REPUBLIC OF TURKEY
SAKARYA UNIVERSITY
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THE ANALYSIS OF EXPORT PERFORMANCE OF SAKARYA IN THE CONTEXT OF NEW REGIONALISM

MASTER THESIS

Oylum Şehvez ERGÜZEL

Department of Institute: International Trade

Thesis Supervisor: Assoc. Prof. Dr. Hakan TUNAHAN

JULY – 2015

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This thesis approved by majority vote/consensus of the examining committee on 01/07/2015

EXAMINING COMMITTEE MEMBERS	COMMENT	SIGNATURE
Assoc. Prof. Dr. HAKAN TUNAHAN	SUCCESSFUL	
Asst Prof Dr A Selçuk DİZKIRICI	SUCCESSFUL	
Asst. Prof. Dr. Samet CİĞNER	SUCCESSFUL	

DECLARATION

I hereby declare that all information in this document has been obtained and presented in accordance with academic rules and ethical conduct. I also declare that, as required by these rules and conduct, I have fully cited and referenced all material and results that are not original to this work.

Oylum Şehvez ERGÜZEL

01.07.2015

ACKNOWLEDGEMENTS

I would like to thank my supervisor Assoc. Prof. Dr. Hakan Tunahan for guiding and encouraging me throughout the process of this study.

Also, I am grateful to my friends Ress. Asst. Ayşegül Karataş, Ress. Asst. Halil Şimdi, Ress. Asst. Ahmet Ağsakal, Ress. Asst. Naciye Güliz Uğur, Ress. Asst. Tuğba Koç and Ress. Asst. Mustafa Şeker, my close friend Aslıhan Erol for their patience and support.

I would also like to thanks all my workmates for their sincerity.

Lastly, I owe special thanks to my Parents and my Love for their endless emotional support in my life.

Oylum Şehvez ERGÜZEL

01.07.2015

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LIST OF ABBREVIATIONS

APEC **:** Asia- Pacific Economic Cooperation

BEC **:** Broad Economic Categories

BRICS **:** Brazil, Russia, India, china, South Africa

EC **:** European Community

EEC **:** European Economic Community

EU **:** European Union

EU-27 **:** 27 countries of European Union

EFTA **:** European Free Trade Association

FDI **:** Foreign Direct Investment

GATT **:** General Agreement of Trade and Tariff

GDP **:** Gross Domestic Product

GVC **:** Global Value Chains

HHI **:** Herfindahl-Hirschmann Index

H-O **:** Heckscher-Ohlin

HS **:** Harmonized System

IEMP **:** Index of Export Market Penetration

IMF **:** International Monetary Fund

ISI **:** Import Substitution Industrialization

ISIC **:** International Standard Industrial Classification of all Economic Activities

LE **:** Lawrence Index

MENA **:** Middle East and North Africa Countries

NAFTA **:** North American Free Trade Agreement

NUTS **:** Nomenclature of Territorial Units for Statistics

OECD **:** Organization of Economic Cooperation and Development

RCA **:** Revealed Comparative Advantage

TEA **:** Turkish Exporters Assembly

TSI **:** Turkish Statistical Institute

US **:** United States

UK **:** United Kingdom

WB **:** World Bank

WITS **:** World Integrated Trade Solutions

WTO **:** World Trade Organization

WWI **:** World War I

WWII **:** World War II

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SAÜ, Sosyal Bilimler Enstitüsü **Yüksek Lisans Tez Özeti**

Tezin Başlığı: Yeni Bölgeselcilik Kapsamında Sakarya İlinin İhracat Performansının Analizi

Tezin Yazarı: Oylum Şehvez ERGÜZEL **Danışman:** Doç. Dr. Hakan TUNAHAN

Kabul Tarihi: 22 Haziran 2015 **Sayfa Sayısı:** xiii (ön kısım) +129 (tez)+10 (ek)

Anabilimdalı: Uluslararası Ticaret **Bilim Dalı:** Uluslararası Ticaret

Bir bölgenin, ülkenin ya da şehrin ihracat potansiyelini analiz etmeden önce, niçin ticarete gerek duyulduğu sorusuna cevap aramak, bu alandaki çalışmaların temelini oluşturmaktadır. Bu soruya yanıt bulabilmek amacıyla, uluslararası ticaretin dünyadaki gelişimine bakıldığında, bu tarihsel gelişimin günümüze kadar dört dönemden oluştuğu görülmektedir. 1500 ve 1850 yılları arasındaki dönemi kapsayan "ticaret dönemi" uzak denizlere açılmayı sağlayan dayanıklı gemilerin yapılmasıyla birlikte, yeni kıtaların keşfedilmesiyle başlamış, 1850'lerde gerçekleşen sanayi devrimiyle son bulmuştur. 1850 ve 1914 yılları arasında gerçekleşen "sömürgecilik dönemi" ise; 1850 yılından I. Dünya Savaşı'nın sonuna kadar devam etmiştir. Sanayi devriminin bir sonucu olarak, bu dönemde büyük işletmeler kurulmuş, bu gelişmenin sonucunda, işletmelerin sanayi üretiminde kullanılan ucuz ürünlere olan talebi artmıştır. 1914 ve 1945 yılları arasında gerçekleşen "imtiyazlar" döneminde ise, çokuluslu şirketler, ticaretin önündeki engellerin belirli oranda kaldırılması sonucunda artış göstermişlerdir. Ayrıca bu dönemde, otomobil, makine ve yedek parça gibi gelişmiş sanayi ürünleri üreten işletmeler ön plana çıkmıştır. Bu dönemde şirketlerin verimliliklerini, ürün miktarlarını hızla arttırmaları ve üretilen ürünün talepten fazla olması sebebiyle, şirketler kendi ülkeleri dışındaki ülkelere ticari ve yatırım boyutunda yoğunlaşma gereği duymuşlardır.1945 yılında başlayan ve "uluslararası dönem" olarak adlandırılan dönem ise, günümüze kadar süregelmiştir. Bu dönemde, 2. Dünya Savaşından sonra yaşanan iki kutuplu dünya düzeni çokuluslu şirketlerin yayılmasını ve ticari ilişkileri yavaşlatsa da 1970'li yıllara kadar süren dönemde, dünyada yeni pazarların ve üretim araçlarının aranması nedeniyle ticarette globalleşme ilerlemiştir. Bu dönemde Amerikan şirketlerinin ticaretteki payı azalırken, gelişmekte olan ülkeler bu boşluğu doldurmaya başlamıştır. 1980'li yıllara gelindiğinde ise, teknolojinin hızla ilerlemesiyle rekabet uluslararası ticarette daha da öne çıkan kavramlar arasındaki yerini almıştır. 1990'larda, uluslararası ticaretin dünyadaki ağırlığı da artmıştır.Uluslararası ticaret yalnızca gelişmeyi ve kalkınmayı sağlayan ekonomik bir faktör olmaktan ötesine geçerek, küreselleşmenin en yoğun yaşanmaya başladığı dönemde gelişimini ve kalkınmasını ticarete dayandırmış ülkeler arasında yaptırım gücü sebebiyle savaş silahı olarak kullanılmaya başlanmıştır. 2000'li yıllara gelindiğinde ise, Amerika Birleşik Devletleri öncülüğünde başlayan yeni pazarlara yönelme eğilimi, gelişmiş ve gelişmekte olan diğer ülkeleri, artan rekabet ortamında, pazarda tutunmak amacıyla,

aynı arayışa yöneltmiştir. Bu dönemde ortaya çıkan bir diğer önemli gelişme ise Avrupa Birliği, Kuzey Amerika Serbest Ticaret Anlaşması gibi bölgesel iş birliklerinin kurularak, rekabet gücünün arttırılmasına yönelik işbirliğine gidilmesidir. Ülkelerin pazar eğilimlerinde yerelden bölgesele ve globale doğru uzanan bir sapma söz konusudur. Bu dönemde işletmelerin pazarın tümüne sahip olma isteği, ticarette rekabet edebilirlik kavramını öne çıkarmıştır. 2010 yılında, 2008'de yaşanan küresel boyuttaki finansal kriz sonucunda, dünya genelinde ticaret hacminde azalış yaşanmıştır. Bu dönemde ticarette yaşanan değişimin, kısa ve uzun dönemli sebebi arasında, kriz sonrasında, Avrupa Birliği ve Amerika Birleşik Devletleri gibi gelişmiş ülkelerin ticaret talebindeki düşüş görülmektedir. Bunun yanında her küresel krizde olduğu gibi, bu krizde de ülkelerin direkt korumacı engeller dışında, dolaylı korumacı yaklaşımlara yönelmesi ve artan korumacılık eğilimi ticaretteki daralmanın bir diğer dönemsel sebebi olmuştur. Dönemsel sebepler dışında, söz konusu dönemde ticaretteki büyümede yaşanan yavaşlamanın en önemli yapısal sebebi ise, küresel değer zincirindeki değişim olarak kabul görmektedir. OECD verilerine göre küresel değer zincirinin dünya genelindeki ihracata olan talebin üçte birini oluşturduğu verisinden hareketle, üretim sisteminde yer alan halkalardan birinin dahi kaybolmasının ihracata olan talepte küresel boyutta hissedilir bir azalmaya neden olacağı açıktır. Bu bağlamda, küresel değer zincirinde önemli yere sahip ülkeler arasında bulunan ve dünya ticaret sisteminde bu vasıtayla oluşan talebin lokomotif ülkeleri arasında yer alan, Çin ve Amerika Birleşik Devletleri gibi ülkelerin, düşük katma değere sahip ürünleri ithal ederek, üretim sürecinde kullanıp, tekrar ihraç etmek yerine, bu ürünleri kendileri üretme eğilimi göstermesi, 2010 yılından itibaren dünya ticaret hacminde yaşanan daralmanın yapısal sebebi olarak görülmektedir. Uluslararası ticaretin Türkiye'deki gelişimine bakıldığında ise, 24 Ocak 1980'de alınan kararlarla, ülkede liberalleşmenin ve dışa açılımın gerçekleşmesinin, uluslararası ticaretin gelişiminde ana etmen olarak görülmektedir.

2000'li yıllara gelindiğinde ise, 2008 küresel finansal krizinin Türkiye'nin ihracatına olan etkisinin derin olmamasının en önemli sebebi, bu dönemde Türkiye'nin ihracat kompozisyonundaki çeşitliliğinin artmasıdır. Kriz döneminde Türkiye'nin en önemli ticaret partneri olan Avrupa Birliği ülkelerinde yaşanan talep daralması, Türkiye'yi farklı bölgelerde pazar arayışına itmiştir. Bunun sonucu olarak, Türkiye'nin ihracat pazarı kompozisyonu, Orta Doğu ve Kuzey Avrupa ülkelerine yönelimin arttığı bir çeşitlenme göstermektedir. Bununla birlikte, Türkiye'nin ticaret sofistikasyonu teknolojik yönden değerlendirdiğinde, 2014'te Türkiye'nin ihracatta orta düşük teknolojili ürünlere yoğunlaşırken, ithalatta orta yüksek teknolojili ürünlere yoğunlaştığı görülmektedir.

Ülkeler artan küresel rekabet ortamında varlıklarını sürdürebilmek amacıyla, 1950 ve 1960'lı yıllar boyunca coğrafi kümelenme ya da tercihli ticaret antlaşmalarıyla bölgeler oluşturarak rekabet avantajı sağlama yönelimi göstermişlerdir. Tercihli ticaret anlaşmalarıyla, sadece, yüzeysel olarak, bölge ülkeleri arasında ticaretin önündeki engellerin azaltılması ya da kaldırılmasını kapsayan ve derin bir bütünleşmeyi İhracat performansının analizinde, ihracat performansının önemli göstergeleri arasında yer alan ihracatın ürün ve pazar kompozisyonu, ulaşım şekilleri, ödeme yöntemleri, ticaret performansı, ticarette uzmanlaşma eğilimleri, açıklanmış mukayeseli üstünlükleri, tamamlayıcı ülke desenleri ve pazar nüfuz etkisi gibi ihracat ve ticaret yönelimlerinin yanı sıra, ihracatta yoğunlaşılan ürün ve pazarlarla birlikte ihracatın teknolojik sofistikasyonunu ortaya koyan endekslerden faydalanılmıştır. Analiz sonuçlarına göre, Sakarya TR42 bölge sınıflandırması içerisinde; Kocaeli, Bolu, Düzce ve Yalova'yla birlikte değerlendirildiğinde, Kocaeli'den sonra ihracat payı en fazla olan şehirdir. Ürün kompozisyonu ise ağırlıklı olarak demiryolu tramvay benzeri taşıtların dışında kalan karayolu taşıtları ile ısıtıcı, makine ve makine ekipmanları ürün gruplarından oluşmaktadır. Sektör kompozisyonu ise, motorlu taşıtlar ve bu taşıtların aksam ve parçalarının üretimiyle birlikte, çikolata, alüminyum ve plastik ürünleri, seramik ve pigment üretiminden meydana gelmektedir. Pazar çeşitliliği 2012 yılından itibaren artış gösterirken, sektör çeşitliliğinin en fazla olduğu yıl 2012'dir. Sakarya'nın ihracat deseniyle benzer ithal desenine sahip olan ülkeler ise, 2014, itibariyle Kuveyt, Suudi Arabistan, Gana, Katar, Bahreyn ve Umman'dır. Söz konusu ülkeler Sakarya için karlılığı yüksek potansiyel pazarlar olmakla birlikte bu ülkelerle olan ihracat ilişkilerinin arttırılması her iki taraf açısından yüksek katma değere sahiptir. Sakarya'nın ticaret yapısındaki değişim incelendiğinde ise, Sakarya'nın ticaretinde yapısal bir değişimin söz konusu olmadığı, 2012 'de gözlemlenen değişimin ise, Sakarya'nın sektör yoğunlaşmasının en fazla olduğu "motorlu taşıtların üretimi" n de Türkiye genelinde yaşanan %10 seviyelerindeki daralmadan kaynaklandığı tespit edilmiştir.

Anahtar Kelimeler: Yeni Bölgeselcilik, Sakarya, İhracat Performansı

SAU Institute of Social Sciences **Abstract of Master's Thesis**

Title of the Thesis: The Analysis of Export Performance of Sakarya In The Context of New Regionalism

Author: Oylum Şehvez ERGÜZEL **Supervisor:** Assoc. Prof. Dr. Hakan TUNAHAN

Date: 22 June 2015 **Nu. of Pages:** xiii (pre text)+129 (main body)+10(app.)

Department: International Trade **Subfield:** International Trade

The historical development of international trade consisted of four main different periods until 1900s. The first was "the period of trade" over the period 1500-1850 followed by "colonial period" in the period of 1850-1914, "the period of privileges" between 1914 and 1945 and "international period" between 1945 and 1990s. In addition to these periods, during the 2000s, international trade has had more globalized and competitive environment for countries to survive.

The relationship between the globalization and regionalism has changed the structure and regionalism has emerged as an important force to support globalisation and more integrated world. This era is defined as "new regionalism". In this era, the micro units, clustered economic activities in certain regions, have been suggested as main actors to integrate global system, and trade is seen as the factor that provides the integration among countries. In this context, the analysis of cities' export performance, as new actors in the global system, reveals the integration capacity of cities to new world order.

The main purpose of the thesis is to find out the export performance of Sakarya in respect of the new regionalism theory with export performance indices. In 2014, Sakarya which is the 9th city in export ranking of Turkey, has taken concrete steps in terms of industry, technology and knowledge. In addition to this, it has increasing trend regarding the ability of competition and integration to global system. This thesis analyses the increasing competitiveness capacity and export performance of Sakarya as an important engine of economic development and welfare by using indices that measure orientation of export, export diversification and export sophistication. Also the study aims to be a guide to export high technologic and value added products to proper markets.

Keywords: New Regionalism, Sakarya, Export Performance

INTRODUCTION

The relationship between the globalization and regionalism has been studied by many economists and political scientists. Regionalism has become important with new independent underdeveloped countries and developed countries that lost production and competition power especially after Second World War. At that time international trade gained momentum thanks to Bretton Woods system and its organizations WB, IMF and GATT. Countries tended to get competition advantage by forming geographical clustering or regions with preferential trade agreements in order to sustain their existences under competitive environment of the globalized world. The most important example of this period was European Economic Community. On the other hand, cooperation of preferential trade agreements just consisted of decreasing or removing trade barriers. Bretton Wood organizations and preferential trade agreements became inadequate in terms of providing advantage to countries with the deepening globalization process all around the world.

Every new global development leads to new polarization tendencies in the world. As a result of this polarization “new regionalism” concept is occurred. New regionalism is based on integration to global system through micro scale formations instead of macro scaled regions.

Particularly cities and clusters have come into prominence under the impact of the new regionalism understanding. Today, some cities such as Istanbul, New York, Tokyo has integrated to global system more than countries at micro scale. Employment opportunities, export and social impacts of cities provide the new players of globalization. Trade plays a role in integration process of cities and clusters to global system. Therefore, sub-national regionalism has become significant with supra-national regionalism for development and competition.

Under this theoretical framework, analyzing of export performances of cities become more important as the indicator of integration level to global system and has capacity to compete potentials.

Subject of Research

This thesis analyse increasing competitiveness capacity and export performance of Sakarya, in the context of the new regionalism, as an important engine of economic development and welfare by using indexes that measure orientation of export, export diversification and export sophistication.

The first part of the study covers the historical international trade developments in world and Turkey. Second part is related with the new regionalism and export performance indexes that measure orientation of export, export diversification and export sophistication. After that, study focuses on the analysing of Sakarya's export compositions and performance with indexes to measure orientation of Sakarya's export composition, diversification in Sakarya's exporting products and markets and technologic sophistication of Sakarya's exporting products.

Importance of Research

Study contributes to development and growth capacities of cities with a different perspective. Under theoretical framework, cities' export analysis is crucial for city development due to the showing externalities of cities' products by detecting producing products and guidance for high tech production process. In addition, limited studies at literature reveal the significance of the study. In addition to this, export performance analysis is used for cities with suitable formats.

Target of Research

The main purpose of the thesis is to find out the export performance of Sakarya in respect of the new regionalism theory with export performance indices. Sakarya that is the 9^{th} city in export ranking of Turkey has taken concrete steps in terms of industry, technology and knowledge. In addition to this, it has increasing trend regarding the ability of competition and integration to global system. This thesis analyse increasing competitiveness capacity and export performance of Sakarya as an important engine of economic development and welfare by using indexes that measure orientation of export, export diversification and export sophistication. Also it aim to be a guide to export high technologic and value added products to proper markets.

Method of Research

Major part of the data used in the study is obtained from Turkish Statistical Institute (TSI) and UN International Trade Centre Database. The analyses include the years between 2002-2014 and 2002-2015 when available since the year 2002 is the beginning of the foreign trade data of Turkish Statistical Institute (TSI-TurkStat) for the cities.

The rest of the data is obtained from the database containing daily export information of all the exporters in Sakarya (except the ones registered at Akyazı Chamber of Commerce and Industry) collected by the cooperation of Sakarya Chamber of Commerce and Industry and Sakarya University International Trade Department. The database is made out of the information gathered from Invoice, ATR movement certificate, Euro1 movement certificate and Certificate of Origin, given to the Chamber by the exporter during export transactions.

After primarily explaining the overview of Sakarya's exports, analyses to figure out the performance of Sakarya exports with target markets and products, are performed.

The indices of export orientation, export diversification and sophistications are used to analyze export performance.

PART 1: DEVELOPMENT OF INTERNATIONAL TRADE

In this part of the study, development of international trade in the world and Turkey is explained with the core events of historical periods.

1.1. Development of Foreign Trade in The World

It is necessary to examine the historical process that compels the global trading system to understand the current state of world trade and to predict the factors of future world trade.

The historical development of international trade can be analysed with four different periods until 1900s. The first is the “period of trade” over the period of 1500-1850 followed by “colonial period” in the period of 1850-1914,” the period of privileges” between 1914 and 1945 and ” international period” between 1945 and 1990s (Czinkota et all, 1999: 35). In the following two parts, the development of international trade will be analysed within two parts. In the first part, the period of commerce, colonial period and period of privileges will be studied as “the first development stage of international trade”, and in the last part, “the second development stage: global trade” is represented.

1.1.1. The First Development Stage of International Trade

The first era begins with the help of advanced ships that provide opening new discovery routes, of America, at the same time, Asia and Africa (Maddison, 2008: 11). Moreover, it is defined as the period in which the individual entrepreneurs make great amount of profit by buying goods and selling them to Europe. This era was ended with the industrial revolution.

The colonial period started in 1850, as the following period after the industrial revolution and it ended with World War I. The second era of development of international trade is colonial period between 1850 and World War I (WWI).

In addition, the world trade gaining importance with the effects of the Industrial Revolution has been described as a scientific first with the Classical Theory was introduced by Adam Smith (1776). This was also the first serious criticism to Mercantilism. In this study, trade has been seen as a tool to improve the welfare of trading nations, bring the specialization and division of labour and to provide efficient

allocation of resources. Therefore, the liberalization of trade and elimination of trade barriers have gained importance and seen as requirements for nations' welfare (Savaş, 2000: 290, Seyidoğlu, 2013: 23-25). Also, the most dominant feature of this period was the establishment of big companies after the industrial revolution (Mutlu, 2008: 18).

Increasing importance of trade during this period is seen as a part of globalization. Globalization has involved a process of free movement of goods and capital markets across the world where barriers to international trade and foreign investment are reduced (Gurgul and Lach; 2014: 99). This definition indicates great amount of growth in such trade and exchanges, not only in goods and services, but also in currencies, capital, technology (Intriligator, 2004: 486).

Trade, which expanded four times as fast as world output, was crucial force of economic growth and technological diffusion throughout this period due to the new transport and communication innovations such as steamships, railways, and telegraph cables but also, because of the spread of open trade and exchange rate policies (WTO, 2014: 45).

In addition to these, as a result of the industrial revolution in the early 1800s, the massive expansion of trade, capital and technology flows, the explosion of migration and communications and the shrinking of the world economy are also referred as the “first stages of globalization (Ikenberry, 2000: 1). Moreover, the first stages of globalization, economic relations which accelerate the global development were governed by European-based bilateral trade agreements and international gold standard. In addition to this, Netherlands and Britain have emerged as the dominant economic power in this period (Ronen, 1986: 7).

After the colonial period the period of privileges started covered the period of 1914-1945. The development process of international relations reversed throughout this period because of the global shocks to the international system such as war, depression and economic nationalism.

Between the 1929 and 1932 world import and export volume declined about 30 per cent in the industrialized countries. Also, during the whole period, the world economy grew more slowly than in 19870-19213, while the world trade grew much less then world

income. (Maddison, 2008: 14). The declining demand, escalating tariff and non-tariff, trade barriers, increasing bilateral trade agreements and international exchange rate policies are among the factors that have been highlighted as reasons behind the declining trade in the literature (Madsen, 2001: 848).

Moreover, because of the less demand compared to the increasing production in the market, the businesses needed to invest in countries their own and outside (Doukas, 1988: 1173).

In addition, by the mid-1920s aircraft manufacturers designed dedicated cargo craft and aircraft used to carry the cargo in the form of air mail in that period. This development formed the basis for progresses in the transportation between the 1970s and 1990s (WTO, 2014: 45).

1.1.2. The Second Development Stage: Global Trade

The period of 1945-1970 is called the golden age of prosperity with the world GDP growing by 4.9 per cent while the world trade grew by approximately 7 per cent. This was due to the new international economic order established after World War II.

Since the World War II (WWII), the period of the second stage of the globalization, global trade has gained momentum by the inclusion of more countries in the system and with the effects of neoliberal policies as a result of the Bretton Woods system (Roser, 2015).

Bretton Wood system had an important impact on the establishment of new industrialized economic order (WTO, 2013: 52). With this system, The International Monetary Fund (IMF), World Bank (WB) and World Trade Organizations (WTO) were established as international organizations to implement different aspects of globalisation. The International Monetary Fund was established to provide exchange rate stability of the gold standard era and at the same time preserving countries' freedom to promote full employment and economic growth. The WB as a second institution was established to ensure loans for social, economic and industrial projects to increase welfare of the societies (Seyidoğlu, 2000: 217). Before the establishment of WTO, General Agreement on Tariffs and Trade (GATT) was designed as a temporary tariff cutting. Although it was never intended as an international organization, it gradually

played this role by reducing trade barriers and strengthening trade rules through eight successive rounds of negotiations until the establishment of WTO on 1 January 1995 (WTO, 2013: 52).

Moreover, during the period of international trade, technological advances in the transportation and communication continued even accelerated. Over the period 1970-1990, the cost of air freight had decreased to about a quarter of its level at the beginning of World War II (Dollar and Easterly, 1999: 548). This decrease caused the expansion in the volume of trade, the distance covered and the product involved. During the period, air freight has become key component of international trade with the other form of shipping such as sea rail and ground transport (Maddison, 2008: 17). In addition to this, in the early 1990s with the technological innovations in telecommunications such as fibre optic cables, satellites and digital technology, the cost of overseas telecommunications approached the zero. All these developments have led to increase in trade volume by decreasing the cost of communication and transportation.

The growth in the volumes of world trade is important to understand the development of international trade in respect to its development periods. For this reason, the growth in the volume of world trade is given in Table 1 to summarize all development periods of international trade.

Table 1
Growth in Volume of World Trade (Annual Average Compound Growth Rates)

Periods	World Trade
1500–1850	1.06 %
1850–1914	4.09 %
1914–1945	0.90 %
1945-1990s	6.00 %

Source: By time period; 1500-1973, Maddison, 1973-2000, Szirmai, 2014

According to Table 1, the global trade grew approximately one per cent in the period of 1500-1850, while this rate was 4 per cent over the period 1520-1914. In the last period, due to the development in transportation, communication and political liberalization, global trade increased 6 per cent in that stage.

In addition to these, international trade is among the stages of globalisation and two processes are developed in same parallel. The colonial period and period of privileges as

the development processes of international trade consist of the first wave of globalization. In the first stages of globalisation, as a result of the colonial movements and development in transportation, European countries and their colonies became a part of international trade and the global system. In figure 1 shows the EU countries that re the parts of international trade and global system.

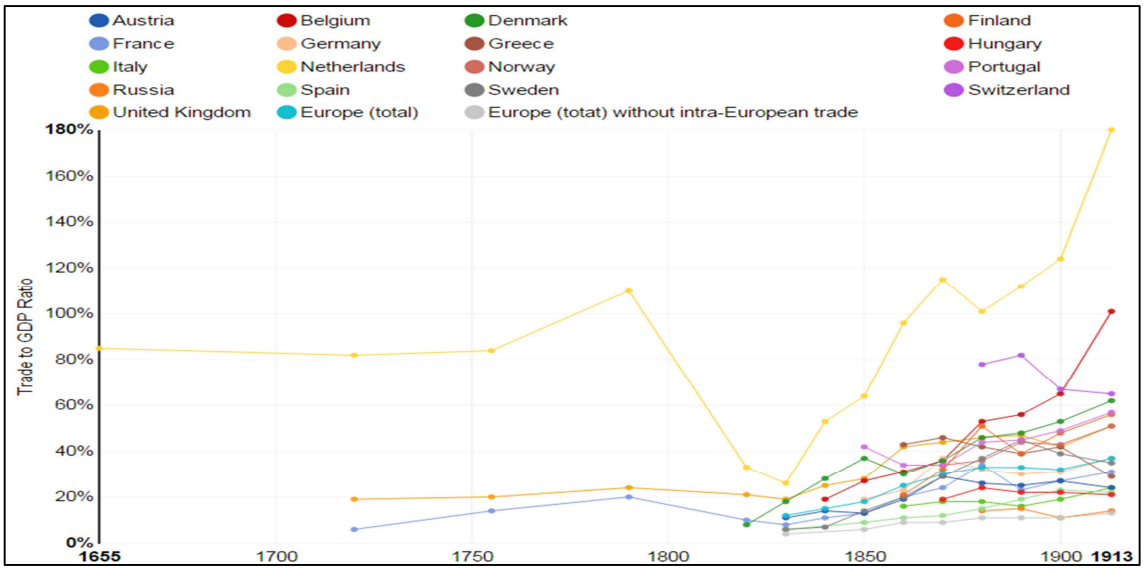

Figure 1: The Volume of Foreign Trade as Share of GDP, Europe – 1655-1913 (The First Wave of Globalization)

Source: http://ourworldindata.org/data/global-interconnections/international-trade/

Figure 1 shows that the changes happening in European countries in the first wave of globalisation. It also, indicates that the one of the most common measure of international integration is trade openness – the sum of exports and imports as a share of GDP. The Netherlands, for the period concerned, is seen the country which is the most integrated into the international system. According to Figure 2, Netherlands had the highest share in international trade and so, 17th century is considered its golden age (Roser, 2015). During this period, British Indian Company in England and Dutch East India Company as the first major global businesses have recently led to multinational companies.

In addition to these, the period of international trade is match with the second wave of globalization. Figure 2 shows the second wave of globalisation to analyse the effects of development of international trade.

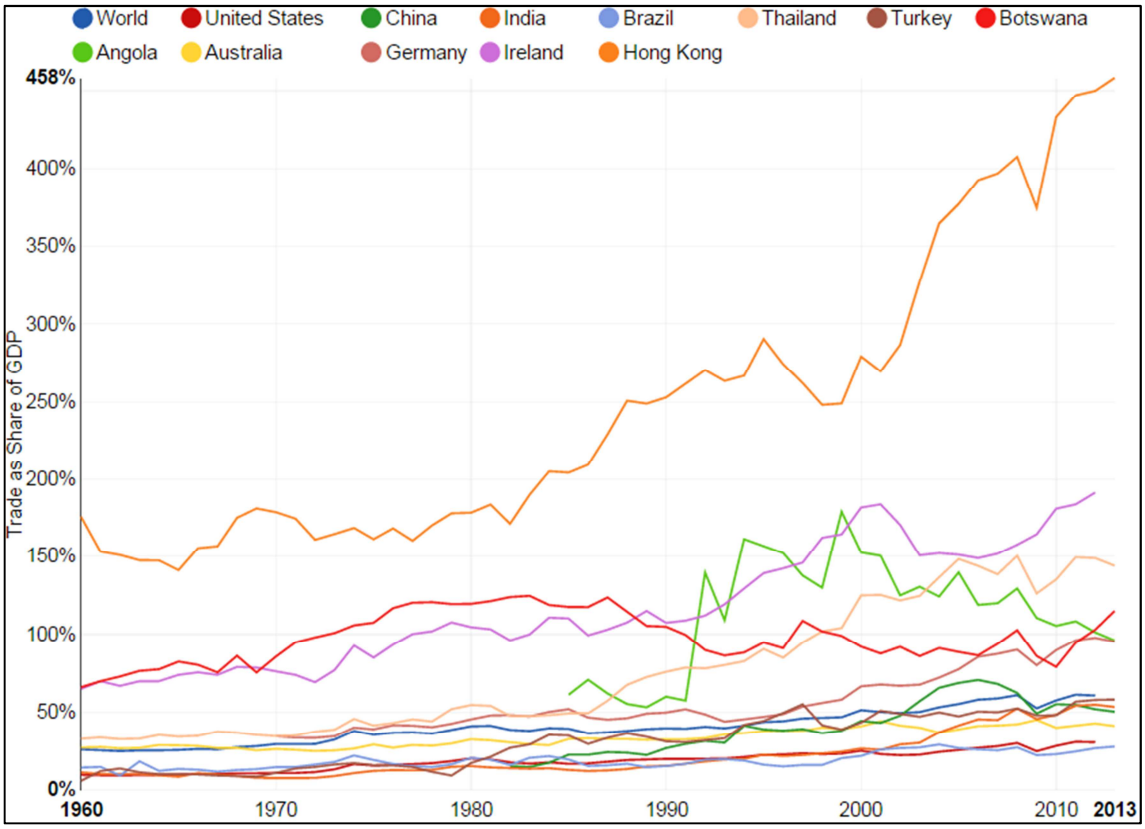

Figure 2: Sum of Exports and Imports as Share of GDP (in %)

Source: http://ourworldindata.org/data/global-interconnections/international-trade/

In addition, as seen in Figure 2 that more countries have been parts of the international system since 1945. During the second wave of globalisation, global and national economic crises lead to a decrease in the share of total import and export in GDP. Global crises, generally, causes the disruption of international trade liberalization and globalization.

In the second wave of globalization that continues nowadays has been seen a reduction in the increase in global trade. Before the 2008 global financial crisis, with an annual average growth rate of 7% in global trade, which was well above the global gross domestic product, with the growth rates of 2,8 per cent and 3,2 per cent in 2012 and 2013, respectively remained below of the global GDP (WB, 2015: 169, The Economist, 2014: 1).

