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THE RELATIONSHIP BETWEEN TURKEY'S OLIVE OIL EXPORT INCOME AND ECONOMIC GROWTH FIGURES: OLIVE OIL SECTOR PROBLEMS AND SOLUTIONS PROPOSALS IN TURKEY

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Title of the Thesis: **THE RELATIONSHIP BETWEEN TURKEY'S OLIVE OIL EXPORT INCOME AND ECONOMIC GROWTH FIGURES: OLIVE OIL SECTOR PROBLEMS AND SOLUTIONS PROPOSALS IN TURKEY**

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ABSTRACT

THE RELATIONSHIP BETWEEN TURKEY'S OLIVE OIL EXPORT INCOME AND ECONOMIC GROWTH FIGURES: OLIVE OIL SECTOR PROBLEMS AND SOLUTIONS PROPOSALS IN TURKEY

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The purpose of this study is to provide information about the agricultural product sector and the olive and olive oil products sector. Also the main purpose of this study is the demonstration of relationship between Turkey's olive oil export income and economic growth figures. This relationship is examined by using the quarterly data in between 1999:Q1 and 2017:Q1. In addition another aim is to find solutions on the existing problems and to provide recommendations about the sector.

For people who to continue their lives must consume processed and unprocessed foodstuffs derived from agricultural, vegetal and animal products. Due to the diversity of geographical shapes in the World, different climate types are formed. Naturally this different type of climate enables the cultivation of various agricultural, herbal and animal products. Some of consumer products provide to meet people's needs and they are cultivated or grown in many countries of the world; but some of them are cultivated or grown in limited geographical areas. An example of

this situation is the olive crop, which has the potential to grow only where Mediterranean climate features dominate.

Olive and olive oil are the products that are produced, consumed and traded by since long years. Olive and olive oil, one of the symbolic products of the Mediterranean climate, are increasing own importance every day because of its positive effects on human health. The increasing importance of the olive and olive oil sector in the world that is economically important for the countries and companies which produce and trade these products. Spain, Italy, Greece which are members of the European Union (EU), have a high share in the world table olive and olive oil sector. Also Turkey is one of the important countries in the world's olive and olive oil sector. Turkey's table olive and olive oil sector has a potential returns in terms of economics and employment. Despite that, this sector has some production and commercial problems. The public or state institutions and private sectors continue to work on resolving these problems. Turkey's 2023 commercial target has also table olive and olive oil sector. Its aim is 3.8 billion USD as revenue from exports of these products. In order to increase the economic growth figures in our country, it is necessary for the institutions and enterprises that are operating on the commercial field to increase the production amounts and then the export revenues. Olive oil products contribute to Turkey's economy with net export revenues. Because of some reason, olive oil activity area is assessing the scope of this thesis.

Keywords: Table Olive, Olive Oil, Economic Growth, Export, Turkey.

ÖZET

TÜRKİYE'DE ZEYTİNYAĞI İHRACATI GELİRLERİ VE EKONOMİK BÜYÜME RAKAMLARI ARASINDAKİ İLİŞKİ: SEKTÖRDEKİ PROBLEMLER VE ÇÖZÜM ÖNERİLERİ

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Bu çalışmanın amacı; tarım ürünleri sektörü, zeytin ve zeytinyağı ürünleri sektörü hakkında bilgi vermektir. Ayrıca, Türkiye' nin zeytinyağı ihracat gelirleri ve ekonomik büyüme rakamları arasındaki ilişkinin analizinin gerçekleştirilmesi temel amacımızdır. Araştırması ve ekonometrik analizi yapılan bu konuda zaman aralığı olarak 1999:Q1-2017:Q1 dönemi ele alınmıştır. Bu duruma ek olarak, sektörde yaşanan problemlerin belirlenmesi, bu problemlere çözüm oluşturulması ve üzerinde çalışılmış olan sektörlere yönlik önerilerde bulunulması çalışmanın diğer hedefleri arasındadır. İnsanlar yaşamlarına devam edebilmesi için tarımsal, bitkisel ve hayvansal ürünlerden elde edilen işlenmiş ve işlenmemiş besin maddelerini tüketmesi gerekmektedir. Dünyadaki coğrafi şekillerin çeşitlilik göstermesi dolayısıyla farklı iklim tipleri oluşmakta bu durum ise değişik tarımsal, bitkisel ve hayvansal ürünlerin yetiştirilmesine olanak sağlamaktadır. İnsanların ihtiyacını karşılayan bazı tüketim ürünleri dünyanın birçok ülkesinde yetişirken bazıları ise

kısıtlı bir coğrafi alanda yetişme imkânı bulabilmektedir. Sadece Akdeniz iklim özelliklerinin egemen olduğu yerlerde yetişebilme imkânı bulan zeytin ürünü de bu duruma örnek olarak gösterilebilir.

Zeytin ve zeytinin işlenmiş hali olan zeytinyağı geçmişten günümüze kadar uzun yıllardır üretimi, tüketimi ve ticareti yapılan ürünlerin başında gelmektedir. Akdeniz iklimini sembolize eden bitkisel ürünlerden olan zeytin ve zeytinyağı insan sağlığına olumlu etkileri dolayısıyla önemini her geçen gün arttırmaktadır. Dünyada zeytin ve zeytinyağı sektörünün öneminin artması bu ürünleri üreten ve ticaretini yapan ülkeler ve firmalar için ekonomik açıdan önem arz etmektedir. Avrupa Birliğine mensup ülkelerden olan İspanya, İtalya, Yunanistan Dünya zeytin ve zeytinyağı sektöründen yüksek oranda pay almaktadır. Türkiye'de bu sektörde kendinden söz ettiren önemli ülkelerdendir. Türkiye açısından zeytin ve zeytinyağı sektörü ekonomik getiri potansiyeline sahip iş alanlarındandır. Zeytin ve zeytinyağı sektöründe üretim ve ticari konularda problemler yaşanmaktadır. Bu problemlerin çözüme kavuşturulması için hem kamu hem özel kesim çalışmalarını sürdürmektedir. Türkiye'nin 2023 yılı ticari hedefleri arasında zeytin ve zeytinyağı sektörü de bulunmakta ve bu ürünlerin ihracatından 3,8 milyar Amerikan Doları gelir elde edilmesi amaçlanmaktadır. Ülkemizde ekonomik büyüme rakamlarının artış gösterebilmesi için ticari alanda faaliyet gösteren kurum ve işletmelerin üretim ve akabinde ihracat gelirlerini arttırması gerekmektedir. Türkiye'nin ekonomisine ihracat gelirleri ile pozitif etki yaratmakta olan zeytinyağı ürünü de bu tez kapsamında değerlendirmektedir.

Anahtar Kelimeler: Zeytin, Zeytinyağı, Ekonomik Büyüme, İhracat, Türkiye.

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EU: European Union

USD: United States' Dollar

TSI: Turkish Statistical Institute

TURKSTAT: Statistics of Turkish Statistical Institute

R & D: Research and Development

GDP: Gross Domestic Product

FAOSTAT: Statistical Institution of the Food and Agriculture Organization of the United Nations

USA: United State of America

UK: United Kingdom

T.C.: Republic of Turkey

ADM: Archer Daniels Midland

LDC: Louis Dreyfus Company

FAO: The Food and Agriculture Organization of the United Nations

OECD: The Organisation for Economic Co-operation and Development

WTO: The World Trade Organization

GATT: General Agreement on Tariffs and Trade

TIM: Turkish Exporters Assembly

Ha: Hectare

Q: Quarter

CAP: Common Agricultural Policy

TRY: Turkish Lira

TGDF: Federation of Food & Drink Indusrty Associations of Turkey

ISIC Rev.3: International Standard Industrial Classification of all Economic Activities, Revision 3

SITC Rev.3: Standard International Trade Classification, Revision 3

KG (kg): Kilogram

TSE: Turkish Standards Institution

UNESCO: United Nations Educational, Scientific and Cultural Organization

EEC: European Economic Community

HS: Customs Tariff Statistics Position

WCO: World Customs Organization

IOC: International Olive Council

UK: United Kingdom

TARIS: Agricultural Sales Cooperatives Union

UZZK: National Olive and Olive Oil Council

EZZIB: Aegean Olive and Olive Oil Exporters' Association

EIB: Aegean Exporters' Association

SME: Small and Medium-sized Enterprises

SWOT: Strengths, Weaknesses, Opportunities, Threats

NX: Net Export of Olive Oil

Y: Gross Domestic Product or Income

ADF: Augmented Dickey–Fuller Test

PP: Phillips-Perron

JJ: Johansen-Juselius

VAR: Vector Auto-Regression Model

AR: Auto Regressive

ECT: Error Correcting Terms

SIC: Schwarz Information Criterion

VECM: Vector Error Correction Model

INTRODUCTION

Today developments in the fields of trade, social, cultural, political and technology are removing the countries from a closed economy. Countries have turned to implement an open economy model in their system. One of the characteristics of the open economy policy is export and import transactions. Export which is an easy and risk-free way of opening up to foreign markets is important to gain to the country's economy and their businesses. The olive and olive oil are important agricultural product in the World and Turkey. They create economic contribution to the countries' budget from the production stage to the consumption stage.

Rapid industrialization has been experienced in our country since 1980's. As a result of this, the importance of agriculture has decreased distressingly. Applied unstability agricultural policies and macro-based production planning can not be realized on our country. For these reasons, it is necessary to import some agricultural products from foreign countries to Turkey. Although, some agricultural products are imported, the export made in the agricultural products sector contributes to the Turkey's economy.

The olive oil sector is a business area that has economic importance and operates in many countries of the World. Special attention has been paid to the olive oil sector and its products within the scope of the common market organization in the EU. The EU's olive oil sector has a solid structure in terms of applied policies. Turkey is among the countries manufacturers and exporters in this sector. This situation provides an important position to the Turkey. Turkey has an important position in the sector but it has some problems in the production and marketing stages. And also the problems have not yet been fully resolved.

Olive oil is a product that increases its importance in the World because there are more positive effects on human health. For this reason, many countries of the World open their local markets to this product. In this case, if Turkey wants to retain its position in the olive and olive oil sector, consistent and modern policies must be applied to the sector. Additionally, Turkey must reach the same level with World and EU's standards in production and product quality for to talk about our identity in World olive oil markets.

Turkey which has a separate importance of growing olives in oil production has an important position in olive oil producing and exporting countries. Olive cultivition and production are made in 37 countries in the World and total of 7.5 million hectares are reserved or allocated for olive farming in terms of economic gain. The most appropriate region for the World olive growing is the Mediterranean Region. Approximately, 95% of the World olive production area is located in the Northern Mediterranean Region. In this direction, the countries where olive production is made in Turkey, Greece, Italy, Spain, Southern of France, North Africa and the some of Middle East countries. It is understood that geographical distribution and the countries are experienced in the Mediterranean climate that affect their olive production potential. In this case, Turkey has appropriate geography for olive production in terms of climate and soil properties (Ayanoğlu and friends, 1998. Yavuz, 2000).

The human body needs adequate and balanced energy from nutritions. Because of this reason, the human should consume olive oil that is the nutritious food and energy store. This phenomenon is accepted in the World day by day and this situation increases the consumption of olive oil by human.

Some countries in the EU are at the forefront of production and trade in the World olive and olive oil sector. And also these countries are leading this sector. Turkey is an important country in the World olive and olive oil sector. Also, the olive oil sector is supported by state of Turkey. However, Turkey's production, export and consumption amounts are not at the desired level. If Turkey wants to become a full member of the EU in the course of the proceeding, we must update our agricultural strategy that will similar to the EU's. And we should closely follow up the developments especially in its olive oil sector.

This thesis study is prepared and named is "The Relationship Between Turkey's Olive Oil Export Income And Economic Growth Figures, Olive Oil Sector Problems And Solutions Proposals In Turkey''. The first chapter of this thesis informs about basic characteristics and structural state of agriculture sector in the World and Turkey. In the following sub-section includes; the share, importance and location of agriculture sector in Turkey's economy. And the impact of agricultural activities on the economic growth figures for Turkey by examined with secondary data. In the second chapter of the thesis informs general information about olive and olive oil products and sector. Also these products' productions, consumptions, imports, exports and economic value amounts tabulated and interpreted according to the World's, EU's and Turkey's official statistics. And then in the same section contains sector's problems, current strategies and policies in the agricultural field in Turkey. The benefits of olive oil to human health are also among the subheadings of the second chapter. In the third chapter of the study includes Turkish Statistical Institute's (TSI) published secondary datas which relevants to economic growth figures and olive oil's net export incomes contain limited time interval is 1999:1stQuarter-2017:1stQuarter to make an econometric analysis. In addition to this division, econometric analysis has been evaluated and interpreted. Literature review, general results of the research, recent reviews and suggestions about the subject exist in the last past of the chapter.

Olives have the potential to grow in areas where Mediterranean climate is available. Also, the olive product is known as an agricultural and herbal product. For this reason, the inclusion of the World's agricultural products sector in the thesis content and to give information about it is important for the better understanding of the subject.

As everyone knows, two kinds of products are obtained from the grown raw olives. One of them is table olive and the other is olive oil. Usually in Turkey, a majority of grown olives are used into olive oil production.

From commercial and economic perspective, olive oil sector has one of the high potential sectors that can contribute economic gain to our country. For this reason, the table olive sector is not included in many parts of the thesis when it prepared. However, when it is deemed necessary, the table olive sector is emphasized both with the datas and tables in the suitable sections. Therefore, the

olive oil product and its economic impact taken up as a main thesis topic and a detailed examination and research about it were carried out.

The main aim of this thesis is making economic analysis in between Turkey's olive oil export income and Turkey's economic growth figures. Also the result of this econometric analysis interprets. Furthermore, examination of the problems experienced in the olive and olive oil sector and suggestions for solving these problems carve out the content of the study.

