish exports to Greece, the share of parts and components in Greek exports to Turkey are very small. So, we can say that both Turkey and Greece are not assembly countries for each other. In other words, we can claim that international fragmentation of production, a recently popular way to acquire high-technology and benefit from technological spillovers, does not play a crucial role in trade relations between Turkey and Greece. Table-4 also shows that final goods constitute only 9.1% of Greece's total exports to Turkey. So we can say that Greek exports are not intended to meet final demand of Turkish consumers.

3. Methodology

The methodology of analyzing export performances of Greece and Turkey involves the computation of static and dynamic RCA indexes

The RCA index by Balassa (1965)

Balassa (1965) assumes that trade patterns reflect both relative costs and differences in non-price factors. Then, he suggests that comparative advantage can be ‘revealed’ by observing trade patterns. He formulated the RCA index as follows:

$$RCA_{ij} = \frac{X_{ij} / X_i}{X_{wj} / X_w} \quad (1)$$

where RCA_{ij} is the revealed comparative advantage index for commodity j of country i ; X_{ij} is the exports of commodity j of country i ; X_i is the total exports of country i ; X_{wj} is the world exports of commodity j ; and X_w is total world exports. Rearranging the terms on the right-hand side, it can be shown that the RCA_{ij} index compares “country i ’s share in the world market for commodity j ” to “its share in the world market for all commodities”.

The value of the RCA index varies between zero and infinity at product level. When RCA is higher (lower) than 1, “the share of country i ’s exports of commodity j in its total exports” is higher (lower) than “the share of world’s exports of commodity j in world’s total exports”; and hence, country i has a revealed comparative advantage (disadvantage) in commodity j .

Dynamic RCA index

Edwards and Schoer (2002) developed an index to analyze the changing comparative advantages over time. They called it the “Dynamic RCA index”. They built the index by decomposing the growth in RCA into its components. Formally, by taking the logs of the conventional RCA index and then by total differentiation, they decomposed the growth in the RCA index as follows:

$$\frac{\Delta RCA_{ij}}{RCA_{ij}} = \frac{\Delta(X_{ij}/X_i)}{X_{ij}/X_i} - \frac{\Delta(X_{wj}/X_w)}{X_{wj}/X_w} \quad (2)$$

In this formula, the first term on the right-hand side reflects the growth in the share of commodity j in total trade of country i , and the second term reflects the growth in the share of commodity j in world trade.

Observing the relative trends in the share of commodity j in country i and world exports, Edwards and Schoer (2002) analyze the market positions of the products. Edwards and Schoer (2002) classification of products with the adjustments by Ekmen-Özcelik and Erlat(2014)¹ is summarized in Table- 9 below. In this ‘so-called ‘dynamic RCA index’, export goods are categorized into six groups as (i) rising stars, (ii) falling stars, (iii) lagging retreat, (iv) leading retreat, (v) lagging opportunity, (vi) lost opportunity

In this approach, thus, we compare “the increase or decrease in the share of a product in a country’s total exports (Turkey or Greece)” and “the increase or decrease in the share of that product in world’s total exports to Turkey or Greece”. The most preferred location for a product is “rising star” since the market share of the country is increasing in products for which demand is growing worldwide. The cases of “rising stars” and “leading retreat” are evaluated as “successful restructuring of exports”, while the cases of “falling stars” and “lost opportunity” are evaluated as “poor restructuring of exports”.

3. Results

The results of our analysis are summarized in Table-6 and Table-7 for Turkey and Greece, respectively.

Table-6 shows the number of over-unity RCA products in Turkish exports to Greece, their percentages in the total number of exported products to Greece from Turkey and shares of these exports in total exports of Turkey to Greece for overall industries and each SITC industries.

¹For details, see Ekmen-Özcelik and Erlat (2014)

Table 5. Market Positions of Exports according to Dynamic RCA index

Share of commodity j in country i's exports		Share of commodity j in World exports	
↑	>	↑	Rising Stars
↑		↓	Falling Stars
↓	<	↓	Lagging Retreat
↓		↑	Lost Opportunity
↓	>	↓	Leading Retreat
↑	<	↑	Lagging Opportunity

Source: Edwards and Schoer (2002)

Table 6. Export Performance of Turkey in Greece Market, Static and Dynamic RCA indices, Total and SITC industries, 2005-2014.

