

**ISTANBUL COMMERCE UNIVERSITY
GRADUATE SCHOOL OF FOREIGN TRADE
COMMERCIAL DIPLOMACY M.A. PROGRAM**

**FINANCIAL ANALYSIS OF THE MOST EXPORTED
GOODS BETWEEN TURKEY AND BRICS COUNTRIES**

M.A. Thesis

Yemilhan KAROĞLU

Istanbul, 2020

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Advisor: Asst. Prof. Yunus ÖZCAN

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Istanbul, 2020



T.C. İSTANBUL TİCARET
ÜNİVERSİTESİ

T.C.
İSTANBUL TİCARET ÜNİVERSİTESİ
DIŞ TİCARET ENSTİTÜSÜ

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ETİK KURALLARA UYGUNLUK

Hazırlamış olduğum tez özgün bir çalışma olup YÖK ve Ticaret üniversitesi Lisansüstü Yönetmeliklerine uygun olarak hazırlanmıştır. Ayrıca, bu çalışmayı yaparken bilimsel etik kurallarına tamamiyle uyduğumu; yararlandığım tüm kaynakları gösterdiğimi ve hiçbir kaynaktan yaptığım ayrıntılı alıntı olmadığını beyan ederim. Bu tezin ihtiva ettiği tüm hususlar şahsi görüşüm olup İstanbul Ticaret Üniversitesinin resmi görüşünü yansıtmamaktadır.

Yemilhan Karođlu

ÖZET

Ticaret, binlerce yıldır uygarlığın parçası olan bir işbirliği ve iletişim aracı. 20. yüzyılın sonlarına kadar klasik konvansiyonel metotlarla ilerlemiş olan uluslararası ticaretin arka planında ise her zaman rekabet kavramı da var olmuş ve küresel ticarete şekil vermiştir. Sürekli gelişen ve dönüşen ticaret olgusunun şekli dönem dönem değiştiyse de, arka planındaki çabası ve mücadelesi hiç değişmedi. Yüzyıllar önce gölde balık tutan insanın meyve toplayan insanla ürünlerini değiş-tokuş yapmasındaki amaç ne ise Türkiye'nin bugün 244 ülke ve bölgeye ihracat gerçekleştirmesine ilham kaynağı olanla aynı şey; "Değer Yaratmak" ve "Rekabet avantajını elde etmek". Bu yüksek lisans tezinde literatürde gelişmekte olan ülkeler grubunda bulunan Brezilya, Rusya, Hindistan, Çin ve Güney Afrika ülkelerinin; Türkiye ile rekabet avantajı yönünden "Karşılaştırmalı Üstünlükler Teorisi" kullanılarak değerlendirilmiştir. Türkiye'nin 2014-2019 yılları arasındaki toplam ihracatına en fazla katkıda bulunan 2'li GTİP kodları tespit edilmiş ve bu GTİP kodları üzerinden BRICS ülkeleri ile söz konusu yıllardaki rekabet durumu ortaya konulmuştur. Geride bıraktığımız son 5 yıllık periyotta ortaya çıkan genel rekabet eğilimi, özellikle belli başlı ürünlerde gelecek yılların tahmininin yapılmasını kolaylaştırmakta ve ülkelerin mevcut dönemdeki rekabet stratejilerini ortaya koymaktadır. Türkiye İhracatçılar Meclisi verileriyle, küresel ithalattaki 2030 perspektifi ortalamalarıyla, ülkelerin çalışmanın incelediği yıllar içerisinde mevcut 2'li HS kod karşılaştırması yapılarak 2030 yolunda mevcut rekabet güçlerini ortaya konmuştur.

Anahtar Kelimeler: Uluslararası Ticaret, Açıklanmış Karşılaştırmalı Üstünlük, BRICS Ülkeleri

ABSTRACT

Trade is a collaboration and communication instrument that has been a part of civilization for many long years. There has been always concept of competition existed in the background of international trade, which has been progressed with classical conventional methods, until the end of the 20th century and this existence has shaped the global trade. Although the form of the constantly developing and transforming trade phenomenon has changed from time to time, the effort and struggle in its background has not changed at all. The purpose of the men fishing in the lake, picking the fruits and exchanging their products with each other centuries ago is the same with the purpose today inspiring us, which is realizing exports to 244 countries and zones (Assembly, 2019) by Turkey today, i.e. “Creating Value” and “Gaining Competitive Advantage”. In this master’s thesis, Brazil, Russia, India, China and South African countries which are classified under the developing countries group in the literature and Turkey have been evaluated by using the “Comparative Advantage Theory”, in terms of their competitive advantage. The binary CTSP codes have been identified of which were contributed most into the total exports of Turkey, within the years between 2014-2019 and then, the competition situation within the said years was set forth over the CTSP codes, by comparing with the BRICS countries. The general competitive tendency that has emerged during the last 5-years of period makes it easier to predict the upcoming years, particularly in the certain products and sets forth of the competitive strategies of the countries in the current period. By using the data of the Turkish Exporters Assembly, the average of global imports perspective in year 2030 have been examined in this study and binary CTSP code comparisons have been made for the examined years and the current competition powers of these countries have been demonstrated and set forth towards the year 2030.

Key Words: International Trade, Revealed Comparative Advantage, BRICS Countries

TEŞEKKÜR

Türkiye, tarih boyunca tüm mazlum coğrafyalara umut olmuş bir ülkedir. Küresel ticaretin köklü bir değişim süreci içerisinde olduğu, savaşların yöntemlerinin değiştiği bir yüzyılda, kalkınmanın anahtarının ticari özgürlük olduğuna inanıyorum.

Akademik hayat, başlı başına uzun ve zorlu bir yol. Fakat bu uzun yol, yola beraber çıktığın insanlar sayesinde keyifli hale gelebiliyor. Tüm tez çalışmam boyunca, desteklerini esirgemeyen tez danışmanlarım Sayın Dr. Öğr. Üyesi Yunus ÖZCAN Hocama ve Sayın Dr. Öğr. Üyesi Gencay KARAKAYA Hocama teşekkürlerimi arz ederim. Pandemi sürecinde dahi verdikleri destekler, akademiye olan ilgimi perçinledi. Kıymetli değerlendirmeleri için jüri üyelerim Sayın Doç. Dr. Raif Cergibozan ve Sayın Dr. Öğr. Üyesi Cihat Köksal'a teşekkürü borç bilirim.

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1. INTRODUCTION

Trade is a collaboration and communication instrument that has been a part of civilization for many long years. There has been always concept of competition existed in the background of international trade, which has been progressed with classical conventional methods, until the end of the 20th century and this existence has shaped the global trade. Although the form of the constantly developing and transforming trade phenomenon has changed from time to time, the effort and struggle in its background has not changed at all. The purpose of the men fishing in the lake, picking the fruits and exchanging their products with each other centuries ago is the same with the purpose today inspiring us, which is realizing exports to 239 countries and regions by Turkey, in year 2019 (Export Assembly, 2019) i.e. “Creating Value” and “Gaining Competitive Advantage”. For this purpose, countries make investments in various fields in order to gain competitive advantage in the products they have determined, and in some areas, they prefer imports because they are in a more advantageous position while making imports. Particularly, with the concept of the speed brought by the globalization and together with the gradual improvement of logistics processes, the speed of change in demanded products has gained a new dimension.

If we give an example to this situation, when we compare the sextet coded CTSP (Customs Tariff Statistics Position) product groups (‘610910, ‘852812 , ‘721420 , ‘611020 , ‘620462 , ‘080222 , ‘620342 , ‘711319 , ‘870322 , ‘870332) which were mainly exported by Turkey in year 2001 with the sextet coded CTSP product groups (‘711319, ‘870421, ‘271019, ‘870340, ‘999999, ‘721420, ‘870321, ‘870322, ‘271012, ‘570242) which were mainly exported by Turkey in year 2019, we observe that numbers of 7 of these sextet coded CTSP product groups have been changed.

This study is quite important for the comparative analysis of the binary CTSP codes, which have been exported the most during the last 5 years in the world, to address the future and in order to focus of Turkish export products in terms of competition.

In addition to the above, in this study, a comparison has been made between the Turkey and other developing countries, such as Brazil, Russia, India, China and South Africa which their competitiveness in exports have been developing as Turkey and it was aimed to reveal the competition power of Turkey in these products.

2. RELATED LITERATURE ON THE REVEALED COMPERATIVE ADVANTAGE THEORY

The first theory of reciprocal trade, the Theory of Absolute Advantages, was put forward by Adam Smith in his work called "*The Wealth of Nations*" (1776). Smith stated that the trade between the two countries is proportional to the advantage that the countries own. According to Adam Smith, mutual cooperation is important for three different reasons; the first one is due to the increased competency of each of the workers in the works they done, the second one is to save the effort that is spent for moving from one job to another, and lastly due to the fact that, many machines have been invented that further minimize the labour efforts of the workers. (Smith, 1776) Accordingly, the main purpose of putting forward of the cooperation is to reduce mutual costs and to raise the level of efficiency to the higher levels. According to the labour theory of value, the countries that are subject to mutual trade cannot present the same situation in terms of productivity, due to their limited resources, and one of the countries focuses on the product produced with high efficiency, while the other country withdraws from the production of this product, due to the lack of its efficiency. At this point, the partner country is expected to import products that are inefficient and to focus on and export products that can be productive in its own production axis. (Salvatore, 1990) The theory has given a new dimension to the issue in scientifically explaining the cause of international trade and paved the way for the emergence of different views in international trade. However, the theory cannot make sense of many reasons for the trade between the countries. (Seyidoğlu, 2013) The existence of existing gaps of this theory under the real world's circumstances has inspired various scientists to study the trade and explain the reasons of international trade. The fact that the theory of absolute advantages cannot answer some certain questions that are subject to international trade and cannot fully explain the reasons for conducting trade in some cases is also related to the situations that the theory accepts as permanent and unchangeable. According to the Classic School, which gained existence with Adam Smith, the cost (price) of a product is determined by the amount of labour/time that was used, in order to produce that product. In addition to this situation, according to this school, labour is homogeneous and capital is accepted as a labour in the tool profile of production.

Within the framework of a National economy having definite boundaries, the theory examines the reasons for the existence of trade, based on the limitations of one's own production resources, while questioning the reason for its existence.

The process of meeting the needs of people through the exchanging of goods among the people who were interested in different professions and undertaking different tasks in ancient times and the mutual benefit provided as a result of this exchanging help the scientists who try to explain the reasons of trade.

The mutual benefit created by the exchange between the people who gathered and hunted in the past continues also in the urban life of today. Hence, when a neighbourhood butcher exchanges his meat products with a product sold in a clothing store in a shopping center, and likewise the owner of the clothing store in the shopping center sees the costs of producing meat by himself and prefers and chooses to buy the meat from the neighbourhood butcher, both two parties gain cost advantage from the cost of the commercial transactions that arise thereof. Similarly, like a butcher or a store owner has limited production resources, the countries have also limited production resources. If the country in question chooses to import the products that are financially difficult to produce from the countries that have an advantage in that product, they will benefit from this mutual cooperation and both two countries would contribute into their own economies. When we examine this matter from this aspect, the international trade provides a mutual benefit by directing the production capacities and outputs of the country economies, by using the limited resources in an efficient manner. The Theory of Comparative Advantages was put forward by David Ricardo (1817), which is one of the oldest international trade theories. The theory focused specifically on why a country should specialize in the export of certain categories of goods and services and import them to others (Ricardo, 2020). According to the theory of comparative advantages, a country should export the goods that it can produce relatively cheaper (at a lower unit of labour cost) than its trading partners, and import what it can produce at a relatively expensive (higher unit of labour cost). In such a case, the gains to be obtained from the foreign trade would both maximize the welfare of the country and it would also lead to an increase in the world's economic welfare through the free trade (Sharma, 2007). With the Comparative Advantages Theory, it has been put forth that, although any country does not have an absolute advantage in a

product, the countries can trade among themselves and both countries can make profits in this trade.

During the following years, Béla Balassa (1965) developed an index that helps to determine the products in which national economies have comparative advantage, by introducing the concept of the “revealed comparative advantage” (RCA). Today, many institutions such as the World Bank still refer to the RCA index analysis in the studies that analyze the competitiveness of countries in the foreign trade, and publish the globally RCA calculation results on their websites. According to the “revealed comparative advantage (RCA)” index, if the share of the export of the relevant product in the total export of a given country in any year is higher than the world average (if the ratio of the same 16 products to the total world export is greater than the unit value), then the country in question has a comparative advantage (RCA) therein. If the ratio of the same product to its share in total world exports is lower than the unit value, then the country in question is in a disadvantageous position in the world market, for that product. (World Trade Organization, WTO), 2019). Chow (1990) Assessed the change in the comparative advantage of Japanese and Asian NICs (New Industrialized countries).

As Donges and Riedel (1977) have recently noted with respect to the export-import ratio measure, "the RCA indices can describe the trade patterns that have taken place, but they cannot tell whether these patterns are optimum ones." Since there are those demonstrated by optimum trading models real comparative advantage, meaning export-import The ratio measure of RCA should not give results corresponding to: Comparative advantage of relative prices before trade. Kunimoto (1977) provides a cornerstone to evaluate trade intensity indices. Indicates that they are equivalent to the real-expected trade rate. According to Yeats, possible distortions in trade patterns due to discriminatory trade barriers RTAs characteristic (Yeats, 1997). It uses the declared comparative advantage index, in connection with changes in the regional orientation of exports apparent inefficiencies in trade patterns for mercusor group of countries.

3. METHODOLOGY

China is the world's largest merchandise exporter according to the data of year 2019 (WTO, 2020) and it is a very important supplier country for the present and future of world's trade. China, which has a share of approximately 2.5 billion US Dollars in the world's exports alone in year 2019, has a share of 13.3 percent in the general world export table with this export figure. When we check the figures for other BRICS members which are classified under the developing countries class; Brazil, Russia, India, China and South Africa, which realized exports of approximately 3.56 billion US Dollars in year 2019 had a share of approximately 19% of the world's general export figure, within the same year. Also, which together represent about 42% of the population, 23% of GDP, 30% of the territory (BRICS, 2020). These countries are working hard in order to develop effective and visionary strategies for the sake of expanding their export markets.

Thus, starting from this point, when we examine the exports of Turkey for the products that it has a competitive advantage, in other words, that it has more supply power and when we examine the binary HS Codes for which Turkey has taken a larger place in the world's market, the competitive power of Turkey has been compared with the BRICS countries.

The main purpose of this study is to put forward of current statuses of both Turkey and the BRICS countries, within the framework of first 20 binary HS codes of products for which most of the export operations have been realized during the last 5 years in the world's trade. Within this scope, firstly, the most exported products in the world's trade between the years of 2014-2019 were determined, and then, using the Revealed Comparative Advantages Index, the competitive conditions of the countries in the said HS codes were set forth accordingly.

In the next chapter of this study, 20 binary HS codes and the identified competitive advantage/disadvantage conditions were analyzed and the results were concluded thereof. There are various methods for determining the product in which a country has a competitive advantage in the products that it exports. Identifying such products and specializing on that product would bring a competitive advantage to that country in the international markets. Insisting on the production and trade of a disadvantaged product

would likely cause the domestic resources to not to be distributed properly and efficiently.

$$RCA^i_k = (X^i_k / X^i) / (X_k / X) ; i = \text{country}, k: \text{product}$$

X^i_k : total export of country i for the product k within a given year

X^i : total export of country i within a given year (total exports of entire products)

X_k : total export of world for product k within a given year

X : total export of world within a given year (total exports of entire products)

The RCA values that are obtained with the above given formula are normalized. The normalized value of the comparative advantage varies between -1 and +1, and the positive value indicates that the country has a comparative advantage in that product, while the negative value indicates that it has a competitive disadvantage. The normalized value is obtained by the ratio of the result obtained by subtracting 1 from the value of NRCA (X), RCA (X) to the result found by adding one to the value of RCA (X) (World Trade Organization, 2012). In addition to the RCA (X) and NRCA (X) indices, the comparative advantage ratio RCA (M) is also determined for a product, not only for exports but also for imports. The new index is equal to the difference between a country's export RCA (X) and its import RCA (M) in a product. If the value is positive, the country has an advantage in the export of that product, and if it is negative, it is disadvantageous.

In this study, analyzes were made with the data taken from the "TradeMap" named website of the International Trade Center (ITC), which is the joint agency of the World Trade Organization (WTO) and the United Nations (UNCTAD), which indicates the international trade in breakdowns both for the products and countries. The World Integrated Trade Solution (World Trade Organization) has been developed by the World Bank, in cooperation with the United Nations Conference on Trade and Development (UNCTAD), in order to enable people to have convenient access into the information on trade and tariffs, in consultation with international organizations such as the International Trade Center (ITC), the United Nations Department of Statistics (UNSD) and the World Trade Organization (WTO). (WITS) (The World Bank), 2019). It is seen that the World Bank also makes use of the "TradeMap", which

is the data site of the ITC, during its analyses of the international trade. The “TradeMap” provides online access to the world’s largest trade database, as well as providing indicators of countries’ export performance, international demand, alternative markets, and the role of competitors, in terms of both the products and the countries. The “TradeMap” operates in a web-based interactive environment and includes more than 220 countries and regions and covers the commercial flows (values, quantities, trends, market shares both in unit and graphic formats) of approximately 5.300 products defined by the 2, 4 and 6 HS Codes (Harmonized System). The commercial data are also available at the tariff level for more than 150 countries and are available as monthly or quarterly periods, for more than 100 countries.

