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Analysis of Competitiveness of Türkiye Among E7 Countries in Terms of Selected Chapters*

Türkiye'nin E7 Ülkeleri Arasındaki Rekabet Gücünün Belirlenmiş Fasıllar Bazında Analizi

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Abstract

This study aims to analyze the competitiveness of Türkiye, which is among the E7 countries, with other countries in this group in terms of some selected sectors. The Comparative Export Performance (CEP) Index was used to measure competitiveness with these countries. The first five chapters in which Türkiye has achieved the highest increase in exports in the last ten years were considered through HS (Harmonized System) codes. In comparing these chapters, the CEP indexes were calculated using the 2011-2020. Chapters subject to research are 97-Works of art, collector's pieces, and antiques, 81-Other base metals employed in metallurgy and articles thereof, 96-Miscellaneous manufactured articles (pens and brushes, etc.), 75-Nickel and articles thereof and 23-Residues and waste from the food industries, prepared animal fodder. According to the findings, in 97, Türkiye has a higher export performance than Russia and Mexico, and its export performance has also increased against Indonesia since 2016. In 81, Türkiye has a better export performance against India, Indonesia, and Mexico. In, there is a higher export performance than other countries except for China. In 75, the export performance of Türkiye increased against China, India, and Brazil, especially after 2016, and showed a better performance despite a changing graphic with Mexico. Also, in 23, it can be said that although the export performance against China and Mexico has differed over the years, it has gained momentum in this process.

Keywords: Competitiveness, comparative export performance index, E7 countries, Türkiye

Paper Type: Research

Öz

Bu çalışma, E7 ülkeleri içerisinde yer alan Türkiye'nin bu gruptaki diğer ülkelerle arasındaki rekabet gücünün belirlenmiş fasıllar açısından analizinin yapılmasını amaçlamaktadır. Bu ülkelerle rekabet gücünü ölçmek için Karşılaştırmalı İhracat Performansı (KİP) Endeksi kullanılmıştır. Türkiye'nin son 10 yılda ihracatında en fazla artış oranı elde ettiği ilk beş fasılın HS (Harmonized System) kodları yardımıyla sınıflandırılması dikkate alınmıştır. Bu fasılların karşılaştırılmasında 2011-2020 arası yıllara ait veriler kullanılarak KİP endeksleri hesaplanmıştır. Araştırmaya konu olan fasılların 97-Sanat eserleri, kolleksiyon eşyası ve antikalar, 81-Diğer adi metaller, 96- Çeşitli mamul eşya (hijyenik havlu, bebek bezi, kalem, çakmak, fermuar, fırça vb.), 75- Nikel ve nikelden eşya ve 23- Gıda sanayiinin kalıntı ve döküntüleri, hayvanlar için hazırlanmış kaba yemlerdir. Bulgulara göre, Türkiye 97- nolu fasılda, Rusya ve Meksika karşısında daha yüksek ihracat performansına sahiptir ve Endonezya karşısında da 2016 yılından itibaren artmıştır. 81-nolu fasılda Türkiye Hindistan, Endonezya ve Meksika karşısında daha iyi ihracat performansa sahiptir. 96- nolu fasılda Çin dışında kalan diğer ülkelerden daha yüksek ihracat performansı bulunmaktadır. 75- nolu fasıla bakıldığında, ihracat performansının Çin, Hindistan ve Brezilya karşısında özellikle 2016 yılından sonra artmış ve Meksika ile inişli çıkışlı bir grafik çizse de daha iyi bir performans sergilemiştir. 23- nolu fasılda ise Çin ve Meksika'ya karşısında ihracat performansı yıllar itibariyle farklılık gösterse de bu süreçte yükselme ivmesi kazandığı söylenebilir.

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Makale Türü: Araştırma

Introduction

Adam Smith determined the first theoretical framework of international trade with his Theory of Absolute Advantage. Within the scope of the theory, he stated that countries should export the goods they produce at a low cost and import them at a high cost. David Ricardo, who introduced the Theory of Comparative Advantage in 1812, contributed to the Theory of Absolute Advantage and stated that countries should not focus on the prices of the goods they produce but on the relative price differences of these goods compared to the goods in other countries, and only in this way countries could trade with each other. In the Theory of Comparative Advantage, physical and natural effects were emphasized, and later contributing economists added factor endowment, technology, and human variables to their theories. These theorists tried to reveal the importance of free trade to ensure economic growth by basing their thoughts on the Comparative Advantage Theory (Erkan, 2012, p. 197).

After 1980, with the effect of globalization, countries struggle to get a share in world trade has grown over time. Countries with other economic development have made an effort to increase their production and product diversity in this struggle. Nowadays, products have diversified, and competitors have increased. Accordingly, it has become essential for countries and businesses to gain competitiveness in international markets. The concept of competitiveness includes both macro and micro variables. Variables such as economic growth, total export-import, national income, employment level, per capita income, etc., are mentioned in the macro extent, and sectoral comparisons in the micro extent. Policies implemented in the micro extent determine the macro variables. For this reason, it can be ensured that the right policies are implemented on time by comparing the sectoral competitiveness of the countries or making a competitiveness analysis (Sarıçoban ve Kösekahyaoğlu, 2017, p. 425-426).