	Average Number of RCA Products	Average % of RCA products in Total # of Exported Products	Share of RCA products in Total Exports	Dynamic RCA (% of total exports)					
				Rising Stars	Falling Stars	Leading Retreat	Lagging Retreat	Lagging Opp.	Lost Opp.
TOTAL	631	40.1	88.1	35.4	17.3	7.7	4.0	16.1	19.4
SITC-0	52	41.5	92.9	12.3	7.5	8.1	0.0	32.9	39.2
SITC-1	1	20.3	66.8	5.8	8.4	0.4	84.7	0.6	0.0
SITC-2	34	53.5	93.6	14.0	6.2	29.6	2.6	27.3	20.4
SITC-3	4	71.2	57.5	97.4	0.0	0.6	0.0	0.4	1.6
SITC-4	1	30.6	70.3	6.1	0.0	0.0	0.0	41.6	52.3
SITC-5	57	32.7	79.7	78.1	5.5	0.3	0.1	6.9	9.1
SITC-6	271	53.1	95.9	31.9	11.4	8.6	2.9	25.0	20.1
SITC-7	106	27.9	79.7	27.8	48.7	4.5	8.0	2.0	8.9
SITC-8	105	34.5	86.9	15.1	11.7	13.8	4.2	18.2	37.0

According to Table-6, during the period 2005-2014, Turkey has 631 over-unity RCA products averagely. These 631 RCA products constitute 40.1% of Turkey's total number of exported products and the exports of these 631 products constitute 88.1 per cent of Turkey's total exports to Greece.

In terms of dynamic RCA indices, Table-6 indicates that 35.4% of Turkey's total exports fall in the category of "rising stars", 17.3% in "falling stars", 7.7% in "leading retreat", 4.0% in "lagging retreat", 16.1% in "lagging opportunity" and 19.4% in "lost opportunity". We see that the highest part of Turkish exports is classified as rising stars. This is a preferred location for Turkey since her market share is increasing in products for which Greek demand is also growing. So, the highest share of "rising stars" is good news for Turkey since a considerable portion of Turkish exports consist of promising products in Greece market. On the other hand, nearly 20 per cent of Turkish exports are classified in lost opportunity. So, 20 per cent of Turkish exports can be considered in the worst position since share of Turkish exports is falling in products for which demand in Greek market is rising.

Table-6 also shows the export performance of Turkey in each SITC industry. According to Table-6, in SITC-0, 52 over-unity RCA products constitute 93% of Turkey's total exports to Greece. Also, 39.2 per cent of Turkey's total SITC-0 exports fall in the category of lost opportunities. That is to say, Turkey is losing market share in most of the SITC-0 products, for which Greek demand is growing. In addition, 33 per cent of Turkey's total SITC-0 exports fall in the category of lagging opportunities. This shows that a considerable portion of Turkey's SITC-0 exports gaining share for the products for which Greek demand is also growing, however this gain is not sufficient to move this sector into rising stars. Therefore, Turkey should reconsider its export policy in SITC-0 sector to exploit the opportunities in Greece market.

According to Table-6, in SITC-1 sector, only one product has over-unity RCA. This product constitutes 66.8% of Turkey's total SITC-1 exports to Greece. When we analyze this sector according to dynamic RCA index, we see that 84.7 per cent of Turkey's SITC-1 exports fall in the category of lagging retreat. This implies that a considerable portion of Turkish SITC-1 exports are declining in terms of their share in the Greece market. In fact, "retreat" can be seen as a rational way of restructuring away from the products with declining demand by Greece, and hence the year-by-year decrease in the exports of these products can be a good development for Turkey, provided that the rate of this decrease accelerates so that Turkey can restructure its exports from 'lagging retreat' to 'leading retreat'.

In SITC-2 sector, 34 over-unity RCA products constitute 93.6% of Turkey's total exports in this sector. Table-6 also shows that 29.6 per cent of Turkey's total SITC-2 exports located in leading retreat. This is a successful position since Turkey is decreasing its SITC-2 exports year by year in accordance with the declining demand in Greece. On the other hand, the share of exports located in lagging opportunity is very close to that in leading retreat. This means that in this sector, Turkey is gaining share for the products for which demand of Greece is also growing, however this gain is not sufficient to move Turkey to an optimal dynamic position.