Figure 3 and 4 show the average annual growth of world merchandise export and GDP (%) and trend and actual values of the world trade respectively to understand recent developments in international trade

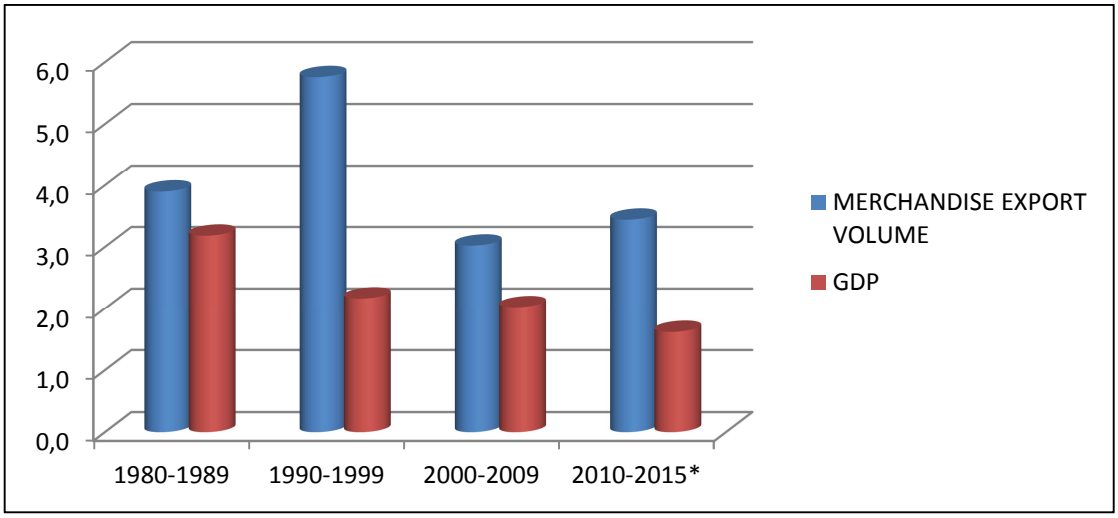

Figure 3: Average Annual Growth of World Merchandise Export and GDP (%)

Source: Data were obtained from WTO and re-calculated by the author
Note: 2015*, forecast

Before 2008 global financial crisis, cross border trade in goods and services had grown at a 7 per cent a year on average with a much faster rate than global GDP. Although it rose by 6.9 per cent in 2011, the growth rates in 2012 and 2013 remained 2.8 per cent and 3.2 per cent in dollar terms respectively, even as global GDP grew by 3.1 per cent and 3.2 per cent. When measured in terms of volume, trade has still grown faster than the world economy, but with a decreasing margin as seen in Figure 3 (The Economist, 2014: 1).

Figure 4, represents the diversion of actual trade values from the trend. This indicates real changes of the world trade.

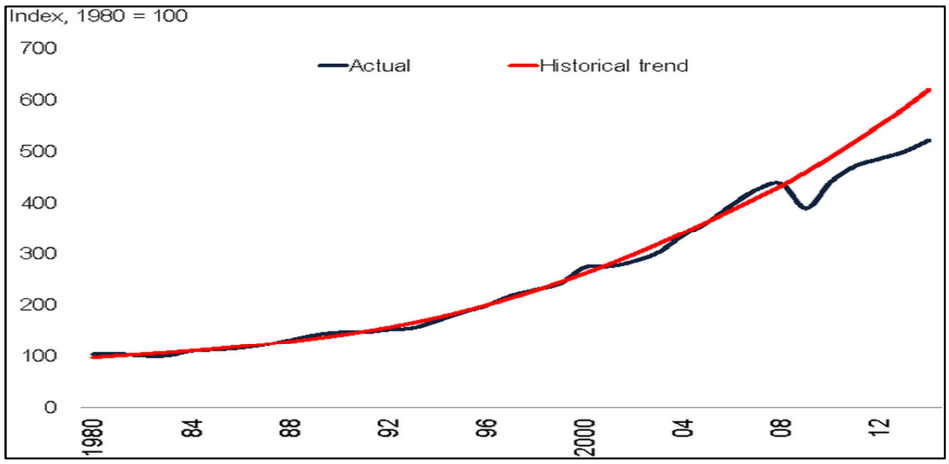

Figure 4: World Trade: Actual and Trend

Source: Global Economic Prospects, WB, 2015: 169

Figure 4 shows the trends and actual values which have been demonstrated in the historical process of global trade. If global trade had continued to expand according to historical trend, it would have been 20 per cent above its actual level in 2014 (WB, 2015: 169). However, as seen in Figure 3, global trade performance has been disappointing in recent years.

As seen in both Figure 3 and 4, the world trade has experienced a global trade slowdown since 2010.

In literature, the cyclical and structural factors that have very different implications have been investigated as reasons that lie behind the global trade slowdown (See also, Baldwin, 2009, Borchert and Mattoo, 2009, Levchenko, 2010, Eaton et al., 2011, Bems et al, 2010, Amiti and Weinstein, 2011, Bussiere et al, 2013, Anderton, 2011,Contantinescu, 2015). While cyclical factors were dominated in the short and medium terms during the crisis, the impact of the long term structural factors have explained the today's slowdown trend. Weak import demand, especially in Eurozone, is shown as an important cyclical factor that reflects weak growth in developed economies and is marked at the epicentre of the Crisis (Contantinescu et al, 2015: 1). The negative impacts of crisis on trade performance are not restricted with the crisis period and sustains through the long term because of the structural changes such as a rise in protectionism and elasticity of trade to income (Freund, 2009: 6, WB, 2015: 169)

In 2013, the import demand is 19 % less than its predicted level in the absence of a crisis. The most remarkable slowdown in demand has been in Europe. High income developed economies such as US and EU is responsible for the 65% of global imports and recession in these economies inevitably affects the recovery in global trade. Because, slowdown in economies of Europe and the US has a spill over effect for their trade partners in regions such as Africa, the Middle East and Asia. GDP levels in the US and EU are 8% and 13% respectively (WB, 2015: 169). Especially in advanced economies, one of the most important reason that is behind the lower rates is collapsed investment activities as a most trade intensive factor of domestic demand throughout the recovery .There is a direct correlation between the demand on investment and the demand on import. If the demand on investment decreases, the demand on import falls as well. That relation affects the countries more whose economies rely on import or

export. This cyclical decrease in investment and demand for import in developed economies has explained the current global trade slowdown in the medium and short term (Constantinescu et al, 2014: 4, Boz et al, 2014: 1, EC, 2015: 1).

Uncertainty, trade financing, changing protectionist measures of governments and demand structure are factors to explain the current trade slowdown in the long run.

With the emergence of North American Global Value Chain (GVC) in automobiles in the 1960s and the East Asian Electronics GVC in the 1970s as a consequences of trade liberalization, reduced transport and logistics cost and improved communication and transportation technologies plus the integration into the world economy of China and the former Soviet bloc, there has been a significant focus on GVC and its contributing impact on trade downturn as a result of the rising dominance of GVC on the world trade order (Ferrantino and Taglioni, 2014: 1, WB, 2015: 170, WTO, 2014: 43).

GVC requires the trade in goods that are produced through the multiple production processes in many different countries (O'Rourke, 2009: 1).

If an exported good is produced entirely within a country, the decline in demand for it causes one trade flow disappearance. However, if an exported good is produced through the multiple production processes in many different countries, the same demand drop for the final good causes more than one trade flows to disappear (O'Rourke, 2009).

It means that it is based on the vertical disintegration of production. Therefore, it increases trade in both intermediate and final goods by extended trade flows among countries (Tanaka, 2009: 1, Ferrantino and Taglioni, 2014: 1).Therefore, trade in complex products which are produced in GVCs have been more sensitive to global economic and political changes than trade in simple products.

The relationship between international trade and GVC is based on the strong statistical and empirical backing.

Hummels et al. (2001), and Yii (2009) found out one- third of the export growth in OECD countries results from the vertical disintegration and trade connection among countries can work in both directions.

Linden et al (2007) who study the case of Apple's Ipod can be seen as an illustrative example of GVC.

In addition, Hanson et al. (2005) indicate the vertical production networks in US multinationals by analysing imports of inputs.

Paul and Wooster (2008) examine the financial characteristics of offshore outsourcing by outsourcer firms in the US. They find that restrictions over the offshore outsource have significant impact on competitiveness of firms. As follows, firms which outsource are not only more productive but also have higher productivity growth relative to non – outsourcing firms.

Coucke and Sleuwaegen (2008) study the effect of outsourcing by analysing Belgian manufacturing sector and show that firms which outsource increase their chances of survival in globalized world order.

Hyun and Hur (2013) evaluate the relationship between trade openness and firms' choice of vertical structure and empirically examine 814 firms located in Korea. The findings suggest that firms change their organization structure by downsizing their domestic production processes and relocating their input production processes to other countries as a result of increasing trade openness.

Ferrantino and Taglioni (2014) examine the impact of global value chains on recent global trade slowdown. Constantinescu et al (2015) analyse the global value chains as a structural factor that causes the global trade slowdown.

In addition, GVC is one of the most important reasons for lowering responsiveness of trade to GDP. It means that world trade elasticity to global income has decreased in recent years (Davies, 2013, EC, 2014).

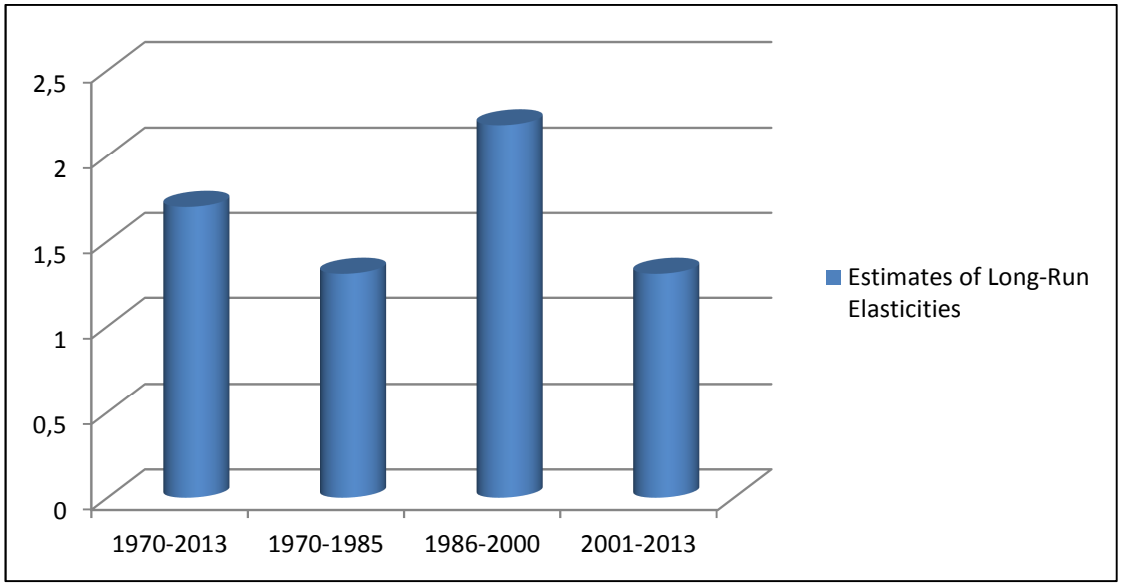

Figure 5: Estimates of Long-Run Trade Elasticity

Soure: Constantinescu et.al. Ruta. 2015: 10

Figure 5 shows that global income elasticity of World trade is 1,7 over the period 1970-2013. However, during the period 1986-2000, income elasticity is 2, 2 %.which is higher than in preceding period of 1970-1985 and subsequent years between 2001 and 2013. In addition, it demonstrates that 1% rising in World real GDP causes 2, 2 % increase in the volume of world trade .Therefore, there is a structural break over the period 1986-2000 and world trade has become more responsiveness to growth in world income (Feund, 2009: 5, Escaith et al., 2010: 12-13) Increasing elasticity between 1986-2000 has been explained by modification in production processes as a result of the growing fragmentation of production across countries. Just as dominance of global value chains supported the rise in the elasticity of trade, the inclusion of new parts to that process have been seen as an explanation for weaker responsiveness of trade to GDP (Constantinescu, 2015: 22).

In particularly, much of the support to the decrease in elasticity has come from the changing pattern of trade in China and the United States (US). The manufacturing supply chain between China and the US has based on the processing exports which involve the form of components being imported and then being assembled into final goods which were exported to the latter (Johnson & Noguera,2012: 2, Koopman et al.,2012: 178-179, Koopman et al.,2013: 2) . The decreasing share of imported components in China's merchandise export from 60% in the mid-1990s to current share

approximately 35% has been an indicator for diminishing importance of such a trade structure (WB, 2015: 171). According to Kee and Tang (2014), the falling share of imported components in merchandise export has been seen as an evidence of increasing domestic value added and substitution of imported materials with domestic materials by Chinese firms. Also, increasing availability of domestic inputs has been connected to growing foreign direct investment and decreasing inputs tariffs. Therefore, increasing foreign value added content of Chinese exports, especially after the WTO accession of China in 2001, has been an indicator of China's raising integration into GVCs (EC,2015: 3). The experiences of US is similar to developments in China with respect of relations between manufacturing trade and income. The US trade structure is crucial for China and other emerging economies as a primary export destination of inputs and assembled goods. However, while merchandise import have increased in the US since the 1980, the US manufacturing imports as a share of GDP and merchandise imports have been stable at about 8% since the turn of the century (Constantinescu, 2015: 22, WB, 2015: 171).To conclude, increasing trend in global value chains, in particularly 1990s, was the driving force of strong global elasticity of trade, however it has diminished since the mid-2000s. This can be seen as a structural long-term reason for current slowdown in global trade.

The impact of short term indicators including weak demand on the slowdown in global trade growth is about 1 per cent and was dominant during the crisis and the first year of the recovery. However, during the 2012 and 2013, the contribution of the long term factors to slowing trend in world trade was about 2 per cent points less than its contribution in the two preceding decades (WB, 2015: 175). This shows that today's slowdown in world trade has been a result of long term structural changes in the world trade patterns.

1.2. Development of Foreign Trade in Turkey

Turkey's population consisting of young people, strong banking sector emerged with the regulations after the 2001 financial crisis and its geographical location as a bridge between Asia and Europe have been among the factors that release the Turkey's potential as an actor and a market in globalized world order. In addition to these; foreign trade as an indicator which is in interaction with the above-mentioned factors has a

crucial role in Turkish development processes. In this thesis, development of Turkish foreign trade is divided into four sub-periods as: (i) the periods of world wars, great depression and etatism, (ii) import substitution industrialization (inward looking), (iii) financial liberalization and export subsidy policy and finally, (iv) the adoption of floating exchange regime (from 2001 financial crisis and onwards).

1.2.1. Periods Great Depression and Etatism

Despite the efforts were made by the nationalist leadership to establish an industrialized economic system by providing domestic finance and cautious acceptance of foreign capital in various aspects of the national economy, Turkey remained a part of the imperialist-controlled capitalist world economy until the end of 1920s. As a result of this, Turkey's role as supplier of raw materials and agricultural products and an importer of finished manufactured products was continued by global dominant forces. For this reason, Great Depression had an immense impact on the Turkish economy (Berberoğlu, 1992: 96).

To identify the impact of Great Depression on Turkey's foreign trade, foreign trade indicators of Turkey are given in Table 2.

Table 2
Turkey's Indicators of Foreign Trade, 1923-1930

Years	Export (000 $)	Change (%)	Imports (000$)	Change (%)	Balance of Foreign Trade (000$)	Volume of Foreign Trade
1923	50 790	-	86 872	-	-36 082	137 662
1924	82 435	62,3	100 462	15,6	-18 027	182 897
1925	102 700	24,6	128 953	28,4	-26 253	231 653
1926	96 437	-6,1	121 411	-5,8	-24 974	217 848
1927	80 749	-16,3	107 752	-11,3	-27 003	188 501
1928	88 278	9,3	113 710	5,5	-25 432	201 988
1929	74 827	-15,2	123 558	8,7	-48 731	198 385
1930	71 380	-4,6	69 540	-43,7	1 840	140 920

Sources: TurkStat,

Table 2 shows the export, import and balance of foreign trade in Turkey between 1923 and 1930. In 1923, the export of Turkey was $ 50 million 790, while its import was $ 86 million 872 and foreign trade deficit was $ 36 million 082. In 1929 export increased to $ 74 million 827 meanwhile import rose from 86 million 872 to $ 123 million 558 and

foreign trade deficit increased to $ 48 million 731 (TSI, 2015). In this period, the basic export items were agricultural products such as cotton and tobacco as expected which constituted some 86 per cent of the total. I addition, the share of industrial products in export was below the 10 per cent and the 5 per cent of export income was provided by minerals (Kopar, 2013: 98). While foreign trade had increased gradually to $ 201 million 988 until the 1928, it dropped to 198 million 385 in 1929 (TSI, 2013: 2). Further, the main trade partners were United Kingdom (UK), Italy, Germany, and the US that were similar to that of 2000s. (Babacan, 2010: 6)

Turkey began to indicate the features of a more closed inward looking national economy because of the variation of population structure, after the World War I. The destruction and death in the wars such as Balkan Wars of 1912-13, the World War I and the War of Independence, 1920-22 and articles of Lausanne Convention about exchange of people between Orthodox Greeks and Muslims had caused the massive changes in population structure of Turkey. The loose of the Greek and Armenian population meant that many of the commercialized, export-oriented farmers of Western Anatolia and the Eastern Black Sea Coast artisans, merchants and moneylenders had disappeared (Pamuk, 2007: 276). As a result of this development, The population of Republic of Turkey declined from 17 million in 1914 to 13 million at the end of 1924 (Behar, 1997: 65). In addition, a significant part (two-third) of the Ottoman Empire's debts as a heavy burden was taken over by Republic of Turkey. According to treaty, until 1929, Turkish tariffs stabilized at the adjusted specific Ottoman tariff scale of 1916. Also, it had to remove existing quantitative restrictions on foreign trade and not to implement new ones. For these reasons, Turkey had not carried out an independent foreign trade policy until 1929 (Boratav, 1981: 168). The changing population structure and limitations on the foreign trade that lasted, in practice, at the end of 1928 had needed to follow new routes to create new artisans, merchants, commercialized and export oriented farmers and policies to develop domestic industry for young Republic of Turkey.

For that purposes, Izmir Economic Congress convened in 1923, when a break was taken in the Lausanne Conference. The Economic Congress adopted the resolutions such as protectionist tariff policy, nationalization of foreign trade, and the establishment of a national bank to achieve development of national economy. However, the government

carried out the decisions which were taken in the Congress only during the 1930s (Barlas, 2008: 2) Although some economist have evaluated the efforts to create private enterprise in respect to decision taken in the Economic Congress in Izmir as the "liberalism", it would be difficult to talk about liberal economic policy in which there is no industrialist, merchants and lenders. Also, the state mostly acted as an economic actor to support private enterprises and accelerated industrialization process by state owned enterprises (Takim and Yılmaz, 2010: 552).

The financial recession in the European countries and the United States of America in 1929, lasting until mid-1930s, had an impact on the Turkish economy largely due to the strong commercial ties between Turkey and these countries (Saygın and Çimen, 2013: 56). This had not only led to decrease in the supply of manufactured goods to Turkey, but also, dropped in foreign demand for Turkey's exports of raw materials and agricultural produce as the largest categories of Turkish exports. In addition, as a result of depreciation in the value of Turkish Lira caused to a major decline in the price of agricultural products. This also had an impact on the balance of trade, agricultural revenues and the state treasury (Berberoğlu, 1992: 96).

To eliminate the adverse impacts of Great Depression on the Turkish economy, after the elimination of restrictions of Lausanne in 1929, young Republic of Turkey took the opportunity to carry out its own economic and trade policy. Earlier in 1929, the government has begun to implement protectionism and greater control over foreign trade and foreign exchange. Also, more than 80 per cent of the foreign trade was carried out under clearing and reciprocal quota systems (Tekeli and Ilkin, 2009: 129). In June 1929, it is adopted a new scale of import duties which provided an average nominal protection of 46 % instead of the 13 % of the previous tariffs (Boratav, 1981: 170)

Due to the changes in the dominant economic paradigm (failure of laissez faire system) including loose of faith in market mechanism and unfavourable world economic conditions emerged from Great Depression caused a movement towards greater state economic involvement (Arnold, 2012: 367). Thus, for these reasons government began to be seen a direct responsible agent for almost all economic issues. With the regulatory functions, the state started to produce goods by state owned enterprises (Bayar, 1996: 774). The intensive and permanent participation of the government in all economic

activities including intensive protectionism in foreign trade is called “etatism” or “inward orientation”. Between 1930 and 1932, the volume of foreign trade decreased from $ 140 million 920 to $ 88 million 690, the price of exports and leading crops such as wheat and other cereals, tobacco, cotton, hazelnuts and dried fruits decreased averaged more than 50 per cent (Okyar, 1965: 99).

As mentioned before in the part of development process of international trade in the world, the period of post WWII is called the golden age of the prosperity. As similar to developments in the world, between 1931 and 1951, Turkey reflected the fast increasing growth rates in respect to foreign trade indicators. In this context, Table 3 represents the

Table 3
Turkey's Foreign Trade Indicators Between 1931 and 1962

Years	Change in Export (%)	Change in Import (%)	Change in Volume of Foreign Trade (%)
1931-1941	51,19	-7,65	21,84
1941-1951	244,93	626,46	389,16
1951-1962	21,36	54.05	39,72

As seen from Table 3, over the period 1941-1951, export increased about 245 per cent as the biggest changes in the period of 1931-1962, while import increased more than export with change of 626 per cent. Generally, between the period 1931 and 1962, foreign trade indicators increased as being similar with world trade indicators.

Thus, Turkey experienced agricultural-led growth under the multi-party electoral regime and Democrat Party government in the period between 1950 and 1960. The Democrat Party government used Marshall Aid to finance the importation of agricultural machineries (Pamuk, 2007: 282). As a result, from the Table 3 the change of import in 1950 was -1.6 % while that of in 1951 was approximately 40, 8 %.

Between 1923 and 1950 while the composition of Turkish import altered the structure that of the export remained almost the same. The share of agriculture was 80 per cent of export and mining was around 5 per cent, between the etatism and ISI, the composition of import started to change. As follows, the share of consumer goods in import decreased while that of the intermediate and capital goods which were used mostly in

agriculture and production increased between 1924 and post WW II period with a break during the WW II (Pamukoğlu, 1990: 60).

1.2.2. Import Substitution Industrialization

After a brief experiment of agricultural- led growth between the end of 1940s and beginning of the 1960s, over the period 1963-1977, Turkey settled on import substituting industrialization which based on the import restrictions on consumer goods that can be produced within the country to increase the foreign exchange savings and using that to rise the imports of intermediate goods that are necessary for industrialization process of a country. Within this scope, Table 4 shows the Turkey's foreign trade indicators between 1963 and 1977.

Table 4
Turkey's Indicators of Foreign Trade Between 1963 and 1977

Years	Change in Export (%)	Change in Import (%)	Change in Volume of Foreign Trade (%)
1963-1970	59,87	37,81	45,50
1970-1977	197,89	554,98	429,75

Sources: TurkStat, 2015

According to Table 4, during the period over 1963-1977, the largest increases in export and took place between 1970 and 1977 that covered the last five years of planned development policies. Besides, the foreign trade deficit starting in 1947 had increased to $ 4 043 252, while the volume of the foreign trade had grown gradually in this period.

Sectors composition of Turkey, during the period of 1963-197, should be analysed to make more accurate assessment about the impacts of import substitution industrialization on foreign trade of Turkey. For this reason, for the period 1963-1977, the export and import sectors composition of Turkey are represented by Figure 6 and Figure 7 respectively.

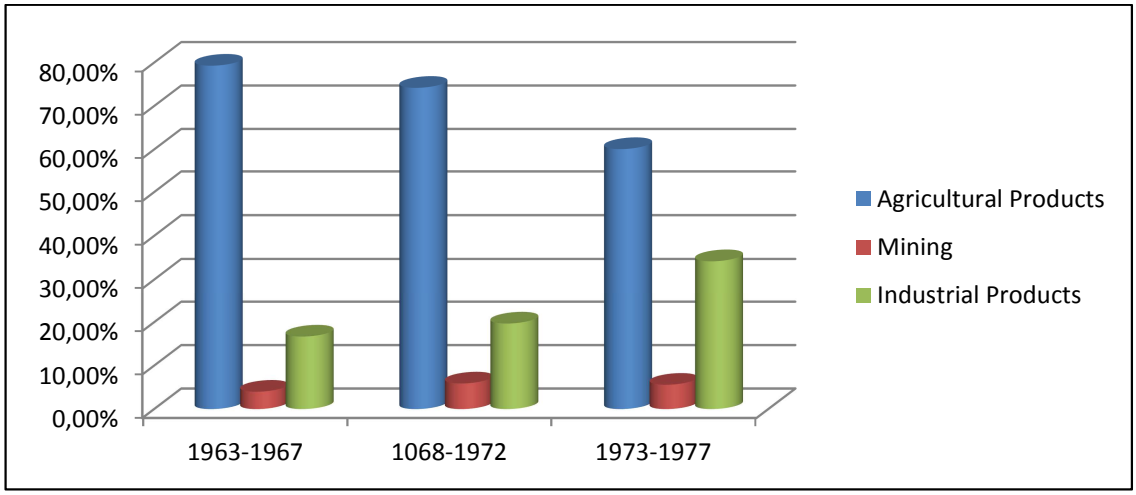

Figure 6: Export Sectors Composition of Turkey 1963-1977 (%)

Source: Şahin,H.Turkish Economy.2012: 154

Figure 6 indicates the export sectors composition of Turkey during the 1963-1977.the share of agriculture had begun to decline (from 79, 3 per cent to 60, 1 per cent), while the share of industry (from 16,7 per cent to 34,2 per cent) and mining (from 4 per cent to 5,6 per cent) had increased at this time period. The hazelnuts, tobacco, cotton, raisins and fig were most exported agricultural goods. In addition, the exported industrial goods consisted of simple products (textiles, sugar, olive oil, petroleum products and copper) which produced by mostly agricultural inputs such as sewing cotton, canned and semi-processed leather etc. (Istanbul Chamber of Commerce; 1978: 21).

As mentioned before, Figure 7 shows the import sector composition of Turkey, for the period 1963-1977.

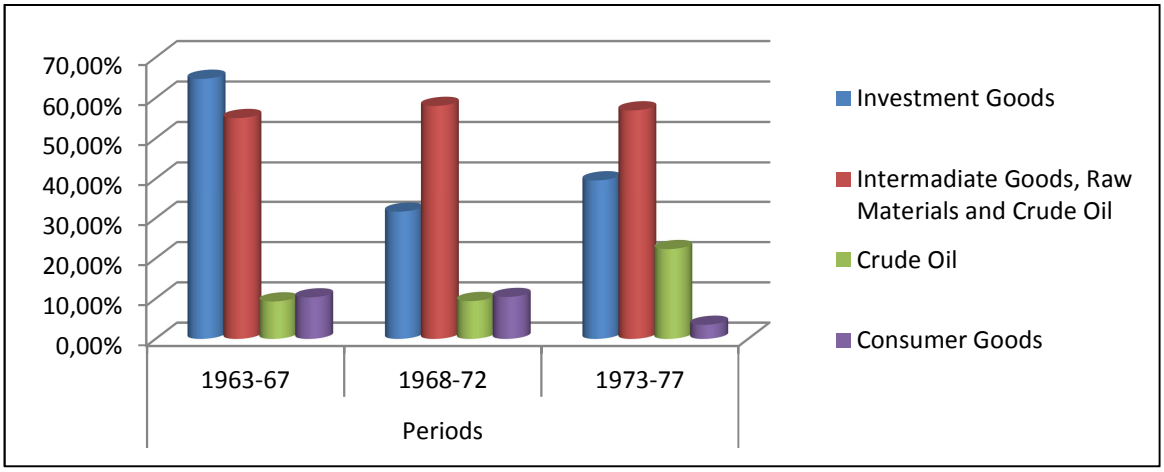

Figure 7: Import Sector Composition of Turkey 1963-1977 (%)

Source: Şahin,H. Turkish Economy. 2012: 55

Figure 7 demonstrates the Turkey's product composition of import. According to Figure 7, the share of consumer goods in import composition had declined while that of the crude oil and intermediate goods as inputs of production had increased gradually. In addition, the share of investment goods (64, 70 per cent) in import had been more than the share of intermediate goods (55 per cent), crude oil (9,3 per cent) and consumer goods (10,3 per cent) over the period 1963-67. However, this picture had changed during the 1973-77. As follows, the share of intermediate goods had exceeded the investment and consumer goods because of the import substitution industrialization policy of the government, since that policy is based on the imports of intermediate goods.

The European Union countries (ECC in those years), European Free Trade Associaton (EFTA) countries (Austria, Denmark, Norway, Portugal, Sweden, Switzerland and the UK in those years) and the US had been Turkey's export and import partners .(Istanbul Chamber of Commerce; 1978: 23).

Before the 1980s in Turkey, foreign trade did not show a parallel development with GDP in the long term. It meant that trade had not had an invigorating impact on the economy during this period (Kazgan, 1988: 234). For this reason, Turkey remained a relatively closed economy compared to countries at a similar level of development. In 1977, the share of Turkey's foreign trade in GDP was about 16 per cent while this rate was 30,3 per cent for average of all underdeveloped countries (Cambazoğlu ve Karaalp, 2012: 1230).

ISI was carried out to decrease dependency of foreign resources by Turkish government, however on the contrary it had led to increase in external dependency (Kepenek, 2012: 392). In addition, Turkey remained the easy stage of ISI which is defined by the production of simple, non-technological goods and did not extend to technologically more difficult stage of capital goods industries (Pamuk, 2007: 283).

1.2.3. Period of Financial Liberalization and Export Subsidy Policy

1970s have known as oil and foreign exchange shocks, deteriorating fiscal balances and increasing total debt stock for Turkey, so because of the results of economic downturn

in 1970s, the need for changes became inevitable for Turkish economy (Babacan, 2014: 7).

Thus, the government carried out a major long-term restructuring program to transform the import substitution policy (inward-looking) into an export oriented growth strategy and began to implement trade liberalization policies (Bayar, 1996: 778). As a part of these developments, in the middle of the 1980s free zones were established to export of final goods, increase the imports of technological improvements and attract foreign capital. Moreover, Decree No: 32 about the "Protection of the value of the Turkish Currency" in accordance with Law no: 1567 of 1930 established the basis of exchange regime and restrictions on the implication of foreign currency declared and the convertibility of the Turkish Lira was strengthened (Cambazoğlu & Karaalp, 2012: 1231).

Table 5 represents the Turkey's foreign trade indicators in order to analysis the impacts on export oriented growth strategy on Turkey's foreign trade.

Table 5
Turkey's Indicators of Foreign Trade 1980-2000

Years	Change in Export (%)	Change in Import (%)	Change in Volume of Foreign Trade (%)
1980-1990	345,32	181,97	225,91
1990-2000	114,32	144,38	133,34

Source: TurkStat,2015

According to Table 5, during the period over 1980-2000, the largest increases in export import and volume of foreign trade took place between 1980 and 1990 that covered the first ten years the financial liberalization period.

Due to the liberalization of Turkey's economy, international expansion and export promoting policies based on depreciation of Turkish lira and export subsidies had led to boom in export and import in early 1980s. However, because of the capital account liberalization of Turkey, in which TL appreciated in real terms as a result of an increase in capital inflows to become more attractive and competitive, import and export growth rate slowed down during the 1990s (Saygılı & Saygılı, 2011: 5).

Furthermore, during the 1990s, the trade deficit increased because of the faster growth of imports than exports. In 1990, the trade deficit change was 41,2 so it was -$ 9 342 838 and higher than the value of previous period -$ 4 167 451.

The another important point, for the period 1989-2000, is the export and import market composition of Turkey to make assessment about foreign trade composition of Turkey in detail. For this reason, Table 6 represents the export and import markets of Turkey by countries between 1989 and 2000.

Table 6
Export and Import Markets of Turkey by Countries Between 1989 and 2000

1989				2000			
Country	Share %	Country	Share %	Country	Share %	Country	Share %
Germany	18,71	Germany	13,98	Germany	18,81	Germany	13,23
Italy	8,41	United States	13,29	United States	11,18	Italy	7,98
United States	8,35	Iraq	10,47	United Kingdom	7,36	United States	7,18
Russian Federation	6,06	Italy	6,8	Italy	6,39	Russian Federation	7,17
United Kingdom	5,3	France	4,73	France	6,01	France	6,49

Source: Data were obtained

Table 6 shows top export and import markets of Turkey in the period of 1989- 2000. After a customs union agreement was concluded with EU in 1995, the share of European Union countries in Turkey's foreign trade has increased. For this reason, over the period 1989-2000 Turkey's share of exports to EU(27) increased from 50 per cent to 56 per cent. Also, Turkey's share of imports from the EU (27) rose from 44 per cent to 52 per cent. As a result, European Union as a region has become the Turkey's main trading partner.

Among the EU(27), Germany was Turkey's largest trading partner. According to Table 6, export and import values of Turkey to/from Germany was $ 2,176 million and $ 2 204 million respectively and these rates increased by 137 per cent and 225 per cent and reached to $ 5,171 million and $ 7,163 million in 2000. Following the European Union, the second largest group of Turkey's trading partners were composed of the Near and Middle East countries (especially Iran and Iraq).

Import and export composition of Turkey is crucial to determine the future orientation of Turkey's export structure. For this reason import and export compositions of Turkey between 1989 and 2000 in respect to ISIC Rev.3 sector classification system are given in Table 7.