International competitiveness refers to the institutional arrangements that provide the necessary conditions for sustainable growth in a country's production. The only way to achieve a sustainable increase in the country's national income is a productivity increase in production. It also increases people's living standards in the country (Herciu, 2013, p. 276). Many indices have been developed to measure the competitiveness of countries in international trade. There are indices such as Revealed Comparative Advantage Index, Comparative Export Performance Index, Export Specialization Index, Export-Import Ratio Index, Intra-Industry Trade (Grubel-Lyold) Index, Gini-Hirschmann (Trade Intensive Index), Herfindahl-Hirschman Index and Export Similarity Index (Sarıçoban ve Kösekahyaoğlu, 2017).

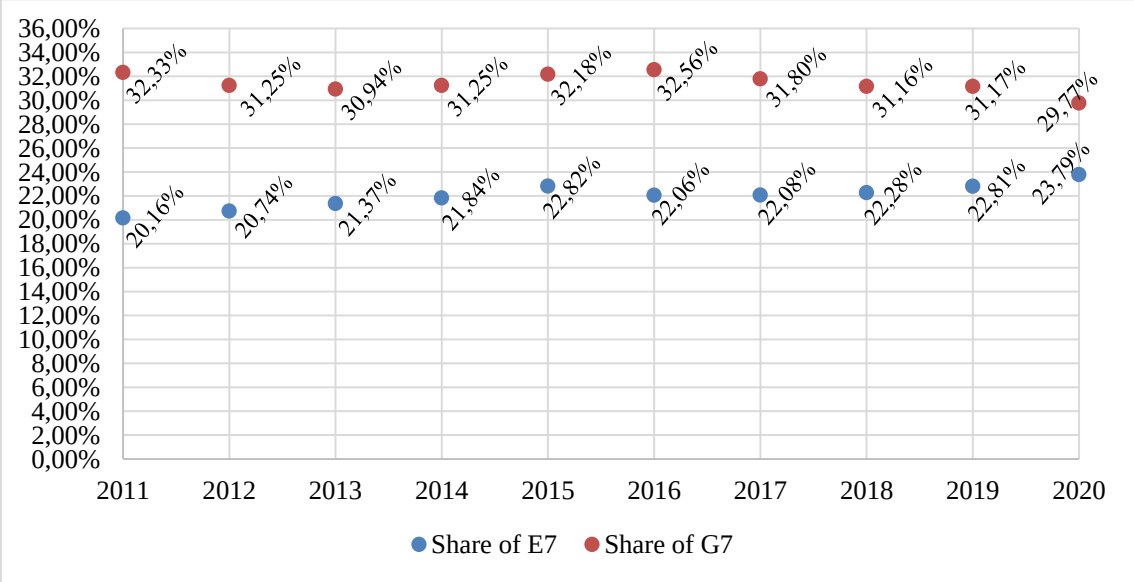
The Revealed Comparative Advantages Index (RCA), founded by Liesner (1958), provides the basis for these indices. Bela Balassa (1965) developed the index that Liesner found and brought the index that measures whether there is an advantage to reveal the comparative advantage between countries to the literature. Balassa's index is formulated as $RCA_{ij} = (X_{ij} / X_{it}) / (X_{nj} / X_{nt})$. In this formula, RCA_{ij} shows the declared comparative advantage coefficient of country i in the product group j, X_{ij} shows the exports of country i in the product group j, X_{it} shows the total exports of country i, X_{nj} shows the world's exports in the product group j, and X_{nt} shows the world's total exports. If the value is higher than 0.50, it means that the country has a comparative advantage in the relevant product group. If it is less than -0.50, the country has a comparative disadvantage in the related product group. When the index takes a value between 0.50 and -0.50, there is neither advantage nor a disadvantage. Balassa later developed different versions of this index and brought it to the literature (Kalaycı, 2017, p. 141).

Thomas L. Vollrath (1991) developed Balassa's index because imports were not sufficiently included in Balassa's indices and double counting occurred. He suggested that three different measurements should be made to measure the international competitiveness of

countries. These are the Relative Trade Advantage Index (RTA), the Relative Export Advantage Index (RXA), and the Revealed Competitiveness Index (RC). These metrics also refer to the Relative Import Advantage Index (RMA). The Relative Trade Advantage Index (RTA) represents the difference between the Relative Export Advantage Index (RXA) and the Relative Import Advantage Index (RMA) (Sarıçoban ve Kösekahyaoğlu, 2017, p. 428).

