IDEA STUDIES Journal
International Journal of Disciplines Economics & Administrative Sciences Studies
Open Access Refereed E-Journal & Indexed & Puplishing
e-ISSN:2587-2168
Volume: 6 / Issue: 24 / Page: 838-840
Doi No: http://dx.doi.org/10.26728/ideas.342
Arrived : 03.11.2020
Published: 10.12.2020
RESEARCH ARTICLE

SOUTH KOREA'S COMPETITIVENESS ON THE BASIS OF FACTOR DENSITY AND TECHNOLOGY EQUIPMENT IN TERMS OF CONTRIBUTION TO TRADE BALANCE

Ticaret Dengesine Katkı Bakımından Güney Kore'nin Faktör Yoğunluğu Ve Teknoloji Donanımı Bazında Rekabet Gücü

Assoc. Prof. Dr.Birol ERKAN [1]

Huri GÜL AYBUDAK [2]

Reference: Erkan, B. & Aybudak, H.G. (2020). "South Korea's Competitiveness On The Basis Of Factor Density And Technology Equipment In Terms Of Contribution To Trade Balance", International Journal of Disciplines Economics & Administrative Scienves Studies, Vol:6, Issue:24; pp:832-840.

ABSTRACT

We aim to demonstrate the importance of export competitiveness in terms of contribution to South Korea's foreign trade in this study. In this context, we use Standard International Trade Classification and International Standard Industry Classification. However, we use the Contribution to Trade Balance index to calculate the export competitiveness of product groups belonging to the aforementioned classifications. According to the results obtained, South Korea has been increasing its competitiveness in exports of products with high added value and technology levels in recent years.

Key Words: Contribution to Trade Balance Index, SITC, ISIC Rev. 3, South Korea

Jel Codes: F00, F13, F19, O30

ÖZET

Çalışmada Güney Kore'nin dış ticaretine katkı perspektifinde ihracat rekabet gücünün öneminin ortaya koyulması amaçlanmıştır. Bu bağlamda, Standart Uluslararası Ticaret Sınıflandırması ve Uluslararası Standart Sanayi Sınıflandırması kullanılmıştır. Bununla beraber, sözü edilen sınıflandırmalara ait ürün gruplarının ihracat rekabet güçlerinin hesaplanabilmesi için Ticaret Dengesine Katkı Endeksi kullanılmıştır. Elde edilen sonuçlara göre, son yıllarda Güney Kore katma değeri ve teknoloji düzeyi yüksek ürün gruplarının ihracatındaki rekabet gücünü arttırmaktadır.

Anahtar Kelimeler: Ticaret Dengesine Katkı Endeksi, SITC, ISIC Rev. 3, Güney Kore

Jel Kodları: F00, F13, F19, O30

1. INDRODUCTION

South Korea changed its export policy in the wake of the Asian crisis. In this context, the country convinced that foreign technology entered the country. In addition, the government took steps to maintain growth and go in coordination with development. Along with these efforts, policies for R & D investment were implemented in the country. R & D investments were made in cooperation with the private sector and public institutions and allowed the private sector to generate added value. These policies enabled South Korea to grow both export-oriented and increase its competitiveness in the international market (Arslanhan & Kurtsal, 2010).

South Korea was successful in significantly improving its macroeconomic indicators, especially after 2000, thanks to its high value-added production and export-oriented economic structure. South Korea managed to increase its GDP nearly three times in the period 2000-2018. In addition, there was a generally regular and stable growth rate in South Korea. South Korea's per capita income increased by 163% from 2000 to 2018. It can be said that South Korea's inflation rate showed a stable outlook (World Bank, 2019). There was also stability in South Korea's unemployment rates. Because unemployment in the country was close to the level of the natural unemployment rate. Although the current account surplus level decreased due to the 2008 global crisis, South Korea

[1] Uşak University, Department of Economics, Uşak-Turkey
0000-0001-8363-5543
[2] PhD Student, Isparta Süleyman Demirel University, Department of Economics, Isparta/Turkey:
0000-0001-8265-7097

didn't not show a current account deficit. However, South Korea ranked 15th in the Global Competitiveness Index in 2018. Furthermore, the country ranked 22th in the Human Development Index.

2. INTERNATIONAL COMPETITIVENESS

The World Economic Forum (WEF) defines competitiveness as the fact that entrepreneurial individuals or institutions gain relative advantages over their competitors in the market during the production and pricing stages by designing their products and services (World Economic Forum, 1989).