4. COMPARISON OF EXPORT AMOUNT OF COUNTRIES BETWEEN 2015-2019

In 2019, total export amount in the world reached 18,75 trillion US Dollars. To look at years of our concern, the global export reached 16,53 trillion US Dollars in 2015, 16,03 trillion US Dollars in 2016, 17,69 trillion US Dollars in 2017 and 19,46 trillion US Dollars in 2018. During this period, while the global export showed an increase twice, it also decreased twice when compared to the previous year. Having narrowed in 2016 at 3% when compared to 2015, but it increased in 2017 at 10% of 2016. Having increased at 10 percent in 2018 when compared to 2017, the global export narrowed in 2019 at 4 percent of 2018. Overall global export amount of 2019 expanded at 13% when compared to 2015. To look at export amounts of companies of our concern in this period, export of Brazil reached 191 billion US Dollars in 2015, 185 billion US Dollars in 2016, 217 billion US Dollars in 2017, 239 billion US Dollars in 2018 and 224 billion US Dollars in 2019. Global export of Brazil also increased and narrowed twice. While export of Brazil narrowed in 2016 when compared to 2015, but it showed a great increase in 2017 at 17% of 2016. While export of 2018 expanded at 10% when compared to 2017, export of 2019 narrowed at 6% of 2018. To look at the whole period for Brazil, export of 2019 increased at 17% when compared to 2015. Considering 2015-2019 periods of China; It holds the position of country with the highest export rate in the world with 2,28 trillion US Dollars in 2015, 2,11 trillion US Dollars in 2016, 2,27 trillion US Dollars in 2017, 2,49 trillion US Dollars in 2018 and 2,49 trillion US Dollars in 2019. During the period of our concern, export of China increased 3rd times and narrowed once. Export of China narrowed in 2016 at 7 percent when compared to 2015, but expanded in 2017 at 7% of 2016. While export in 2018 increased at 10% when compared to 2017, amount of export in 2018 was preserved in 2019, even increased at a small rate. Export amount in 2018 expanded at 18% when compared to 2015. Considering export performance of India between 2015-2019; it reached 263 billion US Dollars in 2015, 260 billion US Dollars in 2016, 295 billion US Dollars in 2017 and 323 billion US Dollars in 2018. In 2019, which is the last year reviewed in the study, even if export of India decreased in 2018 at a small rate, it also remained at the level of 323 billion US Dollars. India achieved to increase its export amounts successively between 2015 - 2018. Export amount of 2018 and 2019 decreased even a little. To compare the periods of 2015 and 2019, a 22%-increase

stands out. Export of 2016 narrowed at 1,11% when compared to 2015, export amount expanded in 2017 at 13 percent of 2016, and in 2018 at 9,5% of 2017. Export in 2019 narrowed at 0,23% when compared to 2018. Export amount of India in 2019 was 22% higher than 2015. Russia reached 333,5 billion US Dollars of export in 2015, but this number decreased in 2016 as 285 billion US Dollars. In 2017, export amount showed a tendency to increase and reached 357 billion US Dollars. This tendency was preserved in 2018 and reached 449 billion US Dollars of export level. Considering data of 2019, we see a turnaround as 422 billion US Dollars. During the periods of 2015-2019, total export decreased and increased twice, then it increased between 2015-2019 at 27% approximately.

Export amount of South Africa reached 81 billion US Dollars in 2015, 76 billion US Dollars in 2016 and 89 billion US Dollars in 2017. In addition to 95 billion US Dollars of export amount in 2018, South Africa completed the period with 90 billion US Dollars of export in 2019. Having showed increase and decrease twice in these periods, export of South Africa recorded a 11% of growth comparing 2015 and 2019. To look at total export data of BRICS group, these countries reached 16,5 trillion US Dollars in 2015, 16 trillion US Dollars in 2016, 17,6 trillion US Dollars in 2017, 19,4 trillion US Dollars in 2018 and 18,7 trillion US Dollars in 2019. During this period, export of BRICS countries increased and decreased twice annually. Comparing 2015 and 2019, export amount was 13% higher than 2015.

Turkey broke its export record in history of republic annually with 143 billion US Dollars in 2015, 142 billion US Dollars in 2016, 156 billion US Dollars in 2017, 164 billion US Dollars in 2018 and 171 billion US Dollars in 2019. During this period, export of Turkey showed a tendency to increase 3rd times and decrease once even a little amount. Comparing 2015 and 2019, export of Turkey showed an increase at 19%. While Turkey showed a tendency to increase 3rd times, trend of BRICS countries to increase was twice. Turkey increased its export amount in this period at 19%, but BRICS countries remained at 13%. This rate shows that Turkey dissociates from BRICS countries positively in terms of export performance.

Table 1. The Most Exported HS Codes in 2015-2019

Product code	Product label	Total
'85	Electrical machinery and equipment and parts thereof; sound recorders and reproducers, television ...	12.760.982.115
'84	Machinery, mechanical appliances, nuclear reactors, boilers; parts thereof	10.450.601.740
'27	Mineral fuels, mineral oils and products of their distillation; bituminous substances; mineral ...	9.872.758.711
'87	Vehicles other than railway or tramway rolling stock, and parts and accessories thereof	7.163.112.835
'71	Natural or cultured pearls, precious or semi-precious stones, precious metals, metals clad ...	3.233.817.783
'39	Plastics and articles thereof	2.980.289.216
'90	Optical, photographic, cinematographic, measuring, checking, precision, medical or surgical ...	2.896.551.990
'30	Pharmaceutical products	2.779.358.148
'99	Commodities not elsewhere specified	2.177.844.911
'29	Organic chemicals	1.969.420.870
'72	Iron and steel	1.806.220.592
'88	Aircraft, spacecraft, and parts thereof	1.664.191.180
'73	Articles of iron or steel	1.448.555.848
'94	Furniture; bedding, mattresses, mattress supports, cushions and similar stuffed furnishings; ...	1.238.099.488
'61	Articles of apparel and clothing accessories, knitted or crocheted	1.139.188.381
'62	Articles of apparel and clothing accessories, not knitted or crocheted	1.132.084.423
'26	Ores, slag and ash	978.926.006
'38	Miscellaneous chemical products	955.346.360
'40	Rubber and articles thereof	894.616.656
'76	Aluminum and articles thereof	879.665.248

Source: Author's own calculation and ITC TradeMap data.

Total number of exports in global trade between 2015-2019 is calculated on the basis of dual HS code and ranking is specified below. Considering the top 5 products in the list, some product groups stand out as follows; “Electrical machinery and equipment and parts thereof; sound recorders and reproducers, television...” with HS code 85 “Machinery, mechanical appliances, nuclear reactors, boilers; parts thereof” with HS code 84 “Mineral fuels, mineral oils and products of their distillation; bituminous substances; mineral ...” with HS code 27 “Vehicles other than railway or tramway rolling stock, and parts and accessories thereof” with HS code 87 “Natural or cultured pearls, precious or semi-precious stones, precious metals, metals clad ...” with HS code 71.

We collected and calculated export amounts of BRICS countries in the same period and the top 20 products are listed in the table 2.

Table 2. Total Exported Goods - BRICS

Product code	Product label	Total
'85	Electrical machinery and equipment and parts thereof; sound recorders and reproducers, television ...	3.192.331.873
'84	Machinery, mechanical appliances, nuclear reactors, boilers; parts thereof	2.157.815.660
'27	Mineral fuels, mineral oils and products of their distillation; bituminous substances; mineral ...	1.455.638.938
'87	Vehicles other than railway or tramway rolling stock, and parts and accessories thereof	544.249.135
'94	Furniture; bedding, mattresses, mattress supports, cushions and similar stuffed furnishings; ...	489.694.844
'71	Natural or cultured pearls, precious or semi-precious stones, precious metals, metals clad ...	455.736.687
'72	Iron and steel	434.508.285
'39	Plastics and articles thereof	433.677.312
'61	Articles of apparel and clothing accessories, knitted or crocheted	417.599.637
'62	Articles of apparel and clothing accessories, not knitted or crocheted	409.137.149
'90	Optical, photographic, cinematographic, measuring, checking, precision, medical or surgical ...	386.863.617
'73	Articles of iron or steel	369.156.313
'29	Organic chemicals	355.780.978
'99	Commodities not elsewhere specified	319.806.439
'64	Footwear, gaiters and the like; parts of such articles	266.392.038
'95	Toys, games and sports requisites; parts and accessories thereof	265.140.136
'76	Aluminum and articles thereof	185.757.921
'26	Ores, slag and ash	184.213.158
'89	Ships, boats and floating structures	164.583.041
'63	Other made-up textile articles; sets; worn clothing and worn textile articles; rags	160.886.992

Source: Author's own calculation and ITC TradeMap data.

The top 5 products standing out in export of BRICS countries are similar to the general trends of world trade; “Electrical machinery and equipment and parts thereof; sound recorders and reproducers, television ...” with HS code 85 “Machinery, mechanical appliances, nuclear reactors, boilers; parts thereof” with HS code 84 “Mineral fuels, mineral oils and products of their distillation; bituminous substances; mineral ...” with HS code 27 “Vehicles other than railway or tramway rolling stock, and parts and accessories thereof” with HS code 87 “Furniture; bedding, mattresses, mattress supports, cushions and similar stuffed furnishings; ...” with HS code 94. The product group “Furniture; bedding, mattresses, mattress supports, cushions and similar stuffed furnishings; ...” with HS code 94, which ranks 5 in the global export of BRICS countries ranks 14 in the list of products with dual HS code that are exported mostly. The product group “Natural or cultured pearls, precious or Semi-precious stones, precious metals, metals clad ...” with HS code 71, which is exported mostly in global trade ranks 6 in the export of BRICS countries.

Export of Turkey between 2015-2019 based on dual product group is specified in the table 3 below;

Table 3. Total Most Exported Turkish Goods in 2015-2019

Product code	Product label	Total
'87	Vehicles other than railway or tramway rolling stock, and parts and accessories thereof	114.141.553
'84	Machinery, mechanical appliances, nuclear reactors, boilers; parts thereof	70.845.539
'72	Iron and steel	42.460.070
'61	Articles of apparel and clothing accessories, knitted or crocheted	44.755.263
'85	Electrical machinery and equipment and parts thereof; sound recorders and reproducers, television ...	41.599.963
'71	Natural or cultured pearls, precious or semi-precious stones, precious metals, metals clad ...	48.818.869
'27	Mineral fuels, mineral oils and products of their distillation; bituminous substances; mineral ...	23.780.501
'73	Articles of iron or steel	29.051.842
'62	Articles of apparel and clothing accessories, not knitted or crocheted	30.506.754
'39	Plastics and articles thereof	28.190.811
'08	Edible fruit and nuts; peel of citrus fruit or melons	20.307.982
'94	Furniture; bedding, mattresses, mattress supports, cushions and similar stuffed furnishings; ...	14.792.606
'76	Aluminum and articles thereof	13.223.074
'40	Rubber and articles thereof	12.511.677
'25	Salt; sulphur; earths and stone; plastering materials, lime and cement	12.369.830
'57	Carpets and other textile floor coverings	10.879.636
'63	Other made-up textile articles; sets; worn clothing and worn textile articles; rags	9.941.640
'19	Preparations of cereals, flour, starch or milk; pastrycooks' products	8.242.501
'28	Inorganic chemicals; organic or inorganic compounds of precious metals, of rare-earth metals, ...	7.323.153
'48	Paper and paperboard; articles of paper pulp, of paper or of paperboard	7.572.585

Source: Author's own calculation and ITC TradeMap data.

The top 5 product groups exported mostly in Turkey between 2015-2019 are listed as follows (in terms of amount); “Vehicles other than railway or tramway rolling stock, and parts and accessories thereof” with HS code 87 “Machinery, mechanical appliances, nuclear reactors, boilers; parts thereof” with HS code 84 “Iron and steel” with HS code 72 “Articles of apparel and clothing accessories, knitted or crocheted” with HS code 61 “Electrical machinery and equipment and parts thereof; sound recorders and reproducers, television ...” with HS code 85.

Comparing export of Turkey with global export data based on product groups, we see that there are important differences in the top 5 product groups. The product group “Electrical machinery and equipment and parts thereof; sound recorders and reproducers, television ...” with HS code 85 which was exported mostly in global trade during the period of concern, ranks 5 in export of Turkey in the said period. The product group “Machinery, mechanical appliances, nuclear reactors, boilers; parts thereof” with HS code 84 ranks 2 both in world export and in export of Turkey. The product group “Mineral fuels, mineral oils and products of their distillation; bituminous substances; mineral ...” with HS code 27 which ranks 3 in the global export ranks 7 in dual-code export of Turkey. The product group “Vehicles other than railway or tramway rolling stock, and parts and accessories thereof” with HS code 87 which ranks 4 in the global export holds the first position in export of Turkey.

The product group “Natural or cultured pearls, precious or semi-precious stones, precious metals, metals clad ...” with HS code 71 which was exported mostly in the international trade during the said period ranks 6 in export of Turkey. Comparing top 5 product groups of Turkey with that of BRICS countries; While the product group “Electrical machinery and equipment and parts thereof; sound recorders and reproducers, television ...” with HS code 85 which holds the first position in export of BRICS countries ranks 5 in export of Turkey, the product group “Machinery, mechanical appliances, nuclear reactors, boilers; parts thereof” with HS code 84 ranks 2 in export of Turkey. While the product group “Mineral fuels, mineral oils and products of their distillation; bituminous substances; mineral ...” with HS code 27 ranks 3 in export of BRICS countries, it ranks 7 in export of Turkey. The product group “Vehicles other than railway or tramway rolling stock, and parts and accessories

thereof” with HS code 87 which ranks 4 in export of BRICS countries holds the first position in export of Turkey. Lastly, the product group “Furniture; bedding, mattresses, mattress supports, cushions and similar stuffed furnishings; ...” with HS code which ranks 5 in export of BRICS countries ranks 12 in export of Turkey. The product group “Iron and steel” with HS code 72 which ranks 3 in export of Turkey ranks 7 in export of BRICS countries. Furthermore, the product group “Articles of apparel and clothing accessories, knitted or crocheted” with HS code 61 which ranks 5 in export of Turkey ranks 9 in export of BRICS group countries.

5. RCA ANALYSIS OF THE MOST EXPORTED PRODUCTS IN THE SPECIFIED YEARS

Rca analysis shows the competitiveness of countries in product and product groups. According to the theory, competitiveness is directly related to the export of the country and the export of the product. In this section, the competition situations in the products that are exported most of the countries will be examined in detail.

5.1.HS Code 85 “Electrical Machinery and Equipment and Parts Thereof; Sound Recorders and Reproducers, Television ...”

Table 4. HS Code 85 - 2015

Year	Country	X _{ik} (Thousand \$)	X _i (Thousand \$)	X _k	X	RCA _x
2015	BRICS	617.412.999	3.152.172.423	2.344.506.899	16.530.769.761	1,38
2015	China	600.292.287	2.281.855.922	2.344.506.899	16.530.769.761	1,85
2015	Russian Federation	3.385.884	333.501.801	2.344.506.899	16.530.769.761	0,07
2015	India	7.936.052	263.889.005	2.344.506.899	16.530.769.761	0,21
2015	Brazil	3.649.815	191.134.325	2.344.506.899	16.530.769.761	0,13
2015	South Africa	2.148.961	81.791.370	2.344.506.899	16.530.769.761	0,19
2015	Turkey	8.278.952	143.844.066	2.344.506.899	16.530.769.761	0,41

Source: Author’s own calculation and ITC TradeMap data.

Table 5. HS Code 85 - 2016

Year	Country	Xik (Thousand \$)	Xi (Thousand \$)	Xk	X	RCA _x
2016	BRICS	574.405.245	2.927.257.721	2.318.684.657	16.031.153.744	1,36
2016	China	557.061.947	2.118.980.582	2.318.684.657	16.031.153.744	1,82
2016	Russian Federation	4.049.924	285.491.052	2.318.684.657	16.031.153.744	0,10
2016	India	8.216.851	260.963.959	2.318.684.657	16.031.153.744	0,22
2016	Brazil	3.239.912	185.235.401	2.318.684.657	16.031.153.744	0,12
2016	South Africa	1.836.611	76.586.727	2.318.684.657	16.031.153.744	0,17
2016	Turkey	7.778.954	142.606.247	2.318.684.657	16.031.153.744	0,38

Source: Author's own calculation and ITC TradeMap data.

Table 6. HS Code 85 - 2017

Year	Country	Xik (Thousand \$)	Xi (Thousand \$)	Xk	X	RCA _x
2017	BRICS	617.333.663	3.232.036.428	2.568.448.494	17.701.054.574	1,32
2017	China	598.974.916	2.271.796.142	2.568.448.494	17.701.054.574	1,82
2017	Russian Federation	4.321.764	357.083.135	2.568.448.494	17.701.054.574	0,08
2017	India	8.796.251	295.862.157	2.568.448.494	17.701.054.574	0,20
2017	Brazil	3.435.459	217.739.177	2.568.448.494	17.701.054.574	0,11
2017	South Africa	1.805.273	89.555.817	2.568.448.494	17.701.054.574	0,14
2017	Turkey	8.089.893	156.992.940	2.568.448.494	17.701.054.574	0,36

Source: Author's own calculation and ITC TradeMap data.

Table 7. HS Code 85 - 2018

Year	Country	Xik (Thousand \$)	Xi (Thousand \$)	Xk	X	RCAx
2018	BRICS	686.496.561	3.602.643.396	2.787.748.517	19.456.187.066	1,33
2018	China	664.425.033	2.494.230.195	2.787.748.517	19.456.187.066	1,86
2018	Russian Federation	4.911.607	449.347.157	2.787.748.517	19.456.187.066	0,08
2018	India	11.869.233	323.997.680	2.787.748.517	19.456.187.066	0,26
2018	Brazil	3.458.453	239.889.210	2.787.748.517	19.456.187.066	0,10
2018	South Africa	1.832.235	95.179.154	2.787.748.517	19.456.187.066	0,13
2018	Turkey	8.722.854	167.923.862	2.787.748.517	19.456.187.066	0,36

Source: Author's own calculation and ITC TradeMap data.

Table 8. HS Code 85 - 2019

Year	Country	Xik (Thousand \$)	Xi (Thousand \$)	Xk	X	RCAx
2019	BRICS	696.415.626	3.558.551.552	2.747.375.396	18.739.914.099	1,33
2019	China	670.997.854	2.498.569.866	2.747.375.396	18.739.914.099	1,83
2019	Russian Federation	5.559.090	422.777.167	2.747.375.396	18.739.914.099	0,09
2019	India	14.672.931	322.786.377	2.747.375.396	18.739.914.099	0,31
2019	Brazil	3.431.274	223.998.669	2.747.375.396	18.739.914.099	0,10
2019	South Africa	1.754.477	90.419.473	2.747.375.396	18.739.914.099	0,13
2019	Turkey	8.729.310	171.098.411	2.747.375.396	18.739.914.099	0,35

Source: Author's own calculation and ITC TradeMap data.