Other general objectives of the work are listed below;

- To share general informations about the World's and Turkey's agricultural products sector,
- To explain the structural features of the Turkey's agricultural products sector, relation of agricultural products sector to other sectors in Turkey and interpretation of economic data of this industry,
- To give informations about the current situation of table olive and olive oil sector in the World, in the EU and in the Turkey and to examine the datas in this industry,
- To determine the problems are experienced in the table olive and olive oil sector in Turkey and to make assessments for solving these sector problems,
- To provide informations about the current applications of the authorized institutions and organizations in the table olive and olive oil sector in Turkey. And to examine its support policies and the consequences of these situations,
- To suggest some points to do for to be in a better position in the table olive and oil olive sector of Turkey in the World.

This thesis is prepared because; to guide for researchers who want to learn about olive and olive oil sector in the World and in Turkey and to olive and olive oil producers or manufacturers who want to take a part of this sector and exporters who want to trade olive oil products. Also the guidance is giving information to economists about relationship between olive oil sector's export revenues and its contributions to the Turkey's economy. In addition, the guidance of this thesis is making some recommendations and suggestions to the public and private sectors for the development of Turkey's olive and olive oil sector. Additionally, the academic community can be benefited from this thesis.

CHAPTER I

ONE OF THE IMPORTANT SECTORS WHICH AFFECT THE ECONOMIC GROWTH OF TURKEY: AGRICULTURAL PRODUCTS SECTOR

1.1 The World's Agricultural Products Sector

The impact of globalization is felt more and more every day since from 1980s. Liberalization and competition in trade of goods, services, financial instruments and capital are increasing with globalization. It is only possible to have sustainable economic development and high competitiveness for countries in which should work at the maximum level in all sectors. For this reason, firms' relationship should be established between sectors in the developed economies strongly. Actually, it is necessary to establish a production process in which the sectoral activities are intertwined. At this point, the agricultural sector is one of the key sectors in among economic sectors (Peker, 2014:79).

The agricultural products sector remains its characteristic as an independent and sensitive sector. In the agricultural sector, state intervention and regulation is intensified in developed countries. The greater share of the agricultural sector is in the national income of a country and how fast the growth rate of the agricultural sector is in a country so the higher contribution of the agricultural sector to the economic development of that country (Kazgan, 1966).

Agriculture sector interacts with many sectors and it provides to supply many raw materials to the agriculture based industry. Also the agricultural sector contributes to the economy by purchasing goods and services from other sectors. Growth figures that to be experienced in the agriculture sector will also increase commercial relations between the sectors. As a result of this situation, the agricultural sector will integrate with the economy and assist the industry and other sector development (Dura, 1987).

Global market unstability, economic crisis, animal diseases and climate changes negatively affect the agriculture sector. In addition, population growth increases the concern of insufficient supply of food situation. It is expected that the World population will be more than 9 billion people in the 2050. Because of this situation, to feed the World population in 2050, food production has to be increased by 70% in developed countries and 100% in developing countries (Ege et al., 2006: 9). Even if the agricultural sector has been lost its commercial and economic significance, it is a strategic sector in terms of to meet human nutrition needs and to provide raw materials to other sectors.

There are many academic and scientific studies about on the agricultural sector and agricultural production in the World and Turkey. It will be appropriate to explain the terms of agriculture and agricultural production before the World agriculture sector begins.

Agriculture is the production and evaluation of plant and animal products. *Agricultural production* is described as the art of obtaining crops and animal products by using land and seeds. Also it is processing and commercializing these products as semi-finished or finished products (İnan, 1992).

There are three forms of agricultural production: (Bilgen, 2014:36-37).

1. *Herbal Production* is to obtain crops such as vegetables and fruits using seeds and lands. Herbal production is also divided into subgroups;

a. Field Crop
   i. Grains (wheat, barley, corn, rice, etc.)
   ii. Legumes (beans, chickpeas, lentils, vetch, etc.)
   iii. Industrial Plants (beet, cotton, tobacco, etc.)
   iv. Tuber Plants (potatoes, onions, etc.)

b. Vineyard and Garden Farming
   i. Fruits (hard and soft seedy, citrus fruit, etc.)
   ii. Vegetables (leaf, lump, flower and fruit-eaten vegetables, etc.)
   iii. Viticulture or Vinegrowing
   iv. Olive Cultivation

c. Cultivation of Ornamental Plants
   i. Hall Plants
   ii. Landscape Plants

2. *Animal Production* is to raise animals and obtain animal products from them. Animal production is also divided into subgroups;

a. Cattle Breeding (milk, meat cattle, etc.)

b. Small Cattle Breeding (sheep, goat breeding, etc.)

c. Poultry Farming (poultry, livestock, etc.)

d. Beekeeping

e. Alternative Animal Farming (horse, silkworm, fur, etc.)

3. *Agricultural Arts - Processing of Agricultural Product* is to process vegetable and animal products into semi-finished or full products and add new value to the this product. Agricultural Arts - Processing of Agricultural Product is also divided into subgroups;

a. Food Arts (flour industry, sugar industry, oil industry, fruit and vegetable processing industry, etc.)

b. Liquor Arts (beer, wine, yeast, etc.)

c. Village handicrafts (weaving, paint, etc.)

1.1.1 Agricultural Production in the World

Many academic publications mention that countries are more becoming dependent on each other in agricultural products. Also, this situation is evidenced by shared official data. It is expected that agricultural products dependency will reach even higher levels in the coming periods. Because it is predicted the human population will be 9 billion in 2050. In addition to this, the amount of arable land is decreasing due to climate and urbanization features. This indicates that the need of agricultural products will be a critical factor. The economic, social and geographical changes on the global scale are affecting the agricultural sector. Contraction will occur in water resources and climate change that will affect to limit food production amount. Because of these conditions are happening now, the importance of research and development (R & D) in agriculture field is increasing (Büyükekşi, 2016:2).

In the 2000s, the increases in the production amount of World agricultural products were above the production amounts in the 1990s. The increase in production due to regional differences brought about the change and development in the foreign trade of agricultural goods (Çakmak and Kasnakoğlu, 2016:16).

South East Asia and South American countries stand out as the places where the highest production level and the increasing production amount in the World agricultural products sector. The share of North America and Europe in the World production and in the World trade is decreasing. In the last quarter of the century there have been two major events in the foreign trade of agricultural products. World agriculture-food trade has grown by an average of 5% per year in real terms from 1990's onwards. Developing countries are on the export and import side of this high rate of growth. South American countries are in the export side with increasing production volumes and African countries are in the import side with increasing commercial income (Çakmak and Kasnakoğlu, 2016:16).

Many of the information about agriculture, olive and olive oil sectors which are contained in this study are supported and proven by the official tables and figures. The informations in tables and figures guide us to better understand the subject. Because of this reason, table 1 that is in the below and provides a better understanding of the agriculture sector with data and informations.

Table 1: The World Cereals, Fruit, Vegetable Production Amount (Million Tonnes)
Source: FAOSTAT, 2012.

Years	World Cereals Production Amount	World Fruit Production Amount	World Vegetable Production Amount
2000	2.062	476	781
2001	2.058	478	809
2002	2.108	487	837
2003	2.030	500	866
2004	2.089	526	876
2005	2.278	535	899
2006	2.265	557	932
2007	2.233	565	962
2008	2.353	591	994
2009	2.525	605	1.019
2010	2.498	613	1.048
2011	2.476	637	1.087
2012	2.591	636	1.106

When Table 1 is examined; the production of cereals was 2.062 million tonnes in 2000; it was reach to 2.591 million tonnes in 2012. The production of fruit was 476 million tonnes in 2000; it was reach to 636 million tonnes in 2012. Also, the production of vegetable was 781 million tonnes in 2000; it was reach to 1.106 milyon tonnes in 2012. The World production amount of agriculture products has generally increased therefore there has been a few decline in production amount for some years.

1.1.2 Economic Structure of the World Agriculture Sector and Foreign Trade

The first economic and commercial activity has been carried out by people in the field of agriculture. In recent years, the agricultural products sector has received a low share from the total World trade of goods and services. However, the agriculture sector is one of the important issues in foreign trade negotiations. Because a person's basic food and consumption source is provided from agricultural products. Today, the share of agricultural sector in the developed countries' GDP is between 2% or 3%. This situation indicates that the agricultural sector is declining in the developed countries. In developing countries such as Turkey, impacts of export in agricultural products are decreasing over the years on the total economy. Nevertheless, the sector remains its importance and long-lasting features.

When the economic growth processes of developed countries are examined, it is seen that these countries are first agricultural countries and then industrial countries. As the development levels of the countries rise, the share of the industry, trade and finance sectors increase in the economy while the share of the agricultural sector is decreasing inside that. This shows us that; there is an inverse relationship between the level of development of the countries and the agricultural sector.

Economic development and upgrade the level of the country's welfare which is the main objective of the countries. If countries want to achieve their stated economic goals, they must realize the necessary conditions for economic growth.

What is this economic growth?

Economic growth can be defined as an increase in national income or per capita income over a limited period of time.

In other words of economic growth that increases in the capacity of the country's production in the goods and services sector also is measurable numerically (Berber, 2004:10).

If a country succeeds to provide about stable economic growth issue; country reduces the unemployment rate, increases purchasing power and consumption amount, individuals earn more per capita income, amount of incomes rise in the government budget, foreign investment increases and the local currency gains value in the World money market (Güven, 1995:12).

When the countires economic growth figures are examined, it is seen that the high increase rates are trended towards the developing countries. Classical industrialized countries such as; USA, Japan, Germany, United Kingdom (UK), France, Italy, Canada, Netherlands, Belgium, Sweden are gradually decreasing their importance in the World economy. The completely reverse; developing countries such as; China, India, South Korea, Indonesia, Turkey, Malaysia, Thailand and Egypt are gradually increasing their importance in the World economy (T.C. Kalkınma Bakanlığı, 2013:17).

In the last 40 years, the World's total foreign trade volume has increased about 60 times. Nevertheless, the World agricultural products sector's foreign trade volume has increased by 25 times. Decreasing transportation costs, diversification and acceleration of logistics activities have a positive effect on commercial life. In addition, trade agreements that are signed by between countries improve the global trade. The agricultural sector has also taken its share from the changes that have taken place in recent years (Büyükekşi, 2016:2).

The value added is created by agricultural products constitutes 3%-6% of the World GDP. In Turkey 1970, this rate was 30% but now this rate has fallen to 8%. 20 countries are producing 78% of the World total GDP and they constitute 56% of the World agricultural GDP. Turkey has the 18th largest economy in the World and also Turkey has the 9th position in the creation of value-added in terms of agricultural products. There is a decrease rate in the importance of agricultural products in Turkey's total foreign trade. The reason for this situation is transfer of foreign trade and value added from unprocessed agricultural products classified as agricultural exports to processed agricultural products. Indeed, in Turkey exports of agricultural products has increased 5.5 times in the last 25 years (Çakmak and Kasnakoğlu, 2016:17).

The basic policy is that countries should implement it. That is selling the agricultural goods and services to abroad as it is in all sectors. Exporting the raw materials with a low unit price and importing the intermediate or final goods with a high unit price damages the country's economy. Importing the raw materials and processing and then selling these products from our country are a good situation for economic growth and economic development.

Today's industrialized and developed countries have come to the position where they have been using the agricultural sector at the most appropriate level. Some countries have benefited from the financial strength which is gained from the sales activity of agricultural products when building their heavy industries. When the economic development processes are examined for industrialized countries, it can be seen that the contribution of agriculture sector to economy decreases day by day. But, the agricultural sector has an important part in the newly industrialized and developing countries' economy.

USA, Netherlands, Germany, Brazil and China are the World's largest exporters in the agricultural products sector. The share of these 5 countries exceeds 30% the World's total export of agricultural products. China, USA, Germany, Japan and France are the World's largest importers. These 5 countries realize the 40% of World total imports. In shortly; USA, Germany, Holland, France, China, India and Brazil which are dominating the World's agricultural sector. Also Indonesia, Turkey, Canada, Russia follow the leader countries in the sector. According to these situations, approximately half of the World supply and demand of agricultural products is carried out by these countries.

The Archer Daniels Midland (ADM) Company, the Bunge Company, the Cargill Company and the Louis Dreyfus Company (LDC) which are referred to ABCD Group and all of them are originated in developed countries. These four international businesses (ABCD Group) realize 75%-90% of the World cereal trade (Çakmak and Kasnakoğlu, 2016:17).

Between 2002 and 2013, agriculture-food sectors' foreign trade has increased approximately 3 times in the World. The source of this movement in the markets is occurred by developing countries. According to the OECD and FAO estimate that USA will increase owns export quantity and its value dominantly. Also USA's export is supported by its south. The export amount of Western Europe will not increase and its position as a net importer will continue. Import demand will rise because of increasing population and rise of income in Africa and Asia (OECD, 2014:61).

Due to globalization, the agriculture sector quickly integrates with other sectors in the World. As a result of this situation, the global foreign trade volume of agricultural products increased by an average of 53% in real terms between 2003 and 2013 (FAO, 2015:89).

In the last decade, the increase in global trade has contributed by the agricultural product exports of developing countries. Between 2004 and 2013, the increase in the total agricultural product exports of developing countries was 199% that of developed countries was 135%. In this sense, global agricultural foreign trade has undergone radical changes (Çakmak and Kasnakoğlu, 2016:66).

According to the OECD's and FAOSTAT's agricultural sector reports; it is stated that the markets react to the prices of agricultural products. Because of products price are high and there is a fluctuating in the World market. As a result of this situation, the price of agricultural products will be reduced but if the demand amount to agricultural products continues strongly and if the costs of some agricultural inputs increase, it is stated that prices of agricultural products will rise to a higher level (OECD and FAOSTAT, 2014).

In 2014, the World's total foreign trade volume was 19 trillion US dollar. Agriculture-originated product export volume (agriculture, food and textiles) had created a value that was over the 2.5 trillion US dollar. This export value was equivalent to 15% of total global foreign trade. 40% of the World total exports, which was approximately 19 trillion US dollars, had been made by China, USA, Germany, Japan and Netherlands. In 2014, Turkey was ranked on 30th with a share of 1% in the World total export list (Çakmak ve Kasnakoğlu, 2016:36).

Table 2: The World Agricultural Goods and Products Export Value (Billion US $)
Source: WTO, 2016.