The WEF prepares global competitiveness reports in order to compare the competitiveness between countries on a global scale. In preparing these reports, national and international competitiveness are discussed from different aspects. The WEF sets out how global development can be achieved on a short and medium scale with the Global Development Strength Index given in global competitiveness reports (Çivi, Erol, İnanlı, & Erol, 2008).

2.1. International Competitiveness Concept

International competitiveness is seen as an element that does not have a negative impact on the balance of payments, and observes macroeconomic targets such as economic growth and employment growth. The ability to talk about competitiveness in an economy will only occur if these macroeconomic indicators are correctly provided (Fagerberg, 1988). Interest rates and exchange rates are the main economic indicators for measuring international competitiveness. Besides these economic indicators, it is also generally accepted that international competitiveness is shaped in the light of labor costs and economies of scale (Porter, 1990).

It would be correct to define competitiveness as micro-scale firm competition and macro-scale country competition in two different ways (McFetridge, 2005). Competitiveness is used on a micro scale to measure the level of movement in firms ' competitiveness, growth performance and profit maximization. A high degree of effective operation of these elements ensures that the firm consistently maximizes profits and receives a high return from free market conditions (Kumral, 2008). On a macro scale, competitiveness means high efficiency, high real income, high performance in the distribution and marketing of produced goods and services (Martin, 2004).

In another sense, competitiveness is related to market conditions that apply equally to the citizens of a country and where entry and exit are free. Competitiveness is also defined as the ability of a country's citizens to produce goods and services in accordance with international market standards as a result of rising real incomes (The Report of the President's Commission on Competitiveness, 1985).

The phenomenon of competitiveness comes across as an element of competitiveness. Competitiveness is the ability of citizens of a country to produce, distribute and market goods and services aimed at increasing real income and expanding the volume of foreign trade in free market conditions (OECD Programme on Technology and the Economy, 1992).

If industry in a national economy is achieving high productivity thanks to technological superiority, competitiveness action has been established in that country. But even if the industry is technologically superior to foreign producers, the market will be left to melt if it does not have a comparative advantage (Martin, 2004).

There are many indicators of the competitiveness needed to gain an advantageous position globally. These indicators can be listed as macroeconomic indicators, public economy volume, policies followed by countries in foreign trade and external openness limits, factors of production, quality, effective productivity, education and demographic structure (Miral, 2006).

Competition structure is very important in measuring international competitiveness. It is suggested that a competitive advantage can be achieved by three different methods, both by accessing

technical information and by addressing it with information technology. These methods are defined as radical changes in the industrial structure and revision of the rules of the competitive environment, the ability to provide good opportunities to companies in order to give them an advantage over their competitors, the ability to provide new employment based on current prices in enterprises. In addition, it was emphasized that productivity is an important factor in capturing competitiveness and that returns after productivity should be used for the welfare of the citizen of the country (Porter & Millar, 1985).

In the context of international competitiveness, countries need political tools in the process of economic integration, in the process of adaptation to structural changes related to integration, and in the correction of negative conditions that may occur after the change. In addition, countries that want to increase welfare levels see productivity growth as an element that cannot be ignored. Therefore, productivity is considered one of the main elements of competitiveness (Çivi, 2001).

2.2 Contribution To Trade Balance Index (CTBI)

Contribution To Trade Balance Index is an index that measures one country's trade relations with other countries. The index measures the share of a particular product or group of products in total trade and shows the reality of the country's trade balance. The CTBI is formulated as follows (Europe, 2002):

$$CTBI^{j}_{kt} = \left[\frac{X^{j}_{kt} - M^{j}_{kt}}{X^{j}_{t} + M^{j}_{t}}\right] - \left[\frac{X^{j}_{t} - M^{j}_{t}}{X^{j}_{t} + M^{j}_{t}}\right] \times \left[\frac{X^{j}_{kt} + M^{j}_{kt}}{X^{j}_{t} + M^{j}_{t}}\right] \times 10000$$

In the formula, “j” represents the country, “k” represents the product or group of products, “t” represents the time, “X” represents the export, “M” represents the import. Each product or product group contributes to the total trade balance separately.

If the CTBI value is greater than zero, the country has a competitive advantage. If the index result is less than zero, it can be said that the country has a disadvantage in competition (Sujová, Hlaváčková, & Marcineková, 2015). CTBI is equal to zero in total when calculated by including all product groups. A comparison based on a restricted product or group of products would be more favorable, since the total would be difficult to use equal to zero (Sarıçoban & Kösekahyaoğlu, 2017).