Table 9. HS Code 85 RCA Scores

Country	2015	2016	2017	2018	2019
BRICS RCA Score	1,38	1,36	1,32	1,33	1,33
China RCA Score	1,85	1,82	1,82	1,86	1,83
Russian Federation RCA Score	0,07	0,10	0,08	0,08	0,09
India RCA Score	0,21	0,22	0,20	0,26	0,31
Brazil RCA Score	0,13	0,12	0,11	0,10	0,10
South Africa RCA Score	0,19	0,17	0,14	0,13	0,13
Turkey RCA Score	0,41	0,38	0,36	0,36	0,35

Source: Author's own calculation and ITC TradeMap data.

When we examine the RCA scores in HS Code 85 "Electrical machinery and equipment and parts thereof; sound recorders and reproducers, television ..." in 2015, China has a clear advantage over both the BRICS group and Turkey. Even though this advantage, which starts with 1.85 points, shows a slight decline during the period, there is no major loss of advantage or gain.

Turkey is the second country in the most advantageous position in the respective countries with a 0,41 RCA score in this product group in 2015. With an RCA score of 0.41, Turkey has the advantage over Brazil, Russia, India and South Africa in 2015, and has started to lose that advantage, albeit a little over the years. The RCA score, which declined to 0.35 in 2019 within the period, is an indicator of this. While RCA scores have decreased over the years in South Africa and Brazil, the RCA scores of Russia and India have tended to increase in the product in question. China makes a quite positive contribution to the RCA score of the BRICS group it is in, increasing the group's RCA score to 1.33. China has also had a direct impact on the RCA scores of BRICS countries, which vary from year to year, with its high export figures in the said Product Group.

5.2. HS Code 84 “Machinery, Mechanical Appliances, Nuclear Reactors, Boilers; Parts Thereof”

Table 10. HS Code 84 - 2015

Year	Country	X _{ik} (Thousand \$)	X _i (Thousand \$)	X _k	X	RCA _x
2015	BRICS	403.052.516	3.152.172.423	1.942.381.321	16.530.769.761	1,09
2015	China	364.536.627	2.281.855.922	1.942.381.321	16.530.769.761	1,36
2015	Russian Federation	8.144.186	333.501.801	1.942.381.321	16.530.769.761	0,21
2015	India	13.226.299	263.889.005	1.942.381.321	16.530.769.761	0,43
2015	Brazil	11.361.268	191.134.325	1.942.381.321	16.530.769.761	0,51
2015	South Africa	5.784.136	81.791.370	1.942.381.321	16.530.769.761	0,60
2015	Turkey	12.333.493	143.844.066	1.942.381.321	16.530.769.761	0,73

Source: Author’s own calculation and ITC TradeMap data.

Table 11. HS Code 84 - 2016

Year	Country	X _{ik} (Thousand \$)	X _i (Thousand \$)	X _k	X	RCA _x
2016	BRICS	381.993.420	2.927.257.721	1.896.036.103	16.031.153.744	1,10
2016	China	344.804.517	2.118.980.582	1.896.036.103	16.031.153.744	1,38
2016	Russian Federation	6.800.758	285.491.052	1.896.036.103	16.031.153.744	0,20
2016	India	13.555.803	260.963.959	1.896.036.103	16.031.153.744	0,44
2016	Brazil	11.647.181	185.235.401	1.896.036.103	16.031.153.744	0,53
2016	South Africa	5.185.161	76.586.727	1.896.036.103	16.031.153.744	0,57
2016	Turkey	12.405.009	142.606.247	1.896.036.103	16.031.153.744	0,74

Source: Author’s own calculation and ITC TradeMap data.

Table 12. HS Code 84 - 2017

Year	Country	Xik (Thousand \$)	Xi (Thousand \$)	Xk	X	RCAx
2017	BRICS	427.343.569	3.232.036.428	2.092.710.870	17.701.054.574	1,12
2017	China	382.926.132	2.271.796.142	2.092.710.870	17.701.054.574	1,43
2017	Russian Federation	8.541.411	357.083.135	2.092.710.870	17.701.054.574	0,20
2017	India	16.638.119	295.862.157	2.092.710.870	17.701.054.574	0,48
2017	Brazil	13.848.540	217.739.177	2.092.710.870	17.701.054.574	0,54
2017	South Africa	5.389.367	89.555.817	2.092.710.870	17.701.054.574	0,51
2017	Turkey	13.825.494	156.992.940	2.092.710.870	17.701.054.574	0,74

Source: Author's own calculation and ITC TradeMap data.

Table 13. HS Code 84 - 2018

Year	Country	Xik (Thousand \$)	Xi (Thousand \$)	Xk	X	RCAx
2018	BRICS	480.236.820	3.602.643.396	2.304.293.053	19.456.187.066	1,13
2018	China	429.953.148	2.494.230.195	2.304.293.053	19.456.187.066	1,46
2018	Russian Federation	9.170.893	449.347.157	2.304.293.053	19.456.187.066	0,17
2018	India	20.468.680	323.997.680	2.304.293.053	19.456.187.066	0,53
2018	Brazil	14.791.209	239.889.210	2.304.293.053	19.456.187.066	0,52
2018	South Africa	5.852.890	95.179.154	2.304.293.053	19.456.187.066	0,52
2018	Turkey	15.827.680	167.923.862	2.304.293.053	19.456.187.066	0,80

Source: Author's own calculation and ITC TradeMap data.

Table 14. HS Code 84 - 2019

Year	Country	Xik (Thousand \$)	Xi (Thousand \$)	Xk	X	RCAx
2019	BRICS	465.083.641	3.558.551.552	2.228.234.388	18.739.914.099	1,10
2019	China	416.975.731	2.498.569.866	2.228.234.388	18.739.914.099	1,40
2019	Russian Federation	8.991.536	422.777.167	2.228.234.388	18.739.914.099	0,18
2019	India	21.158.021	322.786.377	2.228.234.388	18.739.914.099	0,55
2019	Brazil	12.465.285	223.998.669	2.228.234.388	18.739.914.099	0,47
2019	South Africa	5.493.068	90.419.473	2.228.234.388	18.739.914.099	0,51
2019	Turkey	16.453.863	171.098.411	2.228.234.388	18.739.914.099	0,81

Source: Author's own calculation and ITC TradeMap data.

Table 15. HS Code 84 RCA Scores

Country	2015	2016	2017	2018	2019
BRICS RCA Score	1,09	1,10	1,12	1,13	1,10
China RCA Score	1,36	1,38	1,43	1,46	1,40
Russian Federation RCA Score	0,21	0,20	0,20	0,17	0,18
India RCA Score	0,43	0,44	0,48	0,53	0,55
Brazil RCA Score	0,51	0,53	0,54	0,52	0,47
South Africa RCA Score	0,60	0,57	0,51	0,52	0,51
Turkey RCA Score	0,73	0,74	0,74	0,80	0,81

Source: Author's own calculation and ITC TradeMap data.

When we examined the RCA scores of HS code 84 "Machinery, mechanical appliances, nuclear reactors, boilers; parts thereof" in 2015, China is the country with the highest RCA score among the countries examined with an RCA score of 1.36. China, which increased its current RCA score to 1.46 in 2018, had an RCA score of 1.40 in 2019. Turkey, followed by China, has the second highest score among those countries with a score of 0.73. The country has been. The score of 0.73 gained a positive momentum towards 2019, reaching 0.81 in 2019.

When we examined other countries with similar RCA scores, South Africa, which has the highest score, reduced its score from 0.60 to 0.51 in 2019. Russia, Brazil, and India have a relatively low advantage value in the product in question.

The general trend of the BRICS group is advantageous. As China increased the average, China's exports in this product group also affected the average of BRICS over the years.

5.3. HS Code 27 “Mineral Fuels, Mineral Oils And Products Of Their Distillation; Bituminous Substances; Mineral ...”

Table 16. HS Code 27 - 2015

Year	Country	Xik (Thousand \$)	Xi (Thousand \$)	Xk	X	RCAx
2015	BRICS	249.363.015	3.152.172.423	1.822.299.042	16.530.769.761	0,72
2015	China	27.946.007	2.281.855.922	1.822.299.042	16.530.769.761	0,11
2015	Russian Federation	168.737.648	333.501.801	1.822.299.042	16.530.769.761	4,59
2015	India	30.886.308	263.889.005	1.822.299.042	16.530.769.761	1,06
2015	Brazil	13.748.088	191.134.325	1.822.299.042	16.530.769.761	0,65
2015	South Africa	8.044.964	81.791.370	1.822.299.042	16.530.769.761	0,89
2015	Turkey	4.518.438	143.844.066	1.822.299.042	16.530.769.761	0,28

Source: Author’s own calculation and ITC TradeMap data.

Table 17 HS Code 27 - 2016

Year	Country	Xik (Thousand \$)	Xi (Thousand \$)	Xk	X	RCAx
2016	BRICS	208.015.490	2.927.257.721	1.510.313.616	16.031.153.744	0,75
2016	China	26.849.906	2.118.980.582	1.510.313.616	16.031.153.744	0,13
2016	Russian Federation	134.703.176	285.491.052	1.510.313.616	16.031.153.744	5,01
2016	India	27.711.952	260.963.959	1.510.313.616	16.031.153.744	1,13
2016	Brazil	11.581.278	185.235.401	1.510.313.616	16.031.153.744	0,66
2016	South Africa	7.169.178	76.586.727	1.510.313.616	16.031.153.744	0,99
2016	Turkey	3.207.084	142.606.247	1.510.313.616	16.031.153.744	0,24

Source: Author’s own calculation and ITC TradeMap data.

Table 18. HS Code 27 - 2017

Year	Country	Xik (Thousand \$)	Xi (Thousand \$)	Xk	X	RCAx
2017	BRICS	273.998.926	3.232.036.428	1.967.994.476	17.701.054.574	0,76
2017	China	35.453.364	2.271.796.142	1.967.994.476	17.701.054.574	0,14
2017	Russian Federation	173.299.849	357.083.135	1.967.994.476	17.701.054.574	4,37
2017	India	35.883.624	295.862.157	1.967.994.476	17.701.054.574	1,09
2017	Brazil	18.723.141	217.739.177	1.967.994.476	17.701.054.574	0,77
2017	South Africa	10.638.948	89.555.817	1.967.994.476	17.701.054.574	1,07
2017	Turkey	4.327.175	156.992.940	1.967.994.476	17.701.054.574	0,25

Source: Author's own calculation and ITC TradeMap data.

Table 19. HS Code 27 - 2018

Year	Country	Xik (Thousand \$)	Xi (Thousand \$)	Xk	X	RCAx
2018	BRICS	372.694.057	3.602.643.396	2.528.456.743	19.456.187.066	0,80
2018	China	46.630.492	2.494.230.195	2.528.456.743	19.456.187.066	0,14
2018	Russian Federation	237.591.878	449.347.157	2.528.456.743	19.456.187.066	4,07
2018	India	48.695.001	323.997.680	2.528.456.743	19.456.187.066	1,16
2018	Brazil	29.670.809	239.889.210	2.528.456.743	19.456.187.066	0,95
2018	South Africa	10.105.877	95.179.154	2.528.456.743	19.456.187.066	0,82
2018	Turkey	4.411.992	167.923.862	2.528.456.743	19.456.187.066	0,20

Source: Author's own calculation and ITC TradeMap data.

Table 20. HS Code 27 - 2019

Year	Country	Xik (Thousand \$)	Xi (Thousand \$)	Xk	X	RCAx
2019	BRICS	351.115.838	3.558.551.552	2.062.513.939	18.739.914.099	0,90
2019	China	47.035.193	2.498.569.866	2.062.513.939	18.739.914.099	0,17
2019	Russian Federation	220.845.173	422.777.167	2.062.513.939	18.739.914.099	4,75
2019	India	44.081.090	322.786.377	2.062.513.939	18.739.914.099	1,24
2019	Brazil	30.039.342	223.998.669	2.062.513.939	18.739.914.099	1,22
2019	South Africa	9.115.040	90.419.473	2.062.513.939	18.739.914.099	0,92
2019	Turkey	7.315.812	171.098.411	2.062.513.939	18.739.914.099	0,39

Source: Author's own calculation and ITC TradeMap data.

Table 21. HS Code 27 RCA Scores

Country	2015	2016	2017	2018	2019
BRICS RCA Score	0,72	0,75	0,76	0,80	0,90
China RCA Score	0,11	0,13	0,14	0,14	0,17
Russian Federation RCA Score	4,59	5,01	4,37	4,07	4,75
India RCA Score	1,06	1,13	1,09	1,16	1,24
Brazil RCA Score	0,65	0,66	0,77	0,95	1,22
South Africa RCA Score	0,89	0,99	1,07	0,82	0,92
Turkey RCA Score	0,28	0,24	0,25	0,20	0,39

Source: Author's own calculation and ITC TradeMap data.

When we examine the RCA data of HS Code 27 "Mineral fuels, mineral oils and products of their distillation; bituminous substances; mineral ...", it is seen that Russia is the most advantageous country in the said product group.

Russia, which increased its RCA score from 4.59 in 2015 to 4.75 in 2019, continues to gain an advantage in positive momentum. Brazil approximately doubled the RCA score of 0.65 in 2015 and reached a score of 1.22 in 2019. Turkey is in a disadvantaged position compared to other countries in the HS code 27. Brazil has increased the RCA score by about 2 times in the product in question. All countries have increased their advantages in products in the 2015-2019 period.

5.4. HS Code 87 “Vehicles Other Than Railway or Tramway Rolling Stock, And Parts And Accessories Thereof”

Table 22. HS Code 87 - 2015

Year	Country	Xik (Thousand \$)	Xi (Thousand \$)	Xk	X	RCAx
2015	BRICS	98.237.455	3.152.172.423	1.325.760.553	16.530.769.761	0,39
2015	China	62.651.637	2.281.855.922	1.325.760.553	16.530.769.761	0,34
2015	Russian Federation	2.646.716	333.501.801	1.325.760.553	16.530.769.761	0,10
2015	India	14.072.173	263.889.005	1.325.760.553	16.530.769.761	0,66
2015	Brazil	9.604.507	191.134.325	1.325.760.553	16.530.769.761	0,63
2015	South Africa	9.262.422	81.791.370	1.325.760.553	16.530.769.761	1,41
2015	Turkey	17.462.623	143.844.066	1.325.760.553	16.530.769.761	1,51

Source: Author’s own calculation and ITC TradeMap data.

Table 23. HS Code 87 - 2016

Year	Country	Xik (Thousand \$)	Xi (Thousand \$)	Xk	X	RCAx
2016	BRICS	98.137.885	2.927.257.721	1.351.764.185	16.031.153.744	0,40
2016	China	60.416.649	2.118.980.582	1.351.764.185	16.031.153.744	0,34
2016	Russian Federation	2.563.801	285.491.052	1.351.764.185	16.031.153.744	0,11
2016	India	14.986.445	260.963.959	1.351.764.185	16.031.153.744	0,68
2016	Brazil	10.971.033	185.235.401	1.351.764.185	16.031.153.744	0,70
2016	South Africa	9.199.957	76.586.727	1.351.764.185	16.031.153.744	1,42
2016	Turkey	19.804.384	142.606.247	1.351.764.185	16.031.153.744	1,65

Source: Author's own calculation and ITC TradeMap data.

Table 24. HS Code 87 - 2017

Year	Country	Xik (Thousand \$)	Xi (Thousand \$)	Xk	X	RCAx
2017	BRICS	111.545.542	3.232.036.428	1.452.501.927	17.701.054.574	0,42
2017	China	67.358.135	2.271.796.142	1.452.501.927	17.701.054.574	0,36
2017	Russian Federation	3.433.053	357.083.135	1.452.501.927	17.701.054.574	0,12
2017	India	16.210.611	295.862.157	1.452.501.927	17.701.054.574	0,67
2017	Brazil	14.723.998	217.739.177	1.452.501.927	17.701.054.574	0,82
2017	South Africa	9.819.745	89.555.817	1.452.501.927	17.701.054.574	1,34
2017	Turkey	23.940.852	156.992.940	1.452.501.927	17.701.054.574	1,86

Source: Author's own calculation and ITC TradeMap data.

Table 25. HS Code 87 - 2018

Year	Country	Xik (Thousand \$)	Xi (Thousand \$)	Xk	X	RCAx
2018	BRICS	120.156.503	3.602.643.396	1.536.775.504	19.456.187.066	0,42
2018	China	75.094.321	2.494.230.195	1.536.775.504	19.456.187.066	0,38
2018	Russian Federation	3.150.857	449.347.157	1.536.775.504	19.456.187.066	0,09
2018	India	18.277.490	323.997.680	1.536.775.504	19.456.187.066	0,71
2018	Brazil	12.652.789	239.889.210	1.536.775.504	19.456.187.066	0,67
2018	South Africa	10.981.046	95.179.154	1.536.775.504	19.456.187.066	1,46
2018	Turkey	26.758.524	167.923.862	1.536.775.504	19.456.187.066	2,02

Source: Author's own calculation and ITC TradeMap data.

Table 26. HS Code 87 - 2019

Year	Country	Xik (Thousand \$)	Xi (Thousand \$)	Xk	X	RCAx
2019	BRICS	115.947.336	3.558.551.552	1.495.529.701	18.739.914.099	0,41
2019	China	74.366.536	2.498.569.866	1.495.529.701	18.739.914.099	0,37
2019	Russian Federation	3.758.155	422.777.167	1.495.529.701	18.739.914.099	0,11
2019	India	17.188.139	322.786.377	1.495.529.701	18.739.914.099	0,67
2019	Brazil	9.178.720	223.998.669	1.495.529.701	18.739.914.099	0,51
2019	South Africa	11.455.786	90.419.473	1.495.529.701	18.739.914.099	1,59
2019	Turkey	26.175.170	171.098.411	1.495.529.701	18.739.914.099	1,92

Source: Author's own calculation and ITC TradeMap data.

Table 27. HS Code 87 RCA Scores

Country	2015	2016	2017	2018	2019
BRICS RCA Score	0,39	0,40	0,42	0,42	0,41
China RCA Score	0,34	0,34	0,36	0,38	0,37
Russian Federation RCA Score	0,10	0,11	0,12	0,09	0,11
India RCA Score	0,66	0,68	0,67	0,71	0,67
Brazil RCA Score	0,63	0,70	0,82	0,67	0,51
South Africa RCA Score	1,41	1,42	1,34	1,46	1,59
Turkey RCA Score	1,51	1,65	1,86	2,02	1,92

Source: Author's own calculation and ITC TradeMap data.