Table 7
Import and Export Composition of Turkey Between 1989 and 2000 (by ISIC, Rev.3, %)

Import and Export Composition of Turkey Between 1989-2000 (by ISIC, Rev.3, %)																
Years	Agriculture & Forestry		Fishing		Mining &Quarrying		Manufacturing		Electricity & Gas & Water Supply		Wholesale& Retail Trade		Social & Personnel Activities		Others	
	Export	Import	Export	Import	Export	Import	Export	Import	Export	Import	Export	Import	Export	Import	Export	Import
1989	15,771	5,613	0,266	0,000	3,537	0,000	79,895	0,000	0,000	0,000	0,527	0,000	0,000	0,000	0,000	0,017
1990	15,625	5,098	0,271	0,011	2,517	18,884	81,051	73,550	0,000	0,000	0,534	2,442	0,000	0,006	0,000	0,015
1991	17,429	3,208	0,203	0,000	2,096	15,747	79,669	78,143	0,072	0,000	0,528	2,883	0,000	0,011	0,000	2,895
1992	13,065	4,040	0,182	0,007	1,815	14,572	84,464	78,725	0,000	0,000	0,471	2,644	0,000	0,006	0,000	0,012
1993	13,502	4,611	0,140	0,005	1,521	11,377	84,361	81,084	0,000	0,000	0,449	2,917	0,000	0,000	0,026	0,000
1994	11,228	3,788	0,123	0,007	1,452	14,375	86,569	78,023	0,006	0,000	0,620	3,799	0,000	0,000	0,000	0,005
1995	8,504	5,341	0,099	0,005	1,809	11,431	89,015	79,966	0,005	0,000	0,566	3,250	0,000	0,003	0,000	0,007
1996	9,269	4,964	0,114	0,004	1,587	11,649	88,380	80,701	0,067	0,027	0,579	2,622	0,000	0,004	0,000	0,033
1997	8,963	4,977	0,126	0,004	1,539	10,560	88,773	81,967	0,042	0,173	0,550	2,303	0,000	0,014	0,000	0,016
1998	8,740	4,628	0,064	0,002	1,348	8,161	89,214	84,982	0,055	0,249	0,560	1,965	0,017	0,011	0,017	0,011
1999	7,739	4,053	0,143	0,003	1,448	10,439	90,110	83,439	0,054	0,200	0,503	1,843	0,000	0,020	0,000	0,020
2000	5,973	3,896	0,088	0,003	1,441	13,021	91,873	81,097	0,073	0,242	0,491	1,522	0,059	0,209	0,059	0,219

Source: Data were obtained from TurkStat and re-calculated by the author.

In accordance with the Table 7, manufacturing sector has an important share of Turkey's export and import over the period 1989-2000. Contrary to common belief, Turkey's exports in agriculture and forestry are less than in manufacturing. Moreover, manufacturing sector has an important share of Turkey's exports and imports over the period 1989-2000. In addition to this, during the 1980, export was based on agriculture, labour and raw materials intensive products.

However, this structure has changed since 1990s and so, technological competitiveness, research and development intensity in total manufacturing export in Turkey has increased 1980s to 2000s while the share of raw materials and agriculture intensive has declined (Aydın et al., 2007: 22).

1.2.4. The Adoption of Floating Exchange Regime (From 2001 Financial Crisis and Onwards)

On February 21st 2001, known as "Black Wednesday", Turkey experienced the most damaged financial and economic crises in its post war period. As a result of that, economy contracted by 9 per cent in 2001 (Özkan, 2005: 544). As a response to the 2001 crisis, Turkey carried out the "Transition to the Strong Economy Program" under the supervision of IMF to decrease public deficit, reorganize banking sector, reduce inflation and implement floating exchange rate regime and Turkey moved into a period of macroeconomic stability supported by strict monetary and fiscal policies (Yendi & Çetin, 2012: 46).

To identify the impact of adoption of floating exchange regime on Turkey's foreign trade, foreign trade indicators of Turkey are given in Table 8.

Table 8
Indicators of Foreign Trade 2001-2014

Years	Export (000 $)	Change (%)	Imports (000$)	Change (%)	Balance of Foreign Trade (000$)	Volume of Foreign Trade
2001	31 334 216	12.8	41 399 083	-24.0	-10 064 867	72 733 299
2002	36 059 089	15.1	51 553 797	24.5	-15 494 708	87 612 886
2003	47 252 836	31.0	69 339 692	34.5	-22 086 856	116 592 528
2004	63 167 153	33.7	97 539 766	40.7	-34 372 613	160 706 919
2005	73 476 408	16.3	116 774 151	19.7	-43 297 743	190 250 559
2006	85 534 676	16.4	139 576 174	19.5	-54 041 498	225 110 850
2007	107 271 750	25.4	170 062 715	21.8	-62 790 965	277 334 464
2008	132 027 196	23.1	201 963 574	18.8	-69 936 378	333 990 770
2009	102 142 613	-22.6	140 928 421	-30.2	-38 785 809	243 071 034
2010	113 883 219	11.5	185 544 332	31.7	- 71 661 113	299 427 551
2011	134 906 869	18.5	240 841 676	29.8	- 105 934 807	375 748 545
2012	152 461 737	13.0	236 545 141	-1.8	- 84 083 404	389 006 877
2013	151 802 637	-0.4	251 661 250	6.4	- 99 858 613	403 463 887
2014*	157 642 154	3.8	242 182 754	-3.8	- 84 540 600	399 824 908

Source: Data were obtained from TurkStat and re-calculated by the author.
Note: * 2014 figures are provisional

While Turkish economy struggled with the financial and economic crisis, between the 2001 and 2008 average growth rate of Turkey was 21,72 per cent as a higher rate in the recent Turkish history.

Table 8 indicates the indicators of foreign trade of Turkey over the period 2001-2014. A decrease in Turkey's export (from % $132 billion to $102 billion) and import (from $201 million to $140 million) in 2009 was due to diminishing demand of the EU and the US as most crucial trading partner result of the 2008 global financial crisis. After the beginning of capital account liberalization in 1989, ups and downs in trade balance have seen during the period 2001 and 2014. Table 8 indicates that foreign trade deficit increased to $ 105 billion in 2011 that was the highest over the period 2001-2014.In addition, as exports increase (except 2009), a parallel rising has been seen in import as well since 2001.

Turkey's exports increased to $157, 64 billion in 2014 by a 3, 8% of increase from the previous year. That is the all-time highest rate in the country. But only, imports decreased to $242, 18 billion in 2014 by a 3, 7% of decrease from the previous year. Thanks mainly to rising share of exports to the EU, decrease in gold imports and oil prices Turkey's foreign trade deficit was announced at $84,5 for 2014 with a 14, 6 % decrease from the same period of previous year, however it is higher than the expectations of TSI's data. Within this framework, the Turkey's export growth has been 6 % above the annual average global export growth and has been greater 2 times than OECD countries. In addition to these, it is only 4 points below China (WB, 2014: 3).

According to "Medium Term Plan" (2015-2017) prepared by the Ministry of Development, real annual average growth in estimated as 8,4 per cent in exports and 7,6 per cent in imports. Also exports are expected to be $ 173 billion in 2015 and are estimated to reach $ 203,4 billion while imports that are expected to be $ 258 billion in 2015 are estimated to reach $ 297,5 billion at the end of the Program period. Therefore, the foreign trade deficit is expected to be $ 85 million in 2015 will reach $ 94,1 billion at the end of the Program period (Ministry of Development, 2014: 11).

According to the provisional data that is produced with the cooperation of the Turkish Statistical Institute and Ministry of Customs and Trade, in February 2015, exports are 12 billion 272 million dollars with a decrease 6 per cent, while imports were $ 16 billion 927 million with a 7,2 per cent decrease compared with February 2014. As compared with February 2014, exports to the EU28 decreased by 4,3 per cent from $ 5 million 428

million to $ 5,197 billions. The share of EU countries was 42,3 per cent in February 2015, while it was 41,6 per cent in the same month of 2014.

Import and export compositions are important indicators to determine the growth and development potential of a country. For this reason, export and import compositions of Turkey are represented to analyse basic sectors that are important for growth and development in Table 9.

Table 9
Import and Export Composition of Turkey Between 2001 and 2015 (by ISIC, Rev.3, %)

Import and Export Composition of Turkey Between 2001-2015 (by ISIC, Rev.3, %)																
Years	Agriculture & Forestry		Fishing		Mining &Quarrying		Manufacturing		Electricity & Gas & Water Supply		Wholesale& Retail Trade		Social & Personnel Activities		Others	
	Export	Import	Export	Import	Export	Import	Export	Import	Export	Import	Export	Import	Export	Import	Export	Import
2001	6,308	3,404	0,095	0,000	1,113	15,886	91,995	78,954	0,065	0,392	0,407	1,311	0,236	0,030	0,240	0,051
2002	4,865	3,303	0,143	0,002	1,074	13,951	93,462	80,272	0,044	0,249	0,408	2,209	0,004	0,011	0,004	0,015
2003	4,488	3,657	0,171	0,004	0,993	13,009	93,917	80,314	0,043	0,063	0,387	2,942	0,000	0,010	0,000	0,012
2004	4,024	2,827	0,163	0,008	1,028	11,258	94,320	82,476	0,095	0,016	0,365	3,404	0,003	0,010	0,005	0,010
2005	4,530	2,399	0,190	0,021	1,103	13,977	93,654	80,676	0,141	0,016	0,381	2,894	0,000	0,013	0,000	0,018
2006	4,069	2,079	0,153	0,023	1,340	15,786	93,817	79,081	0,144	0,013	0,474	3,005	0,002	0,010	0,002	0,011
2007	3,473	2,729	0,148	0,018	1,548	14,885	94,230	78,758	0,157	0,013	0,442	3,579	0,001	0,017	0,003	0,018
2008	2,982	3,165	0,182	0,020	1,632	17,652	94,820	74,396	0,056	0,008	0,326	4,743	0,001	0,016	0,003	0,017
2009	4,256	3,260	0,185	0,022	1,648	14,635	93,447	78,785	0,137	0,012	0,324	3,270	0,002	0,015	0,004	0,016
2010	4,333	3,480	0,137	0,018	2,360	13,976	92,610	78,346	0,159	0,011	0,397	4,152	0,003	0,015	0,005	0,016
2011	3,830	3,693	0,138	0,020	2,080	15,500	93,370	76,370	0,110	0,036	0,468	4,358	0,004	0,020	0,004	0,022
2012	3,403	3,148	0,125	0,024	2,073	17,860	93,921	74,504	0,125	0,108	0,351	4,337	0,002	0,020	0,002	0,020
2013	3,724	3,067	0,170	0,023	2,556	15,181	93,120	78,209	0,019	0,133	0,399	3,365	0,010	0,021	0,012	0,022
2014	3,826	3,546	0,220	0,029	2,161	15,330	93,306	77,523	0,056	0,181	0,427	3,367	0,003	0,023	0,004	0,024

Source: TurkStat ,2015

In accordance with Table 9, export and import compositions of Turkey according to ISIC, Rev 3. Aydın et al (2007) and Yükseler & Türkan (2006) claim that Turkish export has a structure that is highly dependent on imports and this situation also applies to the new member states of EU.

In the line with this view, although manufacturing seems the sector that have high export and import values, in Turkey manufacturing is highly dependent on imports of intermediate goods. As a result of this, intermediate goods are the most imported

products in Turkey. In addition, until 2008 financial crisis, change of export in capital goods increased however after the crises this growth was replaced by slowdown.

According to February 2015 data, considering the ISIC Rev.3, the ratio of manufacturing industries products in total export is 94 per cent, while the ratio of manufacturing industries products is 44,4 per cent

Table 10
Foreign Trade by Manufacturing Industries Based on Technology Intensity, February 2015

	February					January- February			
	2014		2015			2014		2015	
Technology Intensity	Value	(%)	Value	(%)		Value	(%)	Value	(%)
Exports FOB									
Total Manufacturing Industries	12 204	100	11 531	100		23 569	100	22 980	100
High-Technology Industries	366	3	333	2,9		688	2.9	635	2.8
Medium-High-Technology Industries	3696	30	3 345	29		7 124	30.1	6 679	29.1
Medium-Low Technology Industries	4 023	33	4 329	37,5		7 430	31.4	8 209	35.7
Low-Technology Industries	4 118	33,7	3 524	30,6		8 417	35,6	7 457	32,5
Imports (CIF)									
Total Manufacturing Industries	13 789	100	12 879	100		28 133	100	25 374	100
High-Technology Industries	1 789	13	1 902	14,8		3 731	13,3	3 795	15
Medium-High-Technology Industries	6 053	43,9	5 713	44,4		11 913	42,3	10 933	43,1
Medium-Low Technology Industries	3 951	28,6	3 495	27,1		8358	29,7	7 025	27,7
Low-Technology Industries	1 996	14,5	1 768	13,7		4 131	14,7	3 621	14,3

Source: TurkStat ,2015
Note: Classification of product group by technology intensity was prepared by OECD based on ISIC. Rev. 3 classification

Table 10 demonstrate the manufacturing industries of Turkey based on technology intensity. According to the ISIC. Rev. 3, the ratio of manufacturing industries products in total export is 94 per cent in February. In addition, the ratio of high technology products in manufacturing industries is 2,9 per cent while medium high technology products are 29 per cent.

In terms of imports, the ratio of manufacturing industries' products in total imports is 76,1 per cent. Also, the ratio of high technology products in manufacturing industries' products is 14,8 per cent while medium high technology products in manufacturing industries products is 44,4 per cents. Turkey has mostly increased its medium-technology export since 1980s, while the share of its high-technology export in total

export was stagnant. The share of medium technology exports in total exports increased by half of the last decade from 20 to 30 per cent while high technology exports could not gain a foothold in the export basket (TSI, 2015). As seen from table, Turkey's manufacturing mostly has focused on a standardized labour-intensive and law and medium- tech products such as textiles and apparel goods.

The relatively low level of Foreign Direct investment (FDI) in manufacturing has been a reason for that. Because increasing flow of FDI as a result of globalization of production has provided positive spill overs through productivity. Foreign owned firms tend to be more productive and mostly high technology and skills based than predominantly domestically owned companies. For these reasons, rising shares of FDI in manufacturing sector can provide to increase product quality, diversification and access to produce technologically advanced goods.

As a result, Turkey has to shift into producing and trading more high income goods and services and removes up the value chain in these sectors which it is already specialized. Since 1980s, Turkey has increased its medium- technology exports while high technology exports have remained low. Moreover, although improvements in medium technology exports, the quality ranking of Turkish exports remained low, especially in EU markets (WB, 2014: 3).

In addition to these, due to the global financial crisis, the export and import market composition of Turkey has changed to avoid from negative effects of that period. The changing structure of Turkey's export and import market compositions are represented in Figure 8 and 9.

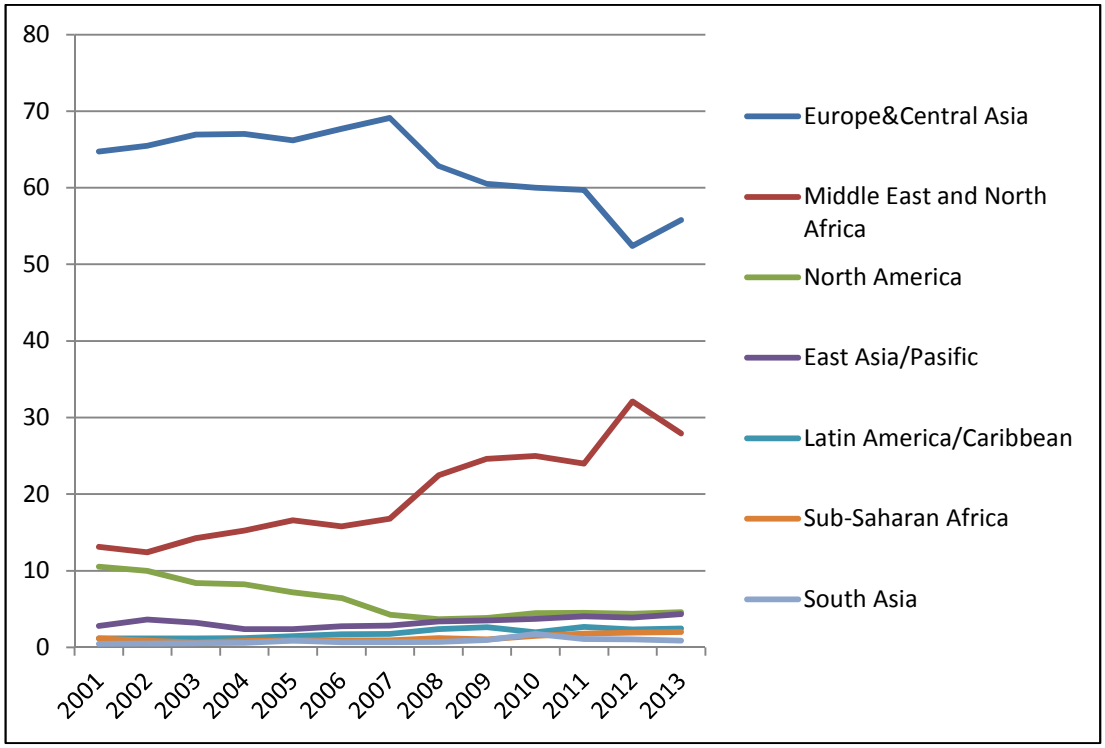

Figure 8: Turkey's Export by Regions: Share of Total Exports, 2001-2013

Source: TurkStat,2015

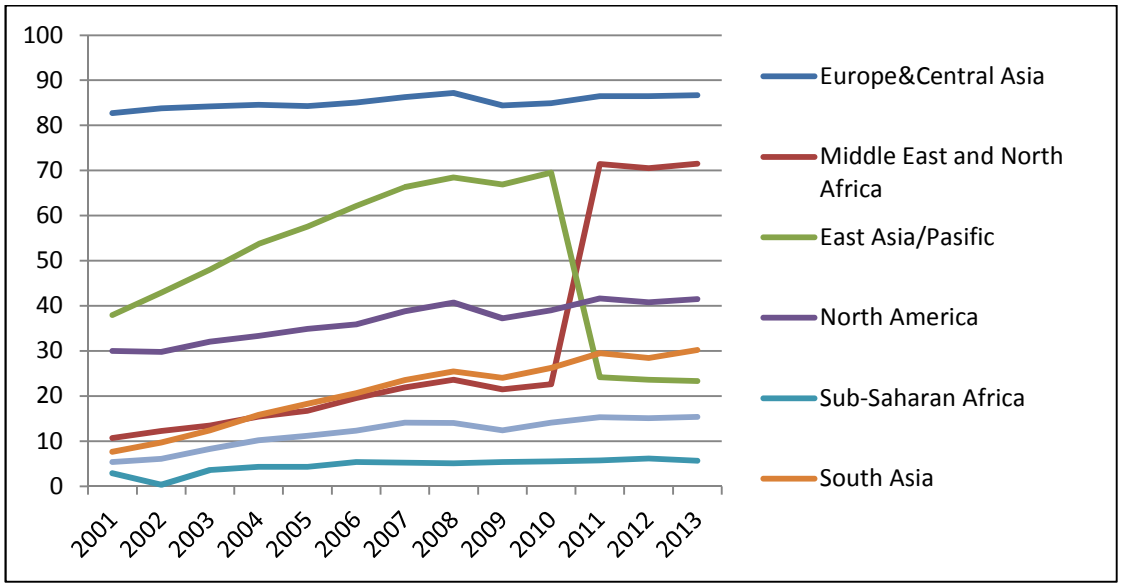

Figure 9: Turkey's Imports by Regions: Share of Total Exports, 2000-2013

Source: TurkStat,2015

Turkey's market diversification with respect of regions can be analysed according to Figure 8 and 9. As figures show, over the past decade, European Union countries still have been an important trade partner for Turkey. However, Middle East and North

African Countries (MENA) countries have gained more prominence while export share of European Union countries has diminished after 2008.The fall in exports to the EU-27 and the US began earlier, lasted longer and was more deepened than decreased exports to all regions during the crisis. Meanwhile, long term decline in the US market continued between 2007 and 2010 and the share of export to the US declined to 33 %. However, this is associated with the end of multi-fibre agreement in the textile rather than financial crisis (WB, 2014: 9). In concluded, while the export share of the EU-27 and the US decreased, the shares of MENA and Asia countries increased most. That can indicate that Turkey has diversified its export market through MENA and Asia countries while the EU still have been an important export partner.

According to TSI's data of Turkey's export by countries, UK is seen to be a main export market in February 2015 with $1 billion 108 million and followed by the Switzerland (1 billion 83 million), Germany ($1 billion 31 million dollars), Iraq ($ 755 million) and Italy ($566 million), while Turkey's main import partner is China with $2 billion 67 million in February 2015 and followed by the Russia ($1 billion 856 million), Germany ($1 billion 570 million), the US ($931 million). Turkey significantly diversified its export market over the last decade.

Although European Union countries remained to be the most important trade partner for Turkey, products that are produced in Turkey have presented in new markets. This market diversification towards non-traditional markets, particularly at a time when demand of the EU decreased, paid off. Moreover, diversification in the product composition provides an increased level of sophistication and as a result the quality of Turkish export also improved. In addition, Turkey has gained comparative advantage in new products such as road vehicles compared to many of its Brazil, Russia, India, China and South Africa (BRICS) peers.

PART 2: MEASURING EXPORT PERFORMANCE IN THE CONTEXT OF NEW REGIONALISM

2.1. New World Order: Globalization and The Importance of Competitiveness

Globalization has different aspects that have a different impact on the world order. For this reason, it has many different definitions from different points of views. The IMF (2000) defines the globalization as a historical process, the result of human innovation and technological process. In addition, it is defined as the integration of world economies, particularly through trade and financial flows.

In another point of view, Stiglitz (2002) identifies that globalization is the integration of countries and people in the world and it is realized through decrease cost of transportation and communication. Also, free movement of goods and services, capital, labour and technology have enabled to eliminate borders among countries and people.

Moreover, Tallman (2009: 4) identifies the globalization by convergence of individual tastes for worldwide brands, worldwide political domination of a small number of industrialized and industrializing states, emergence of new political players, the integration of capital markets worldwide, the increasing ubiquity of communication and information around the world and the spread of technology to the farthest reaches of globe.

In the context of these diversified definitions, globalization requires the increasing integration of countries, regions and economies and it brings high competitiveness in its wake to survive in integrated world order (Tallman, 2009: 4).

Garelli (2008) emphasizes the parallel emergence and growth of globalization and competitiveness by using a parallel approach. According to Garelli, in the early stages of globalization and world economic liberalization, global companies entered emerging markets and benefit from the cheapest access to resources in order to optimize their costs and offer more competitive products to global markets. In recent stages of globalization is defined middle class revolution as a result of the development of emerging markets. This leads to the birth of an urban civilization and new products to serve new customers. The tomorrow stages of globalization are characterized by local

competition to become global. In this stage, according to Porter (2000) local units have more competitive advantage to integrate global world order. Because geographic concentrations of interconnected companies in local regions provide crucial endowments such as machinery, technology, services for local regions to compete and integrate in competitive world order. In addition to this, think thanks, vocational training, non-governmental organizations and international trade ensure specialized training, education, information, research and technical support to local, small regional units.

All of these show that the global competitiveness shifts from more integrated huge companies, countries and regions to more local, small regional units. Moreover, factors such as international trade, non-governmental organizations, and geographic concentration of interconnected companies supply competitive advantage to small regional units in integrated global world.

2.1.1. Old Regionalism

After the World War II, the world economies have become more integrated. The era which has been carried out by preferential trade agreements in the 1950s and 1960s has been defined as old regionalism (Burfisher et all, 2004: 2-3). The most regional integration in old regionalism period has been the establishment of European Common Market in 1958. European trade has increased enormously and comprised a big part of world economy as a result of this agreement. The technological advancements and advanced production techniques triggered the trade between European countries and almost turned it into a single market (Buzan, 1991: 219).

The regionalism which was experienced during the interwar period is attributed to the inadequacy of countries to solve their economic problems. Since there was no progress in international agreements level, countries decided to make some regional agreements to facilitate the trade between countries. The term regionalism was not new however the environment and the outcomes were completely different than before the First World War.

Right before World War II, trade was intensely concentrated among some regions because the close regions were mostly were placed in the same preferential trade

agreements. This is a good example of the effect and growth of regionalism in trade those years. And the regional rise of trade has expanded since World War II, especially in Europe and East Asia (Venables, 2001: 5-7).

However, there was a different situation in East Asia. There existed no trade agreements among East Asian countries during those years but the intraregional trade has increased drastically thanks to the fast development in the economies (Sahasrabuddhe, 2008: 4).

However, the regional integration in this era has been only removal or reducing trade barriers which is defined as shallow integration. There is no deep integration that requires additional act such as harmonizing national policies, allowing or encouraging internal factor mobility (Burfisher et all, 2004: 2-3).

2.1.2. New Regionalism

The new regionalism is among the main theories that are defined relationship between globalization and regionalism (Mittelman, 2000: 126). This trend recommends that to maintain the control over different dimensions within the clusters, local discretionary steps and local cooperation and coordination can replace the place of centralized measures (Pastor: 2000; 241-245).

The theory starting from 1980s and 1990s has favoured the old heterogenic development method and helped rebuilding the regional economic growth theory again. According to this theory; clusters are a major builder of economic development and puts region in an important place in the formula (Ethier, 1998: 1151-1152).

The wind of globalization has started with the increasing intercontinental interaction of regional economic systems. This proves that the national economic growth is highly dependent on the geographical intensity (Keating, 1997: 385).

In new regionalism era, the micro units, clustered economic activities in a certain regions have been main actors to integrate global system. In old regionalism and regional integrations which consist of countries were basic robust player in new global world order (Eaton and Eckstein, 1997: 445) .

As a support this, highly clustered economic activities in a certain regions are the main trigger of the growth of economy as a whole. As an example for this, 40% of US

employment is coming from the countries which occupy 5% of the total land of United States of America. The city-regions are the driving forces of the national economies. Their activities are jointly interrelated and this makes them full of opportunities, with a great potential for innovation and productivity. In many developed countries as well as less-developed countries, the effects of cluster on development and economy is evident, where the development in certain areas or cities are much higher than the rest of the country (Scott, Storper: 2007, 192).

According to new regionalism cities have been emerged as clusters of productivity, innovation that provides an increasing degree tied in to world markets.

2.2. City Regions and Competitiveness

City regions are defined as areas which have populations of at least one million people. Some of the famous metropolitan areas are even more than ten million people nowadays. They tend to become even bigger because of the job opportunities and other benefits they offer to people from all around the world (Scott et al., 2002:1).

During the world war periods, countries used to have strictly restricted economies within their borders and they used to be governed by only powerful central governments. In addition to this, they started joining international entities that were meant to regulate the economic relations among their members (Soja and Scott, 1986: 251).

The advanced technologies and increased mobility opened the way to globalization and this has started changing the structure of the way things are done. It has become much easier to reach information and to alternative sources all around the world and this has created a new form of organizing and thus governing of some certain regions around the world, that have become politically and economically significant than others as a result of globalization (Storper and Scott, 1995: 507).

The new formation of cities is not strictly geographic and social but rather economic, political and territorial. They play a major role in the economic and political arena in our new world. Their major feature of bringing together various types of productive activities from certain sectors in a certain region makes them much more important than the geographically defined towns, cities and even some regions. Because the reason of

their formation and their existence are dependent on stronger economic and political links related to those regions. They are in fact the natural outcome of rapid globalization. They have the major drives to fight against the threats of global competition as well as taking advantage of the opportunities of it (Mommas, 2004: 509)

As a result of the increasing trade activities, money flow, foreign investments and labour movements and so on, there occurred some natural disputes and lack of adequate regulations regarding the new forms of trade between new forms of regions. IMF, World Bank, G8 Group and associations like these were formed in order to regulate the trade and to meet the needs of and to balance the political arena. They seem to be growing in size and number since the global trade is going faster every day. There has been a rise of the multi-nation blocs around the world such as EU, APEC, and NAFTA in order to eliminate the threats of globalization and to form a stronger new form of geography to stay economically competitive and politically important

Traditional form of states and economies have gone through massive alterations too because they do not possess their previous political and economic positions anymore. It has become very difficult to distinguish between economies of states and countries since they are so dependent on each other and much more interactive than before. The new form of city-regions facilitates the flow of information, which in turn accelerates learning and opens the way to innovation. This collective formation allows firms in the region to be more flexible and more responsive and creative to the new requirements of the global world (Campbell, 1996: 298).

However, they are also subject to fierce competition and various pressures near the borders of their regions. Local governments are generally not involved with the various needs of the city-regions because of the complexity and high level of variability. Therefore city-regions are naturally faced with some political and some identity problems and they deal with these problems themselves.

Right after the years of war, and even till the 1970s, companies aimed to standardize production and therefore decreasing the unit costs of production, which is called mass production. They were not flexible and open to change. Their main goal was producing big amounts of gods with low production costs. Since there was no or few competition, this strategy worked out really well at that time. However, with the advance in

technology, transportation and organization abilities; the companies started feeling the urge to become more flexible, being less standardized in their production and be more responsive to the needs of the new world. The new organization brought along many benefits for the firms and other partners in the organization such as higher flexibility, lower costs and better and more convenient information flow and sharing.

2.3. Measurement of Export Performance

Export could be considered as an important factor for both firms and industries due to the positive relationship between trade and growth performance. In addition, it is crucial for policy makers who want to benefit from positive impacts of exporting on the improved productivity, decreasing unemployment, accumulation of foreign exchange reserves (Sousa, 2004: 15). Also, it must be taken into account for viability, development and competitiveness of many countries' production sectors to enter and sustain in global markets. For these reasons, the impact of export on different areas of economy is among the most investigated subjects in the literature.

Frenkel and Romer (1999) focus on the impact of international trade on standard of living. They used ordinary least square method in empirical analysis and they benefit from gravity model to take into account the geographical differences that are among the factors affecting trade volume of countries. According to empirical results of their work, there is a positive relationship between trade and standard of living. In addition, the same connection applies for geographical location of a country as a crucial factor that affect its trade. That is, a country which is far from most other countries as location has less trade relations, while another country is close to many of the world's most populous countries has more trade connections. .

In another study, Kraay (1999) investigates whether firms learn from exporting by using data of 2105 Chinese industrial enterprises between 1988 and 1992. In empirical part, regression analysis is used in the study. He finds that exporting firms tends to be larger than non-exporting firms. Also, they have higher productivity and lower unit costs.

Panas and Vamvoukas (2002) examine the casual links between exports and output growth in Greece by using error correction modelling and multivariate granger

causality. According to empirical findings, in the long run, there is a robust causation from output growth to export performance.

Wagner (2007) contributes to literature by analysing the impact of export on firm's productivity using survey analysis. As a result of the study exporters are more productive than non-exporters.

Study of Taymaz and Yılmaz (2007) analysis the productivity response to trade barrier reduction for Turkish manufacturing plants over the period 1984-2000, a period of tremendous changes in Turkish trade regime. They find that after the Customs Union Agreement between EU and Turkey, productivity has increased in sectors along with increased import penetration rates.

Pisu (2008) tests the casual effects of export to different destination countries in Belgian manufacturing firms that cover the period 1998-2008 by using regression model to take into account factors, such as year and industry shocks, affecting productivity in the post-entry period. According to findings, before export market entry, exporters that export to more developed economies have higher productivity level than non-exporters and firms exporting to less developed countries.

Safdari et al. (2011) investigates causal relationship between export and economic growth in 13 developing countries by using panel vector error correction model over the period 1988-2008. According to results, there is unidirectional reverse causality through economic growth to export.

Lorde (2011) examines the export- led growth hypothesis for Mexico using co-intagration and Granger Causality analysis. As a result of findings, there is only short-run causality from export to growth, while in the long run; there is causality from economic growth to export as reverse in the short run.

Abbas (2012) implies the casual relationship between GDP and export for the period of 1975 to 2010 by using Johansen test of co-intagration and Granger Causality to analyse short run and long run causality. The study shows that both in short and long run only growth in production cause exports growth and government should try to develop production side to provide the development of trade and economy in long run.

Cebeci (2014) indicates the impacts of export destinations on productivity, employment, and wages of Turkish firms by comparing the performance of firms that export to developing and developed countries with firms which do not export by using firm-level data during the 2002-2011 periods. According to findings of that study, firms exporting to high income countries pay higher average wages than exporters to lower income countries. In addition to this, after global financial crisis 2008, increasing export of Turkey to MENA countries is not sufficient to eliminate negative effects caused by the stagnation of export to the EU. Because relative to MENA, exporting to EU contributes more to employment, wages and productivity which are crucial factors for economic growth.

Generally, in the literature, studies examining the relationship between the export performance and economic growth confirm the positive relation between two variables. As a result of this, export performance of a region or country tends to be a good indicator of economic performance. However, it is difficult to establish a definition of successful trade performance. For example, some regions or countries record high export performance by concentrating on niche markets and specific products, while others show more moderate performance with well diversified products and markets. In other cases, successful performance can be a result of region's or country's ability to adopt its export profile to changing patterns of world demand (International Trade Centre; 2007: 3)

For these reasons, measurements which evaluate the orientation of export composition, diversification of export pattern and sophistication of export portfolio as different dimensions of export structure have been used to determine export performance of regions or countries.

Within this scope, there are studies that analyse the export performance of Turkey and different cities of it. These studies are important to reveal the distinctive aspects of export performance analysis of Sakarya.

Yılmaz (2003) analyzed the international competitiveness of the Turkish economy and the structure of specialization in foreign trade by using revealed comparative advantage, comparative export performance, trade overlap and export similarity indices comparing with the five EU candidate countries Bulgaria, the Czech Republic, Hungary, Romania,

Poland (These countries were candidates to EU when this study written) and the EU/15. The results showed that all these countries have a comparative advantage in exporting of labor intensive goods and also, have a comparative advantage in exporting raw material intensive goods except the Czech Republic. Bulgaria and Czech Republic have a comparative advantage in capital intensive goods. Turkey has similar export structure with Romania, Poland and partly with Bulgaria.

Akal (2008) examined the structural change and foreign trade density among Turkey and the Middle East border countries in regard to the changes in production and economic structure of the countries from 1980 to 2005.

According to empirical findings Turkey has had advantages in industrial goods, increased agriculture import and become more dependable in reducing energy gap in foreign trade with those countries since 1980.

Çeviker and Taş (2011) analyzed the relationship between economic growth and export diversification in Turkey by using unit-root and Granger Causality tests. The results indicated that in the period between 14962 and 2008, there is a casual relationship from economic growth towards the export however, there is no causal relationship between export diversification and economic growth.