3. LITERATURE REVIEW

In a study by Freudenberg and Fontagne (2002), European trade structures and bilateral trade agreements between 1980 and 1999 were analyzed with the help of the CTBI. As a result of the study, it was found that vertically differentiated product groups were subjected to neglect in intra-industry trade and negatively reflected in competitiveness (Fontagné & Freudenberg, 2002).

Vokorokosova (2005) considered the comparative advantages of the Czech Republic and Slovakia from a different theoretical framework with the help of the CTBI. As a result of the study, he reached the conclusion that the structural transformations and production processes of both countries are at different stages (Vokorokosová, 2005).

Laursen (2015) analyzed trade in the chemical industry of the EU countries between 2000-2012 with the help of the CTBI and other indices. As a result of the study, he found that the EU chemical industry had a high competitive advantage in the foreign market (Laursen, 1998).

Galovic (2015) analyzed competitiveness and trade volume in the pharmaceutical industry of OECD countries between 2004 and 2009 with the help of the CTBI. As a result of the study, he emphasized that these countries had high competitiveness in the exports of these product groups (Galović, 2015).

Sarıçoban and Kösekahyaoğlu (2017) discussed the indices used to measure competitiveness with the help of post-trade data. Among the indices discussed in the study, they included a wide section on the importance of the CTBI in the literature (Sarıçoban & Kösekahyaoğlu, 2017).

Erkan and Bozduman (2019) analyzed the level of specialization in exports on the basis of high value-added products of the countries that were members of the Shanghai Cooperation Organization between 2000-2016 with the help of CTBI and other indices. As a result of the study, they found that members of the organization specialize in exporting products with low added value and non-innovative products (Erkan & Bozduman, 2019).

4. PRODUCT GROUPS BY VALUE ADDED LEVEL

Product groups by value added level are treated in two separate ways according to SITC Rev.3 and ISIC Rev.3.

4.1. Standard International Trade Classification (SITC Rev.3)

According to SITC Technology Classification, goods are classified into the five groups (Hufbauer & Chilas, 1974):

- ✓ Raw material-intensive goods
- ✓ Labour-intensive goods
- ✓ Capital-intensive goods
- ✓ Easy to imitate science-based goods
- ✓ Hard to imitate science-based goods

Which products the mentioned 5 product groups contain is shown in Table 1 in detail. Among these product groups, the products with the highest added value are easy and difficult to imitate science-based goods. In order for countries to increase their external competitiveness, they must first concentrate their production and exports in these product groups. In this case, countries will also be freed from chronic foreign trade deficits and external dependence. However, when the factor densities of underdeveloped and developing countries are examined, it is seen that the production of these countries is mainly based on labour and raw material-intensive goods with low added value. Naturally, the export competitiveness of these countries is low and their external dependence is high.

4.2. International Standard Industry Classification (ISIC Rev.3)

International Standard Industrial Classification (ISIC Rev.3) and Technological Based Standart International Trade Classification (SITC) are shown in Table 1. According to ISIC Rev.3 technology hardware classification, goods are classified into the four groups (OECD , 2011):

- ✓ Low-technology industries
- ✓ Medium-low-technology industries
- ✓ Medium-high-technology industries
- ✓ High-technology industries

Which products the mentioned 4 product groups contain is shown in Table 1 in detail. High-technology industries have the highest R & D level among these product groups. If a country has a comparative advantage in the production and export of these product groups, its competitiveness in the world markets is high. In this case, the gains of the said country from foreign trade increase and the terms of foreign trade develop in a positive way. Although not as high-tech industries, R & D and innovation are important in medium-high-tech industries. It is obvious that the developed countries have a competitive advantage in the production and export of these two product groups. This means that undeveloped countries are dependent on exports in these product groups.

However, undeveloped countries specialize in the export of low-tech industrial products. This means that the earnings of these countries from foreign trade are relatively low. In other words, the competitiveness of undeveloped countries in global markets is also low (Erkan & Aybudak, 2019). Products or product groups produced with high technology and medium high technology from these four categories within the International Standard Industrial Classification (ISIC) have relatively high added value. In this context, countries that want to increase the level of global competitiveness should increase the level of competition in these product groups.