In HS Code 87, "Vehicles other than railway or tramway rolling stock, and parts and accessories thereof" product group, Turkey has the advantage. Turkey, in which the RCA score was 1.51 in 2015, raised it to 1.92 in 2019 and has an advantage over all of the BRICS countries in this product group. When we examine the BRICS group countries according to the 5-year percentage, the countries of Brazil and India differ positively. Turkey has a direct advantage over the BRICS group in this product group.

5.5. HS Code 71 “Natural or Cultured Pearls, Precious or Semi-Precious Stones, Precious Metals, Metals Clad ...”

Table 28. HS Code 71 - 2015

Year	Country	Xik (Thousand \$)	Xi (Thousand \$)	Xk	X	RCAx
2015	BRICS	92.796.048	3.152.172.423	637.228.439	16.530.769.761	0,76
2015	China	29.186.637	2.281.855.922	637.228.439	16.530.769.761	0,33
2015	Russian Federation	7.433.037	333.501.801	637.228.439	16.530.769.761	0,58
2015	India	38.754.314	263.889.005	637.228.439	16.530.769.761	3,81
2015	Brazil	2.755.268	191.134.325	637.228.439	16.530.769.761	0,37
2015	South Africa	14.666.792	81.791.370	637.228.439	16.530.769.761	4,65
2015	Turkey	11.263.502	143.844.066	637.228.439	16.530.769.761	2,03

Source: Author’s own calculation and ITC TradeMap data.

Table 29. HS Code 71 - 2016

Year	Country	Xik (Thousand \$)	Xi (Thousand \$)	Xk	X	RCAx
2016	BRICS	90.486.056	2.927.257.721	657.459.600	16.031.153.744	0,75
2016	China	21.160.671	2.118.980.582	657.459.600	16.031.153.744	0,24
2016	Russian Federation	8.905.706	285.491.052	657.459.600	16.031.153.744	0,76
2016	India	42.954.820	260.963.959	657.459.600	16.031.153.744	4,01
2016	Brazil	3.375.748	185.235.401	657.459.600	16.031.153.744	0,44
2016	South Africa	14.089.111	76.586.727	657.459.600	16.031.153.744	4,49
2016	Turkey	12.176.573	142.606.247	657.459.600	16.031.153.744	2,08

Source: Author’s own calculation and ITC TradeMap data.

Table 30. HS Code 71 -2017

Year	Country	Xik (Thousand \$)	Xi (Thousand \$)	Xk	X	RCA _x
2017	BRICS	89.674.982	3.232.036.428	661.774.938	17.701.054.574	0,74
2017	China	17.779.989	2.271.796.142	661.774.938	17.701.054.574	0,21
2017	Russian Federation	11.048.244	357.083.135	661.774.938	17.701.054.574	0,83
2017	India	42.592.735	295.862.157	661.774.938	17.701.054.574	3,85
2017	Brazil	3.306.017	217.739.177	661.774.938	17.701.054.574	0,41
2017	South Africa	14.947.997	89.555.817	661.774.938	17.701.054.574	4,46
2017	Turkey	10.879.244	156.992.940	661.774.938	17.701.054.574	1,85

Source: Author's own calculation and ITC TradeMap data.

Table 31. HS Code 71 -2018

Year	Country	Xik (Thousand \$)	Xi (Thousand \$)	Xk	X	RCA _x
2018	BRICS	90.415.837	3.602.643.396	652.373.839	19.456.187.066	0,75
2018	China	20.117.183	2.494.230.195	652.373.839	19.456.187.066	0,24
2018	Russian Federation	10.097.534	449.347.157	652.373.839	19.456.187.066	0,67
2018	India	40.148.216	323.997.680	652.373.839	19.456.187.066	3,70
2018	Brazil	3.346.363	239.889.210	652.373.839	19.456.187.066	0,42
2018	South Africa	16.706.541	95.179.154	652.373.839	19.456.187.066	5,23
2018	Turkey	7.172.319	167.923.862	652.373.839	19.456.187.066	1,27

Source: Author's own calculation and ITC TradeMap data.

Table 32. HS Code 71 - 2019

Year	Country	X _k (Thousand \$)	X _i (Thousand \$)	X _k	X	RCA _x
2019	BRICS	92.279.683	3.558.551.552	630.052.641	18.739.914.099	0,77
2019	China	20.816.755	2.498.569.866	630.052.641	18.739.914.099	0,25
2019	Russian Federation	15.258.928	422.777.167	630.052.641	18.739.914.099	1,07
2019	India	36.734.423	322.786.377	630.052.641	18.739.914.099	3,38
2019	Brazil	4.175.570	223.998.669	630.052.641	18.739.914.099	0,55
2019	South Africa	15.378.088	90.419.473	630.052.641	18.739.914.099	5,06
2019	Turkey	7.327.231	171.098.411	630.052.641	18.739.914.099	1,27

Source: Author's own calculation and ITC TradeMap data.

Table 33. HS Code 71 RCA Scores

Country	2015	2016	2017	2018	2019
BRICS RCA Score	0,76	0,75	0,74	0,75	0,77
China RCA Score	0,33	0,24	0,21	0,24	0,25
Russian Federation RCA Score	0,58	0,76	0,83	0,67	1,07
India RCA Score	3,81	4,01	3,85	3,70	3,38
Brazil RCA Score	0,37	0,44	0,41	0,42	0,55
South Africa RCA Score	4,65	4,49	4,46	5,23	5,06
Turkey RCA Score	2,03	2,08	1,85	1,27	1,27

Source: Author's own calculation and ITC TradeMap data.

In HS Code 71, "Natural or cultured pearls, precious or semi-precious stones, precious metals, metals clad ..." product group, South Africa is the most advantageous country in the period examined by the study, according to RCA score averages. South Africa has reinforced its current success in this field by increasing its advantageous position in 2015 to 5.06 in 2019. India has an advantageous position in code 71 product groups.

Turkey, which its current score was 2.03 in 2015, has declined to 1.27 percentage points. Because China is disadvantaged in this group, the BRICS average is not advantageous against the Turkey score.

5.6.HS Code 39 “Plastics and Articles Thereof”

Table 34. HS Code 39 - 2015

Year	Country	Xik (Thousand \$)	Xi (Thousand \$)	Xk	X	RCA _x
2015	BRICS	77.810.108	3.152.172.423	551.443.814	16.530.769.761	0,74
2015	China	65.835.653	2.281.855.922	551.443.814	16.530.769.761	0,86
2015	Russian Federation	2.258.695	333.501.801	551.443.814	16.530.769.761	0,20
2015	India	5.004.809	263.889.005	551.443.814	16.530.769.761	0,57
2015	Brazil	3.483.327	191.134.325	551.443.814	16.530.769.761	0,55
2015	South Africa	1.227.624	81.791.370	551.443.814	16.530.769.761	0,45
2015	Turkey	5.358.692	143.844.066	551.443.814	16.530.769.761	1,12

Source: Author’s own calculation and ITC TradeMap data.

Table 35. HS Code 39 - 2016

Year	Country	Xik (Thousand \$)	Xi (Thousand \$)	Xk	X	RCA _x
2016	BRICS	76.200.965	2.927.257.721	545.934.759	16.031.153.744	0,76
2016	China	64.035.659	2.118.980.582	545.934.759	16.031.153.744	0,89
2016	Russian Federation	2.251.873	285.491.052	545.934.759	16.031.153.744	0,23
2016	India	5.212.533	260.963.959	545.934.759	16.031.153.744	0,59
2016	Brazil	3.501.806	185.235.401	545.934.759	16.031.153.744	0,56
2016	South Africa	1.199.094	76.586.727	545.934.759	16.031.153.744	0,46
2016	Turkey	5.027.828	142.606.247	545.934.759	16.031.153.744	1,04

Source: Author’s own calculation and ITC TradeMap data.

Table 36. HS Code 39 - 2017

Year	Country	Xik (Thousand \$)	Xi (Thousand \$)	Xk	X	RCAx
2017	BRICS	84.347.496	3.232.036.428	599.388.848	17.701.054.574	0,77
2017	China	70.645.690	2.271.796.142	599.388.848	17.701.054.574	0,92
2017	Russian Federation	2.814.439	357.083.135	599.388.848	17.701.054.574	0,23
2017	India	5.923.073	295.862.157	599.388.848	17.701.054.574	0,59
2017	Brazil	3.656.337	217.739.177	599.388.848	17.701.054.574	0,50
2017	South Africa	1.307.957	89.555.817	599.388.848	17.701.054.574	0,43
2017	Turkey	5.474.292	156.992.940	599.388.848	17.701.054.574	1,03

Source: Author's own calculation and ITC TradeMap data.

Table 37. HS Code 39 - 2018

Year	Country	Xik (Thousand \$)	Xi (Thousand \$)	Xk	X	RCAx
2018	BRICS	96.070.060	3.602.643.396	658.022.206	19.456.187.066	0,79
2018	China	80.135.877	2.494.230.195	658.022.206	19.456.187.066	0,95
2018	Russian Federation	3.172.085	449.347.157	658.022.206	19.456.187.066	0,21
2018	India	7.881.740	323.997.680	658.022.206	19.456.187.066	0,72
2018	Brazil	3.426.433	239.889.210	658.022.206	19.456.187.066	0,42
2018	South Africa	1.453.925	95.179.154	658.022.206	19.456.187.066	0,45
2018	Turkey	6.042.982	167.923.862	658.022.206	19.456.187.066	1,06

Source: Author's own calculation and ITC TradeMap data.

Table 38. HS Code 39 - 2019

Year	Country	Xik (Thousand \$)	Xi (Thousand \$)	Xk	X	RCAx
2019	BRICS	99.322.629	3.558.551.552	627.033.241	18.739.914.099	0,83
2019	China	84.386.942	2.498.569.866	627.033.241	18.739.914.099	1,01
2019	Russian Federation	3.025.527	422.777.167	627.033.241	18.739.914.099	0,21
2019	India	7.351.307	322.786.377	627.033.241	18.739.914.099	0,68
2019	Brazil	3.043.063	223.998.669	627.033.241	18.739.914.099	0,41
2019	South Africa	1.441.844	90.419.473	627.033.241	18.739.914.099	0,48
2019	Turkey	6.287.017	171.098.411	627.033.241	18.739.914.099	1,10

Source: Author's own calculation and ITC TradeMap data.

Table 39. HS Code 39 RCA Scores

Country	2015	2016	2017	2018	2019
BRICS RCA Score	0,74	0,76	0,77	0,79	0,83
China RCA Score	0,86	0,89	0,92	0,95	1,01
Russian Federation RCA Score	0,20	0,23	0,23	0,21	0,21
India RCA Score	0,57	0,59	0,59	0,72	0,68
Brazil RCA Score	0,55	0,56	0,50	0,42	0,41
South Africa RCA Score	0,45	0,46	0,43	0,45	0,48
Turkey RCA Score	1,12	1,04	1,03	1,06	1,10

Source: Author's own calculation and ITC TradeMap data.

In HS Code 39, “Plastics and articles thereof” product group, Turkey has an advantage over the countries analyzed in the study with an RCA score of 1.12. The RCA score, which was 1.12 in 2015, decreased slightly in the period 2016-2017-2018 but reached 1.10 points in 2019 again. Following Turkey, China increased its RCA score from 0.86 in 2015 to 1.01 in 2019.

Russia is the most disadvantaged country with a score of 0.21 in 2019. Turkey has an advantage in the export of the product group against BRICS countries in an average of 5 years.

5.7. HS Code 90 “Optical, Photographic, Cinematographic, Measuring, Checking, Precision, Medical or Surgical ...”

Table 40. HS Code 90 - 2015

Year	Country	Xik (Thousand \$)	Xi (Thousand \$)	Xk	X	RCAx
2015	BRICS	78.812.632	3.152.172.423	543.460.338	16.530.769.761	0,76
2015	China	73.779.680	2.281.855.922	543.460.338	16.530.769.761	0,98
2015	Russian Federation	1.210.037	333.501.801	543.460.338	16.530.769.761	0,11
2015	India	2.321.043	263.889.005	543.460.338	16.530.769.761	0,27
2015	Brazil	847.898	191.134.325	543.460.338	16.530.769.761	0,13
2015	South Africa	653.974	81.791.370	543.460.338	16.530.769.761	0,24
2015	Turkey	724.800	143.844.066	543.460.338	16.530.769.761	0,15

Source: Author’s own calculation and ITC TradeMap data.

Table 41. HS Code 90 - 2016

Year	Country	Xik (Thousand \$)	Xi (Thousand \$)	Xk	X	RCAx
2016	BRICS	73.396.416	2.927.257.721	538.706.324	16.031.153.744	0,75
2016	China	67.870.303	2.118.980.582	538.706.324	16.031.153.744	0,95
2016	Russian Federation	1.428.545	285.491.052	538.706.324	16.031.153.744	0,15
2016	India	2.649.306	260.963.959	538.706.324	16.031.153.744	0,30
2016	Brazil	849.240	185.235.401	538.706.324	16.031.153.744	0,14
2016	South Africa	599.022	76.586.727	538.706.324	16.031.153.744	0,23
2016	Turkey	709.485	142.606.247	538.706.324	16.031.153.744	0,15

Source: Author’s own calculation and ITC TradeMap data.

Table 42. HS Code 90 - 2017

Year	Country	Xik (Thousand \$)	Xi (Thousand \$)	Xk	X	RCA _x
2017	BRICS	76.904.710	3.232.036.428	583.681.032	17.701.054.574	0,72
2017	China	70.648.126	2.271.796.142	583.681.032	17.701.054.574	0,94
2017	Russian Federation	1.877.389	357.083.135	583.681.032	17.701.054.574	0,16
2017	India	2.883.621	295.862.157	583.681.032	17.701.054.574	0,30
2017	Brazil	921.543	217.739.177	583.681.032	17.701.054.574	0,13
2017	South Africa	574.031	89.555.817	583.681.032	17.701.054.574	0,19
2017	Turkey	809.042	156.992.940	583.681.032	17.701.054.574	0,16

Source: Author's own calculation and ITC TradeMap data.

Table 43. HS Code 90 - 2018

Year	Country	Xik (Thousand \$)	Xi (Thousand \$)	Xk	X	RCA _x
2018	BRICS	77.953.587	3.602.643.396	617.921.666	19.456.187.066	0,68
2018	China	71.444.014	2.494.230.195	617.921.666	19.456.187.066	0,90
2018	Russian Federation	1.739.321	449.347.157	617.921.666	19.456.187.066	0,12
2018	India	3.213.963	323.997.680	617.921.666	19.456.187.066	0,31
2018	Brazil	1.000.501	239.889.210	617.921.666	19.456.187.066	0,13
2018	South Africa	555.788	95.179.154	617.921.666	19.456.187.066	0,18
2018	Turkey	864.645	167.923.862	617.921.666	19.456.187.066	0,16

Source: Author's own calculation and ITC TradeMap data.

Table 44. HS Code 90 -2019

Year	Country	Xik (Thousand \$)	Xi (Thousand \$)	Xk	X	RCAx
2019	BRICS	79.771.415	3.558.551.552	613.616.677	18.739.914.099	0,68
2019	China	72.995.669	2.498.569.866	613.616.677	18.739.914.099	0,89
2019	Russian Federation	1.813.803	422.777.167	613.616.677	18.739.914.099	0,13
2019	India	3.391.215	322.786.377	613.616.677	18.739.914.099	0,32
2019	Brazil	1.026.406	223.998.669	613.616.677	18.739.914.099	0,14
2019	South Africa	569.179	90.419.473	613.616.677	18.739.914.099	0,19
2019	Turkey	933.277	171.098.411	613.616.677	18.739.914.099	0,17

Source: Author's own calculation and ITC TradeMap data.

Table 45. HS Code 90 RCA Scores

Country	2015	2016	2017	2018	2019
BRICS RCA Score	0,76	0,75	0,72	0,68	0,68
China RCA Score	0,98	0,95	0,94	0,90	0,89
Russian Federation RCA Score	0,11	0,15	0,16	0,12	0,13
India RCA Score	0,27	0,30	0,30	0,31	0,32
Brazil RCA Score	0,13	0,14	0,13	0,13	0,14
South Africa RCA Score	0,24	0,23	0,19	0,18	0,19
Turkey RCA Score	0,15	0,15	0,16	0,16	0,17

Source: Author's own calculation and ITC TradeMap data.

In HS Code 90, "Optical, photographic, cinematographic, measuring, checking, precision, medical or surgical ..." product group, China has held a competitive advantage over other members of the BRICS group, and Turkey in all the years the study examined. The remaining countries are at a disadvantage against China in the product group in question. Turkey has fallen behind the BRICS average due to China's positive impact on the average.

5.8. HS Code 30 “Pharmaceutical Products”

Table 46. HS Code 30 - 2015

Year	Country	Xik (Thousand \$)	Xi (Thousand \$)	Xk	X	RCAx
2015	BRICS	21.746.330	3.152.172.423	498.361.533	16.530.769.761	0,23
2015	China	6.942.904	2.281.855.922	498.361.533	16.530.769.761	0,10
2015	Russian Federation	529.746	333.501.801	498.361.533	16.530.769.761	0,05
2015	India	12.540.352	263.889.005	498.361.533	16.530.769.761	1,58
2015	Brazil	1.330.856	191.134.325	498.361.533	16.530.769.761	0,23
2015	South Africa	402.472	81.791.370	498.361.533	16.530.769.761	0,16
2015	Turkey	878.147	143.844.066	498.361.533	16.530.769.761	0,20

Source: Author’s own calculation and ITC TradeMap data.

Table 47. HS Code 30 - 2016

Year	Country	Xik (Thousand \$)	Xi (Thousand \$)	Xk	X	RCAx
2016	BRICS	22.315.799	2.927.257.721	506.682.966	16.031.153.744	0,24
2016	China	7.018.375	2.118.980.582	506.682.966	16.031.153.744	0,10
2016	Russian Federation	634.624	285.491.052	506.682.966	16.031.153.744	0,07
2016	India	13.041.098	260.963.959	506.682.966	16.031.153.744	1,58
2016	Brazil	1.201.293	185.235.401	506.682.966	16.031.153.744	0,21
2016	South Africa	420.409	76.586.727	506.682.966	16.031.153.744	0,17
2016	Turkey	827.082	142.606.247	506.682.966	16.031.153.744	0,18

Source: Author’s own calculation and ITC TradeMap data.