The Comparative Export Performance Index (CEP), which was found by Balassa and developed by Donges et al. (1982), is also used to measure a country's export performance against other competing countries on the basis of a product or product group. Donges et al. (1982, p. 83) stated that interventions with tariffs and non-tariff barriers on imports would cause errors in calculating the index, and incentive policies on exports will not affect it much. For this reason, they suggested that the competitiveness of countries should be estimated according to their relative export shares by subtracting the imports from the RCA index. The CEP index provides the opportunity to compare the competitiveness of two countries in a particular product group. Indices measuring competitiveness have been used in many studies. It has been observed that the Comparative Export Performance (CEP) Index has been used in very few studies. The CEP index reveals the export competitiveness of the countries compared to each other.

Figure 1. Share of E7 and G7 countries in world export



Source: Compiled by author

This study contributed to the current investigations by revealing the comparative advantage of Türkiye among E7 countries within the framework of the Comparative Export Performance Index, which is used to measure the international competitiveness of nations. By looking at the previous studies, it is seen that there is no focus on E7 countries. E7 (Emerging Seven) economically developing countries, including China, Russia, India, Brazil, Türkiye, Indonesia, and Mexico. E7 countries are countries that do not have much research on them and are waiting to be discovered. They are among the top 30 exporting countries in the world. In the report published by the international consulting company PricewaterhouseCooper (PwC), it is underlined that these countries will double the economic size of the G7 countries, which are called industrialized countries, in 2050 (PwC, 2017, p. 5). These countries comprised more than 25% of world production and more than 50% of growth in world production in the period 2010-2015 (Huidrom et al., 2020, p. 48). Furthermore, Jakovljevic et al. (2020) stated that about half of the world economic growth belongs to E7 countries and only a quarter of it belongs to G7 countries until 2017. Figure 1 shows the proportion of E7 and G7 countries in world export between 2011-2020. In this period, E7 countries have increased their share by 3,63% and G7

countries have decreased their share by 2,55%. While the difference between two groups was 12,16% in 2011, it decreased to 5.98% in 2020.

It is stated in the literature that E7 countries will have a strong position in the world economy by 2050 (Su et al., 2021). Therefore, in order for Türkiye to have a strong structure in this position and dominate the world, it should give importance to specialization and competition in export. It can realize specialization by increasing the export figures within the framework of particular chapters. In order to identify the chapters, this study can be considered as a road map.

The study was carried out according to the 2011-2020 period. The 2008 financial crisis affected all world countries and its effects continued in 2010. Although there was a rapid recovery in both economic growth and trade volume in 2010, monetary and fiscal policies had an impact on this situation (Kalaycı, 2012, p. 170-171). For this reason, the period of 2011-2020 was preferred in the study in terms of being a crisis-over period. It was thought that this period could allow evaluation in the context of a comparative advantage in the near future.

This study consists of four parts. In the first section after the introduction, a literature review about Comparative Export Performance (CEP) Index is given. Export competitiveness is analyzed using CEP index, after giving information about the data sources and methodology of the study. In the conclusion part of the study, there are results and suggestions for Türkiye to sustain its competitiveness in terms of selected chapters in E7.

1. Literature Review

Bobirca and Miclaus (2007) analyzed the competitiveness of Romania and Bulgaria in service sector trade against the EU-25 and other world countries as of 2003-2005. According to the CEP index values they calculated, it has been observed that Romania has a comparative advantage in the transportation and travel sectors against the EU-25 countries and the transportation sector against the other world countries. It has been found that Bulgaria is increasing its competitiveness in the transport and travel sector against EU-25 countries. It has been determined to have a better export performance than other countries.

Suntharalingam et al. (2011) used the Revealed Comparative Advantage and Comparative Export Performance indices to determine the competitiveness of Malaysia against other exporting countries in the fruit sector in their study. According to the CEP index, Malaysia has a strong export performance against Singapore and Hong Kong in watermelon and papaya export, a moderate export performance against Singapore in banana export, and a weak performance against Singapore in pineapple export.

Bhattacharyya (2012) aimed to measure India's competitive advantage against Southeast Asian countries in vegetable, fruit, and flower trade to Asian, EU, and North American markets within the Revealed Comparative Advantage and Comparative Export Performance indices. According to the CEP index, while India had a higher export performance against only Indonesia in flower exports in 2005, China and Thailand also had higher exports than India. In 2009, India had a higher export performance than Indonesia and Malaysia. Between 2005 and 2009, China had a comparative advantage over India in the sectors subject to research. In 2009, India ultimately gained competitiveness against Malaysia and Indonesia in exporting the industries that are the research subject.

Erkan and Sarıçoban (2014) tried to measure and compare Türkiye's competitiveness against EU+13 countries (Bulgaria, Romania, Hungary, Czech Republic, Slovenia, Cyprus, Malta, Lithuania, Latvia, Poland, Slovakia, Estonia, and Croatia) in research-based goods. Between 1993 and 2012, six different indices were calculated from the SITC Technology Classification. According to the CEP index they have calculated, it has been determined that Türkiye has a comparative disadvantage to EU+13 countries in hard-to-imitate research-based

goods and has a comparative advantage against Estonia, Cyprus, and Latvia in easily imitated research-based goods.