Agricultural Export			
Rank	**Country**	**Billion US $**	**World Share**
1	USA	182	10,3%
2	Netherlands	112	6,3%
3	Germany	101	5,7%
4	Brazil	88	5,0%
5	China	85	4,8%
6	France	81	4,6%
7	Canada	68	3,9%
8	Spain	55	3,1%
9	Belgium	50	2,9%
10	India	47	2,7%
26	**Turkey**	**18**	**1,0%**
	Top 10	870	49,3%
	Top 20	1.231	69,7%
	World	1.765	100%

When table 2 is examined; USA, Netherlands, Germany, Brazil and China are among the World's largest agricultural exporters countires. The share of these five countries is 32% in the total exports of agricultural products. Turkey is ranked on 26th with a share of 1% in among the exporter countries of agricultural products. The share of the top 10 largest exporters has 50%. And also the share of the top 20 largest countries reaches to 70%. The World's largest importer countries are China, USA, Germany, Japan and the UK. These five countries make 40% of the World's total imports. Turkey has 1.3% share and its rank is 17th among the World importer countries.

Table 3: The World Agricultural Goods and Products Import Value (Billion US $)
Source: WTO, 2016.

Agricultural Import			
Rank	**Country**	**Billion US $**	**World Share**
1	China	201	10,7%
2	USA	157	8,4%
3	Germany	119	6,3%
4	Japan	82	4,4%
5	Netherlands	76	4,0%
6	United Kingdom	75	4,0%
7	France	71	3,8%
8	Italy	63	3,4%
9	Belgium	47	2,5%
10	Russia	43	2,3%
25	**Turkey**	**18**	**1,0%**
	Top 10	933	49,8%
	Top 20	1.225	65,4%
	World	1.873	100%

When table 3 is examined; the largest agricultural importer countries are China, USA, Germany, Japan, Netherlands and UK. These six countries make approximately 38% of the World's total agricultural imports. The share of the top 10 largest and the top 20 largest importer countries respectively are 50% and 65% in agriculture imports. Turkey is ranked on 25th with a share of 1% in among the importer countries of agricultural products. Turkey is located within the first 10 countries in the World agricultural production. But Turkey remains outside the top 20 countries in the ranking of export of agricultural products.

Table 4: The World Trade Summary (Billion US $)
Source: WTO, 2016.

Country	Total Export	Total Import	Export of Agricultural Product	Import of Agricultural Product
Turkey	158	242	18	18
China	2.868	2.571	85	201
Top 5	6.881	7.019	568	565
World	18.995	19.104	1.765	1.873

When table 4 is examined; USA, China, Brazil, Germany and Netherlands are the five largest exporter countries in the World agricultural products sector. At the same time, these countries are among the largest agricultural importer countries in the sector.

1.2 The Effects of Multilateral Commercial Agreements on the World Agricultural Sector

The principles of trade agreements has started with the General Agreement on Tariffs and Trade (GATT) were based on the 1950s. Until the mid-1960s, negotiations on the necessity of applying customs tax only in industrial goods were made. Moreover, other countries joined the aggrements. The treaty renewed seven times and liberalization in the trade of industrial goods had been achieved. The Uruguay Round Trips started in the mid-1980s and this round was continued for 10 years. At the end of 10 years of negotiation, the content of the agreement or its name is *round* had been expanded and for the first time, the agriculture sector had been involved in multilateral trade negotiations. Protection is being implemented by developed and developing countries to agricultural commodities in the foreign trade. From the 1950s to the 1990s, developed countries supported their agriculture sector with various measures such as producer subsidies, high customs duties and non-tariff restrictions on imports. As a result of effective policies, it is necessary to sell the goods to foreign markets due to the growing agricultural sector and increasing production in USA and EU. In contrast, developing countries have taxed on export goods indirectly by adding extra taxes, by intervening in sales prices and by appling exchange rate policies. They also tried to apply low prices in agricultural and food sector in the country.

The World Trade Organization (WTO) is established in place of the GATT. WTO has carried out some actions on the agricultural sector. The WTO's main aim is to achieve to create an equitable and market-friendly agricultural-trade system by the general agricultural treaty.

Countries earn foreign currency from foreign trade of agriculture products. Foreign currency entry to country is provided in three ways. The first of these is agricultural products of countries are exported for to provide foreign currency to the country, the second of these is the creation of import substitution and thus to prevent the outflow of foreign currency to abroad, the third of these is as a result of the development of the industrialization based on agriculture, foreign currency entry into the country that is provided by export of raw materials and consumption goods (Deran, 2005:20).

With the work of developed countries such as the USA and the EU provide some exemptions in each area to developing countries for to accepted their general agricultural agreements. And then these countries have accomplished their aims. Now, the World has taken great steps to liberalize in the agricultural trade. With the 1990s reforms, developing countries have reduced their barriers to agricultural trade. Protectionism practices have begun to decrease with these reforms in agricultural subsidies in developed countries (Aksoy, 2005:61).

Despite the fact that many countries of the World are negotiating about on the agricultural sector, there is no clear result from these negotiations. Main reasons for not making clear decisions from negotiations are; the WTO's Agricultural Agreement is not able to take advantages of the level that is expected to have in the developing countries in the market. Other is the requirement of liberalization in other sectors in order to ensure that developed countries can easily access agri-food markets. Against to these situations, some countries make preferential and free trade agreements with each other, thus they increase their trade economies.

The policies that are effective governments have implemented them in the agricultural sector. Since the 20^{th} century developed countries have protected their agricultural sectors with customs taxes and quantitative restrictions. Also, developed countries have provided financial supports to those who are operated in the agricultural sector. This type of supports negatively affects the production quantity and its unit prices. Such practices should only increase farmers' incomes without directly affect production and consumption.

1.3 The Leader Countries in the World Agriculture Sector

The leader countries are USA, EU (Germany, Netherlands, and France), China, India and Brazil in the World agricultural sector. Indonesia, Turkey, Canada and Russia are followed them. These big countries are affecting the supply and demand structure of the World agricultural sector market.

Table 5: The Selected Countries Supply and Demand Share in the World Agriculture Sector (%)
Source: TIM, Agricultural Report, 2016.

Share (%)	USA	Germany	Netherlands	China	India	Brazil	Indonesia	**Turkey**
Agricultural GDP	5	0,7	0,5	21	8	3	3	2
Agricultural Employment	0,3	0,1	0	35	25	2	5	1
Food Agriculture Exports	10	6	6	5	3	5	3	1
Total GDP	16	4	0,1	16	7	3	4	1
Food Agriculture Import	8	6	4	11	1	0,8	1	1

When table 5 is examined; China, India and USA are the important countries in the World agriculture sector. Turkey has ranked as a last among the countries in the table. However, the economic benefits created by the agricultural sector to keep Turkey in a better position than many other countries.

1.3.1 International Organizations Operates in the World Agricultural Sector

The organizations that organize internationally also affect to the structure of the World agriculture sector. The names of the organizations that guide the World agriculture sector are given below. Turkey is situated in the collaboration with these institutions and organizations.

1) The Food and Agriculture Organization of the United Nations (FAO),
2) World Food Programme (WFP),
3) International Fund for Agricultural Development (IFAD),
4) World Trade Organization (WTO),
5) World Health Organization (WHO),
6) World Bank Group (WBG),
7) International Monetary Fund (IMF).

1.3.2 International Companies Operates in the World Agricultural Sector

The leader countries that guide the World agriculture sector are shown in table 5. Also, large firms are operating in this sector. According to the producers' giro in the World agriculture sector, the top 10 commercial companies are given in table 6. Giro of these top 10 companies which are in table 6 are in between 60 - 300 billion US $ in the year of 2012. Also, the total giro of these top 10 companies is 1.34 trillion US $.

These big firms work to trade in the herbal oil, mining, energy, grain, oilseed and sugar sectors. The Archer Daniels Midland Company (ADM) and Cargill Company are the World's largest agro-food trading companies among these companies. Also the Bunge Company and the Louis Dreyfus Company (LDC) which are members of the "*ABCD Group*" are working in the global grain trade sector. It is estimated that these four companies (Archer Daniels Midland, Bunge, Cargill and Louis Dreyfus Company) make 75%-90% of the World grain trade. ABCD group's main activity is unprocessed product trade. In other words, these companies supply raw materials to agriculture sector rather than consumption goods production. The ABCD group does not only trade agricultural products. Also the ABCD group provides inputs to food chain, it has landowner, it makes animal breeder, it produces foods, it is financiers and carriers in the sector. There are commercial activities in many countries around the World. They have 250 thousand employees and their giro exceeds 300 billion US dollar. They also gain approximately 3 billion US dollars profit. These oligopoly companies also affect market prices (Çakmak and Kasnakoğlu, 2016:19).

Table 6: The World's Largest Commodity Trading Companies
Source: Szala, 2013.

Name of Company	2012 Revenue (Billion US $)	Commodities	Orijin of Company
Vitol	303	Petroleum, Gas, Mine, Sugar, Grain, Agriculture Products	Swiss, Netherlands
Glencore	236	Coal, Mineral, Petroleum, Grain	Swiss
Cargill	134	Energy, Food, Biofuels, Steel, Salt	USA
Trafigura	120	Energy, Mine	Swiss
Koch	115 (2011)	Coal, Petroleum, Petrochemical, Forest Products and Paper	USA
Mercuria	98	Energy, Natural Gas, Mine, Biofuels	Swiss
Noble	94	Energy, Mine, Grain, Oil Seed	Hong Kong
Gunvor	93	Petroleum Products, Biofuels, Grain	Cyprus
Archer Daniels Midland Co (ADM)	89	Oil Seeds, Corn, Wheat, Cocoa, Transportation, Storage	USA
Bunge	61	Grain, Oil Seed, Sugar, Ethanol, Seed	USA

Table 7: The ABCD Company Group in the World Cereal Trade
Source: Murphy, 2012.

Company	2011 Sales (Billion US $)	2011 Profit (Billion US $)	Working Staff Number	Operational Number of Countries
ADM	81	2.04	30.000	75
Bunge	59	0.94	32.000	40
Cargill	120	4.2	120.000	66
Dreyfus	60	?	34.000	55

Another characteristic of these companies are mentioned in table 7 is the closeness to the lands. These companies are engaged in contracted agriculture and agricultural goods purchasing. In addition to these jobs, they are engaged in production activities at the some places. These firms are influencing the agro-food industry in the countries with their lobbying activities.

1.4 The Foreign Trade Problems in the World Agricultural Sector

Businesses which are dealing with foreign trade of agricultural products are bringing up sector problems on various platforms. These problems are high costs of raw materials, low returns from trade, internal savings that can be under the control of the enterprises, external savings that can not be under the control of the firms. In addition, some of the situations that are said to be problems sourced by nationally and some of them sourced by internationally.

These problems can vary the between businesses. And each problem is not as important as for every firm. Current problems in foreign trade are; uncertainty and unstability in the markets, unfair competition, non-tariff barriers, high freight, tax and transaction costs, high raw material and intermediate goods cost, not to produce products at competitive unit price, marketing and financing problems and also incentives inadequacies as known. In order to solve these problems, agricultural policies and foreign trade legislation needs to be updated.

The agricultural sector is in interaction with trade, transportation, finance, industry sectors directly and indirectly. In addition, all sectors are affected by many factors such as interest rate, exchange rate, inflation, gross wage, tax base etc.

1.5 Agricultural Products Sector in Turkey

Geographically Turkey has mountainous terrain. Because of this reason, there is a strong relationship between Turkey's climates feature and earth's shape. 24.5% of the total land which is in Turkey has 1st, 2nd and 3rd class of soil. In these three classes of soil structure, the share of agricultural land is 90% in these three classes of soil structure. 77.9 million hectares (ha) of land asset is located in Turkey. 26.3 million hectares of this land is as an agricultural area. Turkey's agricultural structure is based on private property and also this structure is dominated by small family businesses. The total population of Turkey has increased nevertheless there is a decrease in the population who operate in the agriculture sector. This situation shows that there is urban migration from rural areas. In the same way, the employment amount in the agricultural sector has decreased, although general employment has increased. In the last 13 years, about 2 million farmers have left their lands. The income which is gained from agriculture has increased to 62 billion TRY, but the share of agriculture has decreased in the national income. In this time period, the contribution of the agricultural sector to the national economy or income has decreased from 10.3% to 7.1%. According to the TURKSTAT's employment data; in 2002, the number of farmers who are gained reveneu from agriculture was 7 million 458 thousand. This figure declined to 5 million 473 thousand in October 2015. And also the share of agriculture in the GDP has decreased to 7.1% (Yıldız et al., 2017:12).

In 2012, distribution of Turkey's total planting area was; cereal planting area was 65.43% that was equal to 15.47 thousand hectares. Fruit planting area was 13.49% that was equal to 3.21 thousand hectares. Vegetable planting area was 3.49% that was equal to 0.83 thousand hectares. And fallow area was 17.95%. When the distribution of cultivation areas is examined; it is observed that most cereal sowing was carried out in Turkey (TURKSTAT, 2013).

Agricultural production is affected by natural conditions. Also, the agricultural sector is influenced by many external factors. These factors are; weather conditions, climate structure, size of planted area, use of technology, irrigation conditions, training and experience of employment. Demand for agricultural products is increasing due to population growth. This situation increases the production of agricultural products and agricultural-based industrial products obligatory. This indicates that the agricultural sector is a strategic sector.

The producer determines the plant and animal production plan and diversity of them according to the natural conditions. In the agricultural sector in our country, the production technique is backward, capital is limited and organization is insufficient. These conditions affect the diversity, quantity and quality of the production.

The quantity and quality of the product are important in the agriculture sector. In Turkey the efficiency is low in the production of agricultural products. Because of this reason, the country's needs are not supplied in the desired amount. Therefore, this product deficit is closed by import. Some factors affect productivity and sustainable production in the agricultural sector. These are socio-economic structure, education and climatic conditions (Yıldız et al., 2017:48).

The agriculture sector in Turkey is important because it meets the population's nutritional needs, provides raw materials to all of indusrty, creates big employment potential and avoids food dependency to other countries and positive contributions on the country's balance of payments.