Table 48. HS Code 30 -2017

Year	Country	Xik (Thousand \$)	Xi (Thousand \$)	Xk	X	RCA _x
2017	BRICS	22.674.164	3.232.036.428	537.620.442	17.701.054.574	0,23
2017	China	7.359.497	2.271.796.142	537.620.442	17.701.054.574	0,11
2017	Russian Federation	728.113	357.083.135	537.620.442	17.701.054.574	0,07
2017	India	12.888.409	295.862.157	537.620.442	17.701.054.574	1,43
2017	Brazil	1.247.233	217.739.177	537.620.442	17.701.054.574	0,19
2017	South Africa	450.912	89.555.817	537.620.442	17.701.054.574	0,17
2017	Turkey	875.310	156.992.940	537.620.442	17.701.054.574	0,18

Source: Author's own calculation and ITC TradeMap data.

Table 49. HS Code 30 - 2018

Year	Country	Xik (Thousand \$)	Xi (Thousand \$)	Xk	X	RCA _x
2018	BRICS	25.604.289	3.602.643.396	602.373.551	19.456.187.066	0,23
2018	China	8.866.142	2.494.230.195	602.373.551	19.456.187.066	0,11
2018	Russian Federation	791.999	449.347.157	602.373.551	19.456.187.066	0,06
2018	India	14.330.253	323.997.680	602.373.551	19.456.187.066	1,43
2018	Brazil	1.186.596	239.889.210	602.373.551	19.456.187.066	0,16
2018	South Africa	429.299	95.179.154	602.373.551	19.456.187.066	0,15
2018	Turkey	1.172.518	167.923.862	602.373.551	19.456.187.066	0,23

Source: Author's own calculation and ITC TradeMap data.

Table 50. HS Code 30 - 2019

Year	Country	X _k (Thousand \$)	X _i (Thousand \$)	X _k	X	RCA _x
2019	BRICS	27.751.484	3.558.551.552	637.316.966	18.739.914.099	0,23
2019	China	9.165.509	2.498.569.866	637.316.966	18.739.914.099	0,11
2019	Russian Federation	843.795	422.777.167	637.316.966	18.739.914.099	0,06
2019	India	16.124.969	322.786.377	637.316.966	18.739.914.099	1,47
2019	Brazil	1.183.144	223.998.669	637.316.966	18.739.914.099	0,16
2019	South Africa	434.067	90.419.473	637.316.966	18.739.914.099	0,14
2019	Turkey	1.303.990	171.098.411	637.316.966	18.739.914.099	0,22

Source: Author's own calculation and ITC TradeMap data.

Table 51. HS Code 30 RCA Scores

Country	2015	2016	2017	2018	2019
BRICS RCA Score	0,23	0,24	0,23	0,23	0,23
China RCA Score	0,10	0,10	0,11	0,11	0,11
Russian Federation RCA Score	0,05	0,07	0,07	0,06	0,06
India RCA Score	1,58	1,58	1,43	1,43	1,47
Brazil RCA Score	0,23	0,21	0,19	0,16	0,16
South Africa RCA Score	0,16	0,17	0,17	0,15	0,14
Turkey RCA Score	0,20	0,18	0,18	0,23	0,22

Source: Author's own calculation and ITC TradeMap data.

In HS Code 30, "Pharmaceutical products," India has a relatively competitive advantage over these countries in all years, but this score does not mean that it is advantageous globally. The highest RCA score was also achieved by India in 2015 and 2016 with a score of 1.58. Although Turkey has the upper hand over other members of BRICS, India has no relative advantage over BRICS in this area due to its higher BRICS average. In 2018, Turkey and the BRICS average were balanced.

5.9. HS Code 99 “Commodities not Elsewhere Specified”

Table 52. HS Code 99 - 2015

Year	Country	Xik (Thousand \$)	Xi (Thousand \$)	Xk	X	RCAx
2015	BRICS	63.098.185	3.152.172.423	409.570.119	16.530.769.761	0,81
2015	China	2.030.505	2.281.855.922	409.570.119	16.530.769.761	0,04
2015	Russian Federation	55.364.811	333.501.801	409.570.119	16.530.769.761	6,70
2015	India	2.293.003	263.889.005	409.570.119	16.530.769.761	0,35
2015	Brazil	3.004.848	191.134.325	409.570.119	16.530.769.761	0,63
2015	South Africa	405.018	81.791.370	409.570.119	16.530.769.761	0,20
2015	Turkey	339.131	143.844.066	409.570.119	16.530.769.761	0,10

Source: Author’s own calculation and ITC TradeMap data.

Table 53. HS Code 99 - 2016

Year	Country	Xik (Thousand \$)	Xi (Thousand \$)	Xk	X	RCAx
2016	BRICS	54.628.085	2.927.257.721	412.149.340	16.031.153.744	0,73
2016	China	5.890.469	2.118.980.582	412.149.340	16.031.153.744	0,11
2016	Russian Federation	45.239.262	285.491.052	412.149.340	16.031.153.744	6,16
2016	India	820.957	260.963.959	412.149.340	16.031.153.744	0,12
2016	Brazil	2.124.969	185.235.401	412.149.340	16.031.153.744	0,45
2016	South Africa	552.428	76.586.727	412.149.340	16.031.153.744	0,28
2016	Turkey	372.417	142.606.247	412.149.340	16.031.153.744	0,10

Source: Author’s own calculation and ITC TradeMap data.

Table 54. HS Code 99 - 2017

Year	Country	Xik (Thousand \$)	Xi (Thousand \$)	Xk	X	RCA _x
2017	BRICS	62.693.826	3.232.036.428	371.642.333	17.701.054.574	0,92
2017	China	6.204.745	2.271.796.142	371.642.333	17.701.054.574	0,13
2017	Russian Federation	52.887.528	357.083.135	371.642.333	17.701.054.574	7,05
2017	India	277.469	295.862.157	371.642.333	17.701.054.574	0,04
2017	Brazil	2.669.848	217.739.177	371.642.333	17.701.054.574	0,58
2017	South Africa	654.236	89.555.817	371.642.333	17.701.054.574	0,35
2017	Turkey	413.825	156.992.940	371.642.333	17.701.054.574	0,13

Source: Author's own calculation and ITC TradeMap data.

Table 55. HS Code 99 - 2018

Year	Country	Xik (Thousand \$)	Xi (Thousand \$)	Xk	X	RCA _x
2018	BRICS	71.886.035	3.602.643.396	378.798.947	19.456.187.066	1,02
2018	China	5.279.261	2.494.230.195	378.798.947	19.456.187.066	0,11
2018	Russian Federation	63.746.027	449.347.157	378.798.947	19.456.187.066	7,29
2018	India	178.658	323.997.680	378.798.947	19.456.187.066	0,03
2018	Brazil	2.222.181	239.889.210	378.798.947	19.456.187.066	0,48
2018	South Africa	459.908	95.179.154	378.798.947	19.456.187.066	0,25
2018	Turkey	303.424	167.923.862	378.798.947	19.456.187.066	0,09

Source: Author's own calculation and ITC TradeMap data.

Table 56. HS Code 99 - 2019

Year	Country	X _{ik} (Thousand \$)	X _i (Thousand \$)	X _k	X	RCA _x
2019	BRICS	67.444.805	3.558.551.552	516.967.559	18.739.914.099	0,69
2019	China	11.757.215	2.498.569.866	516.967.559	18.739.914.099	0,17
2019	Russian Federation	55.265.424	422.777.167	516.967.559	18.739.914.099	4,74
2019	India	212.037	322.786.377	516.967.559	18.739.914.099	0,02
2019	Brazil	8.445	223.998.669	516.967.559	18.739.914.099	0,00
2019	South Africa	257.187	90.419.473	516.967.559	18.739.914.099	0,10
2019	Turkey	338.102	171.098.411	516.967.559	18.739.914.099	0,07

Source: Author's own calculation and ITC TradeMap data.

Table 57. HS Code 99 RCA Scores

Country	2015	2016	2017	2018	2019
BRICS RCA Score	0,81	0,73	0,92	1,02	0,69
China RCA Score	0,04	0,11	0,13	0,11	0,17
Russian Federation RCA Score	6,70	6,16	7,05	7,29	4,74
India RCA Score	0,35	0,12	0,04	0,03	0,02
Brazil RCA Score	0,63	0,45	0,58	0,48	0,00
South Africa RCA Score	0,20	0,28	0,35	0,25	0,10
Turkey RCA Score	0,10	0,10	0,13	0,09	0,07

Source: Author's own calculation and ITC TradeMap data.

In the HS Code 99, "Commodities not elsewhere specified" product group, Russia has a relatively competitive advantage in all years. The RCA score reached 7.29 in 2018. While Brazil was the country after Russia between 2015-2018, the RCA score approached to zero in 2019 due to the decrease in exports in the product group. Turkey is at a disadvantage compared to the BRICS average.

5.10 HS Code 29 “Organic Chemicals”

Table 58. HS Code 29 - 2015

Year	Country	Xik (Thousand \$)	Xi (Thousand \$)	Xk	X	RCAx
2015	BRICS	60.099.391	3.152.172.423	369.189.614	16.530.769.761	0,85
2015	China	42.683.948	2.281.855.922	369.189.614	16.530.769.761	0,84
2015	Russian Federation	2.919.419	333.501.801	369.189.614	16.530.769.761	0,39
2015	India	11.238.710	263.889.005	369.189.614	16.530.769.761	1,91
2015	Brazil	2.263.941	191.134.325	369.189.614	16.530.769.761	0,53
2015	South Africa	993.373	81.791.370	369.189.614	16.530.769.761	0,54
2015	Turkey	473.941	143.844.066	369.189.614	16.530.769.761	0,15

Source: Author’s own calculation and ITC TradeMap data.

Table 59. HS Code 29 - 2016

Year	Country	Xik (Thousand \$)	Xi (Thousand \$)	Xk	X	RCAx
2016	BRICS	58.594.699	2.927.257.721	350.329.994	16.031.153.744	0,92
2016	China	42.177.868	2.118.980.582	350.329.994	16.031.153.744	0,91
2016	Russian Federation	2.409.098	285.491.052	350.329.994	16.031.153.744	0,39
2016	India	11.251.529	260.963.959	350.329.994	16.031.153.744	1,97
2016	Brazil	1.855.794	185.235.401	350.329.994	16.031.153.744	0,46
2016	South Africa	900.410	76.586.727	350.329.994	16.031.153.744	0,54
2016	Turkey	473.413	142.606.247	350.329.994	16.031.153.744	0,15

Source: Author’s own calculation and ITC TradeMap data.

Table 60. HS Code 29 - 2017

Year	Country	Xik (Thousand \$)	Xi (Thousand \$)	Xk	X	RCA _x
2017	BRICS	70.041.929	3.232.036.428	385.355.904	17.701.054.574	1,00
2017	China	49.731.545	2.271.796.142	385.355.904	17.701.054.574	1,01
2017	Russian Federation	3.236.758	357.083.135	385.355.904	17.701.054.574	0,42
2017	India	13.560.668	295.862.157	385.355.904	17.701.054.574	2,11
2017	Brazil	2.366.033	217.739.177	385.355.904	17.701.054.574	0,50
2017	South Africa	1.146.925	89.555.817	385.355.904	17.701.054.574	0,59
2017	Turkey	657.361	156.992.940	385.355.904	17.701.054.574	0,19

Source: Author's own calculation and ITC TradeMap data.

Table 61. HS Code 29 - 2018

Year	Country	Xik (Thousand \$)	Xi (Thousand \$)	Xk	X	RCA _x
2018	BRICS	85.195.956	3.602.643.396	447.976.053	19.456.187.066	1,03
2018	China	59.795.623	2.494.230.195	447.976.053	19.456.187.066	1,04
2018	Russian Federation	4.199.559	449.347.157	447.976.053	19.456.187.066	0,41
2018	India	17.815.579	323.997.680	447.976.053	19.456.187.066	2,39
2018	Brazil	2.241.528	239.889.210	447.976.053	19.456.187.066	0,41
2018	South Africa	1.143.667	95.179.154	447.976.053	19.456.187.066	0,52
2018	Turkey	632.111	167.923.862	447.976.053	19.456.187.066	0,16

Source: Author's own calculation and ITC TradeMap data.

Table 62. HS Code 29 -2019

Year	Country	X _{ik} (Thousand \$)	X _i (Thousand \$)	X _k	X	RCA _x
2019	BRICS	81.897.910	3.558.551.552	419.227.220	18.739.914.099	1,03
2019	China	56.814.767	2.498.569.866	419.227.220	18.739.914.099	1,02
2019	Russian Federation	3.674.541	422.777.167	419.227.220	18.739.914.099	0,39
2019	India	18.296.277	322.786.377	419.227.220	18.739.914.099	2,53
2019	Brazil	2.021.756	223.998.669	419.227.220	18.739.914.099	0,40
2019	South Africa	1.090.569	90.419.473	419.227.220	18.739.914.099	0,54
2019	Turkey	584.064	171.098.411	419.227.220	18.739.914.099	0,15

Source: Author's own calculation and ITC TradeMap data.

Table 63. HS Code 29 RCA Scores

Country	2015	2016	2017	2018	2019
BRICS RCA Score	0,85	0,92	1,00	1,03	1,03
China RCA Score	0,84	0,91	1,01	1,04	1,02
Russian Federation RCA Score	0,39	0,39	0,42	0,41	0,39
India RCA Score	1,91	1,97	2,11	2,39	2,53
Brazil RCA Score	0,53	0,46	0,50	0,41	0,40
South Africa RCA Score	0,54	0,54	0,59	0,52	0,54
Turkey RCA Score	0,15	0,15	0,19	0,16	0,15

Source: Author's own calculation and ITC TradeMap data.

In the HS Code 29, "Organic chemicals" product group, India has a net score against other countries. In addition, India increased its score from 1.91 in 2015 to 2.53 in 2019, reinforcing its advantage in the product group in question. Following India, China maintained its advantage in HS code 29 from year to year and increased its score above one in 2017. Turkey has no advantage over all BRICS countries in this product group. India and China are increasing the BRICS average.

5.11. HS Code 72 “Iron and Steel”

Table 64. HS Code 72 - 2015

Year	Country	Xik (Thousand \$)	Xi (Thousand \$)	Xk	X	RCA _x
2015	BRICS	84.891.536	3.152.172.423	329.275.276	16.530.769.761	1,35
2015	China	49.223.944	2.281.855.922	329.275.276	16.530.769.761	1,08
2015	Russian Federation	14.911.751	333.501.801	329.275.276	16.530.769.761	2,24
2015	India	6.313.661	263.889.005	329.275.276	16.530.769.761	1,20
2015	Brazil	8.927.018	191.134.325	329.275.276	16.530.769.761	2,34
2015	South Africa	5.515.162	81.791.370	329.275.276	16.530.769.761	3,39
2015	Turkey	6.556.742	143.844.066	329.275.276	16.530.769.761	2,29

Source: Author’s own calculation and ITC TradeMap data.

Table 65. HS Code 72 - 2016

Year	Country	Xik (Thousand \$)	Xi (Thousand \$)	Xk	X	RCA _x
2016	BRICS	77.175.003	2.927.257.721	303.975.827	16.031.153.744	1,39
2016	China	43.413.076	2.118.980.582	303.975.827	16.031.153.744	1,08
2016	Russian Federation	14.121.803	285.491.052	303.975.827	16.031.153.744	2,61
2016	India	6.435.870	260.963.959	303.975.827	16.031.153.744	1,30
2016	Brazil	7.892.012	185.235.401	303.975.827	16.031.153.744	2,25
2016	South Africa	5.312.242	76.586.727	303.975.827	16.031.153.744	3,66
2016	Turkey	6.187.046	142.606.247	303.975.827	16.031.153.744	2,29

Source: Author’s own calculation and ITC TradeMap data.

Table 66. HS Code 72- 2017

Year	Country	Xik (Thousand \$)	Xi (Thousand \$)	Xk	X	RCAx
2017	BRICS	90.409.458	3.232.036.428	375.925.051	17.701.054.574	1,32
2017	China	43.073.950	2.271.796.142	375.925.051	17.701.054.574	0,89
2017	Russian Federation	18.762.190	357.083.135	375.925.051	17.701.054.574	2,47
2017	India	11.712.092	295.862.157	375.925.051	17.701.054.574	1,86
2017	Brazil	10.761.291	217.739.177	375.925.051	17.701.054.574	2,33
2017	South Africa	6.099.935	89.555.817	375.925.051	17.701.054.574	3,21
2017	Turkey	8.230.403	156.992.940	375.925.051	17.701.054.574	2,47

Source: Author's own calculation and ITC TradeMap data.

Table 67. HS Code 72 -2018

Year	Country	Xik (Thousand \$)	Xi (Thousand \$)	Xk	X	RCAx
2018	BRICS	98.383.652	3.602.643.396	425.890.437	19.456.187.066	1,25
2018	China	46.917.053	2.494.230.195	425.890.437	19.456.187.066	0,86
2018	Russian Federation	23.357.805	449.347.157	425.890.437	19.456.187.066	2,37
2018	India	9.969.914	323.997.680	425.890.437	19.456.187.066	1,41
2018	Brazil	11.804.871	239.889.210	425.890.437	19.456.187.066	2,25
2018	South Africa	6.334.009	95.179.154	425.890.437	19.456.187.066	3,04
2018	Turkey	11.546.435	167.923.862	425.890.437	19.456.187.066	3,14

Source: Author's own calculation and ITC TradeMap data.

Table 68. HS Code 72 -2019

Year	Country	Xik (Thousand \$)	Xi (Thousand \$)	Xk	X	RCAx
2019	BRICS	83.540.140	3.558.551.552	368.779.422	18.739.914.099	1,19
2019	China	39.463.924	2.498.569.866	368.779.422	18.739.914.099	0,80
2019	Russian Federation	18.140.726	422.777.167	368.779.422	18.739.914.099	2,18
2019	India	9.665.316	322.786.377	368.779.422	18.739.914.099	1,52
2019	Brazil	10.898.635	223.998.669	368.779.422	18.739.914.099	2,47
2019	South Africa	5.371.539	90.419.473	368.779.422	18.739.914.099	3,02
2019	Turkey	9.939.444	171.098.411	368.779.422	18.739.914.099	2,95

Source: Author's own calculation and ITC TradeMap data.