Abdikoğlu and Unakıtan (2016) used the Revealed Comparative Advantage and Comparative Export Performance indices in their study to determine Türkiye's competitiveness against other hazelnut-exporting countries. According to the CEP index, Türkiye has a strong comparative advantage in hazelnut export against Germany and Italy between 2004 and 2013. While it has a relative disadvantage against Georgia, the advantage situation against Azerbaijan has varied.

In their research, Alidou et al. (2017) used the Comparative Export Performance Index to reveal the competitiveness of Benin's cotton and cashew export against neighboring countries Burkina Faso and Nigeria between 1964 and 2014. Accordingly, Benin has a comparative disadvantage against Burkina Faso in cotton production and export and a comparative advantage against Nigeria in cashew production and export.

Ceylan et al. (2018) used the Revealed Comparative Advantage (RCA), Revealed Competitiveness (RC), and Comparative Export Performance indices to measure and compare Türkiye's competitiveness against other competitor countries in grape and cherry export. According to the availability of country information, export figures between 1996 and 2017 were used. According to the results of the CEP index, Türkiye lost its comparative advantage over time in grape export against other countries except for Spain and France. In the export of cherries, it has been observed that it has more comparative advantage against other countries (Spain, Italy, Poland, France, and the Netherlands) except Greece and Poland.

Ayyaz et al. (2019) analyzed Pakistan's competitiveness in mango export by comparing it with other leading mango exporting countries based on trade data between 2010-2016. They used the Revealed Comparative Advantage, Revealed Symmetric Comparative Advantage and Comparative Export Performance indices in this comparison. According to the CEP index, Pakistan has a comparative advantage against other mango-exporting countries such as India, China, Thailand, Indonesia, Brazil, Bangladesh, Nigeria, and Egypt, except Mexico and the Philippines.

Khasanah et al. (2019), in their study, compared Indonesia's performance and competitive advantage in crab export with China, Vietnam, Korea, and the Philippines, which are the other top crab exporting countries. Trade Balance, Normalized Revealed Comparative Advantages, and Comparative Export Performance indices were used. Indonesia has a competitive advantage against other countries in processed crab products. Frozen crab products have a competitive advantage against the Philippines and Korea, but there is no advantage against China and Vietnam.

Varshini and Manonmani (2019) used the Comparative Export Performance, Market Share, and Net Foreign Flow Rate indices to measure India's international competitiveness in the pharmaceutical industry during 2000-2014. Accordingly, they found that India had a weak performance in pharmaceutical-related exports in this period.

2. Research Methodology

In this study, the competitiveness of Türkiye against other E7 countries within the framework of some determined chapters is measured using the Comparative Export Performance (CEP) Index. As a chapter, the first five chapters in which Türkiye has had the highest increase in export in the last ten years have been selected, and the chapters classified with the help of HS (Harmonized System) codes have been considered. Comparative Export Performance (CEP) indexes were calculated using the data from the years 2011-2020 for comparing these chapters. The sectoral and total export figures of the countries were taken from the Trademap database of the International Trade Center (ITC). The absence of a study that

measures the competitiveness of Türkiye among the E7 countries, which is seen as the power of the future in the literature, reveals the importance of this study.

The Comparative Export Performance (CEP) Index is formulated (Şahin, 2016, p. 711):

$CEP_{irj} = (X_{ij} / X_{rj}) / (\sum X_{it} / \sum X_{rt})$

CEP_{irj} represents the coefficient of the comparative export performance index of country i against the other competitor countries in product group j, X_{ij} denotes the export of country i in j product group, X_{rj} export of another competitor country in j product group, X_{it} shows the total export of country i, X_{rt} indicates total export of another competitor country. If the CEP_{irj} coefficient is greater than 1, the country has an advantage in exporting that product group, while if it is less than 1, it has a disadvantage.

On the other hand, Hinloopen and Marrewijk (2001, s. 18) divided the index into 4 classes for easier interpretation:

Class a: 0<Index value≤1, no comparative advantage

Class b: 1<Index value≤2, weak comparative advantage

Class c: 2<Index value≤4, normal degree to comparative advantage

Class d: 4<Index value, strong comparative advantage

The years between 2011-2020 were considered in the data selection, and the first five chapters, in which Türkiye had the highest increase in export in the previous ten years, were compared. These chapters are 97-Works of art, collector's pieces, and antiques, 81-Other base metals employed in metallurgy and articles thereof, 96-Miscellaneous manufactured articles (pens and brushes etc.), 75-Nickel and articles thereof and 23-Residues and waste from the food industries, prepared animal fodder. Assessments were made over Türkiye's Comparative Export Performance (CEP) indices calculated in these five chapters against China, India, Russia, Brazil, Indonesia, and Mexico.