In SITC-3 sector, 4 products have over-unity RCA coefficients and exports of these four products constitute 57.5 per cent of the Turkey's total exports in SITC-3 sector. Also, most part of Turkish exports in this sector is located as rising stars. This shows that Turkey has significant potential in this sector.

In SITC-4 sector, there is only one product having over-unity RCA and exports of this product constitute 70 per cent of Turkey's total SITC-4 exports to Greece. Also, Turkey's SITC-4 exports are located in lagging opportunity and lost opportunity. There are significant export opportunities for this sector in Greek market but Turkey is unable to exploit these opportunities.

SITC-5 has 57 over-unity RCA products. These products constitute 32.7% of Turkey's total number of exported products in this sector and 79.7 per cent of Turkey's total SITC-5 exports to Greece. So, we can say that SITC-5 sector has a concentrated structure. Also, 78.1% of Turkey's SITC-5 exports to Turkey are located in rising stars. This shows a successful positioning of Turkey's SITC-5 exports in Greece.

In SITC-6 sector, there are 271 over-unity RCA products. These products constitute 93.6 per cent of Turkey's total SITC-6 exports to Greece. Most part of SITC-6 exports is located in rising stars. Lagging opportunity and leading retreat follow rising stars. So, we can say that despite the successful position of Turkish exports to Greece in this sector, Turkey has still unexploited opportunities in this market.

In SITC-7, there are 106 over-unity RCA products. These products constitute 79.7 per cent of Turkey's total SITC-7 exports to Greece. Also, nearly half of Turkey's SITC-7 exports fall in the category of falling stars. This shows that Greece's demand for the products of this sector has been declining while Turkey's exports in this sector have been increasing year by year. We can suggest that most probably it would be more useful for Turkey to channel its high export potential in this sector to other markets as well as Greek market.

In SITC-8, there are 105 over-unity RCA products. These products constitute 86.9 per cent of Turkey's total SITC-8 exports to Greece. Also 37 per cent of Turkey's SITC-8 exports to Greece are located in lost opportunity. Lagging opportunity follows it. This shows that in this sector Turkey is unable to exploit the opportunities in Greek market.

Now, we evaluate market positions of Turkey's 5-digit exported products with the highest RCA coefficients in each sector.

SITC-05775 (Hazelnuts or filberts, fresh or dried) and SITC-08113 (forage kale and similar forage products) have the highest RCA coefficients in SITC-0 sector. However, dynamically, these products are classified in lost opportunity. The decrease in the share of these products in Turkey's total SITC-0 exports year by year, despite the increase in their share in total world exports to Greece, has led these products to such an unsuccessful position. SITC-06195 (pure fructose) is also a product having high RCA coefficient but it is located in "lagging opportunity". This shows that Turkey has a potential to increase its exports of this product and at the same time Greek market has opportunities for the countries to increase the imports of this product. But Turkey is unsuccessful to use its export potential and to exploit the opportunities in Greek market.

SITC-1211 (Tobacco, not stemmed) is the only over-unity RCA product in this sector and it is located in lagging retreat. That is to say, the share of Turkey's SITC-1211 exports to Greece is decreasing in accordance with the decreasing demand for this product in Greek market. But Turkey should accelerate the rate of this decrease in order to restructuring its export composition successfully towards the products for which Greek demand is increasing.

SITC-27824 (Natural magnesium carbonate) is the product having highest RCA among all the products exported from Turkey to Greece. And this product is located in lagging opportunity. We can suggest that Turkey should increase its exports of this product faster in order to utilize the opportunities in Greek market. SITC-

2223 (Cottonseeds) is also an important product for Turkey in terms of having a high RCA coefficient but this product is located in lost opportunity. This means that Turkey's export of this product has been decreasing while demand for this product in Greece has been increasing year by year. In other words, So, Turkey is unable to adjust its cottonseeds exports in accordance with the increasing demand for this product in Greece.

SITC-32221 (Ignite, pulverized or not) and SITC-3421 (Propane, Liquefied) are over-unity RCA products and dynamically they are located in rising stars. These are some of Turkey's promising export products in SITC-3 sector.