Table 8: The Agricultural Area are used in Turkey (Hectar)
Source: TURKSTAT, 2016.

Ha (Hektar)	2001 (1.000 ha)	2015 (1.000 ha)
Agricultural Area	40.967	38.547
Machinable Area	26.350	23.930
Arable Area	23.740	20.646
Cultivated Area	17.917	15.723
Fallow Area	4.914	4.114
Vegetable Cultivated Area	909	809
Long Life Plants Area	2.610	3.284
Vineyard Area	525	462
Olive Area	600	837
Other Fruit, Hard Crustaceans Area	1.485	1.985
Meadow and Grassland Area	14.617	14.617
Covered Farmland Area	43	65

Table 8 includes data about the agricultural area that are used in Turkey. According to the data; there has been no major change in agricultural area since from 2001. Areas are used for agricultural production since from 2001 to 2015, 2 million hectares declined to 38.5 million hectares. During the same period, the meadow and rangeland statistics did not change. There was a small decrease in the fallow area. The increase in fruit and olive fields attracted attention. A decline of more than 2 million hectares in the cultivated area has been compensated with an increase in fruit fields.

In 2002, planted and cultivated area in Turkey had 26 million hectares of agricultural land. It can be stated that the total agricultural area was 41 million hectares with meadow and grassland. In 2014, planted and cultivated area in Turkey had 23 million hectares of agricultural land. It can be stated that the total agricultural area was 38 million hectares with meadow and grassland. In 12 years approximately 10% of agricultural land which was planted and cultivated area disappeared, 6.4% of total agricultural land along with meadows and grassland area disappeared (TURKSTAT, 2015).

Climate change affects the agricultural sector. These affects are biophysical, ecologic and economic. Climate change will adversely affect the risky countries which one is the Turkey. Turkey's interior and a large part of the eastern regions are arid lands and prone to desertification especially Southeastern Anatolia Region (Türkeş, 2007).

1.5.1 Developments in the Field of Agriculture after 1980s in Turkey

After 1980, in Turkey had significant improvements in the agricultural field with the decisions taken by the government. And the structure of the industry was affected by improvements. Abandonment of import substitution is important development for Turkey's all of sectors. In this period as well as in every sector, growth of open economy policy was implemented in agriculture sector. In this globalizing environment, countries have adopted some liberal policies to open their economies to foreign capital and investment. It was aimed to upgrade the level of development of the country with the free and open economy model that is known as "*24 January Decisions"*. The decisions of January 24, 1980 were aimed to pay foreign debts and make economic growth with exports. In Turkey's economy after 1980, the most important change has been taken place in the area of foreign economic relations with other countries.

The objectives of the Decisions of January 24 were liberalization in imports and foreign trade transactions, open economy applications, entry of foreign products into the domestic market, directing international competition pressure to foreign markets, export promotion and competition of domestic products in the outer market.

Agricultural products export owned the biggest share in the total export of Turkey until 1981. However, with the January 24 Decisions, the share of non-agricultural product sectors export started to increase in the total exports. This case shows that the Decisions of the January 24 affected to the Turkey's agriculture sector negatively. While these situations were happening, agricultural incomes decreased because the prices of the products had been kept low in order to increase the exports.

The agricultural sector has a dependency on the natural conditions and due to the free competition approach of the market system; the agricultural sector is not included in the market conditions in any country of the World. However the free market conditions in the agricultural sector were released in 1980 in the Turkey.

There were some big differences about policies in the Turkey's agriculture sector between 1980s and 1990s. In the 1990s, Turkey was trying to implement the Common Agricultural Policy (CAP) principles in there which were applied in European countries. As a result of lengthy negotiations, Turkey has been joined the Customs Union on 1 January 1996. Within the scope of the Customs Union, only industrial products and processed agricultural products are exempted from customs

duties and taxes. However, traditional and unprocessed agricultural and herbal products are excluded. In the later process, Turkey continued to bring their work to fulfill the Customs Unions' and the European's CAP obligations in the field of its agriculture. However, economic problems had been encountered in Turkey. In order to solve these economic problems, *"Agricultural Reform Project"* was started with the contributions of the World Bank in Turkey. The main purpose of the implementation of the Agricultural Reform Project was to find a place in the European Agricultural Development Agreement and to get more shares from the World agricultural trade.

Also, as a result of Uruguay Round Negotiations, 125 countries agreed on the "Agricultural Agreement of World Trade Organization" which has included the standards, characteristics and future of the World agricultural sector. As a continuation of these negotiations; Seattle Conference, Doha Talks were done.

1.6 The European Union's Common Agricultural Policy's (CAP) Importance for Turkey

The CAP of EU is important because the agricultural products sector is directly linked to nutrition and a large part of the EU' budget is allocated to the CAP. The CAP aims to prevent possible food shortages within the EU, to create efficiency, healthy and environmentally friendly production infrastructure and to remove the EU's external dependence on food sector. However, the CAP is a policy that disputes the EU countries and has the most debate among the union countries. Because of the EU's countries views, policies and systems are different from each other about the agricultural sector. The main objective of the EU's CAP is the free movement or circulation of agricultural products as well as industrial products in the union (Dinler, 1996:50).

As a result of these reforms, supports and purposes, the union members signed the Agreement on the CAP. Turkey also needs to adapt to the EU with established and concrete reforms in agriculture field. In these circumstances, various legal regulations are concerning with the agricultural sector have been made and started to be implemented.

Size of the sector, a significant portion of the Turkish society is interested in this sector and the reform process is in the CAP in the EU afftect the Turkey. Therefore, people who interested in the Turkish agricultural sector necessary to follow the practices and policies of the EU's agricultural sector (Bilgen, 2014:18).

1.7 Agricultural Production in Turkey

Agricultural activities are important for the survival of human beings and healthy nutrition. Agricultural products have never lost their importance because they are the main source of food that people need. And agricultural production has been one of the important fields of activity throughout history. Especially, since from the middle of the 20th century the World population has increased. Depending on this situation, the increases in food demand that shows the strategic importance of the agricultural sector for food supply. The agricultural sector is an economic sector that interests the producers and consumers (Fakıbaba, 2017:2).

The agricultural sector is separated from other sectors due to the demand characteristics of production and produced goods features. The high level of uncertainty that may occur on the production side that happan negatively affects small-scale producers.

Demands to the agricultural products are often not flexible. Unstable markets, high risks and low returns affect the market operations negatively. In addition to cover the basic food needs of the population, it is inevitable for governments to intervene in the agricultural market.

Agricultural production in Turkey exhibits a double or triple structure. There are small and large sized commercial enterprises which with high share in production and with contribution to exports. Also there are subsistence or semi-subsistence small businesses in the domestic market. They have a chance to live together in this field.

Because of the diversity of climatic and ecologic conditions provide a wide range of agricultural production in Turkey. In production, field crops such as wheat, sugar beet, barley, cotton and corn are dominant. Most of the grain products are self-sufficiency in Turkey. The production of legumes, rice, cotton and oilseeds generally does not meet domestic demand. Vegetables and fruits constitute the main items of agriculture-food exports due to excess supply. Table 9 includes the share of various agricultural commodities in the machinable area and agricultural production value.

Herbal production is concentrated and more than others in the agricultural sector. The share of animal products (or livestock products) in total agricultural production value is approximately rate of one third. The share of herbal production in the World total agricultural production is about 30%. The share of herbal production is at the level of 70% in Turkey's total agricultural production. Also, the share of animal production in the World total agricultural production is about 70%. The share of animal production is at the level of 30% in Turkey's total agricultural production.

The structure of agricultural production and agricultural policy in Turkey is different than other countries. Domestic subsidies are usually concentrated in field crops. Vegetable and fruit production in Turkey has approximately 40% share in the total value of agricultural goods production. The high level of protection in cereal crops and the intervention of the domestic market are affecting animal production and its products. The share of animal products has not increased due to high protection and high input costs in the livestock sector. As a result, Turkish consumers have to pay high unit price that is above the EU's average for livestock products.

Turkey is the largest manufacturer in nuts, cherries, figs, apricots and quince product in the World. There are small changes in the agricultural products amount from year to year in Turkey. However Turkey is in among the top ten countries in the 35 agricultural products. In 2016, the agricultural report published by the World Bank. According to the report; Turkey was ranked ninth in the World agricultural production, in 2014.

In the year of 2017, total agricultural support payment was 12.9 billion TRY that was shared by the government. In herbal production; 67.4 million tonnes of field crops, 22.2 million tonnes of fruit and 30.9 million tonnes of vegetables were produced.

There were 16.1 million cattle animals (big bovine animals) and 44.3 million small bovine animals. In animal production; in 2017 red meat production was 1 million 126 thousand tonnes, white meat production was 2 million 137 thousand tonnes, milk production was 20 million 7 thousand tonnes, eggs production was 19.3 billion pieces, honey production was 114 thousand 500 tonnes (Tunç, 2017:4).

Table 9: The Shares and Areas in Agricultural Production of Agricultural Products are grown in Turkey (%)

Source: TURKSTAT, 2015.

	2007			2014		
	1.000ha	**Million US $**	**Share (%$)**	**1,000ha**	**Million US $**	**Share (%$)**
Agricultural Production Value		60.858			70.057	
Herbal Production	24.887	43.357	71,2	23.943	44.640	63,7
Cereals and Other Field Crop	16.945	14.933	24,5	15.789	19.150	27,3
Cereals	12.403	8.964	14,7	11.727	10.963	15,6
Wheat	8.098	5.448	9,0	7.919	6.555	9,4
Potatoes, Legumes, Other Tubers	1.211	2.639	4,3	874	3.454	4,9
Potatoes	153	1.576	2,6	130	2.257	3,2
Legumes	1.058	1.063	1,7	744	1.197	1,7
Oily Seeds	631	708	1,2	828	1.534	2,2
Sunflowers	555	517	0,8	657	1.136	1,6
Tobacco	145	345	0,6	106	338	0,5
Sugar Beet	300	900	1,5	289	1.200	1,7
Cotton	530	1.280	2,1	468	1.579	2,3
Vegetables	815	13.015	21,4	809	11.890	17,0
Tubers and root vegetables	120	1.588	2,6	108	1.099	1,6
Vegetables grown for fruit	618	10.351	17,0	649	9.858	14,1
Tomato	184	4.766	7,8	183	4.916	7,0
Watermelon and Melon	546	2.002	3,3	559	1.352	1,9
Fruit, Hard shells and Spices	2.909	15.408	25,3	3.238	13.600	19,4
Grape	485	2.244	3,7	467	1.524	2,2
Citrus	111	1.565	2,6	130	1.067	1,5
Apple	158	1.866	3,1	171	1.237	1,8
Olive	753	1.967	3,2	826	1.664	2,4
Hazelnut	664	1.533	2,5	701	1.713	2,4

Table 10: The Shares in Agricultural Production of Animal Products are grown in Turkey (%)
Source: TURKSTAT, 2015.

	2007		2014	
	Million US $	**Share (%$)**	**Million US $**	**Share (%$)**
Animal Products	17.501	28,8	25.418	36,3
Meat	7.889	13,0	13.128	18,7
Sheep	1.113	1,8	1.032	1,5
Beef	3.695	6,1	6.875	9,8
Chicken	3.080	5,1	5.221	7,5
Milk	6.922	11,4	9.185	13,1
Goat	733	1,2	1.220	1,7
Cow	6.188	10,2	7.965	11,4
Eggs	1.720	2,8	1.981	2,8
Honey	728	1,2	961	1,4

Agricultural production has grown steadily and exuberantly following the *"good year" - "bad year"* trend until the beginning of the 2000s. The amount of agricultural production, which declined significantly due to the drought in 2007, has continuously increased in the following six years. In summary, the impact of climate and weather conditions on agricultural production is an important issue.

1.8 Components of Agricultural Products Sector in Turkey

1.8.1 Herbal Products Sector

Geographical location, climate and fertile soil structure provide an importance to Turkey in the World agricultural products production sector. There are some products that provide an importance to Turkey in the global agricultural products industry. According to the 2013's offical datas; Turkey was an important producer in the (57.87%) nuts, (19.57%) cherry, (23.86%) figs, (16.95%) apricot and (42.36%) poppy in the World. Turkey was located as a third country that meets lentil, pistachio, melon, watermelon, cucumber and pepper production at different rates in the World. Also, Turkey holds an important position in the production of apple, walnuts, olives, tomatoes, fresh beans, spinach, chickpeas, dry tea and eggplant. In addition, Turkey was 6^{th} place in the production of sugar beets, onions, grapefruit, and pear product. Turkey was 7^{th} place in the production of aspir, rye and cotton. Turkey was 9^{th} place in the production of barley, sunflower. Turkey was 12^{th} place in the production of wheat. Turkey is highly self-sufficient country; though it has import wheat from abroad. Today (2018), Turkey is a country with data close to the data of 2013 (T.C. Gıda Tarım Hayvancılık Bakanlığı, 2013:5).

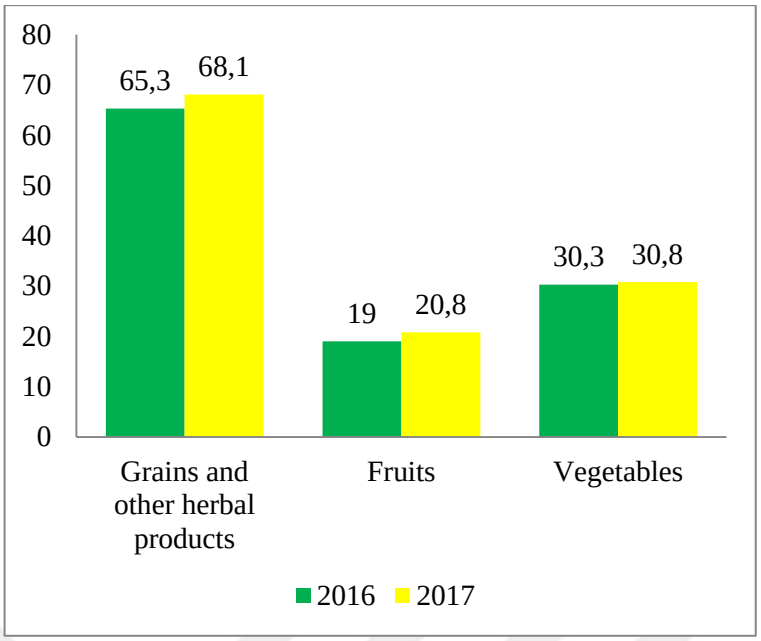


Figure 1: The Herbal Production Volume in Turkey (Million Tonnes)
Source: TURKSTAT, Herbal Production Statistics, 2017.