3. Discussion and Analysis

In this section, first of all, the export figures of E7 countries between the years 2011-2020 are given. Then, Türkiye's competitiveness within the E7 countries was evaluated within the framework of Comparative Export Performance based on five chapters that provided the highest numerical increase in Türkiye's export as of these years. The results are given in the tables below.

Table 1. The annual variation in total exports of E7 countries (2011-2020) (US Dollar thousand)

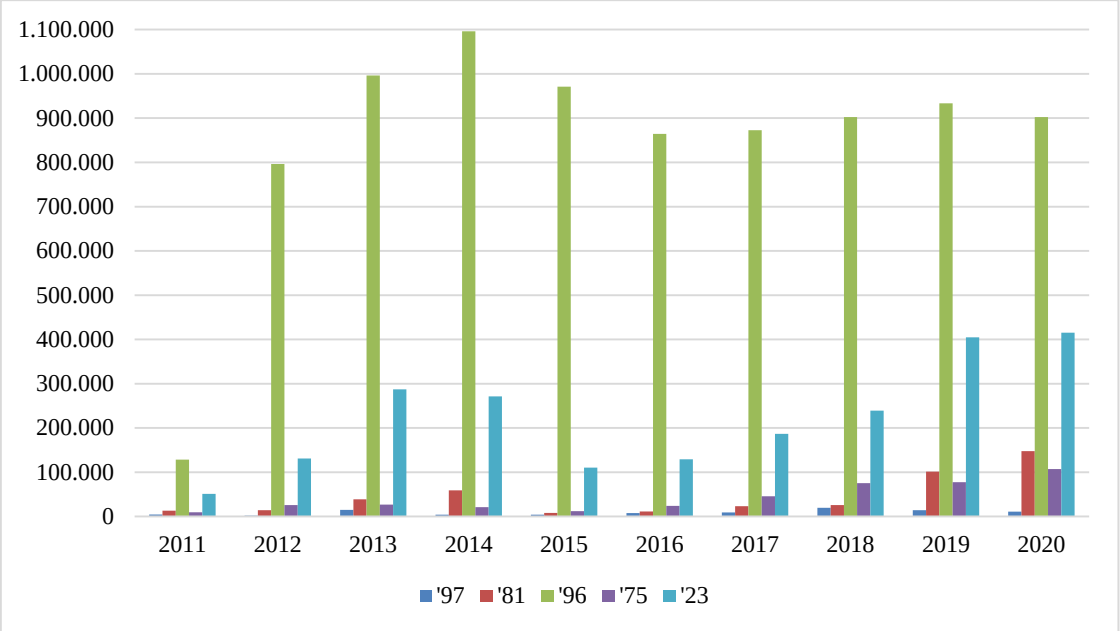
	TÜRKİYE	CHINA	INDIA	RUSSIA	BRAZIL	INDONESIA	MEXICO
2011	-	-	-	-	-	-	-
2012	13,01%	7,92%	-3,95%	1,50%	-5,41%	-6,62%	6,12%
2013	5,92%	7,82%	16,25%	0,48%	-3,09%	-3,94%	2,49%
2014	3,11%	6,03%	-5,66%	-5,58%	-5,00%	-3,57%	4,46%
2015	-13,61%	-2,58%	-16,90%	-33,01%	-13,48%	-14,63%	-4,06%
2016	-0,86%	-7,14%	-1,11%	-14,40%	-3,09%	-3,85%	-1,81%
2017	10,09%	7,21%	13,37%	25,08%	17,55%	16,83%	9,51%
2018	6,96%	9,79%	9,51%	25,84%	10,17%	6,76%	10,12%
2019	7,71%	0,17%	-0,23%	-5,91%	-6,62%	-6,95%	2,17%
2020	-6,20%	3,68%	-14,78%	-20,26%	-6,62%	-2,61%	-9,24%
Mean	2,90%	3,66%	-0,39%	-2,92%	-1,73%	-2,06%	2,20%

Source: Author's calculations

Table 1 demonstrates the export figures of E7 countries between 2011 and 2020. As of the base period, the export figures of the countries showed a fluctuating graphic. By considering the means, it has been calculated that the export figures of Türkiye, China, and Mexico have

increased in the ten years. According to 10-year average, Türkiye's export increased by 2.9%, China's by 3.6%, and Mexico's by 2.2%. In addition, export decreased by 0.39% in India, 2.92% in Russia, 1.73% in Brazil, and 2.06% in Indonesia based on 10-year average.

Figure 2. Export figures of Türkiye's most exported five chapters between 2011-2020 (US Dollar thousand)



Source: Compiled by author

Figure 2 shows the first five chapters in which Türkiye's export experienced the highest increase between 2011 and 2020. The first five chapters were considered in this study, and analyzes were made according to them. In this period these chapters demonstrated a fluctuating increase. Chapter 96 raised substantially in 2012, and then the increase rate continued at smaller levels.