Özlale and Cunedioğlu (2011) analyzed Turkey's export performance with diversification, competitiveness and adaptation in new markets at sector level. According to results, electrical machinery and textiles sectors improved their adaptation ability before the global crises and adaptation changes according to sector characteristics as in the case with the iron-steel and motor vehicles. In addition to this, decrease in competitiveness of export in fruit and vegetable sectors is worrisome.

Gros and Selçuki (2013) indicated the main changes in the structure of Turkish trade and suggested that Turkey's industry specializes in low to medium technology products and the structure of comparative advantage has become different from both those of developing and some southern European countries.

According to World Bank Trading Up To High Income Report (2014), Russia, Azerbaijan, China and MENA countries have been non-traditional trading partners for Turkish exports over the past decade and the preferential trade agreements seems to

have played a role in facilitating new market entry. In addition to these, Turkey has RCA in resources-based export sectors including metals (e.g. iron and steel), agricultural products (sugar, tobacco etc.), textiles and some chemicals. Also, fertilizers, sanitary, plumbing and lighting fixtures; non-ferrous metals; furniture; road vehicles; dying, tanning and coloring of materials; and power generating machinery and equipment.

Erkan (2014) determined product and market diversification of Turkey's export by using the Concentration Ratio of Commerce, Gini Hirchman Index, Entropy Index, Deviation Index and Penetration Index. As a result, Turkey is successful in market diversification while it is unsuccessful in product diversification.

In addition to these, there are studies that analyze the trade composition of different cities from different region of Turkey.

Economic Policy Research Foundation of Turkey (2010) investigated export performance and competitiveness potential in respect to the export of 81 cities by using technological classification of export, diversification of products and market, ubiquity and trade complementarity. According to this study, Sakarya is the 6^{th} city in term of export of high and medium technological products. Kocaeli is the 3^{th} city which locates the same region with Sakarka. In addition to this, ubiquity is a measurement to evaluate the characteristics of exporting products. Products that are exported by many cities are defined as ordinary products so, they have high ubiquity. In accordance with, after the Istanbul and Rize, Sakarya is the 3^{th} city in respect to evaluation of ubiquity among all other cities of Turkey.

Development Agency of West Black Sea (2013) analyzed target market for the exporting products.

Development Agency of Ankara (2013) analyzed foreign trade structure of Ankara by using measure of concentration, diversification and technological distribution of technology.

Development Agency of East Marmara (2010) examined the prominent industries of that region by using the concentration of investment, employment, exports and technology level.

The publication of World Bank "World Integrated Trade Solutions" (known as WITS) is very important tool to measure the export performance of the countries. Following subheads explain the different indicators of export performance. Indicators and indices in this section are used to characterize the structure of trade from different point of view

2.3.1. Sectorial Composition and Primary Products of Exporter

Sectorial composition and primary product represent the main sectors and products that are exported by a region or country. These indicators have given basic understanding to make more accurate assessment in export potential of a region or country.

Besides the basic definitions and shares of main sectors and products, the number of equivalent sectors and export durations are used to disclose the composition of exporting sectors and products.

The number of equivalent sectors gives the number of main sectors that have equivalent contribution to the total exports by excluding the sectors that have little impact on the export (Özlale and Cunedioğlu, 2011: 2).

The number of equivalent sectors can be defined mathematically as;

$$NES_t = \frac{1}{\sum_{k=1}^{n}\left(\frac{x_{k,t}}{x_{total\ ,t}}\right)^2}$$

x is the value of exports sector "k" from region or country

X is the total value of exports from region or country

2.3.2. Export Markets and Concentration Rates of Exporter

This indicator consists of concentration rates of exporting markets, main transportation modes and methods of payments in export which are used to reveal the basic characteristics of the export relations with export markets and destinations.

Concentration ratio which is the cumulative shares of a certain exporting markets indicates the dependency of export on certain number of countries. The ratio ranges between 0 and 100.

Mathematical definition of ratio is given below

$$CR_m = \sum_{i=1}^{m} P_i * 100$$

Pi is the share of the market in total exports.

CR is the concentration rate and indicates the share of the markets.

CR1 is the share of largest market,

CRm is the cumulative share of the m^{th} unit.

The selection of m is optional.

According to ratio value, a number which close to 100 signifies an increase in concentration and the control of export relations by a small number of countries.

2.3.3. Trade Performance Index

Trade performance is defined as the volume of total exports relative to total imports of a region or country and their changes overtime. In summary, it is a measure of balance of trade (Ezeala-Harison, 1999: 43)

Trade performance index is defined as follows;

$$TPI_j = \frac{\sum_i^k X_i^j}{\sum_i^k M_i^j}$$

X^{ji} is total yearly exports of product j from country i ,

M^j_i is total yearly imports of product j from country i

k is the number of tradable commodities in World trade.

A country has a good trade performance if the index value is greater than unity and has an unfavourable trade performance if it is less than unity (Ezeala-Harison, 1999: 43).

2.3.4. Lawrence Index

Lawrence index is used to determine a structural change in region's county's export performance relative to previous year or month (Lawrence, 1984: 122)

Also, it investigates whether the country's response to the changing demands in the world or partner countries (Fontaura and Crespo, 2015: 228)

Mathematical Definition of index is as follows,

$$LEti = \left(\frac{1}{2}\right) x \sum Nj = 1 \left| \frac{Xij,t}{Xit} - \frac{Xij,t-1}{Xit-1} \right|$$

Xij,t is exports of product j from country i at time t,

Xit is the total export value from country i at time t

xij,t-1 is exports of product j from country i at time t-1,

Xi,t-1 is the total export value from country i at time t-1

The Lawrence Index value ranges from 0 to 1 and the index value of 1 indicates a complete upheaval, otherwise if it is close to 0, it implies a little structural change (Atiyas and Bakış, 2013: 24).

2.3.5. Trade Specialization Index

Trade specialization index is used to determine export or import specialization of a region or country. Both the Michaeley Index and trade specialization index are inversely related to conventional Glubel-Lloyd intra industry trade approach. Aggregate measure of trade specialization can be obtained first by weighted all individual sectors' measures then summing over all sectors so, trade specialization is defined as (Rajagopal, 2007: 193);

$$TUE^{i} = \sum_{j=1}^{N} \left\{ \left(\frac{X_j^i + M_j^i}{\sum_{j=1}^{N} \left(X_j^i + M_j^i \right)} \right) * \frac{\left| X_j^i - M_j^i \right|}{\left(X_j^i + M_j^i \right)} \right\}$$

X^{i}_{j} is the export of product or sector j in region or country i

M^{i}_{j} is the import of product or sector j in region or country i,

N is the number of product or sector i

The index value is between 0 and 1 and the ratio close to unity indicates an increase specialization level of that region or country. In addition, it is trade concentration on a group of products and by this way it can benefit from the economy of scale. However if

index value is close to unity, this means that there is diversification in exported products (Filiztekin and Karaata, 2010: 9).

2.3.6. Revealed Comparative Advantage

The theory of comparative advantage is based on two trade theories: the Ricardian and Heckscher Ohlin (H-O) theory. According to Ricardian theory comparative advantage emerges from differences in technology through countries (Utkulu&Seymen, 2001: 8). H-O Theory indicates that a country's comparative advantage arises from its relative factor scarcity. The Balassa Index is emerged as a result of the difficulties to measure the comparative advantage and testing the H-O theory. There are some difficulties about the measuring the comparative advantage and testing the H-O theory. Balassa's measure of RCA which is a measure of international trade specialization is emerged to eliminate these difficulties (Bhattacharyya, 2011: 22)

Revealed Comparative Advantage (RCA) can be defined as;

$$RCA_{ijk} = \left[\frac{\frac{x_{ijk}}{X_{ij}}}{\frac{x_{wjk}}{X_{wj}}} \right]$$

Where;

x_{ij}^{k} is the export value of product "k" from country "i" to destination "j".

X_{ij} is the total export value of country "i" to destination "j"

x_{wj}^{k} is the export value of product "k" from country world as a origin to destination "j".

X_{wi} is the total export value of country "i" to world as a origin

Revealed Comparative Advantage indicates relative trade performance of a country in a particular commodity. If the index value is greater than 1, a country has a revealed comparative advantage in export of that product in respect to the exports of the same industry in reference country or region (Batra and Khan, 2005: 5).

In literature, there are many studies about the advantages and disadvantages of RCA.

According to Wu and Lin (2008) RCA takes into account the scale of each country's economy and relative regional or global market share of their exported products. Also it

is easy to calculate and make a judgement about the trade performance of a country or region. In addition, Nicolic et al. (2011) mentions that RCA is widest used method to underline economic efficiency of an industry.

Some other authors highlight the disadvantages of RCA. Benedicts and Tambari (2004) argue that RCA index is asymmetric. That is if a country has revealed comparative advantage, the index value is greater than 1 and there is no upper bound. However, when a country has revealed comparative disadvantage, RCA index is restricted by upper bound of unity.

Kuldilok et al (2013) indicate that RCA is not a sufficient measurement to explain the reasons for changes in levels of competitiveness.

2.3.7. Trade Complementarity Index

Trade complementary index is a useful measurement to determine the compatibility of a region's or country's export with potential partner country imports (Michaeley, 1996: 22). This index implies that two regions or countries gain from the trade partnership when one has a comparative advantage in products in which the partner has comparative disadvantage (WITS: 2013, 19)

Mathematical definition of index is given below,

$$C^{an} = 100\left[1 - \sum_{k=1}^{m} \frac{\left|m_k^i - x_k^j\right|}{2}\right]$$

C^{an} is the complementarity index value

m^i_k is product k's share in country i's total imports

x^i_k is product k's share in country i's total exports.

A maximum value of 100 indicates that two countries are ideal partner for trading and gain more from this trade partnership. Otherwise, a lower index value implies that two countries' export portfolio consists of similar products (WITS, 2013:19)

2.3.8. Export Diversification

Export diversification is defined as a transformation in the composition of a region's or country's existing export portfolio or destination. Diversification provides stability in export earnings and broader base of exports. By this way, it enhances economic growth. There are two important questions about diversification;" Why do regions or countries diversify their exports?" and "Does countries benefit from diversity to economic growth and development?" (Samen, 2010: 4).

The export diversification can contribute to reduce volatility and instability in export earnings. This is widely accepted in principle (Derosa; 1992: 573) Ghosh and Ostry (1994) indicate that greater volatility in commodity process can cause instability in countries that are dependent on these commodities. In addition, Bleaney and Greenaway (2001) claim that due to the volatility of primary product prices, exporters of these products have greater instability of export revenue. Also, according to Ramey and Ramey (1995), more diversified economies are less vulnerable in terms of output and lower output volatility is associated with higher economic growth.

As a result of all these, concentration on a few products can have serious negative economic and political consequences. One of them is instability in foreign exchange earnings which have negative macroeconomic impacts on growth, employment, investment planning, import and export capacity, foreign exchange cash flow, inflation, debt repayment. (Cashin and Mc. Dermott, 2010: 178). The other is political risks especially in countries that have suffered from civil wars and worsened governance. In such a situation, due to the volatility of commodity prices, export oriented and particularly developing countries suffer from economic, political, social turmoil and their crucial consequences (Collier, 2002: 2). Moreover, limited specialization in primary and agricultural products may cause increase in vulnerability for external shocks and thus interrupt regions or country's growth through terms of trade deter ration (Sarkar, 1986: 358). Export diversification aims to eliminate these negative economic and political results.

In addition, sustained and rapid growth is highly related with export growth (Brenton and Newfarmer, 2007: 2). Besides, rapid export growth is associated with diversification into new products. According to Bora et al. (2004), low income countries

are generally depended on a few products for their exports. This means that export of low income and developing countries have shown less diversified export structure. Also, Imbs and Wacziarg (2003), indicate that economies have inclined to more diversify until they reach to upper middle income status. Moreover, specialization in some products is dominated in the export structure of developing and low income countries.

The concentrated feature of export of developing countries demonstrates that when prices of their particular exports on global markets fall, their economies suffer from price volatility that is bad for investment and consumption (Jansen, 2004: 12). Furthermore, price volatility has affected economic growth adversely.

Export provides specialization in a country's comparative advantage. By this way, it accelerates the growth. With the comparative advantage theory, David Ricardo indicates that countries benefit from specializing in the production of these product and exporting them (Songwe and Winkler, 2012: 1).

New theory of Helpman and Krugman (1985) generalized by Grosman and Helpman (1991) shows that trade between developed countries was mainly in the form of intra-industry trade not inter industry trade. They gave importance to the role of increasing returns to scale and an imperfect competition market structure.

However, while the gross output increased in both commodity and non –commodity exporting countries, the quality of growth has become a major topic of discussion. Haussman, Hwang and Rodrick (2007) developed an indicator to evaluate the productivity of countries' export baskets. Specialization in some products will provide higher growth than specializing in others. They analysed the African countries and concluded that Africa needs to diversify its export basket from less sophisticated primary commodities through the high productive sectors such as manufacturing in order to achieve faster growth.

According to Agosin (2008), this movement in the composition of export from primary to manufacturing products known as vertical specialization and is needed to enjoy sustainable growth.

Besides, there are country specific studies to explain the relation between export diversification and growth. Naude and Rossouw (2008) indicate that export diversification Granger causes GDP per capita in South Africa during the 1962-2000.

Herzer and Lehmann (2006) examine export diversification in Chile. They test diversification-led growth hypothesis by using the Johansen trace-test, a multivariate error-correction model and the dynamic OLS procedure. According to estimation results export diversification plays an important role in economic growth of Chile.

Lederman and Maloney (2007) show an adverse relationship between export concentration and growth over the period 1975-1999 in a cross-country framework. As a result of this study, countries that have diversified their exports in the past decades have on average achieved higher per capita income growth.

Hesse (2008) analyses a non-linearity in relationship between export diversification and growth over the period 1962-2000 in developing countries. He finds that export concentration has been harmful to the economic growth performance of developing countries in the past decades.

Feenstra and Kee (2004) study the relationship between a country's productivity and its variety of sectoral export portfolio in a sample of 34 countries between 1984 and 1999. They find out that 10 per cent of increase in a country's export diversification causes 1.3 per cent growth in a country's productivity.

According to most of studies about diversification in literature, diversification in export portfolio of regions or countries reduces volatility and instability in export earnings. In addition, there is a positive relation between diversification and economic growth. By this way it is an effective policy tool to protect internal and external political and economic shocks and provide sustainable and robust growth.

In the literature, there are various ways to measure export diversification. The most frequently used measures of diversification are product and market concentration ratios such as Herfindahl and Hirschmann product and market concentration indices, Export Market Penetration Index, Gini-Hirschman Concentration Index, Grubel and Lloyd Intra industry Trade index.

Other measures used to determine diversification are the Commodity-Specific Cumulative Export Experience Function, The absolute Deviation of the Country Commodity Shares, the Commodity Specific Traditionalist Index (Samen, 2010: 10).

2.3.8.1. Herfindahl and Hirschmann Product Concentration Indexes

There are different indices to measure the concentration ratios which have developed by economists and regional scientists (Attaran and Zwick, 1987: 18). According to Ali et al. (1991) these indices can be used interchangeably because they provide similar results about export concentration.

"Herfindahl- Hirschman Index" (HHI) which referred as the "Hirfindahl Index" is a measure used to evaluate both product and market concentration of export. It is one of the most widely used and criticized measure (Guordan, 2010: 16).

This index was first used in the 1940s to measure skewness and formally took place in economic theory in 1976 (Cowling and Waterson, 1976: 269). In 1984, The US Department of Justice used the HHI as a concentration index for mergers. This application has been followed by many others for regulatory and academic purposes. Besides commonly acceptation and use of HHI, it has been criticized widely (Lijesen, 2004: 124).

The main criticism about HHI was made by Tirole (1998). He claimed that HHI generally ignore the other factors that affect and determine market powers. Some of these factors are costs of entry and asymmetries in costs and demand. ,

Mathematical Definition of Normalized HH Product Concentrating Index:

$$\frac{\sum_{j=1}^{n_i}\left(\frac{x_{ij}}{X_i}\right)^2 - \frac{1}{n_i}}{1 - \frac{1}{n_i}}$$

Where;

X_i is the total value of exports from region or country "i"

x_{ij} is the value of exports product "k" from region or country "i"

n_i is the number of product exported by region or country "i"

An index value close to "1" indicates a concentration in very limited products. Moreover, diversification increases with an index value close to "0". A region or country which has such a result is more vulnerable to external shocks (WITS, 2013: 24). Because regions or countries which export a very few products experience robust fluctuations in terms of trade – the price of a country's exports relative to the price of its imports- (Baster and Kouparitsas, 2000: 2). In addition, as a result of empirical analysis, terms of trade volatilities are highest for fuel exporting countries due to the highest concentration on export of natural resources, followed by primary commodity exporters, followed by countries that specialize in manufacturing exports (Bacchetta et al., 2007: 4).

Mathematical Definition of Normalized HH Market concentration Index:

$$\frac{\sum_{j=1}^{n_i}\left(\frac{x_{ij}}{X_i}\right)^2 - \frac{1}{n_i}}{1 - \frac{1}{n_i}}$$

X_i is the total value of exports from i

x_{ij} is the value of exports from country i to destination j,

n_i is the number of partner markets according to country i,

A region or country with an index value close to 1 indicates a concentration on very few markets. In addition, it is an indicator of exporter's dependency on its trading partners. The export portfolio which consists of limited number of partner markets shows the dependency of exporters on these trading partners. Moreover, in a time series fall in the index indicates a diversification in the exporter's trading partners (WITS, 2013: 26).

Furthermore, while some countries diversify their export to reach a large number of markets, others concentrate their export on specific number of countries generally within the same region. The economic performance of trading partner has an impact on exports to those trading partners. Countries whose trading partners has more volatile economic or political environment, the higher probability that volatile in the trading partner affects the exporting country (Cadot et al., 2013: 793).

2.3.8.2. Index of Export Market Penetration

Export market penetration index is a ratio of the actual number of bilateral trade flows to potential bilateral trade flows (Brenton and Newfarmer, 2007: 13). Also, it is powerful explanatory variable for export performance. With this index, it can be obtained that the maximum potential number of export relationship that a region or country can establish with its export portfolio at present. Germany as a one of the most powerful exporting country reaches 50 per cent of its potential. In addition, China has increased its market penetration over the past decade (Reis and Farole, 2013: 43).

Brenton and Newfarmer (2007) calculate the index of export market penetration as follows,

IEMP: $\frac{n_{x,ik}}{n_{m,k}}$

Where,

n_x is the number of countries to which region, country or city i exports product k,

n_m is the number of countries that import product k from any sources.

The IEMP will be high for regions or countries that reach a large proportion of the number of markets that import those products. However, it ignores fixed costs of entering foreign markets, variable transactions costs, and their sources (WITS, 2013: 34).

Moreover, this measure can be an indicator for per capita income. In other words, countries with higher GDP per capita incomes are more successful to reach the available markets for the goods they export (Brenton et al., 2009: 15).

2.3.8.3. Gini-Hircshman Concentration Index

Gini-Hircshman Concentration index is a common measure of diversification used in the literature (Talukdar, et al., 2002: 102).This index is calculated by using different variables such as export, employment, and output. (Kılıçaslan et al. 2012: 3).

Mathematical definition of Gini-Hircshman Index as in the following (Kösekahyaoğlu, 2007: 17).

$$\mu_{ji} = 100 \sqrt{\sum_{i=1}^{n} \left(\frac{X_i}{X}\right)^2}$$

x_i is the value of exports product “i” from region or country

X is the total export value of that region or country

By this equation, the largest value of index is 100 and it indicates a country whose export basket consists of only one product. Moreover, the larger index value means increasing concentration in export. In contrast, lower value of index indicates high level of diversification in export (Katz, 1976: 249).

2.3.8.4. Grubel-Lloyd Intra Industry Trade Index

Intra industry trade is the two way trade of products under the same industry classification (Clark, 2010: 190). The Heckscher-Ohlin theory defines the comparative advantage in respect to factor endowments. A country exports commodity to benefit from its abundant factor and import a commodity to benefit from its scarce factor. In addition, this theory assumes that traded goods are homogeneous and as a result of these countries cannot simultaneously export and import goods belonging to the same industry. They either only export goods in the same industry or only import them (Koçyiğit and Şen, 2013: 62).

Balassa (1966) and Grubel (1967) analysed trade of similar but differentiated products rather than specialization. In addition to this Krugman (1979) and Lancester’s (1980) introduced a trade theory as a monopolistic competition models with the main assumptions of increasing return to scale and consumers love for variety. Intra-indusry trade requires specialization in a limited range of products in a given industry as a reverse of inter industry trade with specialization in an industry as a whole (Davis, 1995: 203).

The most important advantage of intra-industry trade occurs from its basic characteristics about economies of scale and decreasing costs. Intra-industry trade emerges from each country’s production of a limited range of products in the same industry. Economies of scale has appeared from the specialization in different and differentiated products in the same sectors. By this way, countries have decreased fixed

costs and benefited from economies and scale and increased variety of goods to domestic consumers (Marrewijk, 2009: 3).

Herbert Grubel and Peter Lloyd (1975) developed an empirical study to measure intra-industry trade.

Mathematical definition of adjusted Grubel Lloyd Index as in the following;

$$GL_j^a = \frac{(\sum(X_i+M_i)-\sum|X_i-M_i|)}{(\sum(X_i+M_i)-|\sum X_i-\sum M_i|)}$$

X_i= Total export value of country or region i

M_i= Total import value of country or region i

The value of index ranges from zero to 1. The index value is equal to unity indicates that all trade is the intra industry type. Conversely, the index value is equal to 0 means that all trade is inter-industry trade.

2.3.9. Export Sophistication

The export portfolio is directly connected with the level of productivity that exists in a country. Thus, the composition of exports determines the level of export sophistication which implies the familiarity of export portfolio of a country with export portfolio of high income countries (Haussman et al, 2007: 3).

As a result of the globalization and liberalization, competitiveness has become one of the most crucial subjects in the world market. Especially, because of the increasing importance of export, export marketing has gained more significance for all economic units such as firms, industries, governments and regions (Lages et al. 2005: 1042). While export marketing has gained importance, the products exported by richer countries have some characteristics that provide countries to compete in global markets. Technology is one of the most important factors among them. However, there also are other factors that include national resources, infrastructure, logistics, value chain organization (Lall, 2005: 5). All these features of products exported by richer countries increase the ability to compete in World markets. Therefore, while primary products have lost their shares in world trade, the demand for technology intensive products has increased more than others. In addition, high technological industries and sophisticated

products have expanded strongly in international trade (Anand et al., 2012: 3). The classification of technology level and sophistication level of production is given following Table 11.

Table 11
Classification of Technology Level and Sophistication Level of Production

Technology Level	**Sophistication Level**	
	Low	**High**
Low	Technologically simple products whose export production has shifted to low wage areas	Technologically simple products whose export production remains in high wage areas because of trade distortions, resource availability, logistical needs to be near main markets
High	Technologically advanced products with fragmentable processes located in low wage areas	Technologically advanced products without fragmentable processes where high wage countries retain strong comparative advantage
Note: The sophistication level is based on the average income of the exporter of a product, the level rising with income. The technology level is based on the R&D intensity of the core industrial process		

Source: Lall,2005,pp.6

Moreover, Felipe, Abdan and Kumar (2012) classified countries with respect to sophistication level of their exported products and they found that 120 of 154 countries are in “bad product” trap and they export mostly unsophisticated products. To prevent this, policy interventions are needed to eliminate market failures in many developing countries.

As a result of these, the structural transformation from low value added, unsophisticated products through higher value added and more sophisticated goods has been important for economic development of developing regions and countries (Fortunato and Razo, 2014: 3). Haussman et all (2007) indicate that a country that produces or exports the sophisticated products that rich countries export are likely to grow faster. In addition, in an another study, Haussman et all (2011) claim that export structure of a country and products which are exported by that country indicate the potential or ability of it to diversify and develop more sophisticated goods to grow faster. Because, these countries

production processes that it already produces through others which are similar in terms of the knowledge, infrastructure, technology required to produce them.

For these reasons, today's export structures of countries and sophistication level of products that are exported by them are important indicators to have an idea about the growth and structural transformation potential of these countries.

In this framework, Jankowska et allm (2012) analyzed Asian newly industrialized countries by using product space methodology of Hidalgo et all (2007) which is based on the maps of relative proximity or similarity of traded products.as a result, new industries such as iron, steel and electronics were developed by using skills and capabilities of existing industries. High connectivity sectors have provided an opportunity a gradual and systematic transition towards high value added activities that require similar production technology and infrastructure.

According to Schott (2008), the export baskets of a group of countries consist of productive goods and have highest export sophistication. The country that has similar export portfolio to this group of countries' export basket is defined high sophistication level.

Xu (2007) indicates that advanced countries which have high technology and more capital export more sophisticated goods such as electronic machinery. Less developed countries with less technology and capital export less sophisticated, low technological goods such as apparel. These relationships are empirically found by study of Schott (2008). According to his work, while low income countries' export portfolio is less similar to OECD countries, export baskets of high income countries are more similar to OECD countries.

Due to importance of sophistication level of exported goods, the measurements which are used to determine the sophistication level of exported products are studied by many economists and regionalists. Technological classification of export, sophistication of export (EXPY), revealed physical capital intensity and revealed human capital intensity are among the major measurements in order to determine sophistication levels of countries.

2.3.9.1. Technological Classification of Exports

High technology industries have an advantage to expand strongly in international trade. Also, they provide an opportunity to improve performance in other sectors by spill over effect. By this way, export sophistication in high technology industries provides structural change and increasing growth in developing regions (Hatzicronoglou, 1997: 4).

Classification in respect to their technological characteristics of industries is an important part in order to analyse export sophistication of a region (Gertler, 2006: 14). There are many ways to classify products by technology. The most generally used methods which are based on the technological classification of Pavitt (1984) as resource based, labour intensive, and scale intensive, differentiated and science-based manufactures. However, in this classification, distinctions among categories are not so clear and there are overlaps between categories (Lall, 2000: 7).

Moreover, Hatzichronoglou (1997) introduces broad classification in respect to ISIC Rev. 2 and STIC. Rev.3.1.This classification which is based on R&D intensity consists of sections as high, medium high, medium low and low technology. In 2011 OECD introduces updated technology intensity definition with respect to ISIC Rev. 3. According to updated classification, medical precision and optical instruments (ISIC Rev.3, 33) are moved to high technology group while it was previously considered medium high technology (OECD, 2011: 1).

Table 12
Technological Classification in respect of ISIC.Rev.3.1

	ISIC Rev. 3
High-technology industries	
Aircraft and spacecraft	353
Pharmaceuticals	2423
Office, accounting and computing machinery	30
Radio, TV and communciations equipment	32
Medical, precision and optical instruments	33

Table 12 Continue

Medium-high-technology industries		
	Electrical machinery and apparatus, n.e.c.	31
	Motor vehicles, trailers and semi-trailers	34
	Chemicals excluding pharmaceuticals	24 excl. 2423
	Railroad equipment and transport equipment, n.e.c.	352+359
	Machinery and equipment, n.e.c.	29
Medium-low-technology industries		
	Building and repairing of ships and boats	351
	Rubber and plastics products	25
	Coke, refined petroleum products and nuclear fuel	23
	Other non-metallic mineral products	26
	Basic metals and fabricated metal products	27-28
Low-technology industries		
	Low-technology industries	36-37
	Wood, pulp, paper, paper products, printing and publishing	20-22
	Food products, beverages and tobacco	15-16
	Textiles, textile products, leather and footwear	17-19
Total manufacturing		15-37

Source: OECD ISIC Rev.3 Technology Intensity Definition,2011,pp.5

By using technology classification of export in Table 12. The index of technological classification of export is used to determine the sophistication level of export.

Mathematical definition of technological classification index is as follows;

$$100^{*} \sum_{k \in \Omega_{tec}} \frac{x_{ik}}{X_i{}'} \qquad \forall tec \in [HT, MHT, LT, MLT]$$

$\mathbf{x_i^k}$ is the export value of product "k" from country "i"

X_i is the total export value of county "i"

∀Tec∈ [HT, MHT, LT, MLT] indicates the set of products which consists of high technological, medium high technological, low technological and medium low technological products respectively.

2.3.9.2. Sophistication of Export (EXPY)

Hausmann, Hwang and Rodrick (2006) have determined the sophistication of products by using income levels of countries that produce them. According to their study, products that are produced by rich countries are defined sophisticated. The measurement

of sophistication for each product is called PRODY. It is weighted average of the per capita GDP of countries that produce these goods and weighted average is derived from Balassa concept of RCA. EXPY is a measure of sophistication or a country's export portfolio. To calculate EXPY, PRODY must first be calculated. Because it is calculated as the weighted sum of the PRODY for each sectors in country's export portfolio. Countries which have high EXPY value tend to have higher growth rates in the future.

Mathematical Definition of PRODY and EXPY

$$PRODY_k = \sum_i \frac{\frac{x_{ik}}{X_i}}{\frac{x_{wk}}{X_w}} * y_i \qquad EXPY_i = \sum_k \frac{x_{ik}}{X_i} * PRODY_k$$

X is the total value of all exports from country i,

xi is the value of exports of product k, and

w is the world as a origin.

Y is GDP per capita.

2.3.9.3. Revealed Factor Intensity

Methodology of revealed factor intensity was inspired by Hausmann, Hwang and Rodrik (2007). RFI indices provide systematic classification of products in respect to their factor intensities (Shirotori et al. 2010: 29). RFI is a weighted average of the factor abundance of the countries exporting that good. The weighted average is derived from the Balassa Concept of RCA, The revealed physical capital intensity (RPCI) and revealed human capital intensity (RHCI) are among the widely used revealed factor intensity indices (WITS, 2013: 41).

$$RPCI_k = \sum_i \frac{\frac{x_{ik}}{X_i}}{\frac{x_{wk}}{X_w}} * \frac{K_i}{L_i} \qquad RHCI_k = \sum_i \frac{\frac{x_{ik}}{X_i}}{\frac{x_{wk}}{X_w}} * H_i$$

X is the total value of all exports from region or country i,

xik is the value of exports of product k, and

w is the world as a origin.

Human capital, H, is estimated by the average years of schooling.

2.3.10. Duration of Export Relations

This indicator reflects the number of new product-partner relationships in the start and selected end year. The ability to establish continuous trade relationships is a sign of a well-developed economy. Large scale deaths of trading relationships may reflect economic shocks or be the result of new policies (WITS, 2013: 42). This is evaluated by counting of the number of export relationships in respect to exporting markets and products.

PART 3: ANALYSIS OF EXPORT PERFORMANCE OF SAKARYA

This section contains the development, structure and composition of exports of the city of Sakarya over the years with the analyses to determine the target market and products.

3.1. Data and Methodology

Major part of the data used in the study is obtained from Turkish Statistical Institute (TSI) and United Nations International Trade Centre Database. The analyses includes the years 2002-2014 and 2002-2015 when available since the year 2002 is the beginning of the foreign Trade data of TSI for the Cities.

The rest of the data is obtained from the database containing daily export information of all the exporters in Sakarya (except the ones registered at Akyazı Chamber of Commerce and Industry) collected by the cooperation of Sakarya Chamber of Commerce and Industry and Sakarya University International Trade Department. The database is made out of the information gathered from Invoice, ATR movement certificate, Euro1 movement certificate and Certificate of Origin, given to the Chamber by the exporter during export transactions.

In addition to these, The Harmonized Commodity description and Coding system generally known as ”Harmonized System” is a multipurpose international product nomenclature introduced by World Custom Organization is used for measurements which are based on the exporting product. This system is widely used by more than 200 countries and economies as basis for their Custom tariffs and the collection and analyses of international trade statistics. Over 98 per cent of the merchandise in international trade is classified according to the HS. (World Custom Organization, 2015).

Moreover, The United Nations International Standard Industrial Classification of all Economic Activities is used to analyses which are based on the exporting sectors. This classification system is the common international standard for the classification of economic activities. The aim of this system is to provide a standard set of economic activities. For this purposes entities can be classified according to the activity they implement.

In the following sections, after primarily explaining the overview of Sakarya's exports, number of equivalent sectors, export market concentration rates, trade performance index, Lawrence index, trade specialization index, revealed comparative advantage, trade complementarity, Herfindahl-Hirschman product and market concentration indices, index of export market penetration, Gini-Hirschman concentration index, Grubel-Lloyd intra-industry trade, technological classification of export and export duration are performed to figure out the performance of Sakarya exports with target markets and products.

3.2. An Overview of Development and Structure of Foreign Trade of Sakarya

As an extension of the considerable transformation in Turkey's foreign trade dating from the beginning of 2000's, Sakarya's exports have also showed an important change. This section intents to show the overview of Sakarya's foreign trade with its place in Turkey and in the 42th region

3.2.1. Development Process of Foreign Trade in Sakarya and Its Place in the Region and Turkey

The following Table 13 shows Sakarya's exports, imports and foreign trade volume between the years 2002-2014

Table 13
Foreign Trade of Sakarya (2002 – 2014)

Years	Export (000 Dollar)	Import (000 Dollar)	Foreign Trade Volume (000 Dollar)
2002	428.029	527.905	955.934
2003	843.017	751.905	1.594.923
2004	2.093.254	1.193.818	3.287.071
2005	2.712.960	1.555.407	4.268.367
2006	2.981.394	1.930.986	4.912.380
2007	3.522.655	2.018.569	5.541.224
2008	2.912.889	1.708.866	4.621.755
2009	1.722.375	908.949	2.631.324
2010	1.678.285	1.005.238	2.683.523
2011	2.011.778	1.368.469	3.380.247
2012	1.820.384	1.149.585	2.969.969
2013	2.250.874	1.639.155	3.890.028
2014	2.599.044	1.663.822	4.262.866

Source: TurkStat,2015

As it will be understood from the Figure 10 below, Sakarya's foreign trade showed an increase starting from 2002 to 2008, but lived a severe decrease particularly in the next three years, with the effect of Global Financial Crisis. Although the progress seen as of 2011, didn't continue in 2012, a recovery showed up in the years 2013 and 2014. Nevertheless Sakarya still couldn't achieve export values of 2008.