In figure 1 shows the herbal production quantities in the years of 2016 and 2017 as million tonnes. The amount of herbal production had increased in the year of 2017 as compared to the previous year. In 2017, grains and other herbal products production increased 4.2%, fruits production increased 9.7% and vegetables production increased 1.8% according to the previous year. Also, in 2017, grains and other herbal products production amount were 68 million tonnes, fruits production amount were 20 million tonnes and vegetables production amount were 30 million tonnes.

Table 11: The List of Grain and Plantation Products are grown in Turkey
Source: TURKSTAT, 2017.

Cereals	Legumes	Industrial Plants	Oily seeds	Tubular Plants
Wheat	Broad Bean	Tobacco	Sunflower	Potato
Barley	Pea	Sugar Beet	Sesame	Mangel
Rye	Chickpea	Hemp	Opium	Jerusalem
Oat	Beans	Opium(Capsule)	Flax (Seed)	
Hot spring plant	Red Lentils	Cotton	Hemp (Seed)	
Corn	Green Lentils	Linen (Fiber)	Peanut	
Maize	Kidney Bean		Soy	
Rice	Vetch		Safflower	
Bird Feed	Grasspea		Canola (Kolza)	
Meslin			Bitter Bean	
Triticale			Hop Weed	
Sorghum				

Table 11 shows the grains and other agricultural products that are grown in Turkey. These products are examined in five groups. The products in the first group are cereal products, the products in the second group are legumes products, the products in the third group are industrial plant products, the products in the fourth group are oily seeds products and the products in the fifth group are tubular plant products. In 2017, the production of grain products increased by 2.4% compared to the previous year and it reached to 36 million tonnes.

Table 12: The List of Fruits are grown in Turkey
Source: TURKSTAT, 2017.

Soft Kernels	**Hard Kernels**	**Citrus**	**Hard Shells**	**Berries Fruit**	**Spice Beverages**
Pear	Plum	Grapefruit	Pistachios	Strawberry	Anise
Quince	Spruce	Lemon	Almond	Mulberry	Cumin
Apple	Apricot	Mandarin	Walnut	Fig	Tea
Medlar	Cranberry	Orange	Hazelnut	Carob	Red Pepper
Loquat	Cherry	Bitter Orange	Chestnut	Banana	Thyme
	Peach			Pomegranate	
	Sour Cherry			Palm	
	Zarcali			Grape	
	Olive			Kiwi	
				Avakado	
				Raspberry	

Table 12 shows the fruit products that are grown in Turkey. These products are examined in six groups. The products in the first group are soft kernels fruits, the products in the second group are hard kernels fruits, the products in the third group are citrus fruits, the products in the fourth group are hard shells fruits, the products in the fifth group are berries fruits and the products in the sixth group are spice beverages. In 2017, the production of fruit products increased by 9.7% compared to the previous year and it reached to 20 million tonnes. There is also ornamental plant products included in the fruit products. In 2017, the production of ornamental plant increased by 7% compared to the previous year.

Table 13: The List of Vegetables are grown in Turkey
Source: TURKSTAT, 2017.

Leafy Vegetables	Fruit Refreshing Vegetables	Leguminous Vegetables	Bulb Tuberous Vegetables	Other Vegetables
Cabbage (Head)	Pumpkin	Beans	Garlic (Fresh)	Cauliflower
Cabbage (Leaf)	Zucchini	Pea	Garlic (Dry)	Asparagus
Cabbage (Red)	Cucumber	Broad Bean	Onion (Fresh)	Broccoli
Cabbage(Brussels)	Acer	Kidney Bean	Onion (Dry)	Mushroom
Celery (Sap-Root)	Eggplant		Carrot	
Lettuce (Roundabout)	Okra		Radish (Bayir)	
Lettuce (Iceberg)	Tomato		Turnip	
Spinach	Pepper (Bell)		Beet (Red)	
Leek	Pepper (Pointed)			
Chard	Melon			
Purslane	Watermelon			
Artichoke	Pumpkin (Snack)			
Parsley	Kidney Bean			
Rocket				
Cress				
Mint				
Dill				

Table 13 shows the vegetable products that are grown in Turkey. These products are examined in five groups. The products in the first group are leafy vegetables, the products in the second group are fruit refreshing vegetables, the products in the third group are leguminous vegetables, the products in the fourth group are bulb tuberous vegetables, the products in the fifth group are other vegetables. In 2017, the production of vegetable products increased by 1.8% compared to the previous year and it reached to 30 million tonnes.

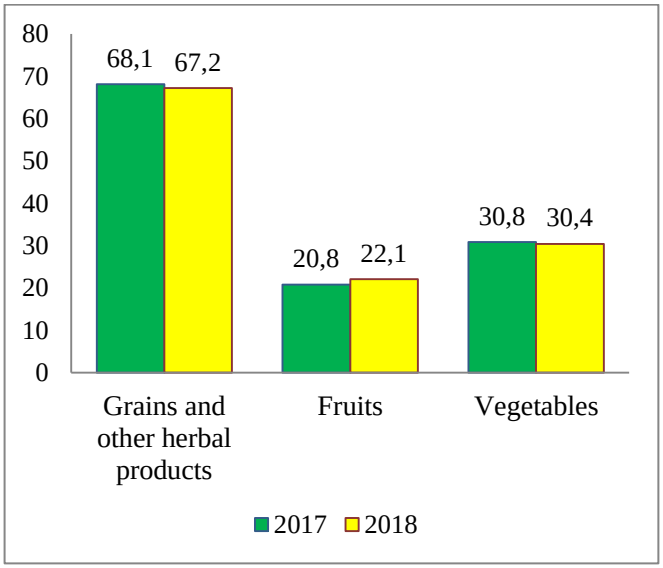


Figure 2: The Estimation of Herbal Production Statistics in Turkey
Source: TURKSTAT, 2018.

Figure 2 contains the herbal production data for 2018 which is published by TSI. According to the data; grain and vegetable production will decrease in 2018. Despite that, fruit production will increase. In 2018, production quantities of agricultural products are approximately 67.2 million tonnes in the grains and other herbal products. And also, 22.1 million tonnes estimate in the fruit products. Moreover, 30.4 million tonnes estimate in the vegetable products.

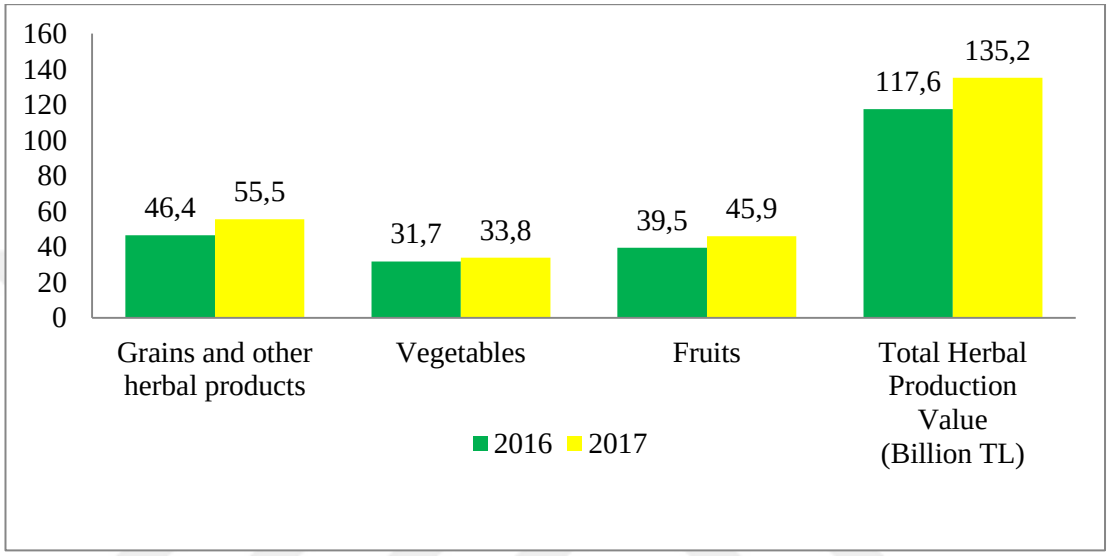


Figure 3: The Herbal Products Production Value in Turkey (Billion TRY)
Source: TURKSTAT, 2017.

Figure 3 shows the herbal products production value in Turkey as billion TRY. When the 3rd figure is examined; in 2017, the total herbal production value increased by 15% compared to the previous year and it reached to 135.2 billion TRY. In 2017, the production of grains and other herbal products increased by 19.6% compared to the previous year and it reached to 55.5 billion TRY. The production of vegetable products increased by 6.7% compared to the previous year and it reached to 33.8 billion TRY. And also the production of fruit products increased by 16.1% compared to the previous year and it reached to 45.9 billion TRY.

The production amount of grain, plantation products, vegetable and fruit are increasing or decreasing according to the climatic conditions in the Turkey from year to year. Also, the technology, irrigation and maintenance facilities are used in the agricultural sector. These factors are increasing the agricultural productivity.

Table 14: The Export Value of Herbal Products in Turkey (1,000 US $)
Source: TIM - Data Set of Export, 2000-2018. *: May 2018 datas were included.

Years	Export (US $)	Years	Export (US $)
2000	3.468,130	2010	11.132,857
2001	4.008,345	2011	13.061,783
2002	3.518,116	2012	13.603,744
2003	4.633,463	2013	14.896,115
2004	5.762,458	2014	15.684,456
2005	7.482,158	2015	14.882,145
2006	7.748,329	2016	14.219,471
2007	8.645,036	2017	14.527,698
2008	10.102,940	2018 (*)	6.305,926
2009	9.930,888		

When table 14 is examined; the export of herbal products in Turkey increased in some years, some years has shown the reductions. The best export transaction in herbal products between 2000 and 2017 were realized in 2014. The main sub-sector of the agricultural sector is the herbal products sector. Turkish Exporters Assembly's (TIM) the herbal products industry data items are created by; cereals, legumes, oily seeds and products, fresh vegetables and fruits, vegetables and fruits products, dried fruits and its products, hazelnut and its products, olive and olive oil, tobacco and ornamental plants and its products.

1.8.2 Animal Products Sector

The agricultural products sector has significant contribution to the Turkey's overall economy and the country's economic growth figure. In the agricultural products sector, not only vegetable products are occured but also the animal products sector is included in the sector calculations as a sub-sector.

Table 15: The Amount of Live Animals in Turkey (Per Unit or Head)
Source: TURKSTAT, 2018.

Year	Cattle	Sheep	Goat	Total Amount
2010	11.369,800	23.089,691	6.293,233	40.752,724
2011	12.386,337	25.031,565	7.277,953	44.695,855
2012	13.914,912	27.425,233	8.357,286	49.697,431
2013	14.415,257	29.284,247	9.225,548	52.925,052
2014	14.223,109	31.140,244	10.344,936	55.708,289
2015	13.994,071	31.507,934	10.416,166	55.918,171
2016	14.080,155	30.983,933	10.345,299	55.409,387
2017	15.943,586	33.677,636	10.634,672	60.255,894

Table 15 shows the live animal (big bovine and small bovine animal) amounts in Turkey. These animals in the table are divided into 3 groups; cattle, sheep, goats. In Turkey, the amount of sheep has always been a maximum number of types in the animal sector.

The number of bovine animal was realized as 16 million 105 thousand head in 2017. While the number of cattle were 15 million 944 thousand heads and water buffalo were 161 thousand 439 heads the in bovine animal. The number of sheep and goats were 44 million 312 thousand heads in the 2017. As of the end of 2017, the numbers of poultry meat were 221 millions, while the numbers of poultry eggs were 121 millions. The number of turkeys were 3 million 872 thousand heads in the animal sector (TURKSTAT, 2017).

Table 16: The Production Amount of Animal Products in Turkey (Tonnes)
Source: TURKSTAT, 2018.

Year	Red Meat	Milk (Million)	Chicken Meat (Million)	Chicken Eggs (Thousand)	Honey	Wool	Clay
2010	780.718	13.543	1.444	11.840,396	81.115	42.823	2.607
2011	776.915	15.056	1.613	12.954,686	94.245	46.586	3.062
2012	915.844	17.401	1.723	14.910,774	89.162	51.180	3.570
2013	996.125	18.223	1.758	16.496,751	94.694	54.784	4.902
2014	1.008,272	18.630	1.894	17.145,389	103.525	58.403	5.460
2015	1.149,262	18.654	1.909	16.727,510	107.665	59.196	5.569
2016	1.173,042	18.489	1.879	18.097,605	105.727	62.525	5.445
2017	1.126,403	20.699	2.136	19.281,196	114.471	63.315	5.796

Table 16 shows the production amounts of animal products in Turkey. The product amount in the first group is red meat, the product amount in the second group is milk, the product amount in the third group is chicken meat, the product amount in the fourth group is chicken eggs, the product amount in the fifth group is honey, the product amount in the sixth group is wool and the product amount in the seventh group is clay. Between 2000 and 2017 years, the overall production of all animal products increased. The reason for this situation; by growth of Turkey's population is directly connected to each other.