Table 2. The annual variation of Türkiye's most exported five chapters between 2011-2020

	'97	'81	'96	'75	'23
2011	-	-	-	-	-
2012	-55,69%	6,03%	520,07%	167,09%	157,16%
2013	642,25%	174,09%	25,08%	3,54%	119,06%
2014	-73,51%	52,05%	10,05%	-20,55%	-5,51%
2015	3,19%	-86,22%	-11,44%	-43,53%	-59,25%
2016	86,48%	41,23%	-10,97%	99,13%	16,82%
2017	19,69%	102,78%	0,95%	91,40%	44,61%
2018	113,19%	11,54%	3,42%	64,60%	27,92%
2019	-28,22%	291,01%	3,44%	3,11%	69,39%
2020	-22,48%	45,48%	-3,35%	38,21%	2,62%
Mean	76,10%	70,89%	59,69%	44,78%	41,42%

Source: Author's calculations

Table 2 shows the annual increase rates and mean of Türkiye's the first five chapters. These chapters in which Türkiye has achieved the highest rate of increase in export in the last ten years are '97-Works of art, collectors' pieces and antiques, '81-Other base metals; cermets; articles thereof, '96-Miscellaneous manufactured articles, '75-Nickel and articles thereof and '23-Residues and waste from the food industries; prepared animal fodder. Annual increases calculated after 2011. In the last ten years, Türkiye has recorded an average increase of 76.10%

in chapter 97, 70.89% in chapter 81, 59.69% in chapter 96, 44.78% in chapter 75, and 41.42% in chapter 23.

Table 3. Proportions of five chapters in total exports of countries

HS CODE	Years	TÜRKİYE	CHINA	INDIA	RUSSIA	BRAZIL	INDONESIA	MEXICO
97	2011	0,003%	0,020%	0,092%	0,0005%	0,022%	0,006%	0,002%
	2020	0,006%	0,027%	0,019%	0,002%	0,029%	0,004%	0,001%
	Increase Rate	89,29%	35,88%	-78,78%	241,62%	29,28%	-37,5%	-54,08%
81	2011	0,010%	0,196%	0,024%	0,157%	0,066%	0,002%	0,021%
	2020	0,087%	0,106%	0,016%	0,210%	0,051%	0,005%	0,025%
	Increase Rate	779,80%	-46,09%	-33,55%	34,36%	-22,81%	112,95%	19,46%
96	2011	0,095%	0,535%	0,124%	0,002%	0,068%	0,132%	0,193%
	2020	0,532%	0,713%	0,187%	0,098%	0,086%	0,222%	0,272%
	Increase Rate	458,51%	33,34%	50,63%	5811,09%	25,99%	68,17%	40,85%
75	2011	0,007%	0,055%	0,013%	0,907%	0,237%	0,599%	0,010%
	2020	0,063%	0,021%	0,019%	0,897%	0,028%	0,495%	0,040%
	Increase Rate	781,97%	-61,90%	44,16%	-1,10%	-88,34%	-17,29%	303,55%
23	2011	0,038%	0,108%	0,914%	0,080%	2,357%	0,247%	0,048%
	2020	0,245%	0,113%	0,535%	0,424%	3,084%	0,602%	0,072%
	Increase Rate	547,95%	3,98%	-41,42%	432,54%	30,84%	143,46%	51,43%

Source: Author's calculations

Table 3 shows ratios of five chapters in total exports of countries in 2011 and 2020. Additionally, increase rates for proportions of chapters have been calculated according to 2020. It is observed that the share of these five chapters in Türkiye's exports increased usually at a high rate in this process. It more clearly reveals the importance of increased competitiveness in export for Türkiye. Furthermore, Russia has raised its proportion of chapter 96, 23 and 97 at a high rate in this process. Mexico increased share of chapter 75 in total exports by a high rate of 303,55%.

Table 4. The comparative export performance (CEP) indexes for 97- works of art, collector's pieces, and antiques

	CHINA	INDIA	RUSSIA	BRAZIL	INDONESIA	MEXICO
2011	0,17	0,04	7,47	0,15	0,54	1,51
2012	0,05	0,02	2,03	0,07	0,14	0,56
2013	0,20	0,11	10,59	0,18	1,07	2,70
2014	0,09	0,03	2,27	0,07	0,44	1,26
2015	0,11	0,05	2,22	0,05	0,57	1,05
2016	0,27	0,04	1,94	0,05	1,10	4,20
2017	0,95	0,18	3,26	0,07	1,04	3,81
2018	1,48	0,27	5,70	0,09	3,74	13,43
2019	0,26	0,19	5,40	0,04	2,62	9,79
2020	0,24	0,33	4,14	0,22	1,64	6,21
Mean	0,38	0,13	4,50	0,10	1,29	4,45

Source: Author's calculations

Due to the CEP values based on chapter 97 in Table 4, it is seen that Türkiye has solid competitive power and a good export performance against Russia and Mexico. It is observed that Türkiye has a weak export performance against Indonesia and has started to get a competitive advantage, especially in 2016. There is no competitive advantage against China, India, and Brazil.