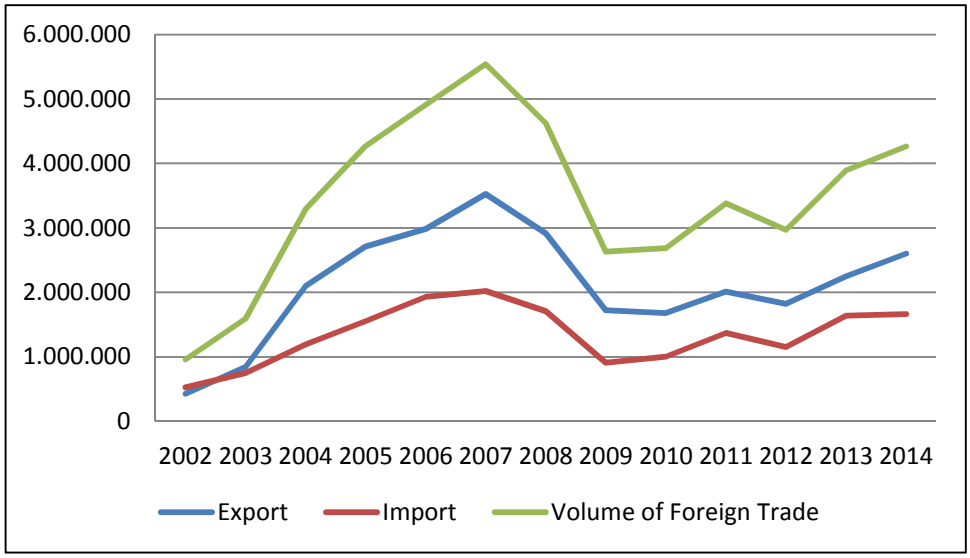

Figure 10: Foreign Trade of Sakarya (2002 - 2014)

Source: TurkStat,2015

The Figure 11 below shows the change in the share of Sakarya's foreign trade in Turkey's foreign trade by years.

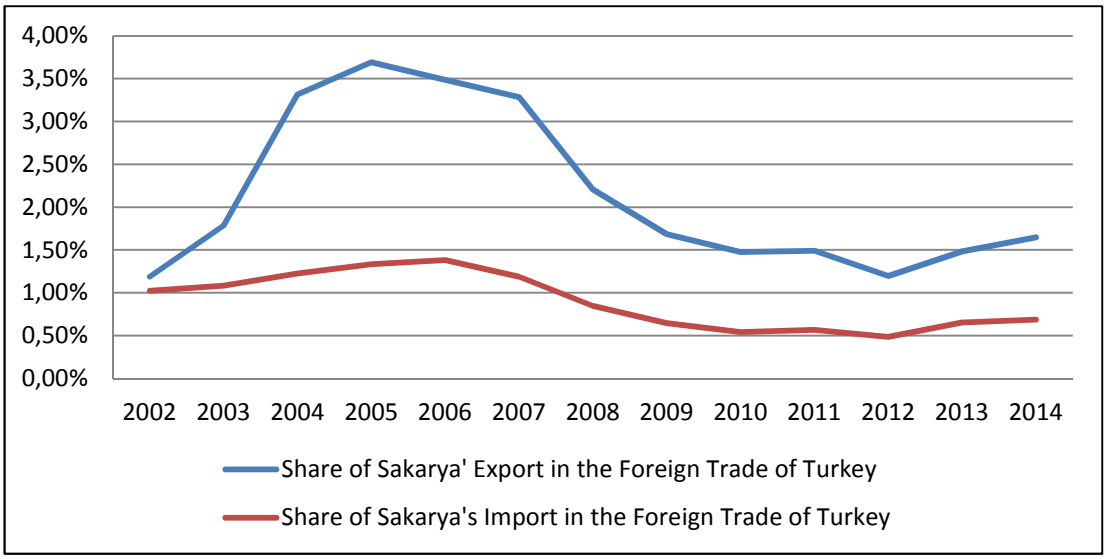

Figure 11 : Share of Sakarya in the Foreign Trade of Turkey (2002 - 2014)

Source: Data is obtained fromTurkStat,2015 and calculated by author

When the export line of the graphic above is taken into consideration, it is understood that, especially until the Global Financial Crisis, the share of Sakarya in Turkey's exports situated in the 3-3,5 % cycle, despite the insignificant declines, but lived a considerable decline with the crisis. Despite the recovery lived later on, Sakarya's export was only 1,65 % of Turkey's exports, as of the end of 2014.

When looked at the from the imports aspect, a radical change, as in exports, is not seen. Sakarya's imports fluctuate about 1 % of Turkey's exports. This ratio is 0,69 % as of end of 2014.

As can be seen, these movements seen in Sakarya's foreign trade, seem to be originating from internal dynamics of its trade. Below Figure 12, showing the movement of Sakarya's foreign trade with Turkey's foreign trade, strengthen this determination.

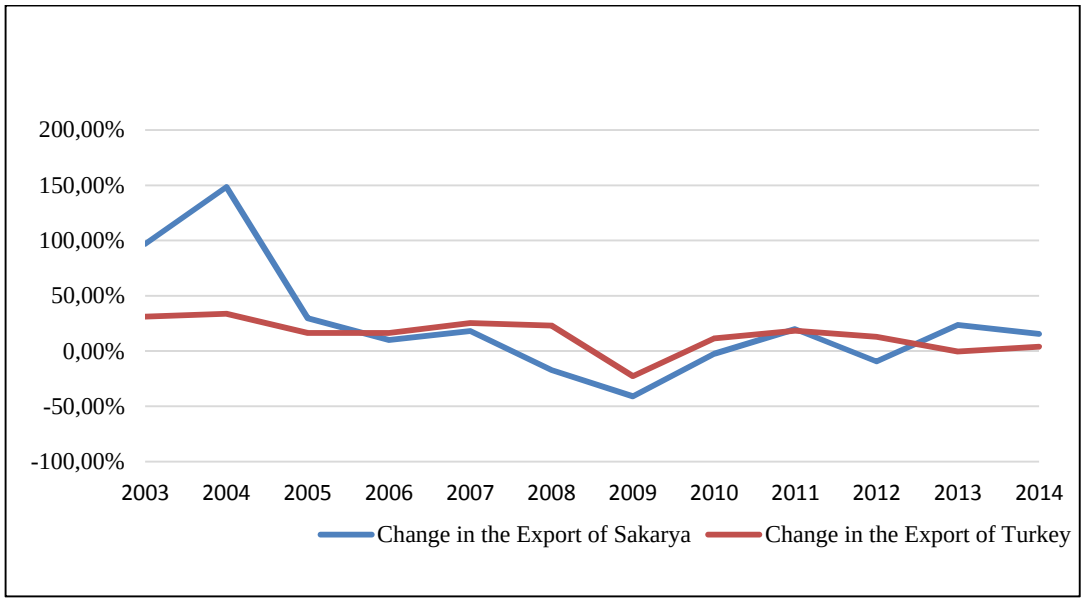

Figure 12: Changes in the Export of Sakarya and Turkey (2002-2014)

Source: Data is obtained fromTurkStat,2015 and calculated by author

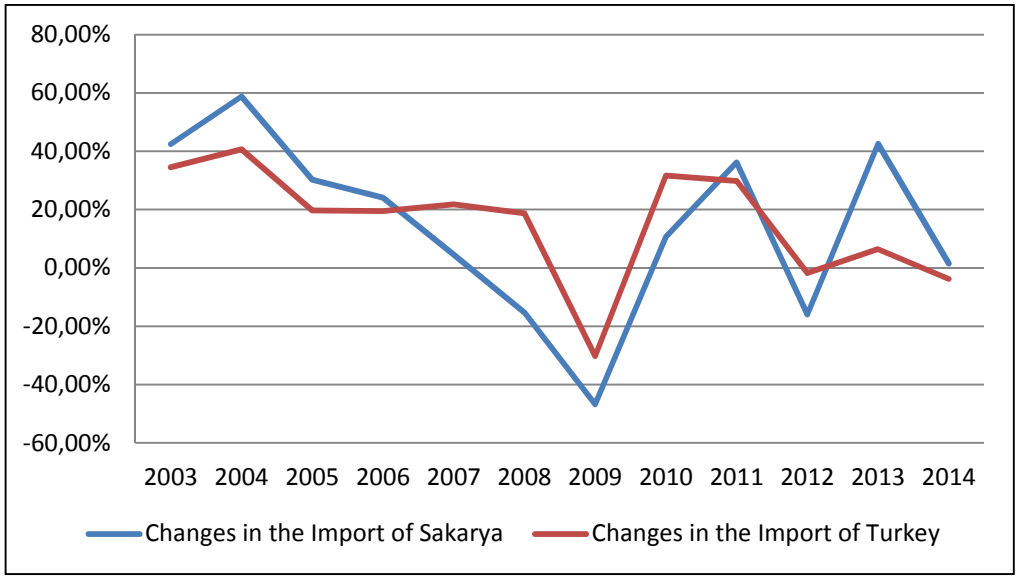

Figure 13: Changes in the Import of Sakarya and Turkey (2002-2014)

Source: Data is obtained fromTurkStat,2015 and calculated by author

As seen in Figure 12 and 13, the impact of global financial crisis on export and imports of Sakarya was much greater than its impact on Turkey. The one of the most important reason for this effect is so large, as will be discussed later, the contraction in the automotive sector due to the weak import demand that provides a significant portion of Sakarya's export. Furthermore, the favourable change in the Sakarya's foreign trade in the last three years is much more than the favourable change in the Turkey's foreign trade.

According to Nomenclature of Territorial Units for Statistics (NUTS), Turkey is divided 12 regions as a candidate of European Union (TSI, 2015). Sakarya is a city of East Marmara Region (TR4) with other developed, industrialized cities as Bursa, Kocaeli and Eskişehir. Moreover, Sakarya is a part of Kocaeli sub region (TR42) which consists of cities such as Kocaeli, Yalova, Düzce and Bolu.

As information supporting the Sakarya's increasing potential in its location, the Figures below show the share of Sakarya's export in Turkey, region of East Marmara, and TR42.

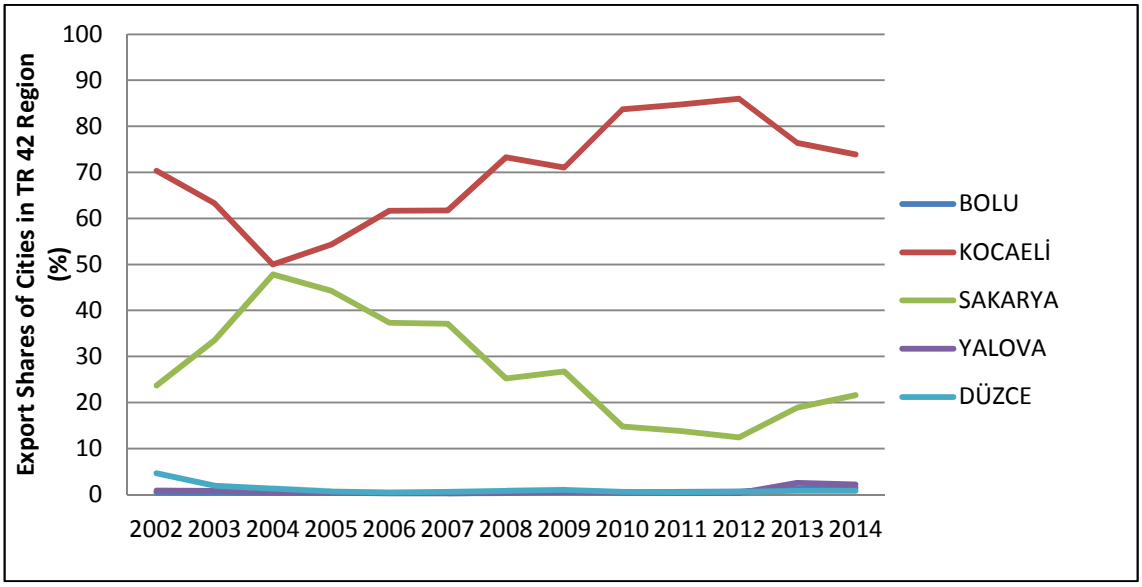

Figure 14: Distribution of Export Among the Cities of TR 42 Region

Source: Data is obtained fromTurkStat,2015 and calculated by author

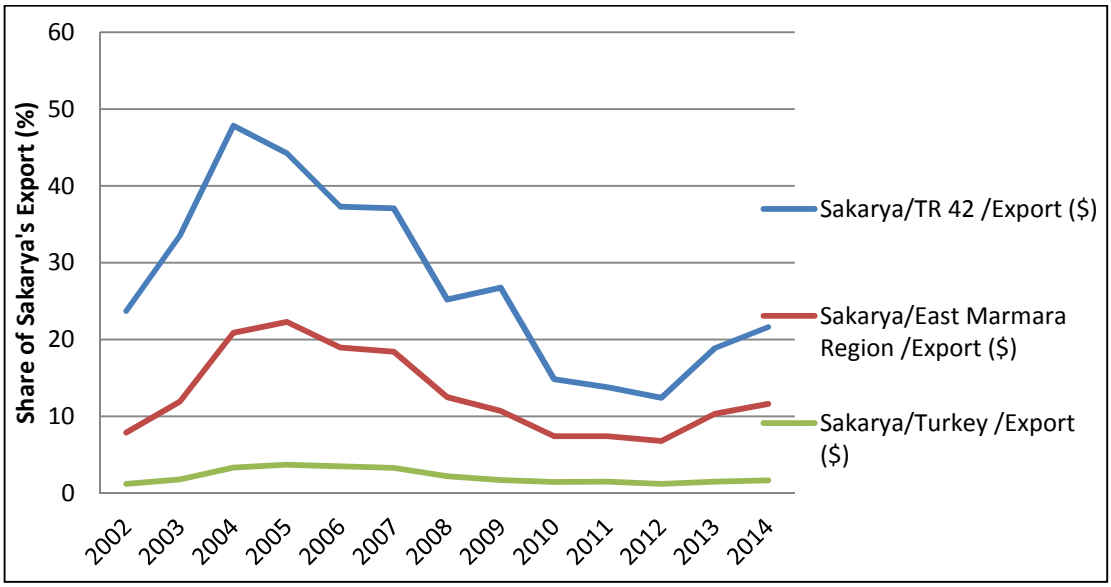

Figure 15: Export Shares of Sakarya Compared to TR42

Source: Data is obtained fromTurkStat,2015 and calculated by author.

Given the export ratios of cities in region of TR42 in Figure 14, Sakarya has robust export potential and the second highest exporter after Kocaeli in that region. In addition, the export share of Kocaeli is more than Sakarya' share and during the period, Kocaeli is more dominant than Sakarya in TR 42 region.

As seen in Figure 15, similar to Figure 14, decreasing trends in share of Sakarya's export in export value of region of East Marmara and TR42 over the period 2006-2012 has changed reversely since 2012.

Transportation is among the key considerations to assess the export potential of a region, because it is crucial to provide an export network is efficient and cost effective. In this context, transportation methods used in exports are also important in export analysis of Sakarya. Table 14 shows four main ways of transportation and their shares in Sakarya's export.

Table 14
Main Transportation Modes and Their Shares in Sakarya's Export in 2014

Road	Railway	Airway	Seaway
64.63 %	1,57%	3.15%	29.25%

Source: Data is obtained from Sakarya Chamber of Commerce and Industry,2015 and calculated by author

As seen weighted values in Table 14, in 2014, the most of export products, approximately 64.63 per cent, are conveyed by road and hazelnut, chocolate, foliage plants, enamel frit and machines have been among the widely export products that are transported by this mode to importers destination.

Moreover, sea is the second commonly used transportation way with 29.25 per cent, and aluminium products, hazelnuts, chocolate, mineral waters are export products that are carried by this mode. ,

In addition, aluminium filtration systems and enamel frit are export products that are conveyed by airway with 3.15 per cent, as the third commonly used transportation mode. Also, the railway is the least used from of transport with 1.57 per cent.

3.2.2. Export View of Sakarya Based on the Industries and Firms

Sakarya currently exporting 141 products to 141 markets has a high potential to export in different sectors and Sakarya's export is demonstrating increase through the years. The basic indicators are represented below to expose export performance of Sakarya.

The number of exporting firms is an indicator of export potential so, in the Table 15 below the number of exporter firms in Sakarya is shown including the other cities of 42th region.

Table 15
The Number of Exporter Firms in TR 42 Region (2003-2013)*

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2003 - 2013 Change (%)
BOLU	**34**	**31**	**39**	**41**	**53**	**64**	**59**	**53**	**63**	**66**	**75**	**120,59**
KOCAELİ	**592**	**686**	**731**	**838**	**927**	**951**	**964**	**994**	**1.108**	**1.229**	**1.344**	**127,03**
SAKARYA	**186**	**221**	**244**	**219**	**255**	**262**	**262**	**279**	**272**	**288**	**325**	**74,73**
YALOVA	**41**	**41**	**53**	**53**	**56**	**63**	**76**	**70**	**76**	**82**	**104**	**153,66**
DÜZCE	**69**	**78**	**82**	**77**	**97**	**87**	**86**	**95**	**104**	**111**	**107**	**55,07**
TOTAL	**35.603**	**39.437**	**42.156**	**44.166**	**48.269**	**48.144**	**48.591**	**50.379**	**53.282**	**56.440**	**60.117**	**68,85**

***** Data is formed according to the city of the tax office the companies is related
Source: İktisadi.org

In the Table 15 the number of exporter companies in Sakarya is shown including the other cities of 42th region. As it can be understood from the table, Sakarya is ranked as second at the number of exporter companies after Kocaeli, and ranked as fourth among 5 cities, in the increase of number of companies in the 11 years period between 2003 and 2013.

There is a difference between the number of companies above and number of companies obtained from SATSO. According to the data of SATSO, the number of exporter companies in Sakarya is 124 in 2012 and 159 in 2013. (The companies registered in Akyazı Chamber of Commerce and Industry are excluded) This difference is thought to be caused of two basic reasons. The first reason is; every company registered in General Secretariat of Exporters Union is considered as exporter even though it hasn't exported for a long time. Second reason is; data of SATSO are obtained from the documents that are actualized and registered through itself. In other words, some of the resident companies in Sakarya may carry out their export transactions in the Chambers and customs outside of Sakarya.

In this context, the change of exports per company in Sakarya, is shown in the following Table 16. Table also shows data calculated excluding the export values of Toyota, that is performing a considerable part of Sakarya's exports.

Table 16
Export Per Company in the Export of Sakarya (2003 – 2013)

Years	Average Export of A Company (000 Dollar)	Toyota Excluded Export of A Company (000 Dollar)
2003	4.532	n.a
2004	9.472	n.a
2005	11.119	1.601
2006	13.614	2.081
2007	13.814	2.601
2008	11.118	2.193
2009	6.574	1.319
2010	6.015	1.318
2011	7.396	1.798
2012	6.321	2.283
2013	6.926	2.427

In addition to these, there have been seven exporting companies in the list of "Top 1000 Exporters of Turkey in 2014" These companies have carried on the different sectors dominantly in automotive and others such as enamel frit, manufacturing of chocolate and aluminium.

Moreover, according to TSI data in terms of the Harmonized System (HS) classification, 89 per cent of Sakarya's exports had comprised product group of HS-87 which is defined as "vehicles other than railway or tramway rolling-stock, and parts and accessories thereof" in 2003. In the same year, 675 million dollars exports had been materialized in HS-87. The export made in the field of HS-84 identifying as "nuclear reactors, boilers, machinery and mechanical appliances; parts thereof" and HS-85 defining as "electrical machinery and equipment and parts thereof; sound recorders and reproducers, television image and sound recorders and reproducers, and parts and accessories of such articles" had ranked the second and the third product groups respectively.

In 2014, 80 per cent of Sakarya's export, approximately 2 billion dollars, has consisted of HS 87. Moreover, HS-84 identifying as "nuclear reactors, boilers, machinery and mechanical appliances; parts thereof" and HS-76 defining as "Aluminium and articles thereof" had ranked the second and the third products group in Sakarya's export portfolio, respectively in the same year.

In pursuant of TSI data, in terms of the ISIC Rev.3.1 classification, sector group defining as “manufacture of motor vehicles” with 3410-ISIC Rev.3.1 Code was top sector in Sakarya’s export basket in 2003. In addition to this, the other sector groups identifying as “manufacture of parts and accessories for motor vehicles and their engines” of 3430 in ISIC Rev 3.1 classification system and “manufacture of insulated wire and cable” as defining ISIC 3130 had ranked as second and third sectors of Sakarya’s export portfolio in the same year.

For 2014, there is no significant change in the composition of Sakarya’s export sectors in terms of the ISIC. Rev.3.1, again, “manufacture of motor vehicles” with 3410-ISIC Rev.3.1 Code and “manufacture of parts and accessories for motor vehicles and their engines” of 3430 in ISIC Rev 3.1 classification system have been first and second sectors in Sakarya’s export portfolio while the sector groups of “Manufacture of bodies (coachwork) for motor vehicles; manufacture of trailers and semi-trailers” defining as 3420 and “manufacture of pharmaceuticals, medicinal chemicals and botanical products” identifying 2422 have consisted of the third and fourth sector groups in Sakarya’s export basket.

In general, sector composition of Sakarya has been comprised of medium high technology sector groups such as manufacture of motor vehicles, parts and accessories for motor vehicles. Correspondingly, the exported products have formed product groups from vehicles, machineries, boilers.

This picture of Sakarya’s export portfolio is caused by the exporting companies such as Toyota Automotive Industry, Tırsan Trailer Industry and Otokar Automotive and Defense Industry.

Due to the large share of Toyota Company (as it can be seen from the Table 17), when we ignore these industries to make more accurate assessment about export structure of Sakarya, the exporting products and sectors composition have changed significantly.

Table 17
Share of Toyota in the Export of Sakarya (2005-2014)

Years	Exports of Toyota / Exports of Sakarya
2005	85,60%
2006	84,71%
2007	81,17%
2008	80,27%
2009	79,93%
2010	78,09%
2011	75,69%
2012	63,88%
2013	64,96%
2014	69,75%

In this situation, in 2003, product portfolio of Sakarya had formed from product groups such as", predations of cereals, flour, starch or milk, pastry cooks products, "articles of stone, plaster, cement, asbestos, mica or similar materials", "aluminium and articles thereof", "cocoa and cocoa preparations". Furthermore, "manufacture of bakery products", "manufacture of non-structural", "non-refractory ceramic ware", "manufacture of paints vanishes and similar coatings", "printing ink and mastics" had been had been among the top five sector groups.

For 2014, by ignoring automotive industry, the exporting products have consisted of "Tanning or dyeing extracts; tannins and their derivatives; dyes, pigments and other colouring matter; paints and varnishes; putty and other mastics; inks", "plastics and articles thereof", "articles of iron or steel", "Cocoa and cocoa preparations", "ceramic products". Moreover, the sector groups of "manufacture of plastics", "manufacture of cocoa", "chocolate and sugar confectionery" have been among the prominent sectors.

The methods of payment in exports is among the important point to assess the market composition and relationship between exporters and importers

Table 18
Main Methods of Payments and Their Shares in Sakarya's Export in 2014

Cash Against Goods	Deferred Payment	Cash in Advance	Letter of Credit
50.40 %	25.50 %	22.59 %	1.38 %

Source: Data is obtained from Sakarya Chamber of Commerce and Industry,2015 and calculated by author

The most widely used payment method in export transaction is the cash on delivery and 50.4 per cent of the export transactions are carried out by this way. The second commonly used way to make payment in export transactions is deferred payment with 25.5 per cent and followed by cash in advance payment with 22.59 per cent. Also, letter of credit is the rarely used method with 1.38 per cent.

3.3. Measurement of the Sakarya's Export Performance

This section contains the analysis of Sakarya's export in respect to different indicators and indices.

3.3.1. The Number of Equivalent Sectors

The number of equivalent sectors is a crucial indicator to reflect main sectors that have equivalent contribution to the total exports. By this way, it shows the number of basic and robust exporting sectors of a region or country.

In this context, Table 19 represents the number of equivalent sectors to provide deep assessment of exporting sector composition of Sakarya.

Table 19
Number of Equivalent Sectors of Sakarya

Year	Number of Equivalent Sectors
2002	2
2003	2
2004	1
2005	1
2006	1
2007	1
2008	2
2009	2
2010	2
2011	1
2012	3
2013	2
2014	2

Source: Data is obtained fromTurkStat,2015 and calculated by author.

According to Table 19, in 2012, Sakarya has the most diversified sector portfolio and there are three main sectors that have equivalent contribution to the total exports by excluding the sectors that have little impact on the export.

3.3.2. Export Markets and Their Concentration Rates in Sakarya's Export

Export market composition as an indicator of export ranks the top markets and represents the concentration rates of these markets. The concentration ratio for exporting markets is an essential indicator which expresses the cumulative shares of a certain number of countries.

Export market composition as an indicator of export ranks the top markets and represents the concentration rates of these markets. The concentration ratio for exporting markets is an essential indicator which expresses the cumulative shares of a certain number of countries

Table 20 shows the top 20 export markets and their concentration rates in Sakarya's export portfolio.

Table 20
Top 20 Export Markets and Their Concentration Rates of Sakarya's Export Portfolio

2002				2006			2010			2014		
CR	Country	Share (%)	CR (%)	Country	Share (%)	CR (%)	Country	Share (%)	CR (%)	Country	Share (%)	CR (%)
CR1	Israel	13,8	13,8	Germany	15,6	15,6	Germany	18,6	18,6	Russian Federation	13,1	13,1
CR2	Germany	9,5	23,3	France	10,5	26,2	Spain	12,8	31,4	Israel	9,4	22,5
CR3	Finland	8,4	31,7	Spain	9,0	35,2	France	8,4	39,7	Germany	7,8	30,4
CR4	Ireland	7,5	39,2	Russian Federation	6,7	41,9	England	8,4	48,1	England	7,5	37,9
CR5	Italy	7,0	46,3	England	6,7	48,6	Sweden	5,9	54,0	France	6,6	44,5
CR6	Poland	5,8	52,1	Italy	5,1	53,7	Italy	4,8	58,8	Belgium	6,2	50,7
CR7	Russian Federation	4,3	56,4	Finland	4,2	57,9	Belgium	4,1	62,9	Egypt	4,9	55,5
CR8	Azerbaijan	3,8	60,1	Belgium	4,1	62,0	Poland	3,7	66,6	Spain	4,7	60,3
CR9	Portugal	3,4	63,5	Netherlands	4,1	66,1	Russian Federation	3,6	70,2	Poland	4,6	64,9
CR10	Spain	2,5	66,0	Denmark	2,7	68,8	Switzerland	2,8	73,0	Sweden	4,3	69,1
CR11	Hungary	2,4	68,5	Poland	2,5	71,3	Greece	2,8	75,8	Italy	3,7	72,8
CR12	Denmark	2,0	70,5	Sweden	2,3	73,5	Israel	2,4	78,2	Ireland	2,3	75,1
CR13	Netherkands	1,8	72,2	South Africa	2,2	75,7	Czech Republic	2,3	80,5	Iraq	1,5	76,7
CR14	Sweden	1,6	73,9	Iraq	2,1	77,9	Netherlands	2,2	82,7	Algeria	1,5	78,1
CR15	Belgium	1,4	75,2	Austria	2	79,9	Austria	1,9	84,6	Morocco	1,2	79,3
CR16	France	1,3	76,6	Ireland	1,9	81,8	Bulgaria	1,4	86	USA	1,2	80,5
CR17	England	1,3	77,9	Switzerland	1,7	83,5	Portugal	1,3	87,3	Austria	1,2	81,7

Table 20 Continue

CR18	Switzerland	1,3	79,1	Israel	1,6	85,2	South Africa	1,2	88,5	Bulgaria	1,1	82,8
CR19	Norway	1,1	80,3	Hungary	1,3	86,5	Iraq	0,9	89,4	Ukraine	1,1	83,9
CR20	Bulgaria	0,8	81,1	Norway	1,1	87,6	Slovenia	0,9	90,3	Iran	0,9	84,8

Source: Data is obtained fromTurkStat,2015 and calculated by author.

According to Table 20, in 2002, Israel was the main partner country in exports. Exports to Israel constituted 13.8 per cent of the total exports (CR1).

In 2006 and 2010, the export market composition of Sakarya had changed and most of EU countries had become an export partner in this period. Germany emerged as leading exporting market with 15.6 per cent followed by France, Spain, Russian Federation and England with 10.5 per cent, 9 per cent, 6.7 per cent and 6.7 per cent respectively.

The European countries such as Germany, France, Italy, Spain, and England had been top exporting countries over the period 2002-2012. However, Russia has been the most important trading partner between 2012 and 2014

In 2014, Russia with 13.1 per cent is seen as the export partner which has the highest share in export market composition of Sakarya. It has been followed by Israel, Germany, England and France with 9.4 per cent, 7.8 per cent, 7.5 per cent and 6.6 per cent respectively.

As of March 2015, Russia is the top export market that Sakarya exports to, by approximately 36 million dollars. Other leading countries are as follows Spain, Germany, Belgium, England, France, Poland, Egypt, Israel, and Ireland.

Figure 16 represents the Sakarya's concentration ratios of exporting markets in 2002, 2006, 2010 and 2014.

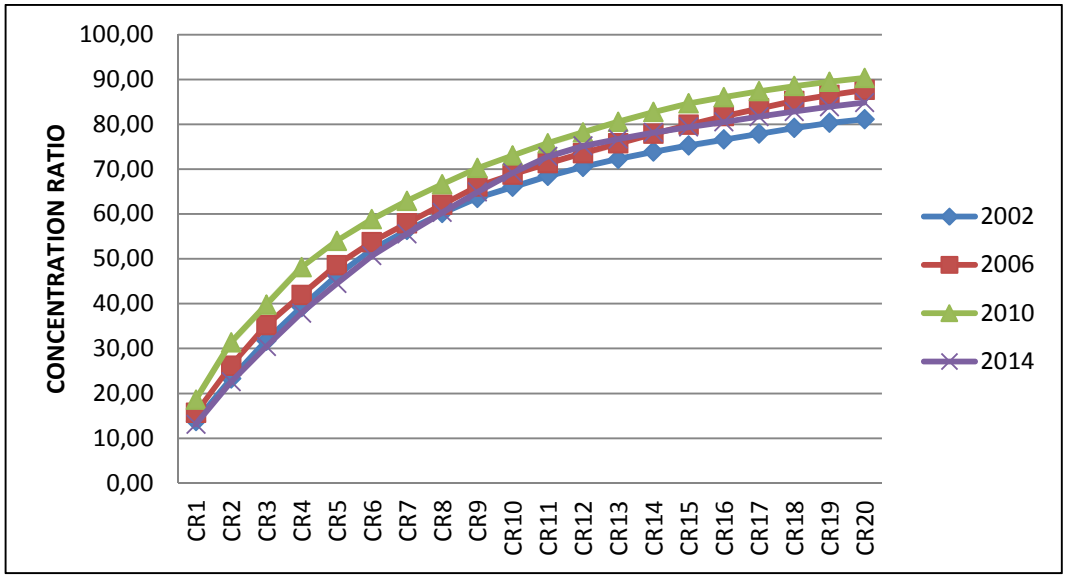

Figure 16: Concentration Ratios of Sakarya's Exporting Markets

Source: Data is obtained fromTurkStat,2015 and calculated by author.

In accordance with Figure 16, in 2010, there is an increase in concentration of Sakarya's exporting markets. However, this rate has decreased in 2014 and it implies that there is an increase in diversification of export market composition in Sakarya. In addition Sakarya has the most diversified export market composition in observed years in 2002 while it has the most concentrated export market portfolio in 2010.

3.3.3. Trade Performance Index

Trade performance is defined the volume of total exports relative to total imports of a region or country and their changes overtime as it was explained before. If the index value is greater than unity, that region, country or city has a favourable trade performance. With this information, the index value for Sakarya is greater than unity over the period 2003-2014. As a result of this, Sakarya has a favourable trade performance period of 2003-2014.

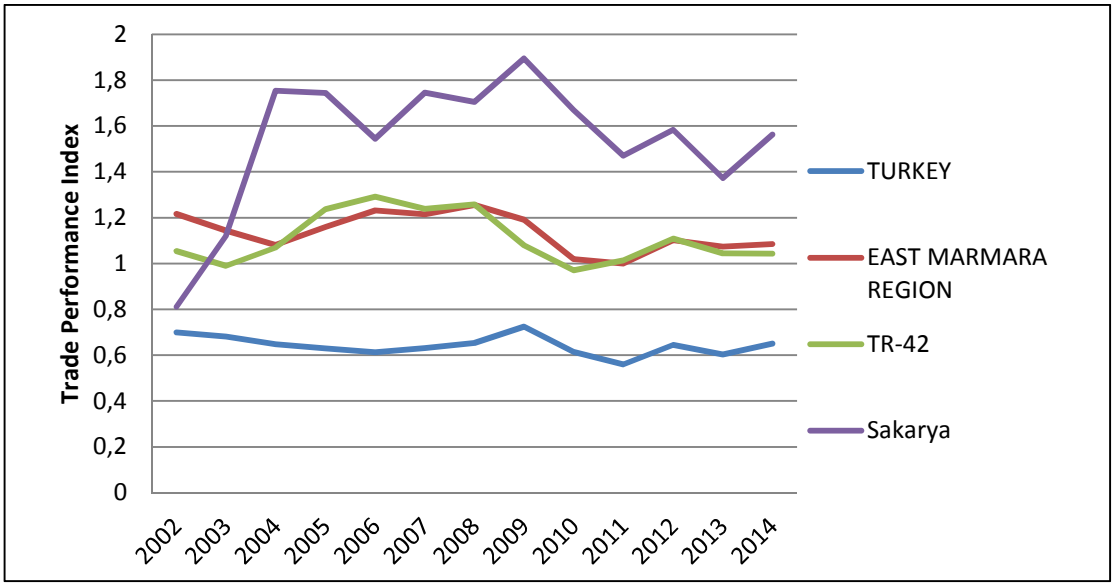

Figure 17: Regional Trade Performance of Sakarya

Source: Data is obtained fromTurkStat,2015 and calculated by author.