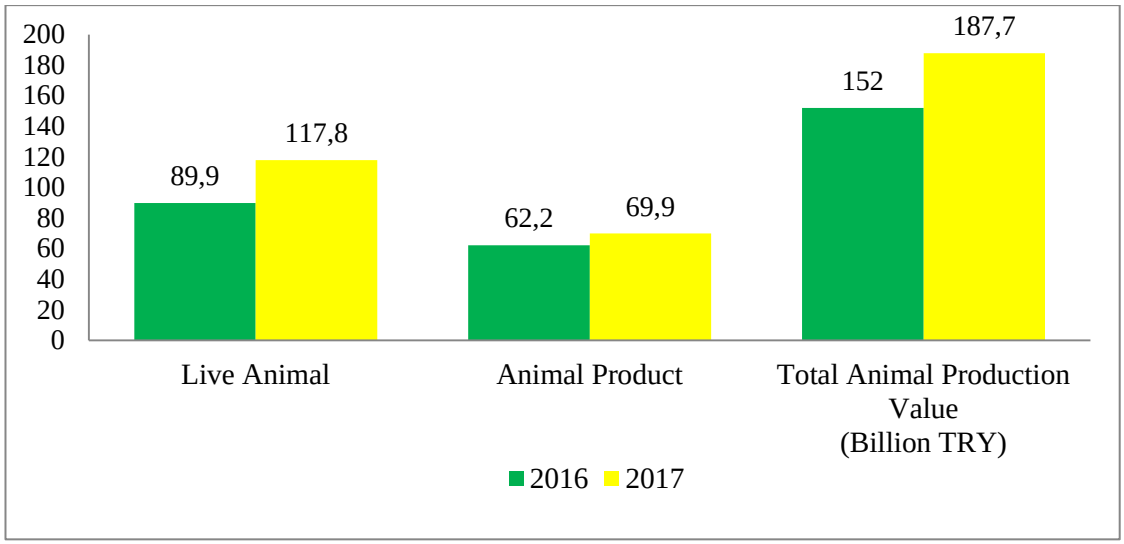


Figure 4: The Production Value of Live Animals and Animal Products in Turkey (Billion TRY)

Source: TURKSTAT, 2017.

Figure 4 shows the Turkey's 2016 and 2017 years live animals and animal products production value comparison. The value of live animal increased by 31.1% compared to the previous year and it reached to 117.8 billion TRY and the value of animal products production increased by 12.5% in 2017 to 69.9 billion TRY. Total animal production value increased by 35 billion TRY compared to the previous year.

Table 17: The Export Value of Animal Products in Turkey (1,000 US $)

Source: TIM - Data Set of Export, 2000-2018. *: May 2018 datas were included.

Year	Export (US $)	Year	Export (US $)
2000	171.345	2010	962.206
2001	225.129	2011	1.418,427
2002	280.399	2012	1.661,916
2003	337.132	2013	1.988,154
2004	359.797	2014	2.274,587
2005	414.984	2015	1.812,581
2006	463.460	2016	1.890,703
2007	592.143	2017	2.260,996
2008	853.965	2018 (*)	1.041,495
2009	828.808		

Table 17 shows the export value of animal products in Turkey. Generally in Turkey, there is an increase in the export of animal products, while decreases occurred in some years in the export.

1.8.3 Wood and Forest Products Sector

At the end of the 19th century and the beginning of the 20th century, industrialization level in the European countries was followed by Turkish businesspeople. In this way, the first structuring of the wood and forest products sector was established in Turkey. The sector maintained its development in the first half of the 20th century under the name of various public institutions. The sector has gained its present structure with planned development periods and privatization. Turkey's industrial wood and forest product companies are the oldest companies in the industry. These companies are mainly producing products for internal market. In recent years, the sector has also opened up to the foreign markets.

Turkey's wood and forest products industry; consists of sub-sector groups such as paper, cardboard, furniture, wood and wooden goods, paper dough, wood, timber, paper clay and used paper goods.

The World's wood and forest products industry has a volume of about 500 billion US $. Over of 14 million people are employed in this sector in the World. Turkey's wood and forest products sector employs approximately 300 thousand people and its worth is about 19 billion US $. Turkey's wood and forest products sector is under development and the sector is rising the own economic level from day to day.

The sector's 2023's main aim in Turkey is to obtain 16 billion US $ from export income and to get 1.6% share from the World market. And also to increase the annual growth rate is 11.9% in the sector. Moreover, to increase 2.93% its export share in the Turkey export pie (TIM, 2010:21). Turkey is 37th in export and 19th in import transaction in the World wood and forest indusrty (Kahraman, 2015:27).

Table 18: The Export Value of Wood and Forest Products in Turkey (1,000 US $)
Source: TURKSTAT, According to the SITC Rev. 3, 2000-2018. *: April 2018 datas were included.

Year	Export (US $)	Year	Export (US $)
2000	409.231	2010	3.150,600
2001	548.785	2011	3.681,535
2002	715.250	2012	4.130,929
2003	971.692	2013	4.798,198
2004	1.271,113	2014	5.168,130
2005	1.518,075	2015	4.647,251
2006	1.725,497	2016	4.710,943
2007	2.348,896	2017	5.112,714
2008	2.945,417	2018 (*)	1.910,515
2009	2.662,247		

When table 18 is examined; generally in Turkey, there is an increases in the export of wood and forest products, while decreases occurred in some years in the export.

1.9 A Sub-Sector of Industrial Products Industry: Processed Products Sector Based on Agriculture

Agricultural products can be supplyed to the market with unprocessed form (or semi-processed form) and also they can be supplied to the market with processed form (as final goods). The agricultural sector interacts with many sectors with respect to manufactured products and structures. The sector that interacts most is the industry sector. Because of agricultural products are located in the industrial sector as raw materials or inputs of production. The industry processes these agricultural products which are raw materials. And then they create semi-finished or full products which are sold to domestic and abroad markets. Industrial sector products are needed for agricultural production. These industrial products are agricultural tools, equipments and machines, agricultural fertilizer, agrochemicals, fodder for animal production, seeds and saplings for herbal production.

Foods and agricultural products are necessary for people to continue their lives and they provide contribution the national economy and GDP. It is an important activity for the countries to get rid of the dependency on the foreign countries with domestic agricultural production and to generate income by exporting the products with more production (Aydın, 2018:112).

Today, the development of technology and the increase of mechanization affect the agricultural sector positively. The use of machinery in the agricultural sector is essential for modern agricultural systems to be implemented to the plantation. The increase in the modernization and use of machinery in the agricultural sector affects the agricultural equipments and the manufacturing industry in the production industry.

In Turkey's agricultural equipment and machinery production companies' export incomes and their export amount is increasing day by day. The fertilizer product that is produced by the industry increases the productivity in the plant production by 50%-80%. If the fertilizer product is consciously used, it is indispensable for the agricultural sector. Agrochemicals are useful products which are used to combat harmful substances in the sector. In the live animal sector, nutrition of animal production is supported by fodder industry. The seed growing industry and sapling growing activities in our country are also developing day by day.

Industry based on agriculture is producing products according to consumer demands. Production is done according to the priorities of human life and presented to consumer liking. Agricultural products are used in many branches of industry such as food, textile, furniture, machinery manufacturing. Agricultural products constitute one of the main cornerstones in industry sector.

According to the table 19, sub-sectors that is covered by TIM's calculation of export figures for processed products based on agriculture is textile and raw material products, leather and leather products and carpets.

Table 19: The Export Value of Processed Products Sector Based on Agriculture in Turkey (1.000 USD $)
Source: TIM – Data Set of Export, 2000-2018. *: May 2018 datas were included.

Year	Export (US $)	Year	Export (US $)
2000	3.444,844	2010	9.135,608
2001	3.780,043	2011	11.052,650
2002	4.016,635	2012	11.483,180
2003	5.061,956	2013	12.525,406
2004	6.124,173	2014	13.092,639
2005	6.571,751	2015	11.435,869
2006	7.500,095	2016	11.179,743
2007	8.826,565	2017	11.786,741
2008	9.327,107	2018 (*)	5.321,553
2009	7.676,309		

When the table 19 is examined; exports of processed products sector based on agriculture declined in 2008 and 2014. In other years, exports of the sector have always increased.

The food products sector that is a sub-sector of the processed products sector based on agriculture sector has an important strategic point in the World and Turkey.

1.9.1 Food Products Sector

Turkey is one of the important countries in the World in terms of diversity in food products. The food industry uses different type of preparation, processes and preserves, packages the raw materials which are supplied by agricultural sector to more durable and ready to use (Eker, 2005:13).

The Federation of Food & Drink Indusrty Association of Turkey's (TGDF) food and beverage export target is 40 billion US $ for 2023. Turkey's food sector that has 40 thousand enterprises and over 400 thousand employess is Turkey's largest manufacturing industry.

The amount of imports has increased due to increasing the young population and production costs in Turkey. Customs duties on imported machinery and equipment have been removed in order to make food production in Turkey, 2017. Turkey has a share of as low as 1% of in the total World food trade. In Turkey, 30% of agricultural products are used in the production industry. The cereals consumption has first rank in Turkey. Vegetable consumption comes in the second rank and consumption of meat and meat products is around 3% in total consumption of food products (Access Date: May 15, 2018. http://www.tgdf.org.tr/baskanin-mesaji/)

The International Standard Industrial Classification of all Economic Activities, Revision 3 (ISIC Rev.3) consists of eight sub-sectors. These sectors are the food industry; meat and meat products, milk and dairy products, aquatic products, fruit and vegetable processing products, herbal oil and its products, sugar and sugary products, fodder industry (Ekşi et al., 2005:1).

The Turkey's Industrial Strategy Document (2011-2014) was prepared by T.C. Science, Industry and Technology Ministry. This document includes some important information about the food sector's impact to the society and the production region. These impacts are the food and beverage industry has the capacity to integrate with the region where the agricultural production is made. Possibility to produce products in many regions and this situation brings with it the probability of

creating high employment for this region. This further increases the importance of the sector due to its role in reducing regional inequalities and its effects on reducing the unemployment rate.

Table 20: The Food Commodities Foreign Trade Value (1.000 US $)
Source: TURKSTAT, 2018.

Year	Export	Import	Foreign Trade Balance	Year	Export	Import	Foreign Trade Balance
1979	1.192,291	89.931	1.102,360	2007	9.007,165	5.167,474	3.839,691
1980	1.486,017	270.867	1.215,150	2008	10.705,181	8.502,704	2.202,477
1985	2.005,967	595.551	1.410,415	2009	10.581,837	6.107,516	4.474,321
1990	2.905,840	1.860,941	1.044,899	2010	11.868,544	7.412,723	4.455,821
1995	4.123,116	2.791,088	1.332,028	2011	14.207,482	10.652,831	3.554,651
2000	3.542,714	2.133,290	1.409,424	2012	15.025,825	10.419,841	4.605,984
2001	3.997,215	1.486,768	2.510,448	2013	16.749,085	10.832,015	5.917,070
2002	3.668,207	1.911,832	1.756,376	2014	17.746,937	12.048,697	5.698,240
2003	4.735,146	2.791,392	1.943,753	2015	16.561,384	10.889,457	5.671,927
2004	5.891,602	3.089,696	2.801,906	2016	16.004,459	10.699,392	5.305,067
2005	7.713,679	3.284,265	4.429,414	2017	16.652,625	12.318,520	4.334,105
2006	7.931,559	3.486,191	4.445,368				

When table 20 is examined, the foreign trade deficit is not in question in the export and import of food products in Turkey. The food products sector brings foreign exchange to the country's economy through exports. Because of this sector provides net export to the Turkey’s economy.

1.9.2 Agricultural Raw Material Products Sector

Developments in the field of agriculture increase the demand for industrial products while at the same time increasing the supply of agricultural raw materials to the industrial sector. While the industrial sector uses agricultural products as an input, it also provides inputs to the agricultural sector (Taraklı, 1996:4).

From this point of view, the agricultural and industrial sectors are not competing each other on the contrary, also they are complementary sectors. Increased in production and productivity in the agricultural sector contributes to the development of agricultural-based on industries.

Table 21: The Agricultural Raw Material Products Foreign Trade Value (Million US $)
Source: TURKSTAT, 2018.

Year	Export	Import	Foreign Trade Balance	Year	Export	Import	Foreign Trade Balance
1979	302.615	101.020	201.595	2007	761.859	4.645,279	-3.883,420
1980	395.539	132.703	262.836	2008	768.486	4.534,790	-3.766,304
1985	367.450	339.245	28.205	2009	607.673	3.523,072	-2.915,399
1990	394.282	951.708	-557.426	2010	795.406	5.466,923	-4.671,517
1995	315.779	1.995,044	-1.679,265	2011	1.071,655	6.921,621	-5.849,966
2000	312.569	2.022,714	-1.710,145	2012	967.825	5.950,007	-4.982,181
2001	351.568	1.592,379	-1.240,811	2013	990.189	6.083,933	-5.093,744
2002	383.971	2.083,087	-1.699,116	2014	999.962	6.011,068	-5.011,107
2003	521.926	2.473,333	-1.951,406	2015	882.806	5.169,757	-4.286,951
2004	609.609	2.968,914	-2.359,306	2016	852.114	4.938,240	-4.086,126
2005	594.859	3.196,024	-2.601,166	2017	937.972	6.003,050	-5.065,078
2006	701.694	3.799,969	-3.098,275				

When table 21 is examined, the foreign trade deficit which started in the middle of the 1980s in the foreign trade of the agricultural raw material products is continuing and increasing yearly. The reason for this situation is expressed not by the decrease in export amounts but by the increase in import amounts. While there are minor changes in the economic crisis periods, the open-trade trend continues linearly.

1.10 Economic Position and Importance of Agricultural Sector in the Turkey

When we examine the sector's share in Turkey's GDP through the TSI's data; the service sector is the first rank, the industrial sector is the second rank and the agriculture sector is the third rank in the sectors of Turkey.

The share of agriculture that is in the Turkey's total economy has declined steadily since from it was established the republic regime. While the shares of industry and service sectors seem to have increased in it. In addition, the agriculture sector is sensitive to the economic, social and climate conditions of the country and these create fluctuations in the sectoral growth rate (Peker, 2014:53).

The agriculture sector which is in the Turkey's economy continuously maintains its importance in terms of population and employment, nutrition, agricultural production, domestic consumption, contribution of agriculture sector to industrial and food industry, national income and balance of payments.