Table 5. The comparative export performance (CEP) indexes for 81- other base metals employed in metallurgy and articles thereof

	CHINA	INDIA	RUSSIA	BRAZIL	INDONESIA	MEXICO
2011	0,05	0,41	0,06	0,15	4,01	0,47
2012	0,06	0,35	0,05	0,10	1,07	0,46
2013	0,17	1,10	0,16	0,25	3,82	0,87
2014	0,24	1,81	0,22	0,38	4,53	0,60
2015	0,05	0,33	0,03	0,07	0,54	0,16
2016	0,07	0,53	0,03	0,10	1,28	0,45
2017	0,10	0,88	0,06	0,21	2,08	0,60
2018	0,10	0,79	0,06	0,22	1,88	0,61
2019	0,40	3,65	0,24	0,81	7,95	2,06
2020	0,82	5,47	0,41	1,70	16,58	3,48
Mean	0,20	1,53	0,13	0,40	4,37	0,98

Source: Author's calculations

According to the CEP values of chapter 81 in Table 5, it is seen that Türkiye has solid competitive power and a good export performance against Indonesia among the E7 countries. Türkiye has a weak export performance against India, and its competitive advantage has increased rapidly, especially in the last two years. Export performance against Mexico increased in 2019 and 2020. Türkiye'nin There is no competitive advantage against China, Russia, and Brazil.

Table 6. The comparative export performance (CEP) indexes for 96- miscellaneous manufactured articles (pens and brushes etc.)

	CHINA	INDIA	RUSSIA	BRAZIL	INDONESIA	MEXICO
2011	0,18	0,77	57,23	1,40	0,72	0,49
2012	0,88	3,47	19,35	5,24	3,21	2,18
2013	1,04	4,06	16,90	6,56	3,30	2,03
2014	1,08	4,03	12,75	6,52	3,10	2,09
2015	1,05	3,30	9,97	5,14	2,87	1,98
2016	0,85	2,82	7,37	4,89	2,37	1,69
2017	0,81	3,03	4,68	6,28	2,54	1,65
2018	0,81	2,88	8,13	7,06	2,40	1,76
2019	0,72	2,67	7,11	6,44	2,14	1,83
2020	0,75	2,85	5,41	6,19	2,40	1,96
Mean	0,82	2,99	14,89	5,57	2,51	1,76

Source: Author's calculations

Based on chapter 96 in Table 6, the CEP values show that Türkiye has a higher export performance than other countries, excluding China. While the export performance was more robust against Russia and Brazil, it was moderate against India and Indonesia and weak against Mexico. Özbaş and Yıldırım (2022) determined that chapter 96 was one of the chapters in the top ten products increase competitiveness in the period of 2001-2019.

Table 7. The comparative export performance (CEP) indexes for 75- nickel and articles thereof

	CHINA	INDIA	RUSSIA	BRAZIL	INDONESIA	MEXICO
2011	0,13	0,55	0,01	0,03	0,01	0,72
2012	0,39	0,16	0,02	0,09	0,03	2,52
2013	0,37	0,11	0,02	0,09	0,03	1,75
2014	0,14	0,05	0,02	0,10	0,02	0,79
2015	0,25	0,03	0,01	0,06	0,02	0,44
2016	1,08	0,32	0,02	0,33	0,04	0,79
2017	1,58	2,09	0,05	1,15	0,08	1,37
2018	2,46	2,42	0,08	2,06	0,10	1,09
2019	1,17	1,48	0,06	1,62	0,09	0,89
2020	2,99	3,33	0,07	2,29	0,13	1,57
Mean	1,05	1,05	0,04	0,78	0,05	1,19

Source: Author's calculations

Based on chapter 75 in Table 7, the CEP values show that Türkiye has weak competitiveness against China, India, and Mexico among the E7 countries. Even though the export performance against Brazil increased in 2017, the competitiveness of Brazil is better according to the last ten years. Additionally, there is no competitive advantage against Russia and Indonesia.