Moreover, Figure 17 shows the trade performance index values of Sakarya, Turkey, Region of East Marmara and TR42. According to Figure 18, trade performance of Sakarya has been better than trade performance of Turkey the period of 2002-2014. In general Sakarya has exposed more favourable trade performance than trade performance of East Marmara and TR42 regions.

3.3.4. Lawrence Index

Lawrence index is among the measurements which are used to determine trade performance of a region. It is an indicator of structural changes in the composition of trade. The index value ranges from 0 to 1 and the index shows a complete upheaval if it is close to unity.

With this framework, this index has been computed by annually based data to determine trade performance of Sakarya in detail and results have been indicated in terms of ISIC Rev.3.1 and HS classifications in Figure 18 and 19, respectively.

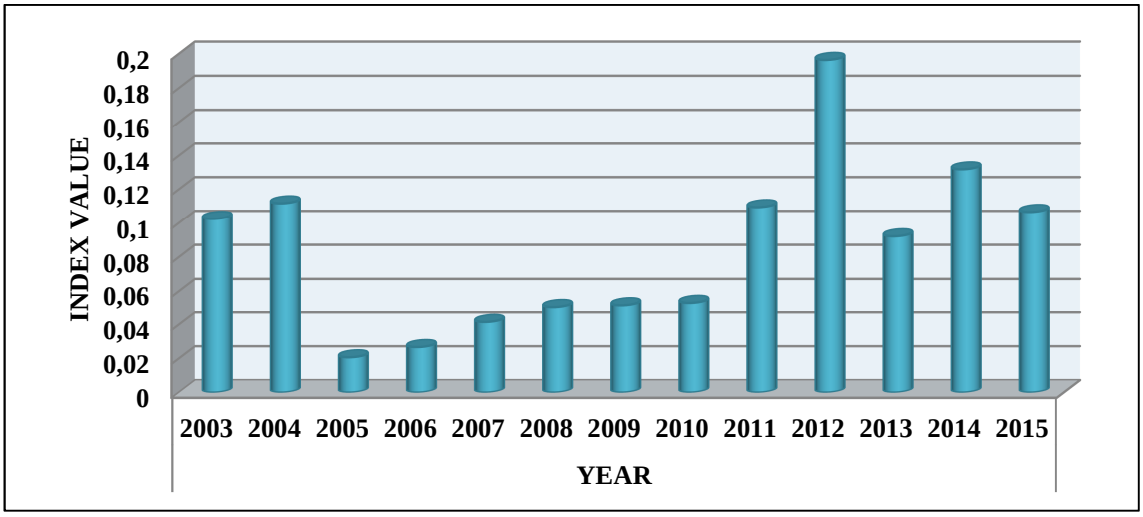

Figure 18: Lawrence Index Values of Sakarya Trade Pattern Between 2002 and 2015

Source: Data is obtained fromTurkStat,2015 and calculated by author.
Note: 2015 covers only three months (Jan., Feb and Mar.)

Lawrence Index Values of Sakarya Trade Pattern Between 2002 and 2014 (HS)(Except Automotive Sector)

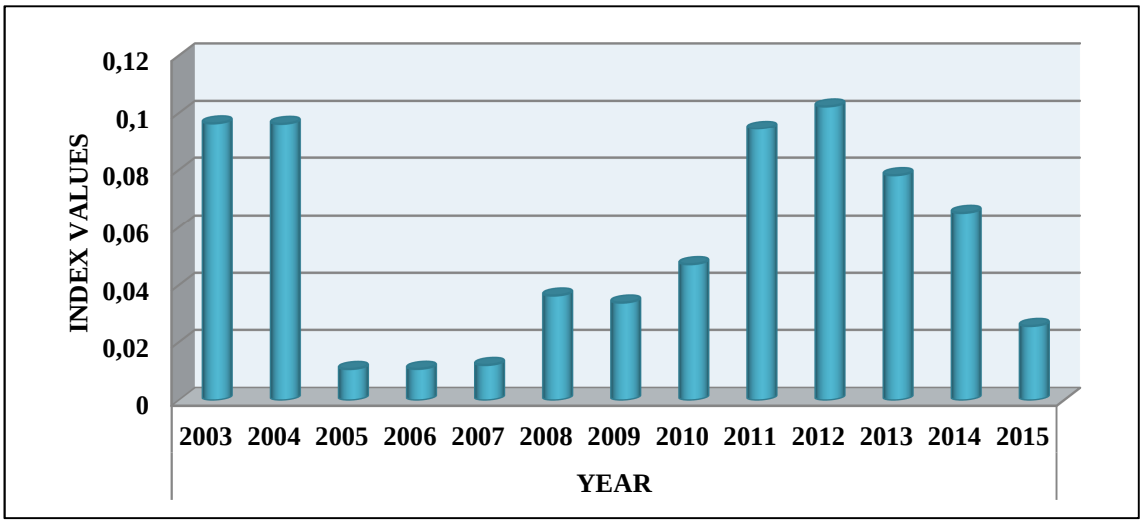

Figure 19 : Lawrence Index Values of Sakarya Export Pattern Between 2002 and 2015 (HS)

Source: Data is obtained fromTurkStat,2015 and calculated by author.
Note: 2015 covers only three months (Jan., Feb and Mar.)

In case of Sakarya, the values of the Lawrence index, are very low over the period 2005-2010, suggesting that there was no important structural change in the export pattern of Sakarya in that period. However, the value of Lawrence index is higher in the periods 2003-2004 and 2011-2012 than its value in the period of 2005-2010. Moreover,

it shows a clear upward trend in 2012. However, this increase has not indicated a structural change in Sakarya's export pattern. For this reason, this change has been explained by cyclical factors which are dominated in the short and medium terms.

First of all, to make more accurate assessment about the changes in the Sakarya's export pattern, global events that affect demand for exported products should be considered as factors which have impact on export pattern of Sakarya. According to Trade and Development Report of United Nations (2012), international trade expansion, a robust recovery in 2010, slowed to 5.5 per cent in 2012. Due to the 2008 financial crisis, weak demand, especially in Eurozone, is shown as an important factor that affects the economies which highly depends on the exports relationship with EU countries. As mentioned before, EU countries are among the most important trade partners of Sakarya. As a result of this, a recession in these economies has directly impact on export composition of Sakarya.

Besides the global trade slowdown in 2012, the automotive sector has experienced 10.03 per cent contraction compared to the previous year. In December, there was a 9.78 per cent decline in the passenger car and light commercial vehicles market compared with the same month of 2011.

To understand the impact of contraction in automotive sector on trade performance of Sakarya, the index values have been recalculated by excluding automotive sectors and products in respect of ISIC Rev.3.1 and HS classifications and results have been indicated in terms of ISIC Rev.3. and HS classifications in Figure 20 and 21, respectively.

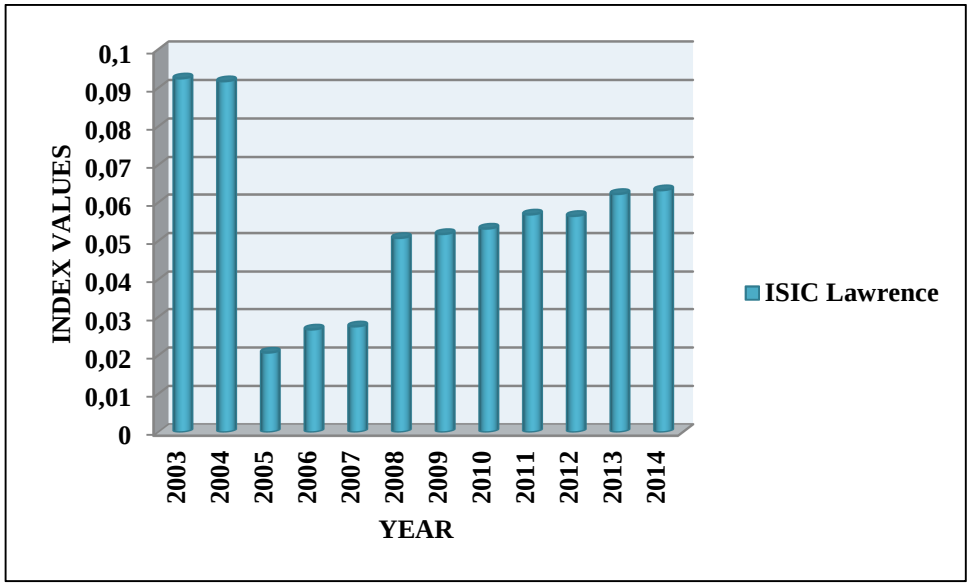

Figure 20: Lawrence Index Values of Sakarya Trade Pattern Between 2002 and 2014

Source: Data is obtained fromTurkStat,2015 and calculated by author.

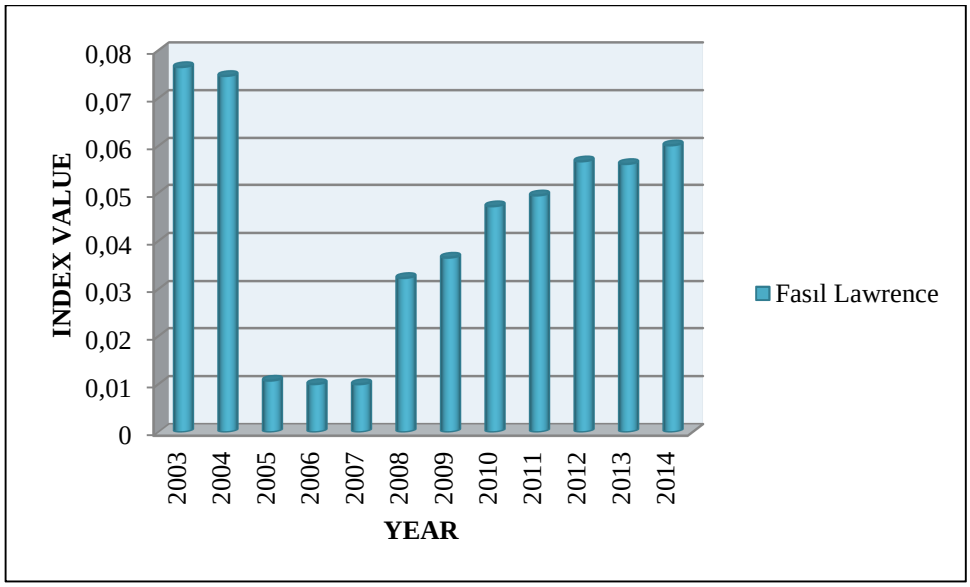

Figure 21: Lawrence Index Values of Sakarya Trade Pattern Between 2002 and 2014

Source: Data is obtained fromTurkStat,2015 and calculated by author.

As seen in Figure 20 and 21, this contraction in automotive sectors has tremendous impact on the export pattern of Sakarya which highly depends on that sector. As a result of recalculation by excluding automotive sectors and products, the index value in 2012 returned to its 2010 and 2011 levels approximately. As a result, this contraction explains the increase in the index value in respect to ISIC Rev.3.1 and HS classifications.

3.3.5. Trade Specialization Index

The index value is between 0 and 1 and the ratio close to unity indicates an increase in specialization level. Also it is used to determine the specialization in both import and export of Sakarya. In this study, this index value of Sakarya is calculated by annual data in terms of HS product Classification and ISIC Rev.3.1 sectorial classification systems.

Figure 22 shows change in the trade specialization index of Sakarya in terms of ISIC Rev.3.1 Sector Classification.

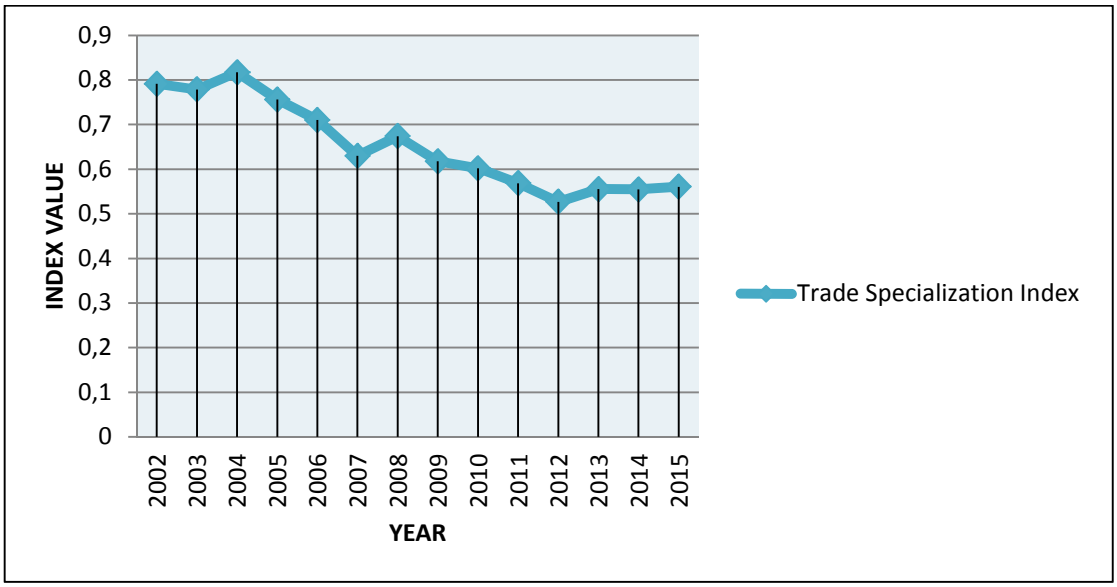

Figure 22: Trade Specialization Index of Sakarya between 2002 and 2014(ISIC Rev.

Source: Data is obtained fromTurkStat,2015 and calculated by author.
Note: 2015 covers only three months (Jan., Feb and Mar.)

According to Figure 22, trade specialization index value is the lowest in 2012 and highest in 2004. After 2008 global financial crisis, the index value of Sakarya has shown a downward trend till 2012. Increasing index value indicates that diversification of Sakarya's traded sectors portfolio tends to concentrate limited number of sectors for the period 2008-2012. Moreover, Sakarya's compositions of traded sectors have more diversified in 2012.

In addition to this Figure 23 indicates changes in the trade specialization index of Sakarya based on the HS product classification.

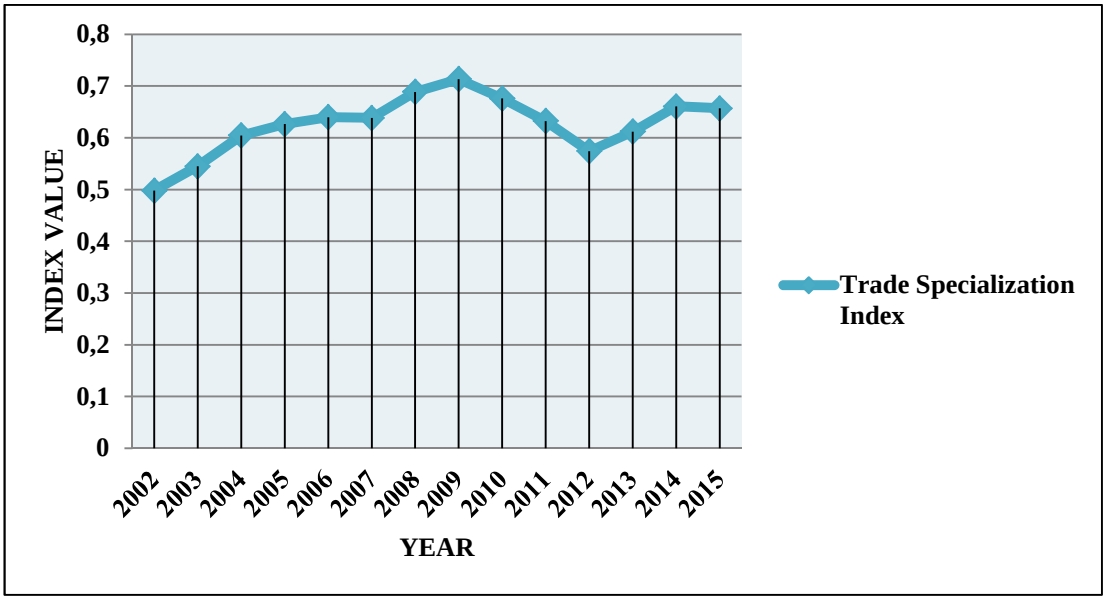

Figure 23: Trade Specialization Index of Sakarya Between 2002 and 2015 (HS)

Source: Data is obtained from Turkstat and calculated by author
Note: 2015 covers only three months (Jan., Feb and Mar.)

According to Figure 23, similar trend which has been seen in the sector compositions of Sakarya has seen in the distribution of traded products. However, the impact of global financial crisis on the distribution of traded products has emerged one year later than surfacing of its effects on traded sectors. In addition, the decreasing trends in traded products have started with 2009 and continued until 2012. Moreover, diversification of traded products is highest in 2002 with the index value of 0.5 which is more close to 0.

3.3.6. Revealed Comparative Advantage

According to this index, a region specializes in export of certain product, if its market share in that product is higher than shares of the exports of the reference area. To calculate revealed comparative advantage, cities in TR 42 region, Turkey, East Marmara and TR42 Regions have been chosen as reference areas.

A. Revealed Comparative Advantage of Sakarya Compared to TR 42 Region

The following calculations express products which are exported by Sakarya and have comparative advantage compared to TR42 region for the period 2002-2014.

Products which have revealed comparative advantages in 2014 are the

- Live trees and other plants; bulbs, roots and the like; cut flowers and ornamental foliage.(HS.6)
- Coffee, tea, mate and spices (HS.9).
- Oil seeds and oleaginous fruits; miscellaneous grains, seeds and fruit; industrial or medicinal plants; straw and fodder (HS.12).
- Cocoa and cocoa preparations (HS.18).
- Preparations of cereals, flour, starch or milk; pastry cooks' products (HS.19).
- Beverages, spirits and vinegar (HS.22).
- Fertilisers (HS.31).
- Tanning or dyeing extracts; tannins and their derivatives; dyes, pigments and other colouring matter; paints and varnishes; putty and (HS.32)
- Explosives; pyrotechnic products; matches; pyrophoric alloys; certain combustible preparations (HS.36).
- Manufactures of straw, of esparto or of other plaiting materials; basket ware and wickerwork (HS.46)
- Special woven fabrics; tufted textile fabrics; lace; tapestries; trimmings; embroidery (HS.58).
- Articles of apparel and clothing accessories not knitted or crocheted (HS.62).
- Other made up textile articles; sets; worn clothing and worn textile articles; rags (HS.63)
- Footwear, gaiters and the like; parts of such articles (HS.64).
- Headgear and parts thereof (HS.65).
- Articles of stone, plaster, cement, asbestos, mica or similar materials (HS.68).
- Ceramic products (HS.69).
- Aluminium and articles thereof (HS.76).
- Miscellaneous articles of base metal (HS.83).
- Vehicles other than railway or tramway rolling-stock, and parts and accessories thereof (HS.87).

Products which have strong revealed comparative advantages in 2014 are the

- Coffee, tea, mate and spices (HS.9).
- Beverages, spirits and vinegar (HS.22).
- Fertilisers (HS.31).
- Tanning or dyeing extracts; tannins and their derivatives; dyes, pigments and other colouring matter; paints and varnishes; putty and (HS.32)
- Manufactures of straw, of esparto or of other plaiting materials; basket ware and wickerwork (HS.46)
- Footwear, gaiters and the like; parts of such articles (HS.64).
- Headgear and parts thereof (HS.65).
- Ceramic products (HS.69).
- Vehicles other than railway or tramway rolling-stock, and parts and accessories thereof (HS.87).
- Products which have strong revealed comparative disadvantages in 2014.
- Live animals (HS.01)
- Fish and crustaceans, molluscs and other aquatic invertebrates (HS.03)
- Animal or vegetable fats and oils and their cleavage products prepared edible fats; animal or vegetable waxes (HS.15)
- Preparations of vegetables, fruit, nuts or other parts of plants.(HS.20)
- Miscellaneous edible preparations (HS 21).
- Residues and waste from the food industries; prepared animal fodder.(HS.23)
- Tobacco and manufactured tobacco substitutes (HS.24)
- Mineral fuels, mineral oils and products of their distillation; bituminous substances; mineral waxes (HS. 27).
- Organic chemicals (HS.29).
- Essential oils and resinoids; perfumery, cosmetic or toilet preparations (HS.33).
- Soap, organic surface-active agents, washing preparations, lubricating preparations, artificial waxes, prepared waxes, polishing or scouring preparations, candles and similar articles, modelling pastes, "dental waxes" and dental preparations with a basis of plaster.(HS.34)
- Albuminoidal substances; modified starches; glues; enzymes (HS.35).

- Rubber and articles thereof (HS.40).
- Articles of leather; saddlery and harness; travel goods, handbags and similar containers; articles of animal gut (other than silk-worm gut). (HS.42).
- Cotton (HS.52).
- Wadding, felt and nonwovens; special yarns; twine, cordage, ropes and cables and articles thereof (HS.56).
- Impregnated, coated, covered or laminated textile fabrics; textile articles of a kind suitable for industrial use (HS.59).
- Natural or cultured pearls, precious or semi-precious stones, precious metals, metals clad with precious metal and articles thereof; imitation jewellery; coin (HS.71).
- Lead and articles thereof (HS.78).
- Zinc and articles thereof (HS.79).
- Tin and articles thereof (HS.80).
- Other base metals; cermets; articles thereof (HS.81).

Products which have consistent comparative advantages over the period 2002-2014 are the

- Preparations of cereals, flour, starch or milk; pastrycooks' products (HS.19).
- Special woven fabrics; tufted textile fabrics; lace; tapestries; trimmings; embroidery (HS.58).
- Vehicles other than railway or tramway rolling-stock, and parts and accessories thereof (HS.87).

Products which have lost comparative advantages over the period 2002-2014 are the

- Live animals (HS.1).
- Dairy produce; birds' eggs; natural honey; edible products of animal origin, not elsewhere specified or included (HS.4)
- Edible fruit and nuts; peel of citrus fruit or melons (HS.8)
- Vegetable plaiting materials; vegetable products not elsewhere specified or included (HS.14)
- Preparations of vegetables, fruit, nuts or other parts of plants (HS.20)

- Paper and paperboard; articles of paper pulp, of paper or of paperboard (HS.49)
- Printed books, newspapers, pictures and other products of the printing industry; manuscripts, typescripts and plans (HS.48)
- Cotton (HS.52).
- Umbrellas, sun umbrellas, walking-sticks, seat-sticks, whips, riding-crops and parts thereof (HS.66).
- Nickel and articles thereof (HS.75).

B. Revealed Comparative Advantage of Sakarya Compared to East Marmara Region

The following calculations express products which are exported by Sakarya and have comparative advantage compared to East Marmara Region for the period 2002-2014

Products which have revealed comparative advantages in 2014 are the

- Live trees and other plants; bulbs, roots and the like; cut flowers and ornamental foliage.(HS.6)
- Coffee, tea, mate and spices (HS.9).
- Vegetable plaiting materials; vegetable products not elsewhere specified or included (HS.14).
- Cocoa and cocoa preparations (HS.18).
- Preparations of cereals, flour, starch or milk; pastry cooks' products (HS.19).
- Tanning or dyeing extracts; tannins and their derivatives; dyes, pigments and other colouring matter; paints and varnishes; putty and (HS.32)
- Explosives; pyrotechnic products; matches; pyrophoric alloys; certain combustible preparations (HS.36).
- Manufactures of straw, of esparto or of other plaiting materials; basket ware and wickerwork (HS.46)
- Cotton.(HS.52)
- Headgear and parts thereof (HS.65)
- Ceramic products (HS.69).
- Aluminium and articles thereof (HS.76)

- Vehicles other than railway or tramway rolling-stock, and parts and accessories thereof (HS.87).
- Works of art, collectors' pieces and antiques (HS.97)

Products which have strong revealed comparative advantages in 2014 are the

- Live trees and other plants; bulbs, roots and the like; cut flowers and ornamental foliage.(HS.6)
- Vegetable plaiting materials; vegetable products not elsewhere specified or included (HS.14).
- Cocoa and cocoa preparations (HS.18).
- Tanning or dyeing extracts; tannins and their derivatives; dyes, pigments and other colouring matter; paints and varnishes; putty and (HS.32)
- Explosives; pyrotechnic products; matches; pyrophoric alloys; certain combustible preparations (HS.36).
- Manufactures of straw, of esparto or of other plaiting materials; basket ware and wickerwork (HS.46).
- Ceramic products (HS.69).
- Vehicles other than railway or tramway rolling-stock, and parts and accessories thereof (HS.87).

Products which have consistent comparative advantages over the period of 2002-2014 are the

- Preparations of cereals, flour, starch or milk; pastry cooks' products (HS.19)
- Tanning or dyeing extracts; tannins and their derivatives; dyes, pigments and other colouring matter; paints and varnishes; putty and (HS.32)
- Vehicles other than railway or tramway rolling-stock, and parts and accessories thereof (HS.87).
- The following calculations express products which are exported by Sakarya and have comparative advantage compared to East Marmara Region for the period 2002-2014.

C. Revealed Comparative Advantage of Sakarya Compared to Turkey

The following calculations express products which are exported by Sakarya and have comparative advantage compared to Turkey for the period 2002-2014

Products which have revealed comparative advantages in 2014 are the

- Live trees and other plants; bulbs, roots and the like; cut flowers and ornamental foliage. (HS.6).
- Cocoa and cocoa preparations (HS.18).
- Tanning or dyeing extracts; tannins and their derivatives; dyes, pigments and other colouring matter; paints and varnishes; putty and (HS.32)
- Manufactures of straw, of esparto or of other plaiting materials; basket ware and wickerwork (HS.46)
- Special woven fabrics; tufted textile fabrics; lace; tapestries; trimmings; embroidery (HS.58).
- Ceramic products (HS.69).
- Aluminium and articles thereof (HS.76).
- Vehicles other than railway or tramway rolling-stock, and parts and accessories thereof (HS.87).

Products which have strong revealed comparative advantages in 2014 are the

- Tanning or dyeing extracts; tannins and their derivatives; dyes, pigments and other colouring matter; paints and varnishes; putty and (HS.32).
- Vehicles other than railway or tramway rolling-stock, and parts and accessories thereof (HS.87).

Products which have lost comparative advantages over the period 2002-2014 are the

- Edible fruit and nuts; peel of citrus fruit or melons (HS.8)
- Preparations of cereals, flour, starch or milk; pastry cooks' products (HS.19).
- Mineral fuels, mineral oils and products of their distillation; bituminous substances; mineral waxes (HS.27).
- Plastics and articles thereof (HS.39).
- Wood and articles of wood; wood charcoal (HS.44)

- Articles of stone, plaster, cement, asbestos, mica or similar materials. (HS.68)
- Tools, implements, cutlery, spoons and forks, of base metal; parts thereof of base metal (HS.82).
- Nuclear reactors, boilers, machinery and mechanical appliances; parts thereof (HS.84).

“Tanning or dyeing extracts; tannins and their derivatives; dyes, pigments and other colouring matter; paints and varnishes; putty and (HS.32)” is a unique product that has increased its comparative advantage, compared to Turkey, for the period 2002-2014.

While Sakarya had had no comparative advantage in products defining with HS codes as 46, 58, 65, and 76 in 2002, these are among the products which have had comparative advantage in 2014.

3.3.7. Trade Complementarity Index

The similarity between export basket of exporters and import profile of trade partner is crucial for both exporter and importer to gain from increased trade. In this case, the most important question is what extent the export pattern of the exporter matches with the import profile of the trade partner? The trade complementarity index is used to determine the complementarity level between the export composition of exporter and import pattern of the importer. Higher index result means higher complementarity value and it indicates a better export/import match, while 0 value indicates no complementarity at all. By this way, the level of complementarity is determined between composition of Sakarya and the import pattern of the all countries in the world.

The import data of countries in respect of HS codes are obtained from UN International Trade Centre Database. The results of index calculations are expressed in Table 21 and 22.

Table 21 shows that the countries have the most strong trade complementarity with export profile of Sakarya.

Table 21
Top 10 Countries with Strong Trade Complementarity

2010		2011		2012		2013		2014	
Country	Index	Country	Index	Country	Index	Country	Index	Country	Index
Oman*	35.85	Oman*	40.08	Oman*	40.15	Nepal	50.02	Kuwait*	35.71
Nigeria	33.82	Nigeria	35.21	Argentina	37.32	Oman*	40.95	Saudi Arabia	33.69
Zimbabwe	31.52	Argentina	31.87	Saint Helena	36.73	Bahrain*	38.86	Ghana	32.41
Argentina	33.11	Saudi Arabia*	29.58	Russia	36.37	Nigeria	37.47	Qatar*	31.842
Canada	29.23	Canada	29.56	Canada	36.34	Ghana	36.55	Bahrain*	31.840
Brunei Darussalam	27.59	Bolivia	28.98	Uzbekistan	34.24	Argentina	36.40	Oman*	31.04
Luxemburg	27.46	Saint Helena	28.22	Zimbabwe	33.93	Saudi Arabia	35.72	Canada	29.88
Portugal	27.22	Slovakia	27.56	Slovakia	33.26	Suriname	35.20	Slovenia	29.79
Uzbekistan	26.85	Libya	27.47	Luxemburg	33.12	Qatar*	34.56	Libya	28.94
Australia	25.91	Russia	27.38	Austria	32.41	Canada	33.95	Algeria	28.13

Source: Data is obtained fromTurkStat,2015 and calculated by author.
*MENA countries

According to Table 21, in 2014, Kuwait has the most strong and sustainable trade complementarity with Sakarya's export basket followed by Saudi Arabia, Argentina, Kazakhstan, Qatar, Bahrain, Oman, Canada, Slovenia, Algeria. The compatibility with these countries is caused exported products of Sakarya such as "Vehicles and Other than Railway or Tramway Rolling Stock" with "HS.87", "Nuclear reactor, boilers, machinery, mechanical appliances, parts thereof." with "HS. 84" and "Electrical Machinery and Equipment and parts thereof; sound Recorders and Reproducers, Television Image and sound Recorders and Reproducers and Parts and Accessories of Such Articles" with "HS.85". In addition to these, Sakarya's export composition is strongly matches with five MENA countries. Also, these countries are more profitable markets for Sakarya's exporting products. Moreover, the indices value of all countries has declined in last year compared to previous. But despite this decline, all countries in the table have still had strong trade complementarity with Sakarya's export composition.

The another important point is that the current export markets of Sakarya, as mentioned before, have consisted of countries such as Russia, Germany, Italy, Spain, Belgium,

England, France, Poland, Israel, Ireland. These countries trade complementarity analysis with Sakarya's export basket is seen in Table 22.

Table 22
Trade Complementarity of Sakarya with Its Current Export Partners

Countries	2010	2011	2012	2013	2014
Russia	23,95648	27,38961	36,37771	32,32484	25,98012
Germany	22,04053	23,7675	29,58015	27,18536	24,15428
Italy	22,81994	23,57093	27,08142	24,74881	22,37939
Spain	23,84252	25,20018	28,91458	27,09431	25,47897
Belgium	24,14123	24,77512	29,74934	26,93182	23,94379
UK	23,84252	25,20018	28,91458	27,09431	25,47897
France	23,83563	24,9122	29,73667	27,51161	24,09825
Poland	23,52261	24,61975	30,04975	27,63401	24,08207
Israel	21,11524	21,34044	24,93615	24,19176	21,73316
Ireland	17,20308	18,14626	22,65537	21,30015	18,9032

Source: Data is obtained fromTurkStat and World Trade Map, 2015 and calculated by author.

As shown in Table 22, currently the most exporting countries have not strong complementarity with Sakarya's export basket. If Sakarya increases trade ties with countries which have strong trade complementarity characteristics, both Sakarya and importer country have gained from increased trade. As a result of this, Sakarya should increase export relations with countries which have strong trade complementarity.

In addition to these, as a part of the analysis, to obtain the most strong complementarity with Sakarya's domestically exported products, we ignore the product of "Vehicles and Other than Railway or Tramway Rolling Stock" with HS 87 code which is exported by a foreign origin company, Toyota, located in Sakarya.

Table 23 shows the top 10 countries whose import profiles have high and sustainable complementarity with Sakarya's export composition.

Table 23
Top 10 Countries with Strong Trade Complementarity (except HS.87)

Countries	2010	2011	2012	2013	2014
Czech Rep.	57,189	59,668	53,48	52,187	51,086
Norway	46,55	44,411	43,14	45,777	50,244
Romania	51,864	53,219	51,27	52,121	48,333
Russia	50,564	48,332	44,91	46,145	48,173

Table 23 Continue

Mexico	51,261	51,857	50,45	51,299	47,954
Poland	51,606	49,574	47,26	47,302	47,474
Denmark	46,183	45,715	44,63	45,476	46,341
Canada	46,062	45,072	41,9	42,802	45,341
Qatar	57,799	54,113	50,38	45,492	45,336
Sweden	47,786	47,695	44,75	45,067	44,597

Source: Data is obtained fromTurkStat and World Trade Map,2015 and calculated by author.