Agricultural sector affects the country in terms of economically, politically and socially in Turkey. The agricultural sector such as industry and service sectors is affecting the performance of a business in Turkey. Agricultural activities should act within a plan and program in the process. As in all other economic activities, the agriculture sector is shaped by general policy and economic conditions of the country.

The impact of macroeconomic stability is felt in the performance of the sector. Although the sector is protected, foreign trade and developments in World prices affect the sector.

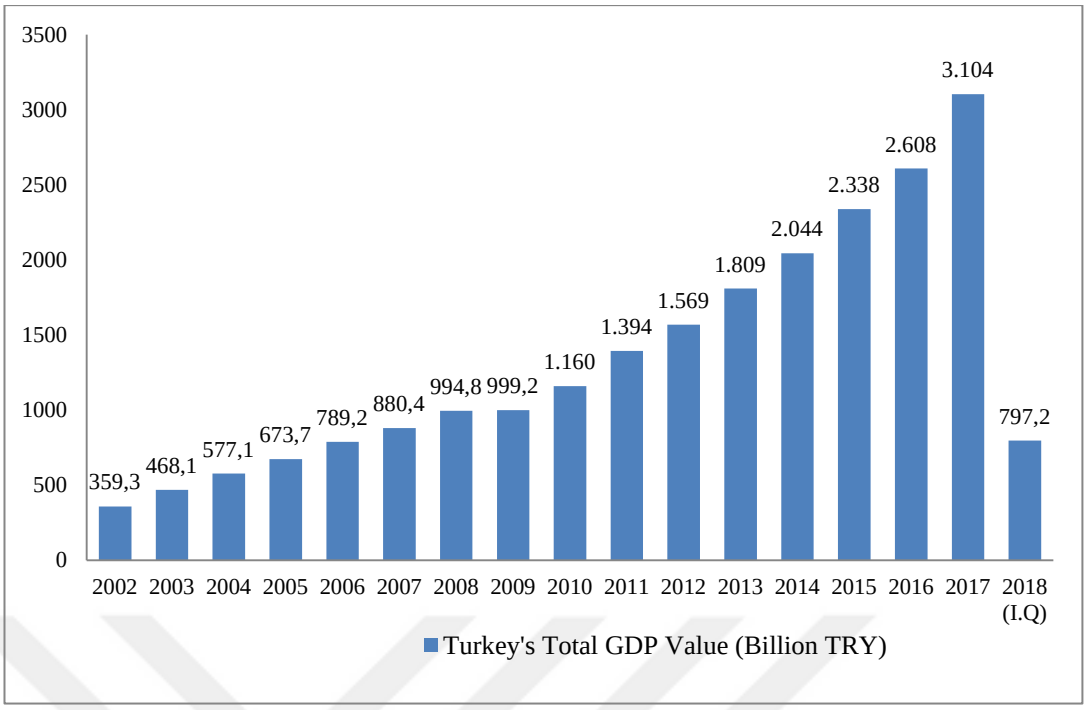


Figure 5: Turkey's Total GDP Value (Billion TRY)
Source: TURKSTAT, 2018.

When figure 5 is examined; it is seen that Turkey's GDP value increases since from 2002. The World economic crisis which took place during in 2008-2009 time period sourced from the American economy. Both in the World and in Turkey has brought economic contraction is occurred. Despite of this situation, Turkey's total GDP increased as a small amout.

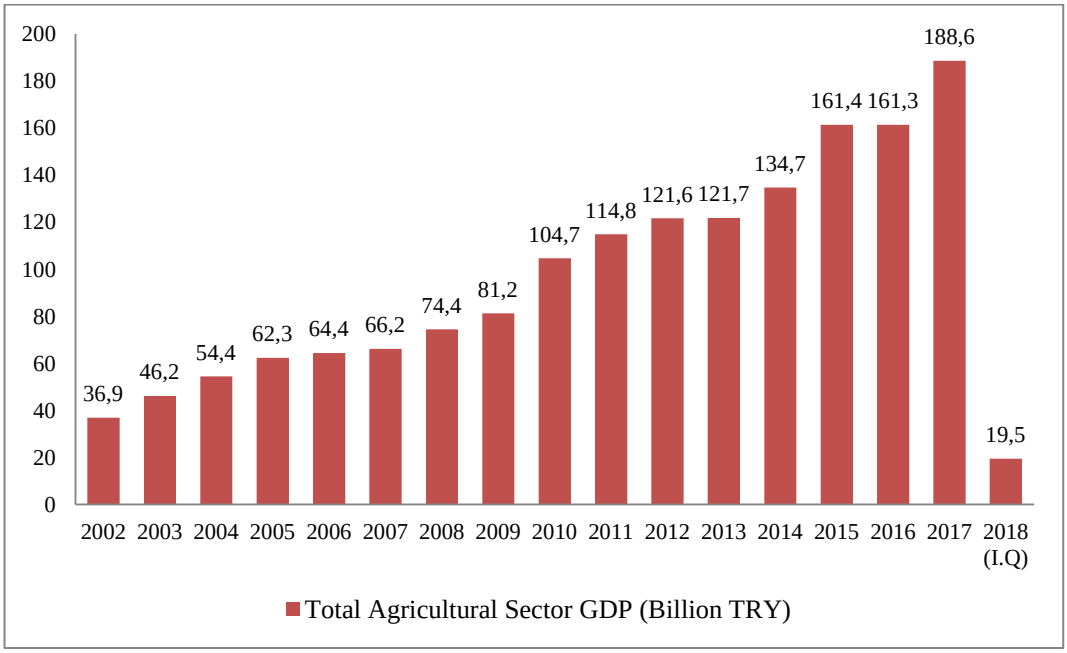


Figure 6: The Turkey's Agriculture Sector GDP Value (Billion TRY)
Source: TURKSTAT, 2018

Table 22: The Rate of Change in Turkey's Total GDP and in the Total Agriculture Sector's GDP (%)

Source: TURKSTAT, 2018.

Year	The Rate of Change in Turkey's Total GDP (%)	The Rate of Change in the Total Agricultural Sector's GDP (%)
2001-2002	46,4	69,8
2002-2003	30,2	25,3
2003-2004	2,33	17,5
2004-2005	16,8	14,7
2005-2006	17,1	3,3
2006-2007	11,6	2,8
2007-2008	13,0	12,5
2008-2009	0,4	9,1
2009-2010	16,1	28,9
2010-2011	20,2	9,7
2011-2012	12,6	6,0
2012-2013	15,3	0,0
2013-2014	13,0	10,7
2014-2015	14,4	19,8
2015-2016	11,5	-0,1
2016-2017	19,0	17,0
2017-2018 (I.Q)	21,9	10,6

When figure 6 and table 22 is examined; Turkey's agricultural sector GDP value has increased from since 2002. However, there has been no growth in the sector in the period of 2012-2013. In the time period of 2015-2016, the sector showed a negative trend and shrunk by -0.1%. The causes of this situation were natural disasters were occured in Turkey, 2016 and bad relationship with foreign countries were negatively reflected in trade and commercial activities with abroad markets. In 2017, the agricultural sector has made a significant contribution to Turkey's economy as a growth of 17%.

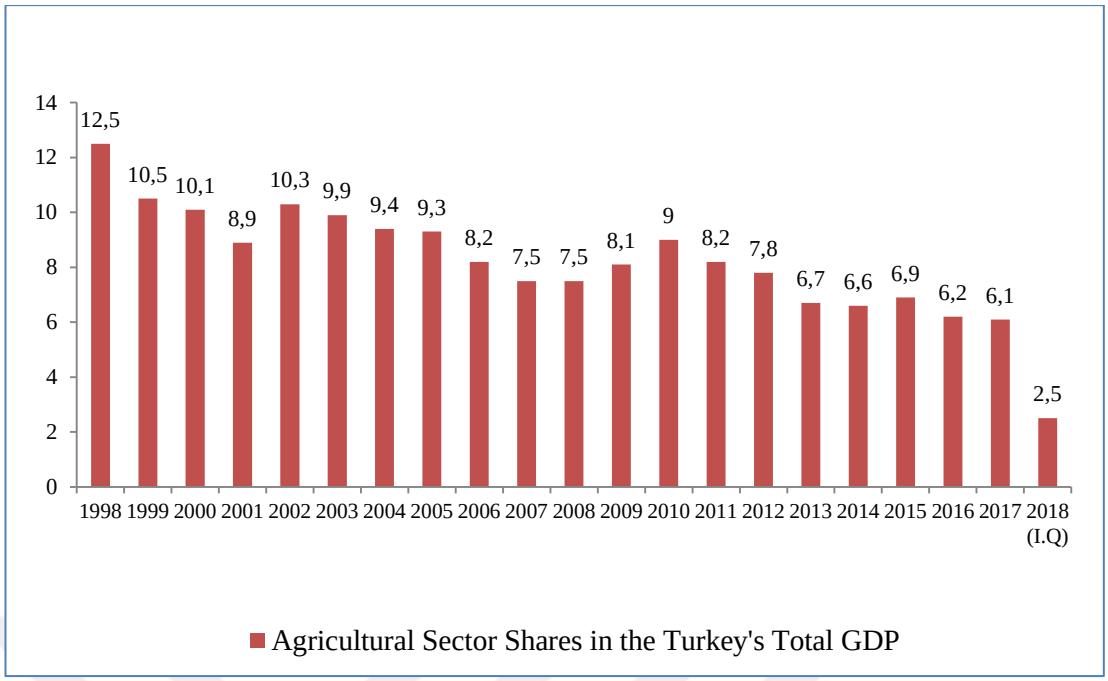


Figure 7: The Turkey's Agricultural Sector Share in the Total Turkey's GDP (%)
Source: TURKSTAT, 2018.

The share of agriculture sector that is in the Turkey's total economy has generally declined steadily since from it was established the republic regime. The share of agriculture sector in the Turkey's GDP was 30% at the beginning of the 1970s, %15-%20 in the 1980s and early 1990s. By the year 2000, the share of the agricultural sector has declined to 10%. The decreases in the share of the agricultural sector continue in the recent years in the Turkey economy. Despite of these cases, in times of economic crisis, the agricultural sector creates jobs potential to unemployed people and to reduce the unemployment rate. At the end of the 1990s, the share of employment rate in the agricultural sector was around 40% in the total rate. In the mid-2000s the share of employment rate in the agricultural sector, which was approaching 20%, continues approximately the same rate in today.

When figure 7 is examinded; the share of the agricultural sector decreased in the country's total GDP in the time period of 1998-2018. However, the agricultural sector currently is important for the Turkey. Because of agricultural sector provides to meet domestic food need, to supply raw materials or semi finisned goods to industry, to gain income from net export and to create job potential to the Turkey's market (Yavuz, 2005:17).

The reduction of the share of agricultural sector in the country's GDP is a normal process. This is happening because of the countries are turning themselves into the industry according to their develeopment level. However, this change or development must also manifest itself in the total exports and imports fields. While this change is happening if the share of exports decreases; if the share of imports increases or remains the same, it can be concluded that there is a problem in the foreign trade policy of the country (Aydın, 2018:117).

1.11 The Amount of Export and Import in the Agricultural Products Sector in Turkey and the Commercial Gain of Sector

In 2017, the Turkey's agricultural products sector fed 79.5 million Turkish people in our country. It created 52 billion US $ (when 1 US $ was equal to 3,648 TRY that it estimated in account) (TSI, 2017) as agricultural revenue to the Turkey economy. 17.5 billion US $ was realized and provided to economy by agricultural net exports. The agricultural sector covered approximately 10% of the total population, to provided 20% rate of employment and to created %6 rate of GDP in our country. Also agricultural sector realized 11% of total export of Turkey. Moreover, the agricultural sector is a sector that supplies raw materials to industry and provides food supply to the market.

When table 24 is examined; it shows the values of Turkey's total export and import and its agricultural sector export and import values by years. This datas and values have procured from TSI's data of 2018 year. There is an important point when the calculation or preparation of the table. This important issue that needs to be taken into consideration here is; which type of products will be included in this calculation because of there are many products in the agricultural sector and which calculation method will be used when preperaing the foreign trade data of agricultural products.

The export and import values of agricultural products are calculated in table 24. When we calculated their value, we used the data included in the SITC Rev.3 form. This calculation method is used because of the ISIC Rev.3 form does not have the ability to examine separately agricultural raw materials and processed food and foodstuffs in the total foreign trade of the agricultural sector (Günaydın, 2009:208). Inability to carry out the examination in agricultural raw materials and processed food and foodstuffs separately makes it impossible to calculate the agricultural foreign trade data correctly (Aydın, 2009:10). Furthermore, the calculation according

to the method of SITC Rev.3 provides two advantages. One of them is; the ISIC Rev. 3 form provides that agricultural products which are not included in the agricultural sector are allowed to be included in the agricultural sector. The second advantage is; the agricultural foreign trade is to be examined in two main subgroups: agricultural raw materials and foodstuffs-processed products. Table 23 shows which products are included in the agricultural foreign trade value calculation according to the SITC Rev.3 form.

Table 23: The Sectors or Product Groups in the Agricultural Foreign Trade in accordance with SITC Rev.3 Form

Source: Aydın, 2009:14

SITC Rev.3 2nd Step / Code	**Name of SITC**
I	**Food Ingredients-Processed Products**
00	Live Animals
01	Meat and meat products
02	Milk, milk products and eggs
03	Fish and other seafood
04	Cereals and cereal products
05	Fruits and vegetables
06	Sugar, sugar products and honey
07	Coffee, tea, cocoa, spices
08	Fodder for animals
09	Various consumable products (oil, homogenised products, sauce, yeast)
11	Beverages
12	Tobacco and tobacco products
41	Animal oil
42	Herbal oils and its fractions (refined or unrefined, not chemically treated)
43	Chemical processed on herbal and animal oils, candles
22	Oily seeds and oil-containing fruits
II	**Agricultural Raw Materials**
21	Unprocessed leather and fur
23	Crude rubber (natural and synthetic)
24	Mushrooms, wood and timber
25	Paper clay and used paper
26	Woven fibers and their residues
29	Raw materials of animal and herbal origin

Table 24: The Turkey's Total Export and Import Values and Agricultural Sector Export and Import Values by Years (Million US $)
Source: TURKSTAT, data is according to the SITC, Rev.3 Form. 1996-2018. *: April 2018 datas were included.