Table 1. SITC Trade Classification and ISIC Rev. 3 Technology Intensity Definition

Technological Based Standart International Trade Classification (SITC)		**International Standard Industrial Classification (ISIC Rev.3)**	
Raw material-intensive goods (RMIG)	Live animals and food items Agricultural raw materials Mineral fuels and mineral oils Animal and vegetable oils fertilizers	***High-technology industries (HTI)***	Aircraft and spacecraft Pharmaceuticals Office, accounting and computing machinery Radio, TV and communications equipment Medical, precision and optical instruments
Labour-intensive goods (LIG)	Textile fibers (fibers) Manufacturing goods Other production goods	***Medium-high-technology industries (MHTI)***	Electrical machinery and apparatus, n.e.c. Motor vehicles, trailers and semi-trailers Chemicals excluding pharmaceuticals Railroad equipment and transport equipment, n.e.c. Machinery and equipment, n.e.c.
Capital-intensive goods (CIG)	Beverages, tobacco and products Electric energy Products used in painting Essential oils, resinoids, perfumery, cosmetics Rubber articles Iron and steel Non-ferrous metals Land vehicles	***Medium-low-technology industries (MLTI)***	Building and repairing of ships and boats Rubber and plastics products Coke, refined petroleum products and nuclear fuel Other non-metallic mineral products Basic metals and fabricated metal products
Easy to imitate science-based goods (EISBG)	Organic chemical products Inorganic chemical products Medicine and pharmacy products Non-original plastics Chemical substances and products Office machines, automatic data processing machines Communication, voice recording and voice recorder	***Low-technology industries (LTI)***	Manufacturing, n.e.c.; Recycling Wood, pulp, paper, paper products, printing and publishing Food products, beverages and tobacco Textiles, textile products, leather and footwear
Hard to imitate science-based goods (HISBG)	Plastics in the original state Tools and transport Professional and scientific measuring and control devices Photographic equipment, optical equipment, watches		

Source: OECD, Directorate for Science, Technology and Industry, Economic Analysis and Statistics Division, 2011, HUFBAUER, Garry and Chilas, John; (1974), "Specialization by Industrial Countries: Extent and Consequences", The International Division of Labour: Problems and Perspectives-International Symposium, Germany, pp.3-38.

5. CONTRIBUTION TO TRADE BALANCE INDEX ANALYSIS

We analyze the CTBI according to two different classifications for South Korea in the form of SITC Rev.3 and ISIC Rev.3 in the study covering the years 2000-2018.

5.1. Analysis by SITC Rev.3

The CTBI scores that we calculated using the data obtained from the Comtrade database are shown in Table 2.

Table 2. South Korea's CTBI Scores

	2000-2009	2010-2018	min	max	2000-2018 mean
Labour-intensive goods	27,56	3,33	-2,88	55,92	16,08
Raw material-intensive goods	-178,25	-180,57	-212,68	-142,13	-179,35
Easy to imitate science-based goods	27,58	-7,79	-23,04	45,05	10,83
Capital-intensive goods	25,81	38,67	8,87	50,01	31,90
Hard to imitate science-based goods	-18,42	45,40	-55,86	73,44	11,81

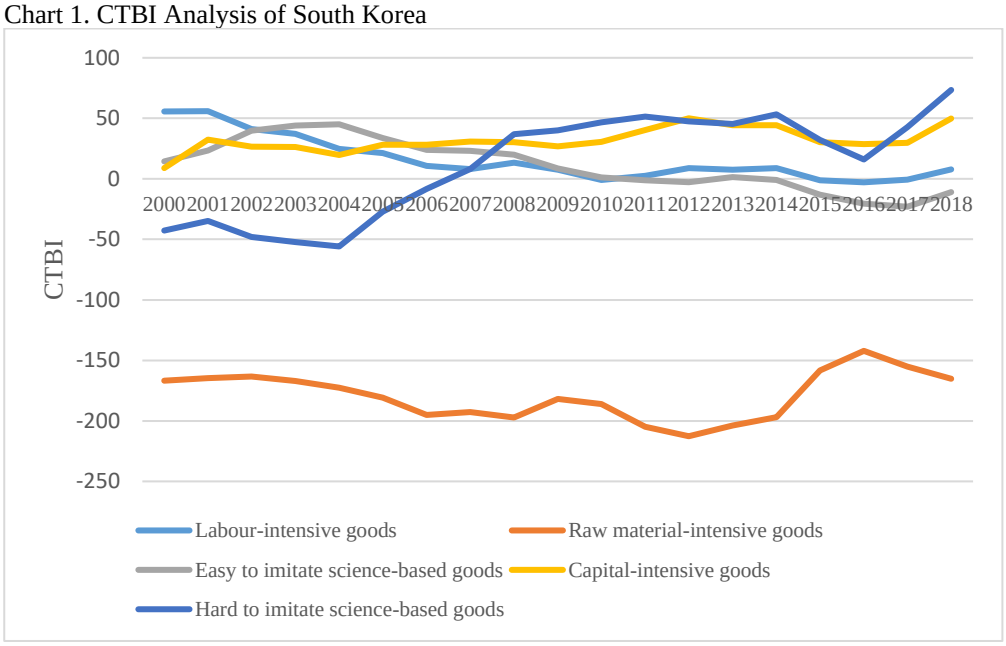
Source: It was created by us using data obtained from https://wits.worldbank.org/