According to Table 23, Czech Republic has the most compatible import pattern in respect to Sakarya's export basket followed by Norway, Romania, Russia, Mexico, Poland, Denmark, Canada, Qatar, and Sweden. The compatibility with these countries is based on exported products of Sakarya such as "Preparations od Cereals, Flours, Starch or Milk, Pastry cooks' products" with "HS.19", "Edible Fruits and Nuts; Peel of Citrus Fruit or Melons." with "HS. 8", "Tanning or dying extracts Tannins and Their Derivatives, dyes, Pigments and Other Colouring Matter, Paints and Varnishes, Putty and Other Mastics" with "HS.32", "Plastics and Articles thereof." with HS. 39, and Aluminium and Articles Thereof with "HS.76. Moreover, these countries are potential profitable markets for Sakarya's domestically exported products. If exporters increase trade relations with these countries both importers and exporters gain more from this.

3.3.8. Export Diversification in Export Composition of Sakarya

The Herfindahl and Hirschman product and market diversification indices, "Export Market Penetration Index", "Gini-Hirschman Concentration Index" and "Adjusted Grubel-Lloyd Intra Industry Trade Index" have been used to determine export diversification in export composition of Sakarya.

3.3.8.1. Herfindahl and Hirschman Product Concentration Index of Sakarya's Export Composition

Herfindahl and Hirschman Product Concentration index is used to determine diversification in exporting products in a region or country. An index value close to unity indicates a concentration on limited products, while diversification increases with an index value close to "0".

In this context, diversification in exporting product and sectors of Sakarya have been specified by using Herfindahl and Hirschman product concentration index in respect to ISIC Rev.3.1 sector and HS product classifications over the period 2002-2014.

Figure 24 and 25 show the Herfindahl and Hirschman product concentration index of Sakarya's exporting products in reference to ISIC.Rev.3.1 sector and HS product classifications.

Figure 24 shows the Herfindahl and HirschmanProduct Concentration index values for exporting sectors of Sakarya.

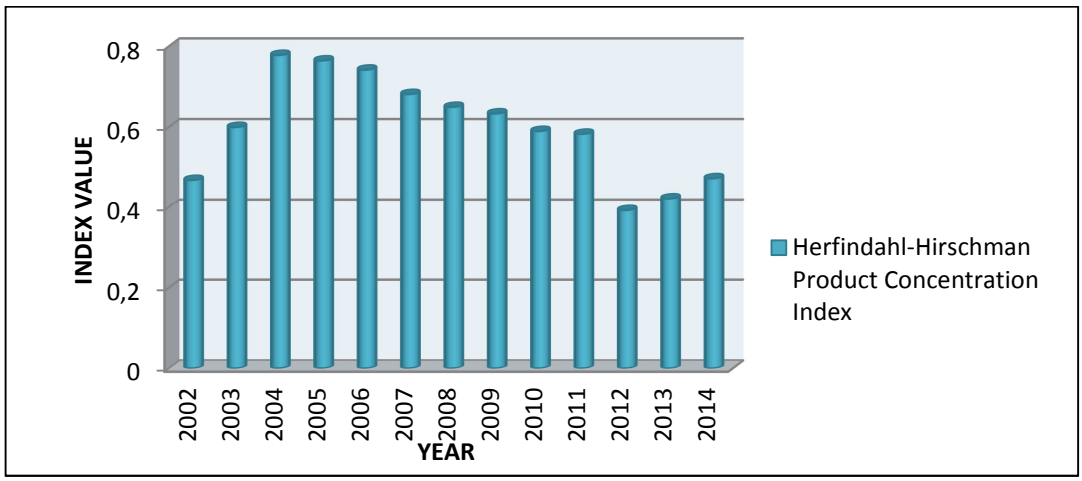

Figure 24: Herfindahl-Hirschman Product Concentration Index of Sakarya's Exporting Sectors (ISIC.Rev.3.1)

Source: Data is obtained from Turkstat and calculated by author

According to Figure 24, Sakarya has higher exporting sector diversification in 2012 with the index value of "0.39", while the higher export concentration, as an inverse to diversification, has been observed in 2011 with the index value of "0.80".

Moreover, Figure 25 shows the Herfindahl and Hirschman Product Concentration index values for exporting products of Sakarya in respect to HS classification.

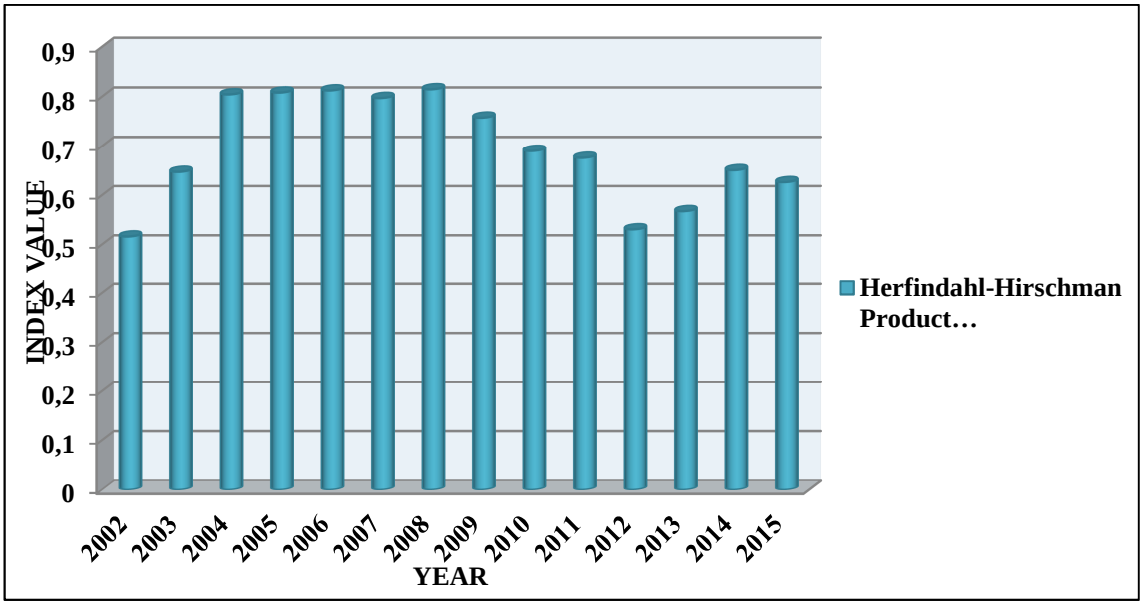

Figure 25: Herfindahl-Hirschman Product Concentration Index for Sakarya's Exporting Products (HS)

Source: Data is obtained from Turkstat and calculated by author

In accordance with Figure 25, Sakarya has the most diversified product portfolio in 2002 with "0.51", while its export has concentrated on fewer products in 2008 with "0.81".

As an another part of analysis, to determine diversification in domestic exporting sectors in export portfolio of Sakarya, sector of "Manufacture of Motor Vehicles" identifying "3410" ISIC.Rev. 3.1. has been excluded from calculations as seen in Table 28.

Table 24 shows the Herfindahl and Hirschman sector concentration indices for both all and domestic exporting sectors of Sakarya's export basket.

Table 24
Herfindahl and Hirschman Sector Concentration Indices For Both All and Domestic Exporting Sectors (ISIC.Rev.3.1)

Year	HHI(All Sectors)	HHI (Except ISIC.3410)
2002	0,468201578	0,109651147
2003	0,599537842	0,126945252
2004	0,778074344	0,187665075
2005	0,764402604	0,227921151

Table 24 Continue

2006	0,741608623	0,289489991
2007	0,681200900	0,217426879
2008	0,649289485	0,103472057
2009	0,633052049	0,114062152
2010	0,589612985	0,074531925
2011	0,582651823	0,071712594
2012	0,391485754	0,069227984
2013	0,422230905	0,080974857
2014	0,472429028	0,102256409

Source: Data is obtained from Turkstat and calculated by author

As seen in Table 24, decreases in index values are observed compared to index values for all products. This indicates that concentration in exporting sectors has been caused by "Manufacture of Motor Vehicles" as a foreign origin exporting sector. Moreover, index values for domestic exporting products are close to "0" so, it reveals that domestic exporting sectors of Sakarya have not consisted of a fewer specified sectors; it has diversified characteristics in domestic exporting sectors.

In the other case, calculation have been made by excluding product of "Vehicles other than Railway or Tramway Rolling-Stock, and parts and Accessories thereof" defining with HS.87 product code to determine diversification in domestic exporting products of Sakarya.

Table 25, shows the Herfindahl and Hirschman Product Concentration index for both diversification in all and domestic exported products of Sakarya.

Table 25
Herfindahl and Hirschman Product Concentration Indices For Both All and Domestic Exporting Sectors (HS)

Year	HHI (All Products)	HHI (Except HS.87)
2002	0,516105994	0,191064836
2003	0,647297908	0,216932549
2004	0,804537092	0,271229103
2005	0,808219843	0,300215097
2006	0,812521377	0,299771485
2007	0,797255825	0,276030828
2008	0,814808302	0,096370049

Table 25 Continue

2009	0,757548723	0,090095056
2010	0,690133079	0,074763113
2011	0,676075251	0,082561934
2012	0,530651582	0,078964734
2013	0,567530940	0,073763674
2014	0,650890414	0,069802232

Source: Data is obtained from Turkstat and calculated by author

In accordance with Table 25, due to decreasing index values, the domestic exporting products of Sakarya have not based on a fewer specified products; it has diversified characteristics in domestic exporting products. In addition, concentration in all exporting products has been caused by "Vehicles other than Railway or Tramway Rolling-Stock, and parts and Accessories thereof" defining with HS code of 87 a foreign origin exporting product.

3.3.8.2. Herfindahl and Hirschman Market Concentration Index for Export Composition of Sakarya

Herfindahl and Hirschman market concentration index is used to determine diversification in exporting markets of Sakarya. In addition, it is an indicator of dependency on its trading partners. An index value close to 1 indicates concentration and high dependency on very few markets.

Figure 26 shows the Herfindahl and Hirschman market concentration index values of Sakarya between 2002 and 2014.

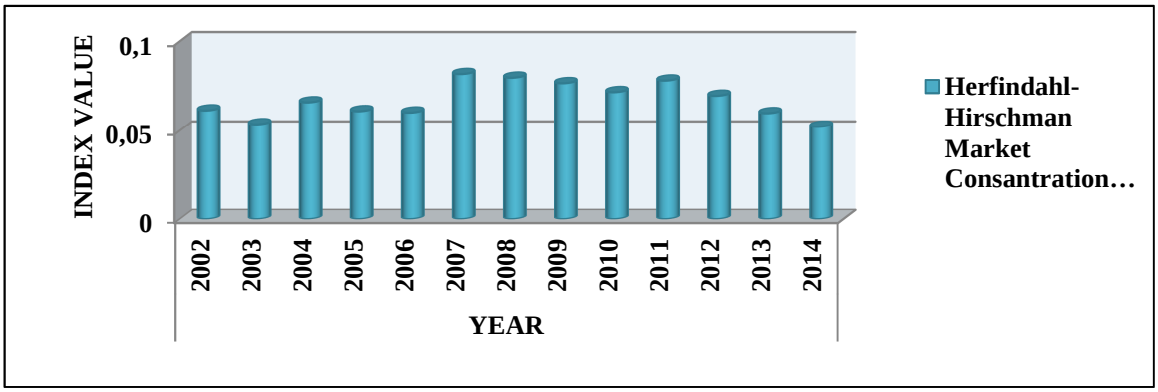

Figure 26: Herfindahl-Hirschman Market Concentration Index of Sakarya's Export Basket

Source: Data is obtained from Turkstat and calculated by author

Figure 26 demonstrates that the index value ranges from 0.05 to 0.08 over the period 2002-2014. Index values which are close to "0" indicate high diversification in Sakarya's exporting market and therefore, Sakarya has the most diversified exporting market composition in 2014 with index value 0.05, while it has the most concentrated and high dependency on exporting markets in 2007 with index value 0.08. In addition to this, Sakarya has increased its diversification in export markets since 2011.

3.3.8.3. Export Market Penetration Index of Sakarya

This index is a powerful explanatory variable for export performance. With this index, it can be obtained that the maximum potential number of export relationship that Sakarya can establish with its export portfolio at present.

The most important advantage of this measurement is that, relative to the Herfindahl-Hirschman Market Concentration, it not only reveals the distribution of exports across markets, normalizes this distribution by the potential markets that exists for these exports. This index reveals the share of potential destination markets that Sakarya actually reaches.

If Sakarya reaches a large number proportion of the number of markets that imports those products, the index value will be high for it.

Table 26 signifies the results of IEMP calculations for Sakarya in the period of 2002-2014.

Table 26
Index of Export Market Penetration for Export Composition of Sakarya in The Period of 2002-2004

Year	2010	2011	2012	2013	2014
Market Penetration Index	7%	8%	8%	9%	9%

Source: Data is obtained fromTurkStat and World Trade Map,2015 and calculated by author.

According to Table 26, Sakarya has reached to increased number of markets over the period 2010-2014. In 2010, while it reached to 7 per cent of world importing markets, this ratio has increased to 9 per cent in 2014.

Moreover, Table 27 shows the IEMP values for Sakarya's top 10 exporting products between 2010 and 2014.

Table 27
IEMP Values For Sakarya's Top 10 Exporting Products Between 2010-2014.

2010		2011		2012		2013		2014	
HS Code	**INDEX**	**HS Code**	**INDEX**	**HS Code**	**INDEX**	**HS Code**	**INDEX**	**HS Code**	**INDEX**
84	41%	84	43%	85	44%	85	46%	85	46%
85	41%	85	41%	84	42%	84	45%	84	45%
73	29%	73	29%	70	34%	87	35%	39	36%
87	28%	39	29%	32	31%	73	35%	87	32%
94	28%	87	29%	73	29%	39	34%	73	31%
39	28%	94	28%	86	29%	32	33%	32	29%
32	25%	32	27%	39	28%	94	29%	94	28%
63	20%	40	20%	94	25%	18	26%	40	23%
40	16%	63	18%	76	21%	40	25%	76	22%
25	16%	76	17%	19	19%	19	24%	18	22%

Source: Data is obtained fromTurkStat and World Trade Map,2015 and calculated by author.

In accordance with Table 27, in 2014, Sakarya has reached 46 per cent of imported markets in exporting of "Electrical Machinery and Equipment and parts thereof: sound recorders and reproducers, television image and sound recorders and reproducers, and parts and accessories of such articles followed by products defining with HS.84, Plastics and Articles thereof." with HS. 39, "vehicles other than railway or tramway rolling-stock, and parts and accessories thereof" with HS87, articles of iron or steel defining HS73, tanning or dyeing extracts; tannins and their derivatives; dyes, pigments and other colouring matter; paints and varnishes; putty and other mastics; inks with HS32, furniture lighting, sign, prefabricated buildings HS94, rubber and article thereof defining as HS40, aluminium and articles thereof with HS76 and cocoa and cocoa preparations HS18.

Furthermore, while salt, sulphur, earth, stone, plaster, lime and cement defining asHS.25 and other made textile articles, sets, worn clothing etc. defining as HS.63 were among the top 10 exporting products that reached 16 per cent and 20 per cent of importing markets respectively, in 2014 they have lost their weights and not been top 10 exporting products anymore. Conversely, in 2014, cocoa and cocoa preparations with

HS18 and aluminium and articles thereof with HS76 have been among the top ten products although they were not among the top 10 exporting products in 2010.

Moreover, the importing markets that are reached by product of “sugar and sugar and sugar confectionary” have increased from 1 per cent to 13 per cent, with an 868.32 per cent increase, in period of 2010-2014. Also, this increase has been the highest ratio in the period specified. In addition, although the product of man-made stable fibres reached approximately 11 per cent of importing markets in 2010, this rate has dropped to 0.46 per cent in 2014. This indicates approximately 95 per cent and the highest decrease.

3.3.8.4. Gini-Hirschman Concentration Index of Sakarya

The highest value of Gini-Hirschman concentration index demonstrates more concentrated export portfolio for a region or country. In this context, according to Gini-Hirschman analysis for exporting sectors of Sakarya are shown in Figure 27 and 28 respectively.

Figure 27 represents the sector concentration of Sakarya’s export composition over the period 2002-2014.

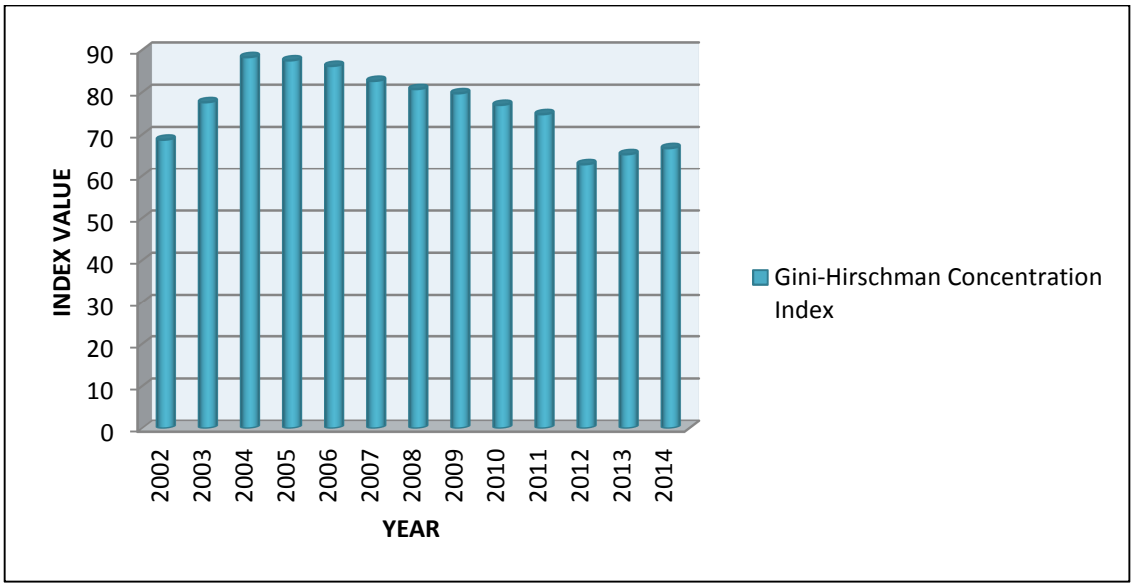

Figure 27: Gini-Hirschman Concentration Index: Sector Composition of Sakarya’s Export Between 2002 and 2014.

Source: Data is obtained fromTurkStat,2015 and calculated by author.

In accordance with Figure 27, Sakarya has the highest diversification in exporting sectors in 2012 with 62.96, while it has the lowest value in 2004 with 88.31. In addition, diversification has increased 32 per cent in period of 2004-2012, although it has decreased approximately 3 per cent over the period 2002-2014.

Exporting Sectors which have the highest concentration in 2002 are the

- manufacture of motor vehicles (ISIC. Rev. 3.1-3410),
- manufacture of parts and accessories for motor vehicles and their engines (ISIC. Rev. 3.1-3430),
- manufacture of insulated wire and cable (ISIC. Rev.3.1.- 3130),
- production, transmission and distribution of electricity (ISIC. Rev. 3.1.-4010),
- manufacture of bodies (coachwork) for motor vehicles; manufacture of trailers and semi-trailers (ISIC Rev.3.1.-3420),
- manufacture of pumps, compressors, taps and valves (ISIC Rev.3.1.-2912),
- manufacture of bakery products (ISIC Rev.3.1.-1541),
- cutting, shaping and finishing of stone (ISIC Rev.3.1-2696),
- manufacture of electricity distribution and control apparatus (ISIC Rev. 3.1.-3120),
- Manufacture of other electrical equipment n.e.c. (ISIC Rev. 3.1.-3190).

Exporting Sectors which have the highest concentration in 2014 are the

- manufacture of motor vehicles (ISIC. Rev. 3.1-3410),
- manufacture of parts and accessories for motor vehicles and their engines (ISIC. Rev. 3.1-3430),
- manufacture of bodies (coachwork) for motor vehicles; manufacture of trailers and semi-trailers (ISIC. Rev.3.1.- 3420),
- manufacture of paints, varnishes and similar coatings, printing ink and mastics (ISIC. Rev. 3.1.-2422),
- manufacture of plastics products (ISIC Rev.3.1.-2520),
- manufacture of other electrical equipment n.e.c. (ISIC Rev.3.1.-3190),
- manufacture of structural metal products (ISIC Rev.3.1.-2811),
- manufacture of other fabricated metal products n.e.c. (ISIC Rev.3.1-2899),

- manufacture of cocoa, chocolate and sugar confectionery (ISIC Rev. 3.1.-1543),
- manufacture of other special-purpose machinery (ISIC Rev. 3.1.-2929).

In the other part of analysis, Gini-Hirschman index has been calculated by excluding the sector of "Manufacture of Motor Vehicles" identifying "3410" ISIC.Rev. 3.1 to make more accurate assessment about exporting sectors of Sakarya.

Figure 28 shows the sector concentration of Sakarya's export composition by excluding the sector of Manufacture of Motor Vehicles over the period 2002-2014.

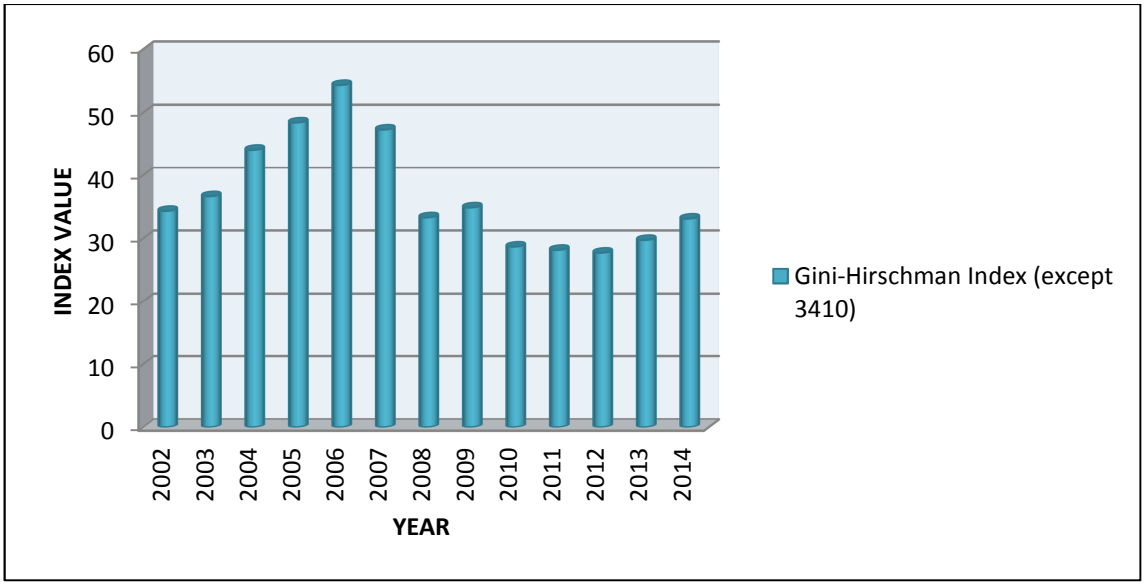

Figure 28: Gini-Hirschman Concentration Index: Sector Composition of Sakarya's Export (Except 3410) in period of 2002-2014.

Source: Data is obtained fromTurkStat,2015 and calculated by author.

Figure 28 shows that diversification in domestic exporting sectors has the highest value in 2012, while it has the most concentrated structure in 2006. There has been 3,67 per cent of decrease in diversification over the period 2002-2014. Also, this indicates increasing dependency of export on concentrated sectors.

The top 10 domestic exporting sectors that have the highest concentration in 2002 are the

- manufacture of insulated wire and cable (ISIC. Rev. 3.1-3130),
- production, transmission and distribution of electricity (ISIC. Rev. 3.1-4010),
- manufacture of bakery products (ISIC. Rev.3.1.- 1541),

- cutting, shaping and finishing of stone (ISIC. Rev. 3.1.-2696),
- manufacture of electricity distribution and control apparatus (ISIC Rev.3.1.-3120),
- manufacture of other electrical equipment n.e.c. (ISIC Rev.3.1.-3190),
- manufacture of structural metal products (ISIC Rev.3.1.-2811),
- manufacture of cocoa, chocolate and sugar confectionery (ISIC Rev.3.1-1543),
- manufacture of paints, varnishes and similar coatings, printing ink and mastics (ISIC Rev. 3.1.-2422),
- manufacture of plastics products (ISIC Rev. 3.1.-2520).

The top 10 domestic exporting sectors that have the highest concentration in 2014 are the

- manufacture of paints, varnishes and similar coatings, printing ink and mastics (ISIC. Rev. 3.1-2422),
- manufacture of plastics products (ISIC Rev. 3.1.-2520),
- manufacture of other electrical equipment n.e.c.(ISIC. Rev.3.1.-3190),
- manufacture of structural metal products (ISIC. Rev. 3.1.-2811),
- manufacture of other fabricated metal products n.e.c. (ISIC Rev.3.1.-2899),
- manufacture of cocoa, chocolate and sugar confectionery (ISIC Rev.3.1.-1543),
- manufacture of other special-purpose machinery (ISIC Rev.3.1.-2929),
- manufacture of pumps, compressors, taps and valves (ISIC Rev.3.1-2912),
- manufacture of structural non-refractory clay and ceramic products (ISIC Rev. 3.1.-2693),
- wholesale of solid, liquid and gaseous fuels and related products (ISIC Rev. 3.1.-1541).

In addition to these, Gini- Hirschman concentration index has been used to determine the product diversification of export basket in respect to HS product classification. The larger index value means increasing concentration in exporting product portfolio of Sakarya. In contrast, lower value of index indicates high level of diversification exporting product portfolio.

The diversification characteristics of exported products is shown in Figure 29.

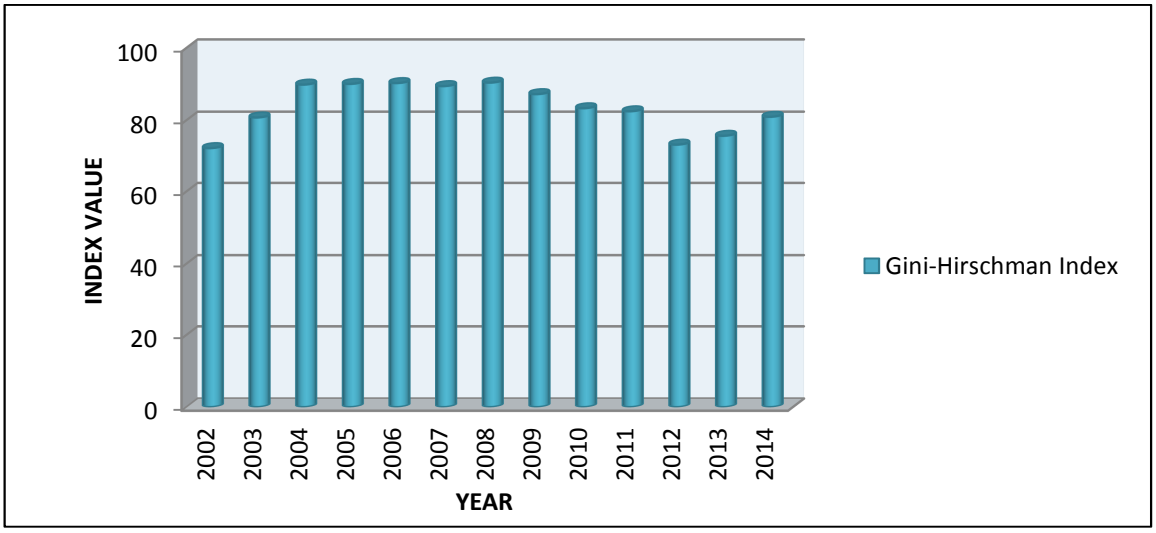

Figure 29: Gini-Hirschman Concentration Index: Product Composition of Sakarya's Export Between 2002 and 2014.

Source: Data is obtained fromTurkStat,2015 and calculated by author.

In according to Figure 29, the most diversified composition of exporting products is observed in 2002 with the index value of 72.25, while the lowest is seen in 2008 with 90.38. In addition to this, diversification has been decreased 10.71 per cent in period of 2002-2014, while the dependency and concentration on limited products have been increased at the some ratio for specified period.

As another analysis, products of HS.87 are excluded from calculations to get more accurate concentration. The results are shown in Figure 30.

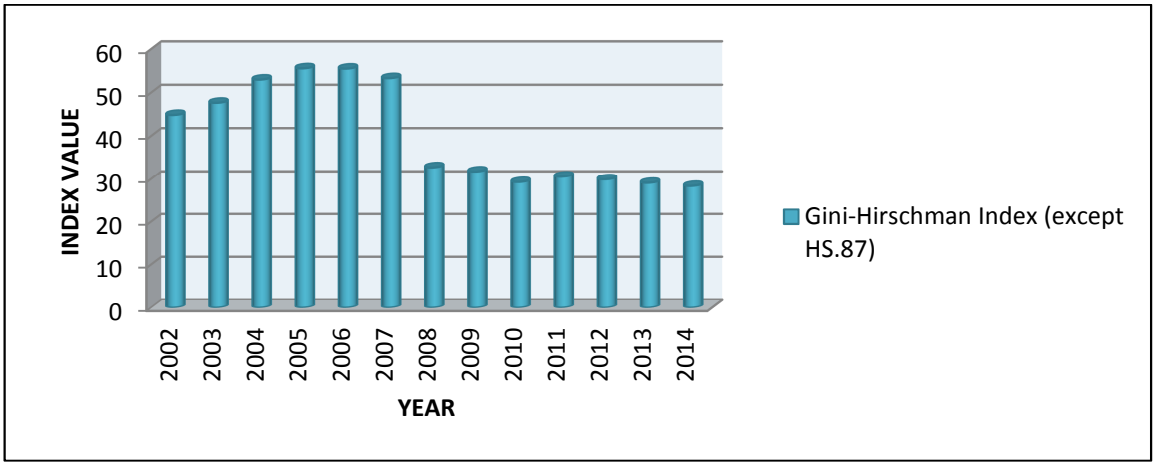

Figure 30: Gini-Hirschman Concentration Index: Product Composition of Sakarya's Export (Except HS.87) in period of 2002-2014.

Source: Data is obtained fromTurkStat,2015 and calculated by author.

Figure 30 shows that diversification in domestic exporting products has the highest value in 2014, while it has the most concentrated structure in 2006. There has been 48.90 per cent of increase in diversification over the period 2002-2014 and diversification in exporting products except HS. 87 has increased since 2008.

The top 10 domestic exporting products that have the highest concentration in 2002 are the

- nuclear reactors, boilers, machinery and mechanical appliances; parts thereof (HS.84),
- electrical machinery and equipment and parts thereof; sound recorders and reproducers, television image and sound recorders and reproducers, and parts and accessories of such articles (HS.85),
- mineral fuels, mineral oils and products of their distillation; bituminous substances; mineral waxes (HS.27),
- preparations of cereals, flour, starch or milk; pastry cooks' products (HS.19),
- articles of stone, plaster, cement, asbestos, mica or similar materials (HS.68),
- aluminium and articles thereof (HS.76),
- cocoa and cocoa preparations (HS.18),
- tanning or dyeing extracts; tannins and their derivatives; dyes, pigments and other colouring matter; paints and varnishes; putty and other mastics; inks (HS.32),
- edible fruit and nuts; peel of citrus fruit or melons (HS.8),
- articles of iron or steel (HS.73).

The top 10 domestic exporting products that have the highest concentration in 2014 are the

- nuclear reactors, boilers, machinery and mechanical appliances; parts thereof (HS.84),
- electrical machinery and equipment and parts thereof; sound recorders and reproducers, television image and sound recorders and reproducers, and parts and accessories of such articles (HS.85),
- plastics and articles thereof (HS.39),

- edible fruit and nuts; peel of citrus fruit or melons. (HS.8),
- iron and steel (HS.72),
- aluminium and articles thereof (HS.76),
- tanning or dyeing extracts; tannins and their derivatives; dyes, pigments and other colouring matter; paints and varnishes; putty and other mastics; inks (HS.32),
- articles of iron or steel (HS.73),
- preparations of cereals, flour, starch or milk; pastry cooks' products (HS.19),
- glass and glassware (HS.70).

3.3.8.5. Grubel-Lloyd Intra Industry Trade Analysis of Sakarya

Intra industry trade analyses trade of similar but differentiated products rather than specialization.

Figure 31 reports the adjusted Grubel-Lloyd Intra Industry Trade Index for Sakarya over the period of 2002-2014.