Table 69. HS Code 72 RCA Scores

Country	2015	2016	2017	2018	2019
BRICS RCA Score	1,35	1,39	1,32	1,25	1,19
China RCA Score	1,08	1,08	0,89	0,86	0,80
Russian Federation RCA Score	2,24	2,61	2,47	2,37	2,18
India RCA Score	1,20	1,30	1,86	1,41	1,52
Brazil RCA Score	2,34	2,25	2,33	2,25	2,47
South Africa RCA Score	3,39	3,66	3,21	3,04	3,02
Turkey RCA Score	2,29	2,29	2,47	3,14	2,95

Source: Author's own calculation and ITC TradeMap data.

South Africa is the most advantageous country in the HS Code 72, "Iron and steel" product group. With RCA scores ranging from 3,39 to 3,02, South Africa is in a highly advantageous position. Following South Africa, Turkey gained this advantage in 2018, and Turkey's RCA scores are advantageous position.

Russia and Brazil performed close to Turkey, whereas the country most disadvantaged groups in the product in question is China. Although Turkey has displayed a balanced profile based on countries, due to China lowering the average of BRICS, Turkey has a relatively advantageous position against BRICS countries every year.

5.12.HS Code 88 “Aircraft, Spacecraft, and Parts Thereof”

Table 70. HS Code 88 - 2015

Year	Country	Xik (Thousand \$)	Xi (Thousand \$)	Xk	X	RCA _x
2015	BRICS	12.338.643	3.152.172.423	329.847.444	16.530.691.171	0,20
2015	China	3.483.943	2.281.855.922	329.847.444	16.530.691.171	0,08
2015	Brazil	4.503.206	263.889.005	329.847.444	16.530.691.171	0,86
2015	India	3.783.771	191.134.325	329.847.444	16.530.691.171	0,99
2015	South Africa	567.723	81.791.370	329.847.444	16.530.691.171	0,35
2015	Turkey	688.755	143.844.066	329.847.444	16.530.691.171	0,24

Source: Author’s own calculation and ITC TradeMap data.

Table 71. HS Code 88 -2016

Year	Country	Xik (Thousand \$)	Xi (Thousand \$)	Xk	X	RCA _x
2016	BRICS	11.761.885	2.927.257.721	335.244.728	16.033.127.095	0,19
2016	China	3.440.181	2.118.980.582	335.244.728	16.033.127.095	0,08
2016	Brazil	4.803.093	185.235.401	335.244.728	16.033.127.095	1,24
2016	India	3.025.466	260.963.959	335.244.728	16.033.127.095	0,55
2016	South Africa	493.145	76.586.727	335.244.728	16.033.127.095	0,31
2016	Turkey	717.532	142.606.247	335.244.728	16.033.127.095	0,24

Source: Author’s own calculation and ITC TradeMap data.

Table 72. HS Code 88 -2017

Year	Country	Xik (Thousand \$)	Xi (Thousand \$)	Xk	X	RCA _x
2017	BRICS	10.393.909	3.232.036.428	329.890.817	17.694.951.675	0,17
2017	China	3.670.362	2.271.796.142	329.890.817	17.694.951.675	0,09
2017	Brazil	4.045.347	217.739.177	329.890.817	17.694.951.675	1,00
2017	India	2.314.343	295.862.157	329.890.817	17.694.951.675	0,42
2017	South Africa	363.857	89.555.817	329.890.817	17.694.951.675	0,22
2017	Turkey	1.534.418	156.992.940	329.890.817	17.694.951.675	0,52

Source: Author's own calculation and ITC TradeMap data.

Table 73. HS Code 88 -2018

Year	Country	Xik (Thousand \$)	Xi (Thousand \$)	Xk	X	RCA _x
2018	BRICS	10.980.646	3.602.643.396	336.924.029	19.460.171.128	0,18
2018	China	4.612.433	2.494.230.195	336.924.029	19.460.171.128	0,11
2018	Brazil	3.973.881	239.889.210	336.924.029	19.460.171.128	0,96
2018	India	2.041.860	323.997.680	336.924.029	19.460.171.128	0,36
2018	South Africa	352.472	95.179.154	336.924.029	19.460.171.128	0,21
2018	Turkey	917.888	167.923.862	336.924.029	19.460.171.128	0,32

Source: Author's own calculation and ITC TradeMap data.

Table 74. HS Code 88 - 2019

Year	Country	Xik (Thousand \$)	Xi (Thousand \$)	Xk	X	RCA _x
2019	BRICS	9.545.605	3.559.015.901	332.284.162	18.754.622.224	0,15
2019	China	3.906.195	2.498.569.866	332.284.162	18.754.622.224	0,09
2019	Brazil	3.744.029	223.998.669	332.284.162	18.754.622.224	0,94
2019	India	1.493.131	323.250.726	332.284.162	18.754.622.224	0,26
2019	South Africa	402.250	90.419.473	332.284.162	18.754.622.224	0,25
2019	Turkey	1.029.696	171.098.411	332.284.162	18.754.622.224	0,34

Source: Author's own calculation and ITC TradeMap data.

Table 75. HS Code 88 RCA Scores

Country	2015	2016	2017	2018	2019
BRICS RCA Score	0,20	0,19	0,17	0,18	0,15
China RCA Score	0,08	0,08	0,09	0,11	0,09
Brazil RCA Score	0,86	1,24	1,00	0,96	0,94
India RCA Score	0,99	0,55	0,42	0,36	0,26
South Africa RCA Score	0,35	0,31	0,22	0,21	0,25
Turkey RCA Score	0,24	0,24	0,52	0,32	0,34

Source: Author's own calculation and ITC TradeMap data.

In the HS Code 88, "Aircraft, spacecraft, and parts thereof" product group, Russia did not report export data. Brazil has a relative advantage in HS code 88. India reduced its score to 0,26, which was close to one in 2015. Turkey, on the other hand, achieved a ceiling score of 0,52 in the years studied in the HS code in question in 2017.

5.13.HS Code 73 “Articles of Iron or Steel”

Table 76. HS Code 73 -2015

Year	Country	Xik (Thousand \$)	Xi (Thousand \$)	Xk	X	RCA _x
2015	BRICS	72.381.186	3.152.172.423	281.905.186	16.530.769.761	1,35
2015	China	60.629.517	2.281.855.922	281.905.186	16.530.769.761	1,56
2015	Russian Federation	2.268.970	333.501.801	281.905.186	16.530.769.761	0,40
2015	India	6.502.482	263.889.005	281.905.186	16.530.769.761	1,44
2015	Brazil	1.739.886	191.134.325	281.905.186	16.530.769.761	0,53
2015	South Africa	1.240.331	81.791.370	281.905.186	16.530.769.761	0,89
2015	Turkey	5.465.543	143.844.066	281.905.186	16.530.769.761	2,23

Source: Author’s own calculation and ITC TradeMap data.

Table 77. HS Code 73 -2016

Year	Country	Xik (Thousand \$)	Xi (Thousand \$)	Xk	X	RCA _x
2016	BRICS	63.527.698	2.927.257.721	261.284.849	16.031.153.744	1,33
2016	China	53.101.329	2.118.980.582	261.284.849	16.031.153.744	1,54
2016	Russian Federation	2.263.777	285.491.052	261.284.849	16.031.153.744	0,49
2016	India	5.820.015	260.963.959	261.284.849	16.031.153.744	1,37
2016	Brazil	1.261.290	185.235.401	261.284.849	16.031.153.744	0,42
2016	South Africa	1.081.287	76.586.727	261.284.849	16.031.153.744	0,87
2016	Turkey	4.967.680	142.606.247	261.284.849	16.031.153.744	2,14

Source: Author’s own calculation and ITC TradeMap data.

Table 78. HS Code 73 -2017

Year	Country	Xik (Thousand \$)	Xi (Thousand \$)	Xk	X	RCA _x
2017	BRICS	70.154.711	3.232.036.428	285.542.904	17.701.054.574	1,35
2017	China	57.301.335	2.271.796.142	285.542.904	17.701.054.574	1,56
2017	Russian Federation	3.441.017	357.083.135	285.542.904	17.701.054.574	0,60
2017	India	6.654.666	295.862.157	285.542.904	17.701.054.574	1,39
2017	Brazil	1.494.532	217.739.177	285.542.904	17.701.054.574	0,43
2017	South Africa	1.263.161	89.555.817	285.542.904	17.701.054.574	0,87
2017	Turkey	5.598.990	156.992.940	285.542.904	17.701.054.574	2,21

Source: Author's own calculation and ITC TradeMap data.

Table 79. HS Code 73 -2018

Year	Country	Xik (Thousand \$)	Xi (Thousand \$)	Xk	X	RCA _x
2018	BRICS	79.830.474	3.602.643.396	316.058.562	19.456.187.066	1,36
2018	China	65.558.408	2.494.230.195	316.058.562	19.456.187.066	1,62
2018	Russian Federation	4.075.683	449.347.157	316.058.562	19.456.187.066	0,56
2018	India	7.102.866	323.997.680	316.058.562	19.456.187.066	1,35
2018	Brazil	1.674.954	239.889.210	316.058.562	19.456.187.066	0,43
2018	South Africa	1.418.563	95.179.154	316.058.562	19.456.187.066	0,92
2018	Turkey	6.533.980	167.923.862	316.058.562	19.456.187.066	2,40

Source: Author's own calculation and ITC TradeMap data.

Table 80. HS Code 73 -2019

Year	Country	Xik (Thousand \$)	Xi (Thousand \$)	Xk	X	RCAx
2019	BRICS	83.258.248	3.558.551.552	305.653.417	18.739.914.099	1,43
2019	China	69.554.449	2.498.569.866	305.653.417	18.739.914.099	1,71
2019	Russian Federation	3.718.506	422.777.167	305.653.417	18.739.914.099	0,54
2019	India	7.246.870	322.786.377	305.653.417	18.739.914.099	1,38
2019	Brazil	1.487.592	223.998.669	305.653.417	18.739.914.099	0,41
2019	South Africa	1.250.831	90.419.473	305.653.417	18.739.914.099	0,85
2019	Turkey	6.485.649	171.098.411	305.653.417	18.739.914.099	2,32

Source: Author's own calculation and ITC TradeMap data.

Table 81. HS Code 73 RCA Scores

Country	2015	2016	2017	2018	2019
BRICS RCA Score	1,35	1,33	1,35	1,36	1,43
China RCA Score	1,56	1,54	1,56	1,62	1,71
Russian Federation RCA Score	0,40	0,49	0,60	0,56	0,54
India RCA Score	1,44	1,37	1,39	1,35	1,38
Brazil RCA Score	0,53	0,42	0,43	0,43	0,41
South Africa RCA Score	0,89	0,87	0,87	0,92	0,85
Turkey RCA Score	2,23	2,14	2,21	2,40	2,32

Source: Author's own calculation and ITC TradeMap data.

In HS Code 73, Turkey is the most advantageous country. The current score, which was 2,23 in 2015, increased to 2,40 in 2018. China is the second country after Turkey. Also, India has an advantageous position in this product group. Turkey has an advantage over countries and the BRICS average in all the years that the study was analyzed.

5.14.HS Code 94 “Furniture; Bedding, Mattresses, Mattress Supports, Cushions and Similar Stuffed Furnishings; ...”

Table 82. HS Code 94 -2015

Year	Country	Xik (Thousand \$)	Xi (Thousand \$)	Xk	X	RCAx
2015	BRICS	101.543.467	3.152.172.423	239.239.363	16.530.769.761	2,23
2015	China	98.734.456	2.281.855.922	239.239.363	16.530.769.761	2,99
2015	Russian Federation	377.304	333.501.801	239.239.363	16.530.769.761	0,08
2015	India	1.276.530	263.889.005	239.239.363	16.530.769.761	0,33
2015	Brazil	697.797	191.134.325	239.239.363	16.530.769.761	0,25
2015	South Africa	457.380	81.791.370	239.239.363	16.530.769.761	0,39
2015	Turkey	2.753.346	143.844.066	239.239.363	16.530.769.761	1,32

Source: Author’s own calculation and ITC TradeMap data.

Table 83. HS Code 94 -2016

Year	Country	Xik (Thousand \$)	Xi (Thousand \$)	Xk	X	RCAx
2016	BRICS	92.322.980	2.927.257.721	234.464.071	16.031.153.744	2,16
2016	China	89.500.005	2.118.980.582	234.464.071	16.031.153.744	2,89
2016	Russian Federation	409.657	285.491.052	234.464.071	16.031.153.744	0,10
2016	India	1.353.830	260.963.959	234.464.071	16.031.153.744	0,35
2016	Brazil	677.508	185.235.401	234.464.071	16.031.153.744	0,25
2016	South Africa	381.980	76.586.727	234.464.071	16.031.153.744	0,34
2016	Turkey	2.658.941	142.606.247	234.464.071	16.031.153.744	1,27

Source: Author’s own calculation and ITC TradeMap data.

Table 84. HS Code 94 -2017

Year	Country	Xik (Thousand \$)	Xi (Thousand \$)	Xk	X	RCAx
2017	BRICS	92.863.330	3.232.036.428	242.471.629	17.701.054.574	2,10
2017	China	89.816.692	2.271.796.142	242.471.629	17.701.054.574	2,89
2017	Russian Federation	494.236	357.083.135	242.471.629	17.701.054.574	0,10
2017	India	1.440.220	295.862.157	242.471.629	17.701.054.574	0,36
2017	Brazil	714.781	217.739.177	242.471.629	17.701.054.574	0,24
2017	South Africa	397.401	89.555.817	242.471.629	17.701.054.574	0,32
2017	Turkey	2.760.343	156.992.940	242.471.629	17.701.054.574	1,28

Source: Author's own calculation and ITC TradeMap data.

Table 85. HS Code 94 -2018

Year	Country	Xik (Thousand \$)	Xi (Thousand \$)	Xk	X	RCAx
2018	BRICS	99.834.681	3.602.643.396	259.322.206	19.456.187.066	2,08
2018	China	96.416.994	2.494.230.195	259.322.206	19.456.187.066	2,90
2018	Russian Federation	567.507	449.347.157	259.322.206	19.456.187.066	0,09
2018	India	1.661.016	323.997.680	259.322.206	19.456.187.066	0,38
2018	Brazil	770.926	239.889.210	259.322.206	19.456.187.066	0,24
2018	South Africa	418.238	95.179.154	259.322.206	19.456.187.066	0,33
2018	Turkey	3.130.600	167.923.862	259.322.206	19.456.187.066	1,40

Source: Author's own calculation and ITC TradeMap data.

Table 86. HS Code 94-2019

Year	Country	Xik (Thousand \$)	Xi (Thousand \$)	Xk	X	RCA _x
2019	BRICS	103.131.686	3.558.551.552	264.369.551	18.739.914.099	2,05
2019	China	99.499.770	2.498.569.866	264.369.551	18.739.914.099	2,82
2019	Russian Federation	666.335	422.777.167	264.369.551	18.739.914.099	0,11
2019	India	1.843.118	322.786.377	264.369.551	18.739.914.099	0,40
2019	Brazil	759.869	223.998.669	264.369.551	18.739.914.099	0,24
2019	South Africa	362.594	90.419.473	264.369.551	18.739.914.099	0,28
2019	Turkey	3.489.376	171.098.411	264.369.551	18.739.914.099	1,45

Source: Author's own calculation and ITC TradeMap data.

Table 87. HS Code 94 RCA Scores

Country	2015	2016	2017	2018	2019
BRICS RCA Score	2,23	2,16	2,10	2,08	2,05
China RCA Score	2,99	2,89	2,89	2,90	2,82
Russian Federation RCA Score	0,08	0,10	0,10	0,09	0,11
India RCA Score	0,33	0,35	0,36	0,38	0,40
Brazil RCA Score	0,25	0,25	0,24	0,24	0,24
South Africa RCA Score	0,39	0,34	0,32	0,33	0,28
Turkey RCA Score	1,32	1,27	1,28	1,40	1,45

Source: Author's own calculation and ITC TradeMap data.

China is the most advantageous country in HS code 94 "Furniture; bedding, mattresses, mattress supports, cushions, and similar stuffed furnishings" product group. Turkey, followed by China, again has the advantage in this product group.

Russia is the most disadvantaged country in this product group. Brazil's RCA score makes no progress in recent years. Turkey is behind the BRICS score due to China's high BRICS average.

5.15.HS Code 61 “Articles of Apparel and Clothing Accessories, Knitted Or Crocheted”

Table 88. HS Code 61 -2015

Year	Country	Xik (Thousand \$)	Xi (Thousand \$)	Xk	X	RCA _x
2015	BRICS	92.031.241	3.152.172.423	219.651.783	16.530.769.761	2,20
2015	China	83.842.271	2.281.855.922	219.651.783	16.530.769.761	2,77
2015	Russian Federation	111.971	333.501.801	219.651.783	16.530.769.761	0,03
2015	India	7.778.225	263.889.005	219.651.783	16.530.769.761	2,22
2015	Brazil	74.629	191.134.325	219.651.783	16.530.769.761	0,03
2015	South Africa	224.145	81.791.370	219.651.783	16.530.769.761	0,21
2015	Turkey	8.927.259	143.844.066	219.651.783	16.530.769.761	4,67

Source: Author’s own calculation and ITC TradeMap data.

Table 89. HS Code 61 -2016

Year	Country	Xik (Thousand \$)	Xi (Thousand \$)	Xk	X	RCA _x
2016	BRICS	83.328.714	2.927.257.721	216.661.610	16.031.153.744	2,11
2016	China	75.026.960	2.118.980.582	216.661.610	16.031.153.744	2,62
2016	Russian Federation	120.098	285.491.052	216.661.610	16.031.153.744	0,03
2016	India	7.909.095	260.963.959	216.661.610	16.031.153.744	2,24
2016	Brazil	74.626	185.235.401	216.661.610	16.031.153.744	0,03
2016	South Africa	197.935	76.586.727	216.661.610	16.031.153.744	0,19
2016	Turkey	8.855.609	142.606.247	216.661.610	16.031.153.744	4,59

Source: Author’s own calculation and ITC TradeMap data.