Easy to imitate science-based goods reached the best competitiveness index average of the 2000-2009 period. The competitive value in the export of raw material-intensive goods is negative during this period and is quite low. In the 2010-2018 period, the highest average competitiveness value belongs to the group of products that are difficult to imitate. This product group is followed by a capital intensive product group. The competitive disadvantage of the raw material-intensive product group has continued during this period (Table 2). When the minimum points are examined in Table 2, it is seen that the minimum point of the capital-intensive product group is above the minimum points of the other groups. The point with the lowest minimum point has been the raw material-intensive product group. There is also a significant competitive disadvantage in this product group. The largest of the maximum values belongs to the hard to imitate science-based goods. The country has a significant competitive advantage in the export of this product group.

The CTBI value of the hard to imitate science-based goods, which is -42 in 2000, has begun to rise from 2004 and continued to rise until 2008. It has lost momentum after this year after a steady rise that continues into 2014 and saw its minimum point in 2016. As of 2018, the highest competitiveness belongs to hard to imitate science-based goods. In these product groups with high added value, the country has provided a significant competitive advantage.

There is also a steady state of competitive advantage in the exports of the country's capital-intensive product groups. According to the index value in 2018, the competitive advantage of the capital intensive product group is quite high.

Chart 1. CTBI Analysis of South Korea



Source: It was created by us using data obtained from https://wits.worldbank.org/

Comparing the CTBI scores of the labor-intensive and easy to imitate science-based goods for the period 2000 and 2018, it is seen that the competitiveness of these two groups has steadily decreased in exports. The competitive disadvantage of the raw material-intensive product group has continued over the years.

5.2. Analysis by ISIC Rev.3

The CTBI scores that we calculated using the data obtained from the Comtrade database are shown in Table 3.

Table 3. South Korea's CTBI Scores

	2000-2009	2010-2018	min	max	2000-2018 mean
Low-technology	6,84	-6,63	-12,79	23,99	0,46
Medium-low-technology	9,39	26,17	-11,13	43,69	17,34
High-technology	24,85	14,90	-16,15	41,51	20,14
Medium-high-technology	0,64	31,27	-25,21	47,74	15,15

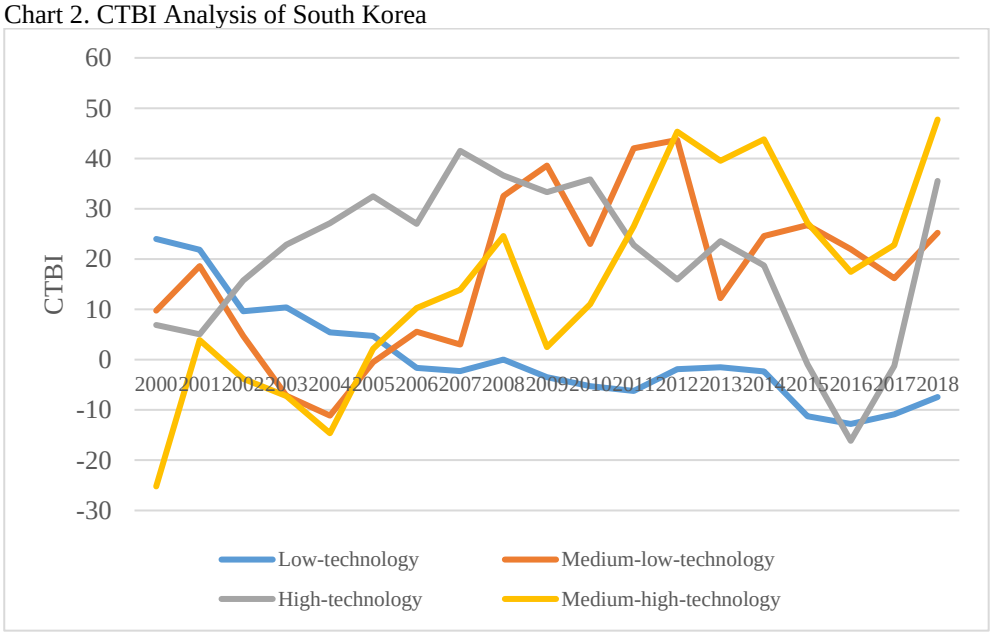
Source: It was created by us using data obtained from https://wits.worldbank.org/