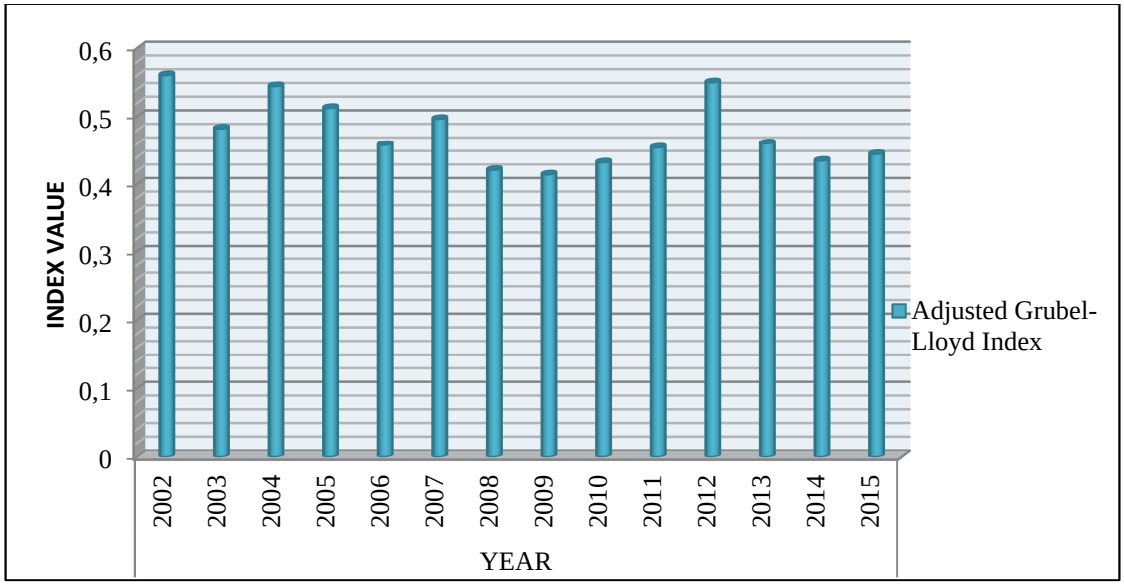

Figure 31: Adjusted Grubel-Lloyd Intra Industry Trade Index for Sakarya

Source: Data is obtained fromTurkStat,2015 and calculated by author.

The index value of intra industry trade is scaled between 0 (inter industry trade) and 1 (intra industry trade).

Figure 31 represents that intra industry trade is generally low for the Sakarya, and it has the most higher values in 2002 and 2012.

Generally, intra industry trade is high in the sectors such as

- Manufacture of other products of wood; manufacture of articles of cork, straw and plaiting materials (ISIC.Rev.3.1- 2029)
- Manufacture of plastics products (ISIC.Rev.3.1- 2520)
- Manufacture of other special-purpose machinery (ISIC.Rev.3.1- 2929)
- Manufacture of lifting and handling equipment (ISIC.Rev.3.1- 2915)
- Manufacture of pumps, compressors, taps and valves (ISIC.Rev.3.1- 2912)
- Manufacture of pumps, compressors, taps and valves (ISIC.Rev.3.1- 2927)
- Manufacture of pumps, compressors, taps and valves (ISIC.Rev.3.1- 3110)
- Manufacture of other electrical equipment n.e.c. (ISIC.Rev.3.1- 3190)
- Manufacture of other fabricated metal products n.e.c. (ISIC.Rev.3.1- 2899)
- Manufacture of electronic valves and tubes and other electronic components (ISIC.Rev.3.1- 3210)
- Manufacture of bodies (coachwork) for motor vehicles; manufacture of trailers and semi-trailers (ISIC.Rev.3.1- 3420)

3.3.9. Export Sophistication of Sakarya

“Technological classification of export”, “sophistication of export”, and “ revealed factor intensity” are among the most widely used methods to determine export sophistication of a region or country.

Due to the data constraint, in this study, the analysis of technological classification of export, as an appropriate method, has been used to assess the export sophistication of Sakarya.

The technological classification of Sakarya has been examined with four based technology intensity definitions of manufacturing industries in ISIC Rev.3. High-technology, medium-high–technology, medium-low-technology and low-technology are divisions of manufacturing industries.

The high technology group consists of industries such as

- aircraft and space craft (ISIC. Rev.3-352),
- pharmaceuticals (ISIC. Rev.3-2423),
- office, accounting and computing machinery (ISIC. Rev.3-30),
- radio, TV and communications equipment (ISIC. Rev.3-32),
- medical, precision and optical instruments (ISIC. Rev.3-33),

The medium- high technology group consists of industries such as

- electrical machinery and apparatus, n.e.c. (ISIC. Rev.3-31),
- motor vehicles, trailers and semi-trailers (ISIC. Rev.3-34),
- chemicals excluding pharmaceuticals (ISIC. Rev.3-24 excl. 2423),
- railroad equipment and transport equipment, n.e.c (ISIC. Rev.3-352+359),
- machinery and equipment, n.e.c (ISIC. Rev.3-29),.

The medium- low technology group consists of industries such as

- building and repairing of ships and boats(ISIC. Rev.3-351),,
- rubber and plastics products (ISIC. Rev.3-25),
- coke, refined petroleum products and nuclear fuel (ISIC. Rev.3-23),
- other non-metallic mineral product (ISIC. Rev.3-26),
- basic metals and fabricated metal products (ISIC. Rev.3-27/28),

The low technology group consists of industries such as

- manufacturing, n.e.c.; recycling (ISIC. Rev.3-36/37),
- wood, pulp, paper, paper products, printing and publishing (ISIC. Rev.3-20/22),
- food products, beverages and tobacco (ISIC. Rev.3-15/16),
- textiles, textile products, leather and footwear (ISIC. Rev.3-17/19),

In this context, export composition of Sakarya has been investigated according to technological division of industries. Figure 32 represents the share of sectors in the export of Sakarya in respect to the technology intensity definitions of manufacturing industries in ISIC Rev.3.1.

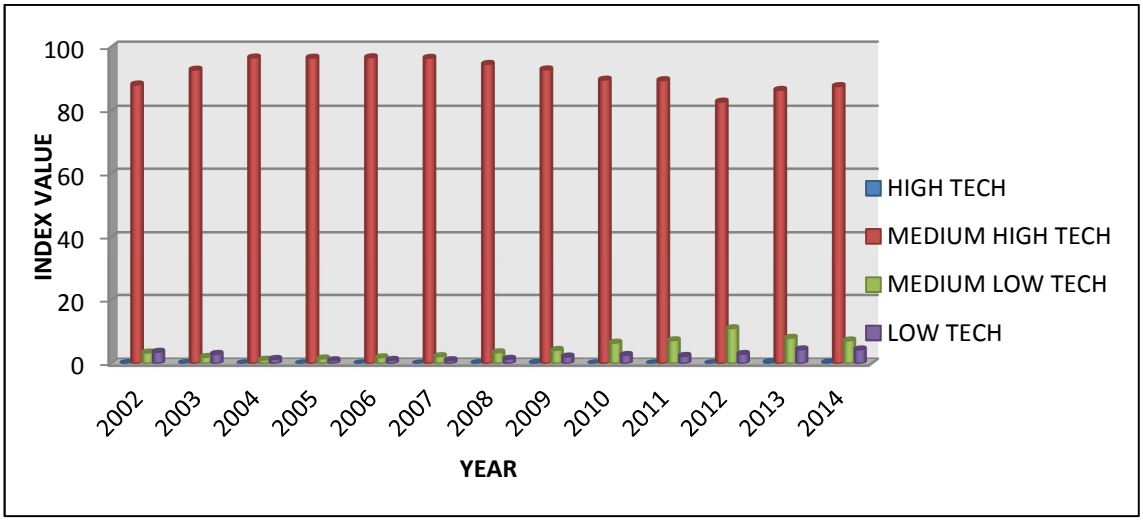

Figure 32: Technological Classification of Sakarya's Exporting Sectors

Source: Data is obtained fromTurkStat,2015 and calculated by author.

According to Figure 32, export pattern of Sakarya has particularly oriented towards medium high technology. The medium high technology intensive sectors have had prominent share in Sakarya's export, while medium and low technology intensive sectors have shown signs of increase. In addition, the export performance of high technology intensive sectors has still been poor and the shares of these sectors have still been insignificant. However, between 2002 and 2014, high technology exports grew faster (118 per cent) than medium high technology exports.

The analysis has been applied by excluding the sector of "manufacture of motor vehicles" to determine more accurate technological sophistication of exporting sectors.

Figure 33 shows the share of sectors, except the sector of "manufacture of motor vehicles", in Sakarya's exports in respect to the technology intensity definitions of manufacturing industries in ISIC Rev.3.1.

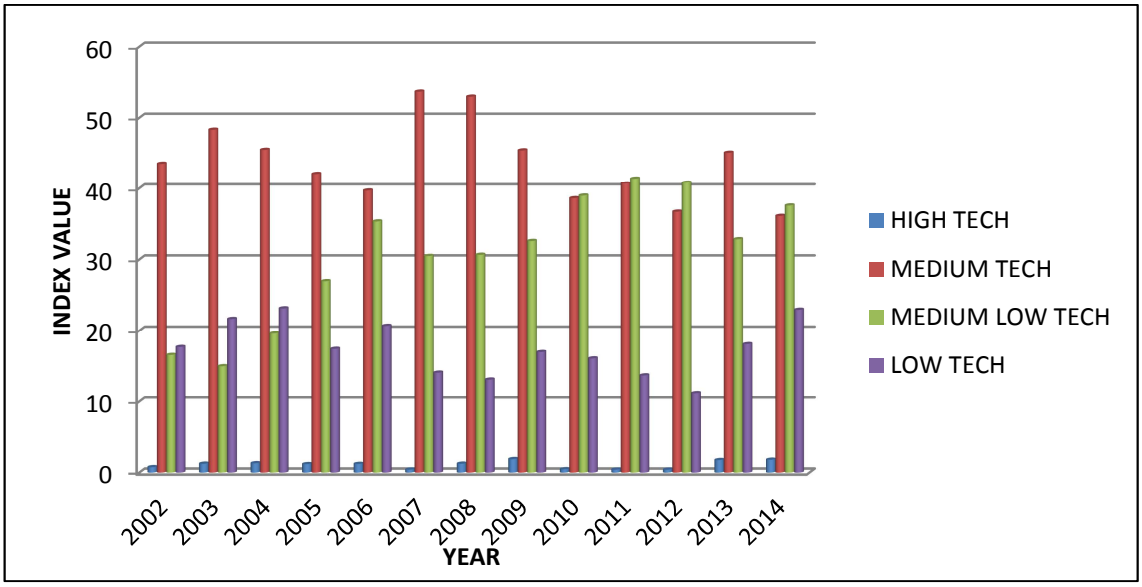

Figure 33: Technology Intensity Definitions of Manufacturing Industries in ISIC Rev.3.1. (Except ISIC. 3410)

Source: Data is obtained fromTurkStat,2015 and calculated by author.

In this case, generally, although the medium high technology intensive sectors still have the largest share, they have decreased share in exports. With the exception of "manufacture of motor vehicles", the shares of high technology and medium low technology and low technology intensive sectors have increased approximately 637.5 per cent, 985.83 per cent and 520 per cent respectively, while the share of medium high technology intensive sectors has decreased 57.37 per cent over the period 2002-2014.

3.3.10. Export Duration of Sakarya

This indicators shows the number of new product-partner relationships and the number and of exporting products and markets of Sakarya that survive in each succeeding year until the selected end date.

Table 28
Export Duration of Sakarya

	Start Year	End Year	Start Year	End Year	Start Year	End Year
	2002	2006	2007	2011	2012	2014
Number of Markets	108	120	121	124	125	141
Product Death	0	4	0	11	0	3
New Product	0	9	0	10	0	3
Surviving Product	63	59	74	63	74	71
Total Product	63	68	74	73	74	74

Source: Data is obtained fromTurkStat,2015 and calculated by author.

In accordance with Table 28 between the 2002 and 2006, the number of exporting markets of Sakarya increases from 108 to 120. In addition, while nine new products enter to the export market, four surviving products are withdrawn from the markets.

Over the period 2007-2011, while ten new products enter to the export market, eleven surviving products are withdrawn from the markets. Moreover, at the same period, only three new markets took place in the export composition of Sakarya.

In the period of 2012-2014, while three new products enter to the export market, three surviving products are withdrawn from the markets. As a result the total number of exporting products has not changed in this period. Also, the greatest increase in the number of exporting markets, from 125 to 141, has been seen in that period.

CONCLUSION AND DISCUSSION

The most remarkable aspect of cities is economic competitiveness with their potential of trade, increasing population, clustered technology and industry and employment. Globalisation has led to increasing interdependence of economies throughout trade, global financial markets, information systems, technology and production. The most important results of global interdependence is increasing competitiveness among the global actors. While for firms, competitiveness can be measured by the number of markets that they reach or their sales, for regions, countries or cities, competitiveness can be evaluated by trade performance. As a result of this, the trade performance of cities as the global actor is crucial indicator to assess the cities potential of competitiveness in new world order. In this study, the export performance of Sakarya has been demonstrated by data, measurements and especially indices to disclosure the competitiveness potential of Sakarya. The findings of the study is summarized as follows:

- The most widely used payment method used by the companies in Sakarya is the cash on delivery (50.4 per cent). In addition, the most of exported products , (64.63 per cent) are transported by road and hazelnut, chocolate, foliage plants, enamel frit and machines have been among the widely export products that are transported by this mode to importers destination. Sea and air way are the second and third transportation modes that are used in export.
- The results of the Lawrence index shows that there was no important structural change in the export pattern of Sakarya in that between 2005 and 2010. But it shows a clear upward trend in 2012. However, this increase has not indicated a structural change in Sakarya's export pattern. For this reason, this change has been explained by cyclical factors which are dominated in the short and medium terms like 2008 financial crisis, weak demand, especially in Eurozone. Especially the contraction in automotive sector has tremendous impact on the export pattern of Sakarya which highly depends on that sector and contradiction in that sector in 2012 explains the change in the trade pattern of Sakarya.
- Furthermore, the results of trade specialization index shows that Sakarya's compositions of traded sectors have more diversified in 2012 and diversification has

been increased since 2008. The similar trend which has been seen in the sector compositions of Sakarya has seen in the distribution of traded products. However, the impact of global financial crisis on the distribution of traded products has emerged one year later than surfacing of its effects on traded sectors.

- The results of the revealed comparative advantage analysis (RCA) shows that between the 2002 and 2014 Sakarya has RCA in respect of the export of preparations of cereals, flour, starch or milk; pastry cooks' products (HS.19), tanning or dyeing extracts; tannins and their derivatives; dyes, pigments and other colouring matter; paints and varnishes; putty and (HS.32), vehicles other than railway or tramway rolling-stock, and parts and accessories thereof (HS.87) in comparison with East Marmara Region. In addition, "Tanning or dyeing extracts; tannins and their derivatives; dyes, pigments and other colouring matter; paints and varnishes; putty and (HS.32)" is a unique product that has increased its comparative advantage, compared to Turkey, for the period 2002-2014.
- Kuwait has the most strong and sustainable trade complementarity with Sakarya's export basket followed by Saudi Arabia, Qatar, Bahrain, Oman, Canada, Slovenia, Libya and Algeria. The compatibility with these countries is caused by export products of Sakarya such as "Vehicles and Other than Railway or Tramway Rolling Stock" with "HS.87", "Nuclear reactor, boilers, machinery, mechanical appliances, parts thereof." with "HS. 84" and "Electrical Machinery and Equipment and parts thereof; sound Recorders and Reproducers, Television Image and Sound Recorders and Reproducers and Parts and Accessories of Such Articles" with "HS.85". In addition to these, Sakarya's export composition is strongly matches with seven MENA countries. Also, these countries are more profitable markets for Sakarya's exporting products. Currently, the export partners of Sakarya have not strong complementarity with Sakarya's export basket. If Sakarya increases trade ties with countries which have strong trade complementarity characteristics, both Sakarya and importer country will gain from increased trade.
- As a results of the Herfindahl-Hirschman product concentration index, concentration in exporting sectors has been caused by "Manufacture of Motor Vehicles".
- Herfindahl-Hirschman market concentration index shows that Sakarya has the most diversified exporting market composition in 2014, while it has the relatively

concentrated and high dependency on exporting markets in 2007. In addition to this, Sakarya has increased its diversification in export markets since 2011.

- Sakarya has reached 46 per cent of imported markets in exporting of “Electrical Machinery and Equipment and parts thereof: sound recorders and reproducers, television image and sound recorders and reproducers, and parts and accessories of such articles followed by products defining with HS.84, Plastics and Articles thereof.” with HS. 39, “vehicles other than railway or tramway rolling-stock, and parts and accessories thereof” with HS87, articles of iron or steel defining HS73, tanning or dyeing extracts; tannins and their derivatives; dyes, pigments and other colouring matter; paints and varnishes; putty and other mastics; inks with HS32, furniture lighting, sign, prefabricated buildings HS94, rubber and article thereof defining as HS40, aluminium and articles thereof with HS76 and cocoa and cocoa preparations HS18. Moreover, the importing markets that are reached by product of “sugar and sugar confectionary” have been increased from 1 per cent to 13 per cent, with an 868.32 per cent increase, in period of 2010-2014. Also, the increase has been the highest ratio in the period specified. In addition, although the product of man-made stable fibres reached approximately 11 per cent of importing markets in 2010, this rate has dropped to 0.46 per cent in 2014. This indicates approximately 95 per cent and the highest decrease.
- According to Gini-Hirshman concentration index: manufacture of motor vehicles (ISIC. Rev. 3.1-3410), manufacture of parts and accessories for motor vehicles and their engines (ISIC. Rev. 3.1-3430), manufacture of bodies (coachwork) for motor vehicles; manufacture of trailers and semi-trailers (ISIC Rev.3.1.-3420), manufacture of other electrical equipment n.e.c. are the Exporting Sectors which have the highest concentration rate between 2002 and 2014. In addition to this, by excluding Toyota Company to make assessment about Sakarya’s own export portfolio, manufacture of paints, varnishes and similar coatings, printing ink and mastics, manufacture of other electrical equipment n.e.c., manufacture of structural metal products, manufacture of cocoa, chocolate and sugar confectionery are the Exporting Sectors which have the highest concentration rate between 2002 and 2014.

- In addition, Manufacture of other products of wood; manufacture of articles of cork, straw and plaiting materials (ISIC.Rev.3.1- 2029), manufacture of plastics products (ISIC.Rev.3.1- 2520), manufacture of other special-purpose machinery (ISIC.Rev.3.1- 2929),manufacture of lifting and handling equipment (ISIC.Rev.3.1-2915) are the main sectors that have high intra-industry trade structure.
- According technological sophistication analysis, The medium high technology intensive sectors have had prominent share in Sakarya's export, while medium and low technology intensive sectors have shown signs of increase. In addition, the export performance of high technology intensive sectors has still been poor and the shares of these sectors have still been insignificant. However, between 2002 and 2014, high technology exports grew faster (118 per cent) than medium high technology exports. With the exception of "manufacture of motor vehicles" sector, the shares of high technology and medium low technology and low technology intensive sectors have increased approximately 637.5 per cent, 985.83 per cent and 520 per cent respectively, while the share of medium high technology intensive sectors has decreased 57.37 per cent over the period 2002-2014.
- According to export market duration of Sakarya, in the period of 2012-2014; the greatest increase in the number of exporting markets, from 125 to 141, has been seen and between the 2007-2011 ten new products enter to the export market, as the most highest number between the period 2002-2014.

For further studies, the indices other than the study includes can be used to analyse the export of Sakarya or other cities or city regions.

The concentration of the export of Sakarya on one sector and few companies, reveals that the companies and the authorities need to prepare a master plan on the development and supporting of diversification of product and market. Furthermore the region agencies and policy makers should support the advantages of Sakarya on a sustainability basis, since this study finds out the products that Sakarya has comparative advantages on its region and Turkey.

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APPENDICES

Appendix. 1

ISIC.Rev.3.1

- A - Agriculture, hunting and forestry
  - 01 - Agriculture, hunting and related service activities
  - 02 - Forestry, logging and related service activities
- B - Fishing
  - 05 - Fishing, aquaculture and service activities incidental to fishing
- C - Mining and quarrying
  - 10 - Mining of coal and lignite; extraction of peat
  - 11 - Extraction of crude petroleum and natural gas; service activities incidental to oil and gas extraction, excluding surveying
  - 12 - Mining of uranium and thorium ores
  - 13 - Mining of metal ores
  - 14 - Other mining and quarrying
- D - Manufacturing
  - 15 - Manufacture of food products and beverages
  - 16 - Manufacture of tobacco products
  - 17 - Manufacture of textiles
  - 18 - Manufacture of wearing apparel; dressing and dyeing of fur
  - 19 - Tanning and dressing of leather; manufacture of luggage,hangbags , saddlery, harness and footwear
  - 20 - Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials
  - 21 - Manufacture of paper and paper products
  - 22 - Publishing, printing and reproduction of recorded media
  - 23 - Manufacture of coke, refined petroleum products and nuclear fuel
  - 24 - Manufacture of chemicals and chemical products
  - 25 - Manufacture of rubber and plastics products
  - 26 - Manufacture of other non-metallic mineral products
  - 27 - Manufacture of basic metals
  - 28 - Manufacture of fabricated metal products, except machinery and equipment
  - 29 - Manufacture of machinery and equipment n.e.c.
  - 30 - Manufacture of office, accounting and computing machinery
  - 31 - Manufacture of electrical machinery and apparatus n.e.c.
  - 32 - Manufacture of radio, television and communication equipment and apparatus
  - 33 - Manufacture of medical, precision and optical instruments, watches and clocks
  - 34 - Manufacture of motor vehicles, trailers and semi-trailers
  - 35 - Manufacture of other transport equipment
  - 36 - Manufacture of furniture; manufacturing n.e.c.
  - 37 - Recycling
- E - Electricity, gas and water supply

    - 40 - Electricity, gas, steam and hot water supply
    - 41 - Collection, purification and distribution of water
- F - Construction
    - 45 - Construction
- G –Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods
    - 50 - Sale, maintenance and repair of motor vehicles and motorcycles; retail sale of automotive fuel
    - 51 - Wholesale trade and commission trade, except of motor vehicles and motorcycles
    - 52 – Retail trade, except of motor vehicles and motorcycles; repair of personal and household goods
- H - Hotels and restaurants
    - 55 - Hotels and restaurants
- I - Transport, storage and communications
    - 60 - Land transport; transport via pipelines
    - 61 - Water transport
    - 62 - Air transport
    - 63 - Supporting and auxiliary transport activities; activities of travel agencies
    - 64 - Post and telecommunications
- J - Financial intermediation
    - 65 - Financial intermediation, except insurance and pension funding
    - 66 - Insurance and pension funding, except compulsory social security
    - 67 - Activities auxiliary to financial intermediation
- K - Real estate, renting and business activities
    - 70 - Real estate activities
    - 71 - Renting of machinery and equipment without operator and of personal and household goods
    - 72 - Computer and related activities
    - 73 - Research and development
    - 74 – Other business activities
- L - Public administration and defence; compulsory social security
    - 75 - Public administration and defence; compulsory social security
- M - Education
    - 80 - Education
- N - Health and social work
    - 85 - Health and social work
- O - Other community, social and personal service activities
    - 90 - Sewage and refuse disposal, sanitation and similar activities
    - 91 - Activities of membership organizations n.e.c.
    - 92 - Recreational, cultural and sporting activities
    - 93 - Other service activities
- P - Activities of private households as employers and undifferentiated production activities of private households
    - 95 - Activities of private households as employers of domestic staff
    - 96 - Undifferentiated goods-producing activities of private households for own use

    - 97 - Undifferentiated service-producing activities of private households for own use
- Q - Extraterritorial organizations and bodies
    - 99 - Extraterritorial organizations and bodies

Appendix. 2

General Rules for the interpretation of the Harmonized System.

	SECTION I LIVE ANIMALS; ANIMAL PRODUCTS
1	Live animals.
2	Meat and edible meat offal.
3	Fish and crustaceans, molluscs and other aquatic invertebrates.
4	Dairy produce; birds' eggs; natural honey; edible products of animal origin, not elsewhere specified or included.
5	Products of animal origin, not elsewhere specified or included.
	SECTION II VEGETABLE PRODUCTS
6	Live trees and other plants; bulbs, roots and the like; cut flowers and ornamental foliage.
7	Edible vegetables and certain roots and tubers.
8	Edible fruit and nuts; peel of citrus fruit or melons.
9	Coffee, tea, maté and spices.
10	Cereals.
11	Products of the milling industry; malt; starches; inulin; wheat gluten.
12	Oil seeds and oleaginous fruits; miscellaneous grains, seeds and fruit; industrial or medicinal plants; straw and fodder.
13	Lac; gums, resins and other vegetable saps and extracts.
14	Vegetable plaiting materials; vegetable products not elsewhere specified or included.
	SECTION III ANIMAL OR VEGETABLE FATS AND OILS AND THEIR CLEAVAGE PRODUCTS; PREPARED EDIBLE FATS; ANIMAL OR VEGETABLE WAXES
15	Animal or vegetable fats and oils and their cleavage products; prepared edible

fats; animal or vegetable waxes.

SECTION IV PREPARED FOODSTUFFS; BEVERAGES, SPIRITS AND VINEGAR; TOBACCO AND MANUFACTURED TOBACCO SUBSTITUTES

16 Preparations of meat, of fish or of crustaceans, molluscs or other aquatic invertebrates.

17 Sugars and sugar confectionery.

18 Cocoa and cocoa preparations.

19 Preparations of cereals, flour, starch or milk; pastrycooks' products.

20 Preparations of vegetables, fruit, nuts or other parts of plants.

21 Miscellaneous edible preparations.

22 Beverages, spirits and vinegar.

23 Residues and waste from the food industries; prepared animal fodder.

24 Tobacco and manufactured tobacco substitutes.

SECTION V MINERAL PRODUCTS

25 Salt; sulphur; earths and stone; plastering materials, lime and cement.

26 Ores, slag and ash.

27 Mineral fuels, mineral oils and products of their distillation; bituminous substances; mineral waxes.

SECTION VI PRODUCTS OF THE CHEMICAL OR ALLIED INDUSTRIES

28 Inorganic chemicals; organic or inorganic compounds ofprecious metal, of rare-earth metals, of radioactive elements or of isotopes.

29 Organic chemicals.

30 Pharmaceutical products.

31 Fertilisers.

32 Tanning or dyeing extracts; tannins and their derivatives; dyes, pigments and other colouring matter; paints and varnishes; putty and other mastics; inks.

33 Essential oils and resinoids; perfumery, cosmetic or toilet preparations.

34 Soap, organic surface-active agents, washing preparations, lubricating preparations, artificial waxes, prepared waxes, polishing or scouring preparations, candles and similar articles, modelling pastes, "dental waxes" and dental preparations with a basis of plaster.

35 Albuminoidal substances; modified starches; glues; enzymes.

36 Explosives; pyrotechnic products; matches; pyrophoric alloys; certain combustible preparations.

37 Photographic or cinematographic goods.

38 Miscellaneous chemical products.

SECTION VII PLASTICS AND ARTICLES THEREOF; RUBBER AND ARTICLES THEREOF

39 Plastics and articles thereof.

40 Rubber and articles thereof.

SECTION VIII RAW HIDES AND SKINS, LEATHER, FURSKINS AND ARTICLES THEREOF; SADDLERY AND HARNESS; TRAVEL GOODS,HANDBAGS AND SIMILAR CONTAINERS; ARTICLES OF ANIMAL GUT (OTHER THAN SILK-WORM GUT)

41 Raw hides and skins (other than furskins) and leather.

42 Articles of leather; saddlery and harness; travel goods, handbags and similar containers; articles of animal gut (other than silk-worm gut).

43 Furskins and artificial fur; manufactures thereof.

SECTION IX WOOD AND ARTICLES OF WOOD; WOOD CHARCOAL; CORK AND ARTICLES OF CORK; MANUFACTURES OF STRAW, OF ESPARTO OR OF OTHER PLAITING MATERIALS; BASKETWARE AND WICKERWORK

44 Wood and articles of wood; wood charcoal.

45 Cork and articles of cork.

46 Manufactures of straw, of esparto or of other plaiting materials; basketware and wickerwork.

SECTION X PULP OF WOOD OR OF OTHER FIBROUS CELLULOSIC MATERIAL; RECOVERED (WASTE AND SCRAP) PAPER OR PAPERBOARD; PAPER AND PAPERBOARD AND ARTICLES THEREOF

47 Pulp of wood or of other fibrous cellulosic material; recovered (waste and scrap) paper or paperboard.

48 Paper and paperboard; articles of paper pulp, of paper or of paperboard.

49 Printed books, newspapers, pictures and other products of the printing industry; manuscripts, typescripts and plans.

SECTION XI TEXTILES AND TEXTILE ARTICLES

50 Silk.

51 Wool, fine or coarse animal hair; horsehair yarn and woven fabric.

52 Cotton.

53 Other vegetable textile fibres; paper yarn and woven fabrics of paper yarn.

54 Man-made filaments.

55 Man-made staple fibres.

56 Wadding, felt and nonwovens; special yarns; twine, cordage, ropes and cables and articles thereof.

57 Carpets and other textile floor coverings.

58 Special woven fabrics; tufted textile fabrics; lace; tapestries; trimmings; embroidery.

59 Impregnated, coated, covered or laminated textile fabrics; textile articles of a kind suitable for industrial use.

60 Knitted or crocheted fabrics.

61 Articles of apparel and clothing accessories, knitted or crocheted.

62 Articles of apparel and clothing accessories, not knitted or crocheted.

63 Other made up textile articles; sets; worn clothing and worn textile articles; rags.

SECTION XII FOOTWEAR, HEADGEAR, UMBRELLAS, SUN UMBRELLAS, WALKING-STICKS, SEAT-STICKS, WHIPS, RIDING-CROPS AND PARTS THEREOF; PREPARED FEATHERS AND ARTICLES MADE THEREWITH; ARTIFICIAL FLOWERS; ARTICLES OF HUMAN HAIR

64 Footwear, gaiters and the like; parts of such articles.

65 Headgear and parts thereof.

66 Umbrellas, sun umbrellas, walking-sticks, seat-sticks, whips, riding-crops and parts thereof.

67 Prepared feathers and down and articles made of feathers or of down; artificial flowers; articles of human hair.

SECTION XIII ARTICLES OF STONE, PLASTER, CEMENT, ASBESTOS, MICA OR SIMILAR MATERIALS; CERAMIC PRODUCTS; GLASS AND GLASSWARE

68 Articles of stone, plaster, cement, asbestos, mica or similar materials.

69 Ceramic products.

70 Glass and glassware.

SECTION XIV NATURAL OR CULTURED PEARLS, PRECIOUS OR SEMI-PRECIOUS STONES, PRECIOUS METALS, METALS CLAD WITH PRECIOUS METAL AND ARTICLES THEREOF; IMITATION JEWELLERY; COIN

71 Natural or cultured pearls, precious or semi-precious stones, precious metals, metals clad with precious metal and articles thereof; imitation jewellery; coin.

SECTION XV BASE METALS AND ARTICLES OF BASE METAL

72 Iron and steel.

73 Articles of iron or steel.

74 Copper and articles thereof.

75 Nickel and articles thereof.

76 Aluminium and articles thereof.

77 (Reserved for possible future use in the Harmonized System)

78 Lead and articles thereof.

79 Zinc and articles thereof.

80 Tin and articles thereof.

81 Other base metals; cermets; articles thereof.

82 Tools, implements, cutlery, spoons and forks, of base metal; parts thereof of base metal.

83 Miscellaneous articles of base metal.

SECTION XVI MACHINERY AND MECHANICAL APPLIANCES; ELECTRICAL EQUIPMENT; PARTS THEREOF; SOUND RECORDERS AND REPRODUCERS, TELEVISION IMAGE AND SOUND RECORDERS AND REPRODUCERS, AND PARTS AND ACCESSORIES OF SUCH ARTICLES

84 Nuclear reactors, boilers, machinery and mechanical appliances; parts thereof.

85 Electrical machinery and equipment and parts thereof; sound recorders and reproducers, television image and sound recorders and reproducers, and parts and accessories of such articles.

SECTION XVII VEHICLES, AIRCRAFT, VESSELS AND ASSOCIATED TRANSPORT EQUIPMENT

86 Railway or tramway locomotives, rolling-stock and parts thereof; railway or tramway track fixtures and fittings and parts thereof; mechanical (including electro-mechanical) traffic signalling equipment of all kinds.

87 Vehicles other than railway or tramway rolling-stock, and parts and accessories thereof.

88 Aircraft, spacecraft, and parts thereof.

89 Ships, boats and floating structures.

SECTION XVIII OPTICAL, PHOTOGRAPHIC, CINEMATOGRAPHIC, MEASURING, CHECKING, PRECISION, MEDICAL OR SURGICAL INSTRUMENTS AND APPARATUS; CLOCKS AND WATCHES; MUSICAL INSTRUMENTS; PARTS AND ACCESSORIES THEREOF

90 Optical, photographic, cinematographic, measuring, checking, precision, medical or surgical instruments and apparatus; parts and accessories thereof.

91 Clocks and watches and parts thereof.

92 Musical instruments; parts and accessories of such articles.

SECTION XIX ARMS AND AMMUNITION; PARTS AND ACCESSORIES THEREOF

93 Arms and ammunition; parts and accessories thereof.

SECTION XX MISCELLANEOUS MANUFACTURED ARTICLES

94 Furniture; bedding, mattresses, mattress supports, cushions and similar stuffed furnishings; lamps and lighting fittings, not elsewhere specified or included; illuminated signs, illuminated name-plates and the like; prefabricated buildings.

95 Toys, games and sports requisites; parts and accessories thereof.

96 Miscellaneous manufactured articles.

SECTION XXI WORKS OF ART, COLLECTORS' PIECES AND ANTIQUES

97 Works of art, collectors' pieces and antiques.

CURRICULUM VITAE

Oylum Şehvez ERGÜZEL was born in 1982. She graduated from Uşak Anatolian Teacher High Schools and she received double major and minor degrees from Yeditepe University in the fields of Economics, Political Science and International Relations and International Finance. She has still been master student of Sakarya University, International Trade Department since 2013.

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