SITC-42299 (Palm oil and its fractions) is an over-unity RCA product and it is located in lagging opportunity. Also, SITC-42171 (Colza or Mustard Oil, Crude) and SITC-4311 (Animal or vegetable fats and oils) are products whose RCA coefficients are very close to 1 on average and higher than 1 in some years. Those products are located in lost opportunity. So, since demand for these products are increasing in Greece, Turkey has an opportunity to increase its export revenues by using its potential rationally and increasing exports of these products to Greek market.

SITC-52361 (Phosphinates and phosphonates), SITC-55431 (Polishes, creams and similar preparations for footwear and leather), SITC-51372 (Esters and Acetic Acid) and SITC-51221 (Ethylene glycol) are some of the over-unity RCA products and they are located in rising stars. So, these are promising products for Turkey in SITC-5 sector. On the other hand, SITC-51383 (Dioctylorthophthalates) and SITC-51241 (Phenol) are also examples of high RCA products but they are located in lost opportunity. This shows that demand for these products in Greece is increasing while Turkish exports are decreasing year by year. So, we can say that in these products, Turkey is unable to utilize export opportunities to Greece market

SITC-65185 (Yarn of artificial staple fibers), SITC-67941 (Iron and steel line pipe used for oil gas or gas pipelines) and SITC-68427 (Aluminum and aluminum alloy tube and pipe fittings) are some of the products having high RCA and located in rising stars. Therefore, these are promising products for Turkey in Greece market. On the other hand, SITC-66121 (Cement Clinkers), SITC-65159 (Synthetic filament yarn), SITC-65952 (Textile floor coverings, woven), SITC-65134 (Cotton yarn), SITC-65529 (Knitted or crocheted fabrics) are also products with high RCA but they are located in lagging opportunity. We can claim that in order to benefit most from the opportunities in Greek market, Turkey should increase its exports of these products.

SITC-78311 (Public-transport type passenger motor vehicles with compression-ignition internal combustion engine), SITC-78683 (Trailers and semi-trailers,n.e.s.), SITC-73313 (Machines, bending folding straightening metal), SITC-72127 (Machines for cleaning, sorting or graining seed and grain) and SITC-77589 (Parts of electrothermic appliances, n.e.s.) are some products having high RCA and located in rising stars. So, these are promising products for Turkey in SITC-7 sector. On the other hand, SITC-77328 (Insulating fittings for electrical machines) are SITC-72721 (Machinery for the extraction or preparation of animal or fixed vegetable fats) are products having high RCAs but located in falling stars. This shows that Turkey has continued to increase its exports of these products, without considering the fall of these products in the Greece market. This situation is not sustainable in the medium-to-long run. In a dynamic view, Turkey should direct its export potential in these products to other markets.

SITC-89985 (Slide fasteners), SITC-84422 (Ensembles) and SITC-84429 (Other hosiery) are some of the products having high RCA and located in rising stars. On the other hand, SITC-81211 (Radiators, and parts thereof), SITC-82115 (Seats, other than garden seats or camping equipment, convertible into beds) and SITC-82118 (Other seats) are some RCA products but located in lost opportunities. In other words, Turkey's share has been declining despite the fact that the Greece's demand for these products has been rising. Of course, this is an undesirable situation for Turkey. Highest RCAs of these products show the favorable circumstances for Turkey. Turkey should use its capacity fully to increase the exports of these products and move them into an optimal position rather than exhibiting the 'lost opportunity' position.

Next, we analyze the export performance of Greece in Turkish market based on static and dynamic RCA indices. Table-7 shows the number of over-unity RCA products in Greece's exports to Turkey, their percentages in the total number of exported products to Turkey from Greece and shares of these exports in total exports of Greece to Turkey for overall industries and each SITC industries.

Table-7 shows that Greece in Turkish markets has significant unexploited opportunities in most of the sectors. In total, Greece has 246 over-unity RCA products. These 246 RCA products constitute only 27.5 % of Greece's total number of exported products and the exports of these 246 products constitute 86.2 per cent of Greece's total exports to Turkey. We can conclude that Greece has a very concentrated export structure in Turkish market. This concentrated export structure is observed in most of the SITC sectors. In terms of dynamic RCA indices, Table-7 indicates that a significant part of Greece's total exports to Turkey fall in the category of "lagging opportunity". This means that Greece is gaining share in Turkish market for the products for which Turkey's

Table 7. Export Performance of Greece in Turkish Market, Static and Dynamic RCA indices, Total and SITC industries, 2005-2014.