The competitiveness of high-tech group exports has a maximum value in the period 2000-2009. This product group is followed by medium low-tech and low-tech group. The product group with the worst CTBI average during this period is the middle high-tech group (Table 3).

The competitiveness of the medium high technology group has showed a higher performance in the 2010-2018 period than in the previous period. During this period, South Korea has gained an advantage in competitiveness in exports of electrical machinery and equipment, motor vehicles, trailers and semi-trailers, chemicals other than pharmaceuticals, railway and transport equipment, machinery and equipment.

When the minimum points are examined, it is seen that the middle high-tech group has the lowest CTBI value and the middle low-tech group has the highest value. When looking at maximum points, the middle high-tech group has the highest CTBI value, while the low-tech group has the lowest value.

Chart 2. CTBI Analysis of South Korea



Source: It was created by us using data obtained from https://wits.worldbank.org/

South Korea has gained significant momentum in the medium-high-technology. The CTBI value is -25.2 in 2000 and has reached 47.7 in 2018. The index value, which has rosen until 2008, has declined due to the impact of the global crisis. The index, which has rosen to 45.3 in 2012, has showed an unstable trend and has reached its maximum point as of 2018 (Chart 2).

The middle low-tech group has followed a very choppy course throughout the period. After the global crisis, the index has reached its maximum value in 2011 and has reached 25.2 as of 2018. This indicates that the country also has a comparative competitive advantage in the exports of this product group.

The CTBI scores of low-technology group are pretty bad. Although it followed a positive course at the beginning of the period, South Korea's CTBI scores in this product group in 2018 are quite low. Therefore, it is not possible to specialize in low-tech products or product groups in South Korean industry.

6. CONCLUSION

After the 1997 Asian crisis, the South Korean economy pursued a policy of economic reform focused on areas with high added value. As part of this policy, the shares allocated to technology investments and R & D in the national income and public budget have started to rise. After 2000, investments in technology began to be seen. One of the most obvious indicators of this situation is the increase in the competitiveness of the country in its production and exports. In other words, the level of specialization in the country's foreign trade has increased.

In the study, we aim to measure the level of specialization in South Korea's foreign trade in the period 2000-2018. In this context, we calculate the CTBI values for the years in question using both the ISIC and SITC classification.

According to South Korea's CTBI scores, the country has been able to specialize in the foreign trade of all product groups except the raw material-intensive product group. When interpreted on the basis of factor density, a significant part of the product groups in which the country specializes in foreign trade consists of capital-intensive and R & D-based product groups with high added value. Based on the level of technology, it can be said that South Korea's exports are mostly based on R & D and innovation.

South Korea has not been able to provide expertise in the foreign trade of raw material-intensive product groups. The main reason for this situation is that the country is caused by criteria that cannot be changed, such as soil fertility, mineral wealth. Despite its disadvantage in this area, it can be seen that the South Korean economy has a significant specialization in hard-to-imitate product groups. Given that the hard-to-imitate product groups include high-value added products such as machines and vehicles, professional and scientific control and measurement devices, it can be concluded that South Korean industry exports imported raw materials with a high added value.

The qualitative and quantitative development of South Korea's foreign trade after 2000 should be an example for many countries (especially underdeveloped and developing countries). South Korea has achieved significant development success by constantly increasing the share of investments in education, technology and innovation from both its national income and public budget. In many important sectors, especially the electronics sector, the country's external dependence has decreased. On the contrary, South Korea has managed to make many countries dependent on it. The most important indicator of this success is arguably the increase in the added value and external competitiveness of the products exported by the country.