Table 90. HS Code 61 -2017

Year	Country	Xik (Thousand \$)	Xi (Thousand \$)	Xk	X	RCAx
2017	BRICS	80.796.740	3.232.036.428	224.306.744	17.701.054.574	1,97
2017	China	71.972.535	2.271.796.142	224.306.744	17.701.054.574	2,50
2017	Russian Federation	161.078	357.083.135	224.306.744	17.701.054.574	0,04
2017	India	8.350.043	295.862.157	224.306.744	17.701.054.574	2,23
2017	Brazil	84.631	217.739.177	224.306.744	17.701.054.574	0,03
2017	South Africa	228.453	89.555.817	224.306.744	17.701.054.574	0,20
2017	Turkey	8.840.031	156.992.940	224.306.744	17.701.054.574	4,44

Source: Author's own calculation and ITC TradeMap data.

Table 91. HS Code 61 -2018

Year	Country	Xik (Thousand \$)	Xi (Thousand \$)	Xk	X	RCAx
2018	BRICS	81.599.832	3.602.643.396	239.650.152	19.456.187.066	1,84
2018	China	73.525.495	2.494.230.195	239.650.152	19.456.187.066	2,39
2018	Russian Federation	173.354	449.347.157	239.650.152	19.456.187.066	0,03
2018	India	7.580.562	323.997.680	239.650.152	19.456.187.066	1,90
2018	Brazil	85.437	239.889.210	239.650.152	19.456.187.066	0,03
2018	South Africa	234.984	95.179.154	239.650.152	19.456.187.066	0,20
2018	Turkey	9.043.113	167.923.862	239.650.152	19.456.187.066	4,37

Source: Author's own calculation and ITC TradeMap data.

Table 92. HS Code 61 -2019

Year	Country	Xik (Thousand \$)	Xi (Thousand \$)	Xk	X	RCAx
2019	BRICS	79.872.363	3.558.551.552	247.204.048	18.739.914.099	1,70
2019	China	71.440.138	2.498.569.866	247.204.048	18.739.914.099	2,17
2019	Russian Federation	215.963	422.777.167	247.204.048	18.739.914.099	0,04
2019	India	7.908.865	322.786.377	247.204.048	18.739.914.099	1,86
2019	Brazil	92.882	223.998.669	247.204.048	18.739.914.099	0,03
2019	South Africa	214.515	90.419.473	247.204.048	18.739.914.099	0,18
2019	Turkey	9.089.251	171.098.411	247.204.048	18.739.914.099	4,03

Source: Author's own calculation and ITC TradeMap data.

Table 93. HS Code 61 RCA Scores

Country	2015	2016	2017	2018	2019
BRICS RCA Score	2,20	2,11	1,97	1,84	1,70
China RCA Score	2,77	2,62	2,50	2,39	2,17
Russian Federation RCA Score	0,03	0,03	0,04	0,03	0,04
India RCA Score	2,22	2,24	2,23	1,90	1,86
Brazil RCA Score	0,03	0,03	0,03	0,03	0,03
South Africa RCA Score	0,21	0,19	0,20	0,20	0,18
Turkey RCA Score	4,67	4,59	4,44	4,37	4,03

Source: Author's own calculation and ITC TradeMap data.

In HS code 61, "Articles of apparel and clothing accessories, knitted or crocheted" product group, Turkey has a competitive advantage over RCA score. Although the score, which was 4,67 in 2015, declined to 4,03 in 2019, Turkey has continued to be the most advantageous country over the years the study examined. While Russia, Brazil, and South Africa have no advantages, China and India have an advantageous place in this product group, after Turkey.

5.16.HS Code 62 “Articles of Apparel And Clothing Accessories, Not Knitted or Crocheted”

Table 94. HS Code 62 -2015

Year	Country	Xik (Thousand \$)	Xi (Thousand \$)	Xk	X	RCA _x
2015	BRICS	88.261.252	3.152.172.423	218.914.796	16.530.769.761	2,11
2015	China	78.506.716	2.281.855.922	218.914.796	16.530.769.761	2,60
2015	Russian Federation	149.883	333.501.801	218.914.796	16.530.769.761	0,03
2015	India	9.347.025	263.889.005	218.914.796	16.530.769.761	2,67
2015	Brazil	52.926	191.134.325	218.914.796	16.530.769.761	0,02
2015	South Africa	204.702	81.791.370	218.914.796	16.530.769.761	0,19
2015	Turkey	5.916.617	143.844.066	218.914.796	16.530.769.761	3,11

Source: Author’s own calculation and ITC TradeMap data.

Table 95. HS Code 62 -2016

Year	Country	Xik (Thousand \$)	Xi (Thousand \$)	Xk	X	RCA _x
2016	BRICS	82.200.571	2.927.257.721	216.446.264	16.031.153.744	2,08
2016	China	72.766.740	2.118.980.582	216.446.264	16.031.153.744	2,54
2016	Russian Federation	149.120	285.491.052	216.446.264	16.031.153.744	0,04
2016	India	9.049.966	260.963.959	216.446.264	16.031.153.744	2,57
2016	Brazil	47.948	185.235.401	216.446.264	16.031.153.744	0,02
2016	South Africa	186.797	76.586.727	216.446.264	16.031.153.744	0,18
2016	Turkey	5.928.894	142.606.247	216.446.264	16.031.153.744	3,08

Source: Author’s own calculation and ITC TradeMap data.

Table 96. HS Code 62 -2017

Year	Country	Xik (Thousand \$)	Xi (Thousand \$)	Xk	X	RCAx
2017	BRICS	83.038.712	3.232.036.428	225.209.961	17.701.054.574	2,02
2017	China	73.591.016	2.271.796.142	225.209.961	17.701.054.574	2,55
2017	Russian Federation	198.240	357.083.135	225.209.961	17.701.054.574	0,04
2017	India	8.999.578	295.862.157	225.209.961	17.701.054.574	2,39
2017	Brazil	54.669	217.739.177	225.209.961	17.701.054.574	0,02
2017	South Africa	195.209	89.555.817	225.209.961	17.701.054.574	0,17
2017	Turkey	5.947.844	156.992.940	225.209.961	17.701.054.574	2,98

Source: Author's own calculation and ITC TradeMap data.

Table 97. HS Code 62 -2018

Year	Country	Xik (Thousand \$)	Xi (Thousand \$)	Xk	X	RCAx
2018	BRICS	79.983.865	3.602.643.396	236.163.099	19.456.187.066	1,83
2018	China	71.448.039	2.494.230.195	236.163.099	19.456.187.066	2,36
2018	Russian Federation	201.793	449.347.157	236.163.099	19.456.187.066	0,04
2018	India	8.082.832	323.997.680	236.163.099	19.456.187.066	2,06
2018	Brazil	52.927	239.889.210	236.163.099	19.456.187.066	0,02
2018	South Africa	198.274	95.179.154	236.163.099	19.456.187.066	0,17
2018	Turkey	6.262.454	167.923.862	236.163.099	19.456.187.066	3,07

Source: Author's own calculation and ITC TradeMap data.

Table 98. HS Code 62 -2019

Year	Country	Xik (Thousand \$)	Xi (Thousand \$)	Xk	X	RCAx
2019	BRICS	75.889.753	3.558.551.552	240.407.024	18.739.914.099	1,66
2019	China	66.798.309	2.498.569.866	240.407.024	18.739.914.099	2,08
2019	Russian Federation	236.441	422.777.167	240.407.024	18.739.914.099	0,04
2019	India	8.599.203	322.786.377	240.407.024	18.739.914.099	2,08
2019	Brazil	57.444	223.998.669	240.407.024	18.739.914.099	0,02
2019	South Africa	198.356	90.419.473	240.407.024	18.739.914.099	0,17
2019	Turkey	6.450.945	171.098.411	240.407.024	18.739.914.099	2,94

Source: Author's own calculation and ITC TradeMap data.

Table 99. HS Code 62 RCA Scores

Country	2015	2016	2017	2018	2019
BRICS RCA Score	2,11	2,08	2,02	1,83	1,66
China RCA Score	2,60	2,54	2,55	2,36	2,08
Russian Federation RCA Score	0,03	0,04	0,04	0,04	0,04
India RCA Score	2,67	2,57	2,39	2,06	2,08
Brazil RCA Score	0,02	0,02	0,02	0,02	0,02
South Africa RCA Score	0,19	0,18	0,17	0,17	0,17
Turkey RCA Score	3,11	3,08	2,98	3,07	2,94

Source: Author's own calculation and ITC TradeMap data.

In HS Code '62, "Articles of apparel and clothing accessories, not knitted or crocheted" product group, Turkey is the most advantageous country. Turkey, with an average RCA value of over three, is followed by China and India. Russia, Brazil, and South Africa are relatively disadvantaged in this product group. Turkey has an advantage over the average of the BRICS.

5.17. HS Code 26 “Ores, Slag and Ash”

Table 100. HS Code 26 -2015

Year	Country	Xik (Thousand \$)	Xi (Thousand \$)	Xk	X	RCA _x
2015	BRICS	28.123.773	3.152.172.423	159.305.984	16.530.769.761	0,93
2015	China	244.868	2.281.855.922	159.305.984	16.530.769.761	0,01
2015	Russian Federation	1.935.942	333.501.801	159.305.984	16.530.769.761	0,60
2015	India	675.324	263.889.005	159.305.984	16.530.769.761	0,27
2015	Brazil	16.693.435	191.134.325	159.305.984	16.530.769.761	9,06
2015	South Africa	8.574.204	81.791.370	159.305.984	16.530.769.761	10,88
2015	Turkey	1.000.959	143.844.066	159.305.984	16.530.769.761	0,72

Source: Author’s own calculation and ITC TradeMap data.

Table 101. HS Code 26 -2016

Year	Country	Xik (Thousand \$)	Xi (Thousand \$)	Xk	X	RCA _x
2016	BRICS	27.125.554	2.927.257.721	157.020.787	16.031.153.744	0,95
2016	China	275.276	2.118.980.582	157.020.787	16.031.153.744	0,01
2016	Russian Federation	2.014.981	285.491.052	157.020.787	16.031.153.744	0,72
2016	India	1.316.152	260.963.959	157.020.787	16.031.153.744	0,51
2016	Brazil	15.816.099	185.235.401	157.020.787	16.031.153.744	8,72
2016	South Africa	7.703.046	76.586.727	157.020.787	16.031.153.744	10,27
2016	Turkey	929.569	142.606.247	157.020.787	16.031.153.744	0,67

Source: Author’s own calculation and ITC TradeMap data.

Table 102. HS Code 26 -2017

Year	Country	Xik (Thousand \$)	Xi (Thousand \$)	Xk	X	RCAx
2017	BRICS	39.500.770	3.232.036.428	202.908.341	17.701.054.574	1,07
2017	China	719.599	2.271.796.142	202.908.341	17.701.054.574	0,03
2017	Russian Federation	3.070.402	357.083.135	202.908.341	17.701.054.574	0,75
2017	India	1.990.336	295.862.157	202.908.341	17.701.054.574	0,59
2017	Brazil	22.397.927	217.739.177	202.908.341	17.701.054.574	8,97
2017	South Africa	11.322.506	89.555.817	202.908.341	17.701.054.574	11,03
2017	Turkey	1.397.824	156.992.940	202.908.341	17.701.054.574	0,78

Source: Author's own calculation and ITC TradeMap data.

Table 103. HS Code 26 -2018

Year	Country	Xik (Thousand \$)	Xi (Thousand \$)	Xk	X	RCAx
2018	BRICS	42.037.318	3.602.643.396	217.872.815	19.456.187.066	1,04
2018	China	1.171.065	2.494.230.195	217.872.815	19.456.187.066	0,04
2018	Russian Federation	3.672.883	449.347.157	217.872.815	19.456.187.066	0,73
2018	India	1.659.072	323.997.680	217.872.815	19.456.187.066	0,46
2018	Brazil	23.663.011	239.889.210	217.872.815	19.456.187.066	8,81
2018	South Africa	11.871.287	95.179.154	217.872.815	19.456.187.066	11,14
2018	Turkey	1.325.481	167.923.862	217.872.815	19.456.187.066	0,70

Source: Author's own calculation and ITC TradeMap data.

Table 104. HS Code 26 -2019

Year	Country	Xik (Thousand \$)	Xi (Thousand \$)	Xk	X	RCAx
2019	BRICS	47.234.331	3.558.551.552	242.591.366	18.739.914.099	1,03
2019	China	1.815.755	2.498.569.866	242.591.366	18.739.914.099	0,06
2019	Russian Federation	4.182.318	422.777.167	242.591.366	18.739.914.099	0,76
2019	India	3.029.290	322.786.377	242.591.366	18.739.914.099	0,72
2019	Brazil	25.256.609	223.998.669	242.591.366	18.739.914.099	8,71
2019	South Africa	13.141.771	90.419.473	242.591.366	18.739.914.099	11,23
2019	Turkey	1.219.862	171.098.411	242.591.366	18.739.914.099	0,55

Source: Author's own calculation and ITC TradeMap data.

Table 105. HS Code 26 RCA Scores

Country	2015	2016	2017	2018	2019
BRICS RCA Score	0,93	0,95	1,07	1,04	1,03
China RCA Score	0,01	0,01	0,03	0,04	0,06
Russian Federation RCA Score	0,60	0,72	0,75	0,73	0,76
India RCA Score	0,27	0,51	0,59	0,46	0,72
Brazil RCA Score	9,06	8,72	8,97	8,81	8,71
South Africa RCA Score	10,88	10,27	11,03	11,14	11,23
Turkey RCA Score	0,72	0,67	0,78	0,70	0,55

Source: Author's own calculation and ITC TradeMap data.

In the HS Code 26, "Ores, slag and ash" product group, South Africa and Brazil have a great advantage. While South Africa has double-digit advantage points each year, Brazil's advantage status is also quite high. China is the most disadvantaged country in this product group. Turkey, Russia, and India share a similar advantage profile.

5.18.HS Code 38 “Miscellaneous Chemical Products”

Table 106. HS Code 38 -2015

Year	Country	Xik (Thousand \$)	Xi (Thousand \$)	Xk	X	RCA _x
2015	BRICS	18.643.022	3.152.172.423	171.053.604	16.530.769.761	0,57
2015	China	13.222.507	2.281.855.922	171.053.604	16.530.769.761	0,56
2015	Russian Federation	518.988	333.501.801	171.053.604	16.530.769.761	0,15
2015	India	3.031.011	263.889.005	171.053.604	16.530.769.761	1,11
2015	Brazil	843.010	191.134.325	171.053.604	16.530.769.761	0,43
2015	South Africa	1.027.506	81.791.370	171.053.604	16.530.769.761	1,21
2015	Turkey	546.394	143.844.066	171.053.604	16.530.769.761	0,37

Source: Author’s own calculation and ITC TradeMap data.

Table 107. HS Code 38 -2016

Year	Country	Xik (Thousand \$)	Xi (Thousand \$)	Xk	X	RCA _x
2016	BRICS	18.823.584	2.927.257.721	172.875.488	16.031.153.744	0,60
2016	China	13.541.852	2.118.980.582	172.875.488	16.031.153.744	0,59
2016	Russian Federation	534.805	285.491.052	172.875.488	16.031.153.744	0,17
2016	India	3.150.015	260.963.959	172.875.488	16.031.153.744	1,12
2016	Brazil	802.597	185.235.401	172.875.488	16.031.153.744	0,40
2016	South Africa	794.315	76.586.727	172.875.488	16.031.153.744	0,96
2016	Turkey	562.845	142.606.247	172.875.488	16.031.153.744	0,37

Source: Author’s own calculation and ITC TradeMap data.

Table 108. HS Code 38 -2017

Year	Country	Xik (Thousand \$)	Xi (Thousand \$)	Xk	X	RCAx
2017	BRICS	22.612.759	3.232.036.428	190.295.447	17.701.054.574	0,65
2017	China	16.242.714	2.271.796.142	190.295.447	17.701.054.574	0,67
2017	Russian Federation	704.634	357.083.135	190.295.447	17.701.054.574	0,18
2017	India	3.711.070	295.862.157	190.295.447	17.701.054.574	1,17
2017	Brazil	907.229	217.739.177	190.295.447	17.701.054.574	0,39
2017	South Africa	1.047.112	89.555.817	190.295.447	17.701.054.574	1,09
2017	Turkey	576.320	156.992.940	190.295.447	17.701.054.574	0,34

Source: Author's own calculation and ITC TradeMap data.

Table 109. HS Code 38 -2018

Year	Country	Xik (Thousand \$)	Xi (Thousand \$)	Xk	X	RCAx
2018	BRICS	25.453.682	3.602.643.396	212.398.508	19.456.187.066	0,65
2018	China	18.141.959	2.494.230.195	212.398.508	19.456.187.066	0,67
2018	Russian Federation	881.614	449.347.157	212.398.508	19.456.187.066	0,18
2018	India	4.431.609	323.997.680	212.398.508	19.456.187.066	1,25
2018	Brazil	946.250	239.889.210	212.398.508	19.456.187.066	0,36
2018	South Africa	1.052.250	95.179.154	212.398.508	19.456.187.066	1,01
2018	Turkey	685.960	167.923.862	212.398.508	19.456.187.066	0,37

Source: Author's own calculation and ITC TradeMap data.

Table 110. HS Code 38 -2019

Year	Country	Xik (Thousand \$)	Xi (Thousand \$)	Xk	X	RCAx
2019	BRICS	25.345.067	3.558.551.552	209.993.940	18.739.914.099	0,64
2019	China	17.086.533	2.498.569.866	209.993.940	18.739.914.099	0,61
2019	Russian Federation	995.741	422.777.167	209.993.940	18.739.914.099	0,21
2019	India	5.135.079	322.786.377	209.993.940	18.739.914.099	1,42
2019	Brazil	972.628	223.998.669	209.993.940	18.739.914.099	0,39
2019	South Africa	1.168.868	90.419.473	209.993.940	18.739.914.099	1,15
2019	Turkey	750.443	171.098.411	209.993.940	18.739.914.099	0,39

Source: Author's own calculation and ITC TradeMap data.