	Average Number of RCA Products	Average % of RCA products in Total # of Exported Products	Share of RCA products in Total Exports	Dynamic RCA (% of total exports)					
				Rising Stars	Falling Stars	Leading Retreat	Lagging Retreat	Lagging Opp.	Lost Opp.
TOTAL	246	27.5	86.2	9.3	4.6	1.3	1.1	63.9	19.8
SITC-0	40	60.5	83.8	24.1	7.4	1.4	0.1	45.4	21.6
SITC-1	4	32.5	87.0	6.2	1.7	0.3	0.0	85.2	6.5
SITC-2	25	53.1	89.4	3.0	1.8	1.4	0.3	1.3	92.2
SITC-3	3	50.9	90.7	2.6	0.1	0.0	0.0	97.3	0.0
SITC-4	3	74.3	62.1	3.4	34.1	0.0	2.9	59.3	0.3
SITC-5	37	30.4	81.9	14.8	16.1	1.5	0.7	4.0	63.0
SITC-6	68	27.6	79.5	36.1	14.3	4.2	11.3	20.8	13.3
SITC-7	37	16.7	62.0	36.7	19.5	5.3	1.0	8.7	28.7
SITC-8	29	17.5	58.7	31.9	21.2	23.4	0.9	9.3	13.3

demand is growing however this gain is not sufficient to move Greece to an optimal dynamic position. This finding is also valid for SITC-0, SITC-1, SITC-3 and SITC-4 sectors. This shows that in overall and in these sectors, Greece is “lagging” prominently in materializing the “opportunities” in Turkish market. However, Greece can easily move itself to an optimal position since it has an improving trend in terms of increasing share of its exports for the sectors for which Turkey’s demand is also growing. In SITC-2 and SITC-5 sectors, significant shares of Greece’s exports are located in lost opportunity. This shows that in these sectors Greece’s share has been declining despite the fact that Turkey’s demand for the products of this sector has been rising. This is not a desirable situation for Greece. SITC-6 has 68 over-unity RCA products. These products constitute 27.6 per cent of Greece’s total number of exported products in this sector and 79.5 per cent of Greece’s total SITC-6 exports to Turkey. Highest part of Greece’s SITC-6 sector is located in rising stars, and lagging opportunity follows it. This shows that even Greece is in a successful position in this sector; it has opportunities those are not utilized fully. SITC-7 and SITC-8 sectors are also located in rising stars but over-unity RCA exports of both sectors constitute a relatively lower share of Greece’s total exports of those sectors. Therefore, by increasing the number of exported products might be a way of increasing export performance of Greece in Turkish market.

Now, we evaluate market positions of Greece’s 5-digit export products with the highest RCA coefficients in each sector. SITC-05895 (Apricots, cherries and peaches) and SITC-0581 (Jams, fruit jellies, marmalades, fruit, being cooked preparations) are rising stars of Greece in SITC-0 sector. These products also have very high RCA coefficients. So, these are promising products of Greece in Turkish market. On the other hand, SITC-05793 (Apricots, cherries, peaches, plums and sloes, fresh), SITC-09813 (Cooked fruit preparations, homogenized) and SITC-05752 (Grapes, fresh or dried) are products having high RCAs but located in lagging opportunities.

SITC-12232 (Smoking tobacco), SITC-11102 (Waters containing added sugar or other sweetening matter or flavoured, and other non-alcoholic beverages, n.e.s.) are over-unity RCA products and they are located in rising stars. On the other hand, SITC-11101 (Waters, including natural or artificial mineral waters and aerated waters, not containing added sugar or other sweetening matter nor flavoured; ice and snow) and SITC-1222 (Cigarettes containing tobacco) are some of high RCA products which are located in lagging opportunities.

SITC-2223 (Cotton seeds), SITC-25113 (Waste and scrap of paper or paperboard made mainly of mechanical pulp) are the highest RCA products in SITC-2 sector and these products are also located in rising stars. So, they are promising export products of Greece in Turkish market. On the other hand, SITC-27323 (Gypsum; anhydrite), SITC-27861 (Granulated slag from the manufacture of iron or steel) and SITC-2631 (Cotton (other than linters), not carded or combed) are also some of the highest RCA products but located in lost opportunity.