REFERENCES

Arslanhan, S., & Kurtsal, Y. (2010). *Güney Kore inovasyondaki başarısını nelere borçlu? Türkiye İçin Çıkarımlar.* Ankara: Türkiye Ekonomi Politikaları Araştırma Vakfı.

Çivi, E. (2001). Rekabet Gücü: Literatür Araştırması. *Yönetim ve Ekonomi, 8*(2), 22-38.

Çivi, E., Erol, İ., İnanlı, T., & Erol, E. (2008). Uluslararası Rekabet Gücüne Farklı Bakışlar. *Ekonomik ve Sosyal Araştırmalar Dergisi, 4*(1), 2-22.

Erkan, B., & Aybudak, H. G. (2019). Comparative Specialization and Competition Analysis According to the Technology Hardware of Turkey and South Korea. *8th SCF International Conference on "The Economic and Social Impacts of the Globalization and Liberalization"*. Antalya.

Erkan, B., & Bozduman, E. T. (2019). Türkiye'nin Emek Yoğun İmalat Mallarının Rekabet Analizi. *Sosyal Politikalar ve Bilimsel Araştırmalar Kongresi*. Ankara: İKSAD.

Europe, E. C. (2002). *Economic Survey of Europe.* Geneva: United Nations Publication.

Fagerberg, J. (1988). International Competitiveness. *The Economic Journal, 98*(391), 355-374.

Fontagné, L., & Freudenberg, M. (2002). Long-term Trends in Intra-Industry Trade. *Frontiers of Research in Intra-Industry Trade*, 131-158.

Galović, T. (2015). The International Competitiveness of The Pharmaceuticial Industry Within 21 OECD Countries. *Ekonomski vjesnik : Review of Contemporary Entrepreneurship, Business, and Economic Issues, 1*(28), 225-241.

Hufbauer, G., & Chilas, J. (1974). Specialization by Industrial Countries: Extent and Consequences. *The International Division of Labour: Problems and Perspectives-International Symposium*. Germany.

Kumral, N. (2008). Bölgesel Rekabet Gücünü Artırmaya Yönelik Politikalar. *Ege University Working Papers in Economics 2008*(2), 1-15.

Laursen, K. (1998). Revealed Comparative Advantage and the Alternatives as Measures of International Specialization. *Danish Research Unit for Industrial Dynamics*, 1-24.

Martin, R. (2004). *A Study on the Factors of Regional Competitiveness* . Rotterdam: University of Cambridge .

McFetridge, D. (2005). *Competitiveness: Concepts and Measures*. 2019 tarihinde http://www.ic.gc.ca/epic/site/easaes.nsf/vwapj/op05e.pdf/$FILE/op05e.pdf).

Miral, Z. (2006). *Açıklanmış Karşılaştırmalı Üstünlükler ve Türkiye'nin Avrupa Birliği'ne Karşı Rekabet Gücü: Seçilmiş Tarımsal Ürünler İçin Bir Uygulama.* İzmir: Dokuz Eylül Üniversitesi Sosyal Bilimler Enstitüsü Yayınlanmamış Yüksek Lisans Tezi.

OECD. (2011). Economic Analysis and Statistics Division. OECD.

OECD Programme on Technology and the Economy. (1992). Paris: Organisation for Economic Cooperation and Development (OECD).

Porter, M. (1990). The Competitive Advantage of Nations. *Harvard Business Review*, 72-91.

Porter, M., & Millar, V. (1985). How Information Gives You Competitive Advantage. *Harward Business Review*, 149-174.

Sarıçoban, K., & Kösekahyaoğlu, L. (2017). Ticaret Sonrası Verilerle Rekabet Gücünün Ölçülmesinde Kullanılan İndeksler Üzerine Bir iteratür Taraması. *Akademik Sosyal Araştırmalar Dergisi*(47), 424-444.

Sujová, A., Hlaváčková, P., & Marcineková, K. (2015). Evaluating the Compettiveness of Wood Processing Industry. *Original Scientific Paper*, 281-288.

The Report of the President's Commission on Competitiveness. (1985). Washington: USGPO.

Vokorokosová, R. (2005). To Some Methods for Measuring Competitiveness of Slovak and Czech Foreign Trade. *Ekonomický ústav SAV a Prognostický ústav, 16*, 808-823.

World Bank. (2019). www.worlbank.org

World Economic Forum. (1989). *World Competitiveness Report.* Imede: Geneva.