Table 111. HS Code 38 RCA Scores

Country	2015	2016	2017	2018	2019
BRICS RCA Score	0,57	0,60	0,65	0,65	0,64
China RCA Score	0,56	0,59	0,67	0,67	0,61
Russian Federation RCA Score	0,15	0,17	0,18	0,18	0,21
India RCA Score	1,11	1,12	1,17	1,25	1,42
Brazil RCA Score	0,43	0,40	0,39	0,36	0,39
South Africa RCA Score	1,21	0,96	1,09	1,01	1,15
Turkey RCA Score	0,37	0,37	0,34	0,37	0,39

Source: Author's own calculation and ITC TradeMap data.

India and South Africa have a relative advantage in HS code '38 "Miscellaneous chemical products". Russia is the most disadvantaged country in this product group. Turkey's RCA value remains below the average of BRICS every year.

5.19.HS Code 40 “Rubber and Articles Thereof”

Table 112. HS Code 40 -2015

Year	Country	Xik (Thousand \$)	Xi (Thousand \$)	Xk	X	RCA _x
2015	BRICS	27.273.273	3.152.172.423	167.303.948	16.530.769.761	0,85
2015	China	20.358.587	2.281.855.922	167.303.948	16.530.769.761	0,88
2015	Russian Federation	2.418.928	333.501.801	167.303.948	16.530.769.761	0,72
2015	India	2.360.291	263.889.005	167.303.948	16.530.769.761	0,88
2015	Brazil	1.643.624	191.134.325	167.303.948	16.530.769.761	0,85
2015	South Africa	491.843	81.791.370	167.303.948	16.530.769.761	0,59
2015	Turkey	2.165.526	143.844.066	167.303.948	16.530.769.761	1,49

Source: Author’s own calculation and ITC TradeMap data.

Table 113. HS Code 40 -2016

Year	Country	Xik (Thousand \$)	Xi (Thousand \$)	Xk	X	RCA _x
2016	BRICS	25.877.573	2.927.257.721	163.132.010	16.031.153.744	0,87
2016	China	18.874.826	2.118.980.582	163.132.010	16.031.153.744	0,88
2016	Russian Federation	2.543.292	285.491.052	163.132.010	16.031.153.744	0,88
2016	India	2.407.552	260.963.959	163.132.010	16.031.153.744	0,91
2016	Brazil	1.620.084	185.235.401	163.132.010	16.031.153.744	0,86
2016	South Africa	431.819	76.586.727	163.132.010	16.031.153.744	0,55
2016	Turkey	2.203.163	142.606.247	163.132.010	16.031.153.744	1,52

Source: Author’s own calculation and ITC TradeMap data.

Table 114. HS Code 40 -2017

Year	Country	Xik (Thousand \$)	Xi (Thousand \$)	Xk	X	RCAx
2017	BRICS	28.949.790	3.232.036.428	186.496.998	17.701.054.574	0,85
2017	China	20.686.033	2.271.796.142	186.496.998	17.701.054.574	0,86
2017	Russian Federation	3.137.653	357.083.135	186.496.998	17.701.054.574	0,83
2017	India	2.846.101	295.862.157	186.496.998	17.701.054.574	0,91
2017	Brazil	1.800.011	217.739.177	186.496.998	17.701.054.574	0,78
2017	South Africa	479.992	89.555.817	186.496.998	17.701.054.574	0,51
2017	Turkey	2.494.294	156.992.940	186.496.998	17.701.054.574	1,51

Source: Author's own calculation and ITC TradeMap data.

Table 115. HS Code 40 -2018

Year	Country	Xik (Thousand \$)	Xi (Thousand \$)	Xk	X	RCAx
2018	BRICS	30.788.842	3.602.643.396	192.892.600	19.456.187.066	0,86
2018	China	22.276.120	2.494.230.195	192.892.600	19.456.187.066	0,90
2018	Russian Federation	3.162.405	449.347.157	192.892.600	19.456.187.066	0,71
2018	India	3.166.751	323.997.680	192.892.600	19.456.187.066	0,99
2018	Brazil	1.717.441	239.889.210	192.892.600	19.456.187.066	0,72
2018	South Africa	466.125	95.179.154	192.892.600	19.456.187.066	0,49
2018	Turkey	2.822.288	167.923.862	192.892.600	19.456.187.066	1,70

Source: Author's own calculation and ITC TradeMap data.

Table 116. HS Code 40 -2019

Year	Country	Xik (Thousand \$)	Xi (Thousand \$)	Xk	X	RCA _x
2019	BRICS	30.484.190	3.558.551.552	184.962.038	18.739.914.099	0,87
2019	China	22.160.538	2.498.569.866	184.962.038	18.739.914.099	0,90
2019	Russian Federation	3.032.437	422.777.167	184.962.038	18.739.914.099	0,73
2019	India	3.227.111	322.786.377	184.962.038	18.739.914.099	1,01
2019	Brazil	1.630.864	223.998.669	184.962.038	18.739.914.099	0,74
2019	South Africa	437.975	90.419.473	184.962.038	18.739.914.099	0,49
2019	Turkey	2.826.406	171.098.411	184.962.038	18.739.914.099	1,67

Source: Author's own calculation and ITC TradeMap data.

Table 117. HS Code 40 RCA Scores

Country	2015	2016	2017	2018	2019
BRICS RCA Score	0,85	0,87	0,85	0,86	0,87
China RCA Score	0,88	0,88	0,86	0,90	0,90
Russian Federation RCA Score	0,72	0,88	0,83	0,71	0,73
India RCA Score	0,88	0,91	0,91	0,99	1,01
Brazil RCA Score	0,85	0,86	0,78	0,72	0,74
South Africa RCA Score	0,59	0,55	0,51	0,49	0,49
Turkey RCA Score	1,49	1,52	1,51	1,70	1,67

Source: Author's own calculation and ITC TradeMap data.

In HS code '40, "Rubber and articles thereof" product group, Turkey is the most advantageous country. Turkey increased the RCA score from 1,49 in 2015 to 1,70 in 2018. While South Africa negatively diverged from other countries in this product group, China, Russia, India, and Brazil had similar scores. Turkey has had an advantage over the BRICS average every year.

5.20.HS Code '76 "Aluminum and Articles Thereof"

Table 118. HS Code 76 -2015

Year	Country	Xik (Thousand \$)	Xi (Thousand \$)	Xk	X	RCA _x
2015	BRICS	36.034.741	3.152.172.423	166.046.776	16.530.769.761	1,14
2015	China	23.819.933	2.281.855.922	166.046.776	16.530.769.761	1,04
2015	Russian Federation	6.880.992	333.501.801	166.046.776	16.530.769.761	2,05
2015	India	2.686.382	263.889.005	166.046.776	16.530.769.761	1,01
2015	Brazil	1.053.474	191.134.325	166.046.776	16.530.769.761	0,55
2015	South Africa	1.593.960	81.791.370	166.046.776	16.530.769.761	1,94
2015	Turkey	2.370.075	143.844.066	166.046.776	16.530.769.761	1,64

Source: Author's own calculation and ITC TradeMap data.

Table 119. HS Code 76 -2016

Year	Country	Xik (Thousand \$)	Xi (Thousand \$)	Xk	X	RCA _x
2016	BRICS	32.538.412	2.927.257.721	158.851.161	16.031.153.744	1,12
2016	China	21.315.169	2.118.980.582	158.851.161	16.031.153.744	1,02
2016	Russian Federation	5.980.102	285.491.052	158.851.161	16.031.153.744	2,11
2016	India	2.732.376	260.963.959	158.851.161	16.031.153.744	1,06
2016	Brazil	990.180	185.235.401	158.851.161	16.031.153.744	0,54
2016	South Africa	1.520.585	76.586.727	158.851.161	16.031.153.744	2,00
2016	Turkey	2.238.041	142.606.247	158.851.161	16.031.153.744	1,58

Source: Author's own calculation and ITC TradeMap data.

Table 120. HS Code 76 -2017

Year	Country	Xik (Thousand \$)	Xi (Thousand \$)	Xk	X	RCAx
2017	BRICS	35.713.198	3.232.036.428	176.720.781	17.701.054.574	1,11
2017	China	22.642.422	2.271.796.142	176.720.781	17.701.054.574	1,00
2017	Russian Federation	6.673.318	357.083.135	176.720.781	17.701.054.574	1,87
2017	India	3.652.286	295.862.157	176.720.781	17.701.054.574	1,24
2017	Brazil	974.459	217.739.177	176.720.781	17.701.054.574	0,45
2017	South Africa	1.770.713	89.555.817	176.720.781	17.701.054.574	1,98
2017	Turkey	2.512.216	156.992.940	176.720.781	17.701.054.574	1,60

Source: Author's own calculation and ITC TradeMap data.

Table 121. HS Code 76 -2018

Year	Country	Xik (Thousand \$)	Xi (Thousand \$)	Xk	X	RCAx
2018	BRICS	41.730.049	3.602.643.396	197.221.229	19.456.187.066	1,14
2018	China	27.077.282	2.494.230.195	197.221.229	19.456.187.066	1,07
2018	Russian Federation	6.555.519	449.347.157	197.221.229	19.456.187.066	1,44
2018	India	5.170.393	323.997.680	197.221.229	19.456.187.066	1,57
2018	Brazil	883.897	239.889.210	197.221.229	19.456.187.066	0,36
2018	South Africa	2.042.958	95.179.154	197.221.229	19.456.187.066	2,12
2018	Turkey	2.995.017	167.923.862	197.221.229	19.456.187.066	1,76

Source: Author's own calculation and ITC TradeMap data.

Table 122. HS Code 76 -2019

Year	Country	Xik (Thousand \$)	Xi (Thousand \$)	Xk	X	RCA _x
2019	BRICS	39.741.521	3.558.551.552	181.453.508	18.739.914.099	1,15
2019	China	26.108.435	2.498.569.866	181.453.508	18.739.914.099	1,08
2019	Russian Federation	5.839.023	422.777.167	181.453.508	18.739.914.099	1,43
2019	India	5.244.321	322.786.377	181.453.508	18.739.914.099	1,68
2019	Brazil	781.991	223.998.669	181.453.508	18.739.914.099	0,36
2019	South Africa	1.767.751	90.419.473	181.453.508	18.739.914.099	2,02
2019	Turkey	3.107.725	171.098.411	181.453.508	18.739.914.099	1,88

Source: Author's own calculation and ITC TradeMap data.

Table 123. HS Code 76 RCA Scores

Country	2015	2016	2017	2018	2019
BRICS RCA Score	1,14	1,12	1,11	1,14	1,15
China RCA Score	1,04	1,02	1,00	1,07	1,08
Russian Federation RCA Score	2,05	2,11	1,87	1,44	1,43
India RCA Score	1,01	1,06	1,24	1,57	1,68
Brazil RCA Score	0,55	0,54	0,45	0,36	0,36
South Africa RCA Score	1,94	2,00	1,98	2,12	2,02
Turkey RCA Score	1,64	1,58	1,60	1,76	1,88

Source: Author's own calculation and ITC TradeMap data.

In the HS Code '76, "Aluminum and articles thereof" product group, South Africa is the most advantageous country. South Africa increased its RCA score from 1,94 in 2015 to 2,12 in 2018. Russia has lost its advantage, lowering its score from 2,05 in 2015 to 1,43 in 2019. China's RCA score is above one every year in this product group. Turkey has had an advantage over the BRICS average every year.

6. RCA RANKINGS & FUTURE EXPECTATIONS

Table 124. RCA Ranking (2015-2019)

HS Kod	China	Russian Federation	India	Brazil	South Africa	Turkey
'85	1	6	3	5	4	2
'84	1	6	3	5	4	2
'27	6	1	2	3	4	5
'87	5	6	3	4	2	1
'71	6	4	2	5	1	3
'39	2	6	3	5	4	1
'90	1	6	2	5	3	4
'30	5	6	1	3	4	2
'99	2	1	5	6	3	4
'29	2	5	1	4	3	6
'72	6	4	5	3	1	2
'88	5	-	3	1	4	2
'73	2	5	3	6	4	1
'94	1	6	3	5	4	2
'61	2	5	3	6	4	1
'62	2	5	3	6	4	1
'26	6	3	4	2	1	5
'38	3	6	1	4	2	5
'40	3	5	2	4	6	1
'76	5	4	3	6	1	2

Source: Author's own calculation and ITC TradeMap data.

When we examine the RCA rankings in year 2019 of the most exported product groups during the last 5 years of period; Turkey in terms of its advantages for 20 product groups has been ranked as the first for 6 times and ranked as the second for 7 times and ranked as the third for 1 time and ranked as the fourth for 2 times and ranked as the fifth for 3 times and ranked as the sixth for 1 time.

The axis shifts that the global trade will undergo can be observed in the figures for the perspective of years 2023 and 2030. In this regard, Turkey is the most advantageous country for 2 of the first 10 product groups which are most likely to be demanded in year 2023 and it is ranked as the second country for 3 of such products, in terms of advantage and it is ranked as third for one product group and ranked as fourth for one product group and ranked as fifth for 2 of such products and ranked as sixth for one product group.

The countries that desire to increase their exports in global trade in years 2023 and 2030 should examine the most demanded products in their future projections and shift their investments to the product groups that they have determined thereof.

The Export Report 2020 published by the Turkish Exporters Assembly (TIM) contains significant data both for the future of global trade and Turkey. When we examine the import data of the first 20 countries with the highest number of imports in year 2018, which are likely to be realized in years 2023 and 2030 as well, it is expected that the product groups with binary codes that would be most demanded by these first 20 countries in year 2023 are as follows;

Table 125 . Import Position in 2023-2030

HS Code	Total Import in 2023	HS Code	Total Import in 2030
'27	3.796.114	'27	10.794.167
'85	3.588.680	'85	7.189.782
'84	2.301.556	'84	3.717.226
'87	1.579.671	'71	3.694.422
'71	922.416	'26	3.313.705
'30	817.885	'87	2.987.577
'90	758.872	'30	1.930.464
'39	669.827	'90	1.541.465
'26	642.438	'39	1.233.774
'29	583.729	'29	1.115.406
'72	455.254	'72	1.012.208
'73	294.184	'74	627.595
'94	263.615	'88	592.598
'88	245.773	'73	546.242
'74	241.621	'33	512.541
'38	231.164	'12	486.391
'61	221.946	'94	470.280
'62	209.924	'38	445.431
'40	206.693	'40	404.178
'76	201.720	'76	374.197

Source: Author's own calculation and Turkish Exporters Assembly data.

7. CONCLUSION & POLICY RECOMMENDATIONS

When we compare the current advantage ranking of Turkey in year 2019 in terms of first 10 product groups with the ranking of the global trade for the projections made for years 2023 and 2030; Turkey is ranked as in the fifth place, regarding the 27 HS coded product groups, i.e. “Mineral fuels, mineral oils and products of their distillation; bituminous substances; mineral ...” to be demanded by the largest importers in years 2023 and 2030.

Regarding the 85 HS Coded product groups, i.e. “Electrical machinery and equipment and parts thereof; sound recorders and reproducers, television ...”, Turkey is ranked as in the second place.

Regarding the 84 HS Coded product groups, i.e. “Machinery, mechanical appliances, nuclear reactors, boilers; parts thereof”, Turkey is ranked as in the second place.

Regarding the 87 HS Coded product groups, i.e. “Vehicles other than railway or tramway rolling stock, and parts and accessories thereof”, Turkey is in the leader position.

Regarding the 71 HS Coded product groups, i.e. “Natural or cultured pearls, precious or semi-precious stones, precious metals, metals clad ...”, Turkey has an advantage with its 3rd place in the ranking thereto.

Regarding the 30 HS Coded product groups, i.e. “Pharmaceutical products”, Turkey is ranked as in the second place.

Regarding the 90 HS Coded product groups, i.e. “Optical, photographic, cinematographic, measuring, checking, precision, medical or surgical ...”, Turkey is ranked as in the fourth place.

Regarding the 39 HS Coded product groups, i.e. “Plastics and articles thereof”, Turkey is in the leader position, in terms of its advantages for the said product groups.

Regarding the 26 HS Coded product groups, i.e. “Ores, slag and ash”, Turkey is ranked as in the fifth place.

Regarding the 29 HS Coded product groups, i.e. “Organic chemicals”, Turkey is the most non-advantageous country for the said product groups.

According to the most demanded product groups in 2023 and 2030 years, we definitely may say that, global trade's trends are changing year to year. All countries studied in the study should focus on that future's global trade trends. In addition, top importers might change in future, countries must explore the markets and follow their youth population's demands. As well as the non- tariff barriers are important for future's world trade. Government strategies are changing for transnational companies. Countries are getting more and more protective and also they make protective import policies. The latest regulation has come from European Union about protective policy. It called "A European Green Deal (Commission, 2020) by European Union.

European Union asserts 'Climate change' and 'environmental degradation' for this regulations and it goes step by step. This programme started in December, 2019 and although pandemic, it continues steadfastly. Especially, Turkey has to be quickly adapted to Green Deal regulations. Europe is the biggest market for Turkish exporters (Exporters Assembly, 2020). For that reason, the adaptation process should be overcome quickly.

Also, logistics is an important issue for world trade. Product delivery times are gradually decreasing. That's why, that countries should invest on logistics sector for gain advantage against other countries. Due to the fact that, logistics centers are becoming more and more important. So, countries must be planning on this global circumstances.

Another important issue is 'value-added production'. It effects countries export profile directly. The product's average kilogram price shows countries production type's. If countries can produce high tech products, it would affect their average kilogram prices.

In addition, Turkey should focus on below groups production;

85 HS Coded product groups, i.e. "Electrical machinery and equipment and parts thereof; sound recorders and reproducers, television ..."

84 HS Coded product groups, i.e. "Machinery, mechanical appliances, nuclear reactors, boilers; parts thereof",

71 HS Coded product groups, i.e. "Natural or cultured pearls, precious or semi-precious stones, precious metals, metals clad ..."

the 30 HS Coded product groups, i.e. "Pharmaceutical products",

90 HS Coded product groups, i.e. “Optical, photographic, cinematographic, measuring, checking, precision, medical or surgical ...” ,

26 HS Coded product groups, i.e. “Ores, slag and ash”.

If Turkey focuses on these product groups, it will make a difference from other countries.

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