SITC-33541 (Petroleum bitumen and other residues of petroleum oils or of oils obtained from bituminous minerals) and SITC-3510 (Electric current) have high RCAs in SITC-3 sector and they are located in rising stars. On the other hand, SITC-334 (Petroleum oils and oils obtained from bituminous minerals (other than crude); preparations, n.e.s.) constitute more than half of Greece’s SITC-3 exports to Turkey and it has over-unity RCA but located in lagging opportunity. So, we can conclude that Greece should use its resources to support the production and export of this product to increase the export revenues from Turkish market.

SITC-42121 (Crude cottonseed oil) is a product having highest RCA in SITC-4 sector and it is located in rising stars. This product is the only promising product of Greece in this sector.

SITC-55133 (Resinoids) is the highest RCA product in SITC-5 sector and it is located in rising stars. On the other hand, SITC-53119 (Other synthetic organic colouring matter) and SITC-57211 (Polystyrene expansible) are also high RCA products but located in lost opportunities. We can claim that Greece should restructure its exports of these products in order to enjoy the benefits in Turkish market.

SITC-68271 (Tubes and pipes), SITC-66334 (Other articles of cement, of concrete or of artificial stone, reinforced or not) and SITC-66134 (Marble, travertine and alabaster and articles thereof, simply cut or sawn, with a flat or even surface) are over-unity RCA products and they are located in rising stars. On the other hand,

SITC-63423 (Particle board and similar board of ligneous materials other than wood, whether or not agglomerated with resins or other organic binding substances) is the highest RCA product in SITC-6 sector but located in lost opportunity. This shows that demand for this product in Turkey has been increasing year by year but Greek exports have been decreasing despite the high export potential of Greece for this product. SITC-6132 (Heads, tails, paws and other pieces or cuttings, not assembled) is another product with very high RCA but located in lagging opportunity.

SITC-74564 (Agricultural or horticultural appliances for projecting, dispersing or spraying liquids or powders), SITC-79328 (Cruise ships, excursion boats and similar vessels principally designed for the transport of persons; ferry-boats of all kinds) and SITC-77521 (Refrigerators, household-type (electric or other), whether or not containing a deep-freeze compartment) are highest RCA products of Greece that are located in rising stars. So, these are some of the promising export products for Greece. On the other hand, SITC-74493 (Parts suitable for use solely or principally with the machinery of headings), SITC-79351 (Dredgers), SITC-79399 (Floating structures, n.e.s), and SITC-74341 (Table, floor, wall, window, ceiling or roof fans) are also high RCA products but located in lost opportunity.

SITC-84831 (Articles of furskin), SITC-89732 (Articles of goldsmiths' or silversmiths' wares, and parts thereof, of precious metal or of metal clad with precious metal), SITC-8424 (Dresses) and SITC-84322 (Ensembles) are high RCA products and located in rising stars. These are some of the promising products for Greece. On the other hand, SITC-89221 (Newspapers, journals and periodicals, whether or not illustrated or containing advertising material) is the highest RCA product in SITC-8 sector but located in falling stars. This shows that Greece has been increasing its exports of these products in a shrinking market. This is not an optimal position for a product especially in the long run. Greece should direct its export potential to the other markets whose demand for this product has been increasing over time.

4. Conclusion

In this study, we evaluated Turkey's export performance in Greek market and Greece's export performance in Turkish market from both static and dynamic points of view. We based our evaluation on the RCA index (due to Bela Balassa, 1965) and on the analysis of dynamic RCA index (due to Edwards and Schoer, 2002).

Our results show that Turkey and Greece are different countries in terms of the variety of products in which they have comparative advantages, whereas they are relatively more homogeneous in terms of the contribution of the RCA-exports to their total export earnings. In other words, Turkey and Greece may have many or few RCA sectors; however, the major source of export revenue remains to be the RCA sectors for both of the countries.

We can conclude that for both countries, they are unexploited export opportunities in each market especially for the products they have already over-unity RCAs. So, they can increase their export earnings easily, because each-RCA product is a potentially promising export-earner. In other words, each country has a chance to improve their export performance by specializing more in the products in which they have already RCA. Also, in some sectors, there is an opportunity, especially for Greece, to improve export earnings by exporting new products.

All in all, for both countries, a potential loss of ground in each market can be avoided and also their export performance can be improved in line with the recent dynamics in these markets.

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