Table 8. The comparative export performance (CEP) indexes for 23- residues and waste from the food industries, prepared animal fodder

	CHINA	INDIA	RUSSIA	BRAZIL	INDONESIA	MEXICO
2011	0,35	0,04	0,47	0,02	0,15	0,79
2012	0,60	0,09	0,55	0,03	0,26	1,40
2013	1,44	0,16	0,90	0,06	0,44	2,66
2014	1,17	0,25	0,66	0,05	0,37	3,18
2015	0,66	0,19	0,27	0,02	0,20	1,65
2016	0,69	0,31	0,27	0,03	0,24	1,90
2017	1,02	0,24	0,49	0,05	0,33	1,95
2018	1,14	0,27	0,59	0,05	0,32	1,98
2019	1,99	0,50	0,75	0,08	0,47	3,29
2020	2,17	0,46	0,58	0,08	0,41	3,38
Mean	1,12	0,25	0,55	0,05	0,32	2,22

Source: Author's calculations

Looking at the CEP values based on chapter 23 in Table 8, although the export performance of Türkiye against China and Mexico has differed, it has increased in the ten years. On the other hand, there is no competitive advantage against India, Russia, Brazil, and Indonesia. By using RCA and TBI indices, Bashimov (2017) found that Türkiye had comparative disadvantage for this chapter and was net importer in the period of 2002-2015. Furthermore, Keskingöz (2018) discovered that Türkiye had comparative disadvantage for this chapter and was net importer in the period of 2001-2017 by measuring with RCA, RSCA and TBI.

Conclusion and Recommendations

Especially in the 2000s, countries with a high development rate started to draw attention. These countries were China, Brazil, India and Russia, which are referred to as the BRICS countries. Then, subsequently Mexico, Indonesia and Türkiye joined these countries. Firstly they were called BRICS+3. Afterwards, In 2006, they were expressed in the literature as Emerging Seven (E7) countries by famous economists John Crofton Hawksworth and Gordon Cookson. Their economic growth rates especially are relatively higher among the developing countries in recent years.

This study contributes to export competitiveness research in the literature in several dimensions. First, it has enabled to determine the chapters that Türkiye has given importance to export in last decade. Second, by using total export and some selected chapters' export figures, it gives the opportunity to specify Türkiye's export performance against other E7 countries. Third, it provides guidance on whether it is necessary to specialize and increase competitiveness in these chapters.

In this study, Türkiye's competitiveness within the E7 countries is revealed by calculating the Comparative Export Performance indices. As a sector, the first five chapters, which demonstrated the highest increase in Türkiye's export in the last ten years, were used as of 2011-2020. These chapters are 97-Works of art, collector's pieces, and antiques, 81-Other base metals employed in metallurgy and articles thereof, 96-Miscellaneous manufactured articles (pens and brushes etc.), 75-Nickel and articles thereof and 23-Residues and waste from the food industries, prepared animal fodder. Assessments were made over Türkiye's Comparative Export Performance (CEP) indices calculated in these five chapters against China,

India, Russia, Brazil, Indonesia, and Mexico. After 2008 financial crisis affected all the world, countries could eliminate its effects at the end of 2010. For this reason, in this study the period of 2011-2020 was preferred. It was thought that this period could be appropriate in the context of a comparative advantage for the near future.

According to the calculated CEP indices, it has been determined that Türkiye has strong export performance against Russia and Mexico in chapter 97, Indonesia in chapter 81, and Russia and Brazil in chapter 96. Türkiye needs to maintain its strong export competitiveness against the countries mentioned in these chapters. Türkiye should strengthen its weak export performance against Indonesia in chapter 97, its weak export performance against India in chapter 81, its moderate export performance against India and Indonesia, and its weak export performance against Mexico in chapter 96. Besides, Türkiye should try to increase its export performance against China, India, and Mexico in chapter 75 and its export performance against China and Mexico in chapter 23. Similar to this study, Yalçın and Bakan (2021) also found that Türkiye has a weak comparative advantage in Chapter 96 by using RCA.

The CEP index reveals the export competitiveness of the countries compared to each other. Other comparative advantage indexes, especially Balassa's RCA index, can be used to make comparisons with all the world countries. Thus, a different evaluation can be made. In this study, the five chapters in which Türkiye's exports increased the most during the period of 2011-2020 were evaluated. Considering the share of these chapters in world export, Türkiye's share varies in the range of 0,1-1,7. But, according to competitiveness, other E7 countries has fallen back in recent years. Tuerxun (2017) found that China decreased its comparative advantage for chapters 81, 96 and 97 in the period of 2006-2015. Chapters 23 and 75 had negative Revealed Comparative Advantage indices during this period. On the other hand, in future studies the chapters that Türkiye has a high rate of world export share may be thought. Türkiye can be compared with other competitor countries or country groups in this context. Politicians evaluate whether the chapters are value-added products and may direct awareness studies to increase their exports and incentives. Türkiye should invest more in technology, innovation and branding.

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ETİK ve BİLİMSEL İLKELER SORUMLULUK BEYANI

Bu çalışmanın tüm hazırlanma süreçlerinde etik kurallara ve bilimsel atıf gösterme ilkelerine riayet edildiğini yazar(lar) beyan eder. Aksi bir durumun tespiti halinde Afyon Kocatepe Üniversitesi Sosyal Bilimler Dergisi'nin hiçbir sorumluluğu olmayıp, tüm sorumluluk makale yazarlarına aittir.