	Turkey's Total Foreign Trade Value (Million US $)			**Turkey's Total Agricultural Sector Foreign Trade Value (Million US $)**		
Year	**Export**	**Import**	**Foreign Trade Balance**	**Export**	**Import**	**Foreign Trade Balance**
1990	12.959,3	22.302,1	-9.342,8	3.300	2.813	487
1995	21.637,0	35.709,0	-14.071,3	4.555	4.494	61
1996	23.224,5	43.626,6	-20.402,1	4.871	4.866	5
2000	27.774,9	54.502,8	-26.727,9	3.855	4.156	-301
2001	31.334,2	41.399,1	-10.064,9	4.349	3.079	1.270
2002	36.059,1	51.553,8	-15.494,7	4.052	3.995	57
2003	47.252,8	69.339,7	-22.086,9	5.257	5.265	-8
2004	63.167,2	97.539,8	-34.372,6	6.501	6.059	442
2005	73.476,4	116.774,2	-43.297,7	8.309	6.480	1.829
2006	85.534,7	139.576,2	-54.041,5	8.633	7.286	1.347
2007	107.271,7	170.062,7	-62.791,0	9.769	9.813	-44
2008	132.027,2	201.963,6	-69.936,4	11.474	13.038	-1.564
2009	102.142,6	140.928,4	-38.785,8	11.190	9.631	-1.559
2010	113.883,2	185.544,3	-71.661,1	12.664	12.880	-216
2011	134.906,9	240.841,7	-105.934,8	15.279	17.574	-2.295
2012	152.461,7	236.545,1	-84.083,4	15.994	16.370	-376
2013	151.802,6	251.661,3	-99.858,6	17.739	16.916	823
2014	157.610,2	242.177,1	-84.567,0	18.747	18.059	688
2015	143.838,9	207.234,4	-63.395,5	17.444	16.059	1.385
2016	142.529,6	198.618,2	-56.088,7	16.856	15.637	1.219
2017	156.996,4	233.797,9	-76.801,5	17.589	18.320	-731
2018 (*)	55.029,3	82.445,8	-27.146,5	6.147	6.979	-832

When table 24 is examined; generally Turkey's total exports and imports increased except for some years. In the year that experienced a decrease in total foreign trade, there were economic crises in Turkey and the World so all of markets have narrowed. Within the total export and import values of the agricultural sector, the same conditions can be mentioned.

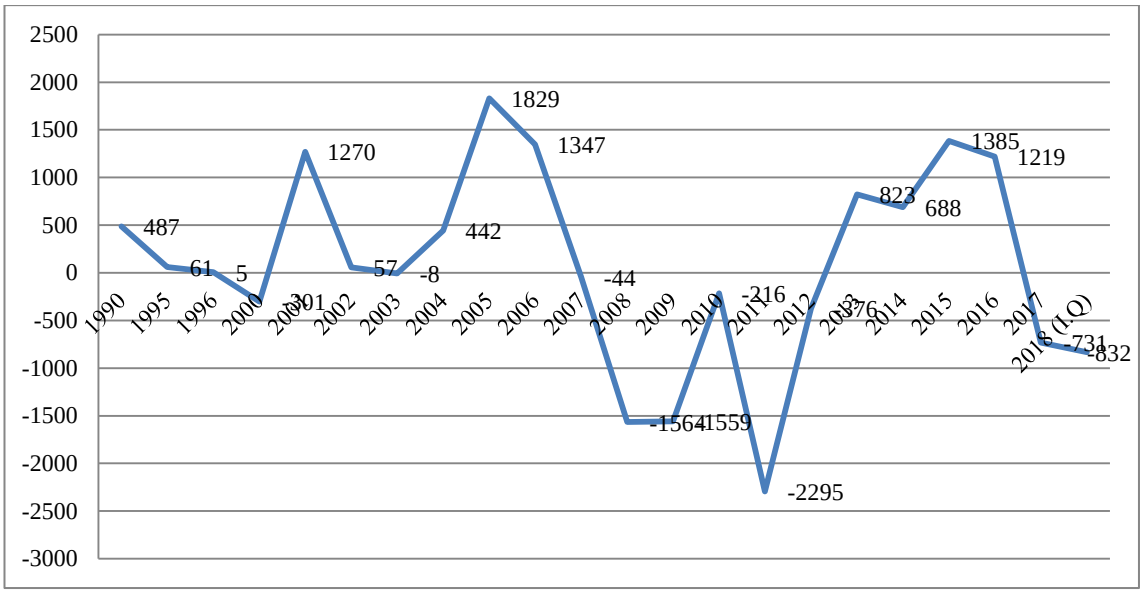


Figure 8: The Foreign Trade Balance of the Agricultural Sector in Turkey (Million US $)
Source: Data is calculated according to agricultural foreign trade balance table of 24

When figure 8 is examined; we can make inferences from the figure that generally the export of agricultural products in Turkey contributes to Turkey's economy. Despite that, our country makes imports in agricultural sector for some years.

Table 25: The Share of Agricultural Foreign Trade in Turkey's Total Foreign Trade (%)
Source: Data is calculated according to agricultural foreign trade balance table of 24
*: April 2018 datas were included.

Year	Share of Agriculture Sector in Total Exports (%)	Share of Agriculture Sector in Total Imports (%)	Year	Share of Agriculture Sector in Total Exports (%)	Share of Agriculture Sector in Total Imports (%)
1990	25,5	12,6	2008	8,7	6,5
1995	21,1	12,6	2009	11,0	6,8
1996	20,9	11,1	2010	11,1	6,9
2000	13,9	7,6	2011	11,3	7,3
2001	13,9	7,4	2012	10,5	6,9
2002	11,2	7,7	2013	11,7	6,7
2003	11,1	7,6	2014	11,8	7,4
2004	10,3	6,2	2015	12,1	7,7
2005	11,3	5,5	2016	11,8	7,8
2006	10,1	5,2	2017	11,2	7,8
2007	9,1	5,8	2018	11,1(*)	8,4(*)

When table 25 is examined, in the last decade, the export share of agricultural sector average is at the level of 11.2% in the total export's pie. Also, the import share of agricultural sector average is at the level of 7% in the total import's pie. Despite the external interventions, the agriculture sector is the net exporter sector. Also, the agricultural sector provides an economic contribution to the closure of the foreign trade deficit.

Iraq is the first and Germany is the second important foreign countries in the export share of Turkey's agricultural products market. The Turkey's agricultural products export list is followed by Georgia, Azerbaijan, Turkmenistan, Russia, Italy, Saudi Arabia and Iran. Germany is the first important foreign country in the import share of Turkey's agricultural products market. The Turkey's import list is followed by USA, Italy, Netherlands, China and Russia after Germany (Çakmak and Kasnakoğlu, 2016:22).

Table 26: The Turkey's Top 10 Export Products in the Agriculture and Food Sector in 2016
Source: TURKSTAT, 2016.

Rank	Products	The Export Value of Products in 2016 (Million US $)
1	Hazelnut	1.828
2	Wheat flour	1.078
3	Seafood	790
4	Macaroni	439
5	Raisins	426
6	Tobacco (Crude)	363
7	Poultry Meat	361
8	Sweet Biscuits	324
9	Mandarin	322
10	Lemon	305

Table 26 shows the Turkey's top 10 export products in the agriculture and food sector, 2016. The first rank of these products is hazelnut. Turkey has realized to produce it apparoximately 70% of the total production in the World.

The last 20 years in Turkey, the export and import values of agricultural products sector remains to each other in close proportion with other sectors. The Turkish agricultural products sector does not have advantages from free trade agreements and free custom duties these benefits are appied to the Turkey's non-agricultural products sector in EU under the custom union conditions.

Although the Turkish agricultural sector can not benefit from these advantages, it promises hope for the future. The agricultural sector is in a position to supply goods and products to the World market beyond national borders. In the agricultural product sector, technical developments in the manufacturing and the distribution stages restructure business relations and technical developments have an impact on the revision of agricultural policies.

1.11 The Applied Policies and Supports to Turkey's Agricultural Sector

In the last 40 years, Turkey's agricultural sector has been changes confinedly. This is happening because of the political and social causes. Until the 1990s, the main objectives of agricultural policy were; provided food securities of the increasing population, increasing productivity in the sector, reduced the dependence of agricultural production on the climate conditions, provided goods on based self-sufficiency, increased farmer's income, stabilized on the sector and increased the competitive power of the sector also developed in rural areas. And then, the inclusion of detailed policies in agriculture and rural areas due to the membership candidacy to the EU and the harmonization of institutionalization with the EU have been added to other aims. Despite the reform efforts, the use of known policy tools is ongoing in the sector. The agricultural insurance support and similar instruments have the small share in the total subsidies, but they are promising implementations in the agricultural sector. Also, the given supports need to adapt to the competitive environment of the sector.

In order for the Turkish agricultural sector to be able to compete with the global agricultural sector, some conditions must be appropriate in the country. These some condtions are; to have extensive and efficient agricultural area, to have favorable climate conditions, to have skilled and educated producers, the development and dissemination of modern production techniques appropriate to the conditions of the country, to have advanced and problem-free input markets, to have transportation, processing and marketing infrastructures, to have product markets that will allow the price creation and risk transfer, to have the enhancement of financial institution supports.

In Turkey, *Agricultural Reform Support Project* which was introduced to market in 1999 and also it was ended in 2009. This project has been a failed project in general terms. But, this failed project provided to show the shortcomings about the Turkey's agriculture sector and also there is a positive side in terms of ability to produce solutions to these shortcomings. In summary, the agriculture sector is in Turkey has always supported materially and spiritually.

Import policies for the agricultural products sector have not undergone major changes since the 1980s. The liberalization policy of foreign trade, which started to be implemented in the 1980s, does not cover the agricultural sector. Naturally, this situation negatively affected the sector.

Turkey has made changes in the import regime that was implemented in the mid-1990s. With this change was in the import regime, the maximum customs tax reductions were limited according to the WTO's Agricultural Agreement. In case of necessity during the year, customs tax reductions are made at certain time intervals in certain products.

Agricultural sector is one of the components to constitute Turkey's 2023 vision of economic and commercial activities. Sector's aim is; to generate 150 billion US $ in the total GDP, to gain 40 billion US $ with export. If we want to reach these goals, we must change some production system and policies in the agricultural sector. It is necessary to use high-capacity agricultural production vehicles and machinery that have become integrated with the industry sector and technology instead of traditional methods in agricultural production. At this point, there is a need for practical work that can help to guide the level of production, trade and price dynamics of the industry and to guide it to the competitive structure.

CHAPTER II

THE OLIVE and OLIVE OIL SECTOR IN THE WORLD AND IN TURKEY

2.1 The Definitions of Olive and Olive Oil and Their Properties

2.1.1 The Definition of Olive

Olive product; it is a tree which is belonging to the *Oleaceae* family and is grown for its fruits. The amount of herbal oil in the olive is rich and thus it is used for the olive oil production (Duran, 2006:4).

The first olive fruit *(Olea europaea L.)* was produced and its main homeland is the Upper Mesopotamia and South Asia. Upper Mesopotamia also includes Turkey's Southeastern Anatolia Region. Now, olive product is mentioned as the plant of the 20th century. Olive does not have lost its importance for centuries. The first production areas of olive plants are generally accepted as Mardin, Hatay, Syria, Palestine and Cyprus region (T.C. Sanayi ve Ticaret Bakanlığı, 2010:4).

The distribution of olives has been realized in two different ways in the World. First way of them was to Tunisia and Morocco over the Egypt and the second route was followed by Anatolia, the Aegean Islands, Greece, Italy and Spain (Duran, 2006:4).

Olive symbolizes the immortality, peace, fertility, justice, prosperity, purity, healthy life and presence of the Mediterranean climate. Naturally, the olive has an important place in our daily geography. Olives have been consumed by people for nearly 4 thousand years. Another idiomatic name of olive tree is ‘*’Immortal Tree*’’. Because of there is a monumental olive tree which is estimated to be 5,000 years old in Crete, Greece.

The olive tree protection law was firstly introduced in the World by Athenian person who was Solon in the 6th century before Chrics. According to this law was forbade the cutting of trees as a twice in a year in an olive tree plantation. The law of

olive farming, which has been in force since from 1939, prepared by Ataturk, also protects the olive trees and olive tree plantation of Turkey.

The olive has a long history. Because of this and naturally, olive has been used in the idioms, proverbs, historical events, gifts, poems and songs. In the past and nowadays, the olive products have been the subject in the scientists' work and artists have included them in their works.

Olive, which is a source for many myths in its historical development, has been included in the inscriptions of ancient civilizations and holy books. Moreover, the olive has been regarded as a symbol of peace for centuries because a white dove returned to the ship of Noah as a sign of life after the flood with an olive branch in its mouth (Bakırlıoğlu, 2006:17).

2.1.2 General Information about the Olives

In terms of ecology, olive has found its own living space or grown area in certain regions of the World. The olive tree grows efficiently between the 30th and 45th latitudes of the southern and northern hemisphere. The Mediterranean climate zone, the coastline of the mountains parallel to the sea and the piedmont of the vertically extending mountains are suitable to growing areas for olives (Dönmez, 2004:1). The World is the most important causal climatic characteristic of the concentration of olive production in the Mediterranean region.

The olive tree usually grows in low elevation geographies. However, olive agriculture can be done at a height of 1,000 meters from the sea. The most efficient environment for the olive tree is the summer which is hot and the winter which has temperate climates. Because of the olive tree loves the sun light and the temperature above 15° celcius. The olive tree is grown in calcareous, pebbly, stony and infertile soils due to its deeply extendable roots. The average annual rainfall of 220 mm is sufficient to grow of the olive tree efficiently. Due to these desired characteristics, the olive tree grows more efficiently in the Mediterranean climate. However, nowadays California (USA), Japan and Australia have the olive cultivation (Access Date: June 25, 2017. http://www.komilizeytinyagi.com.tr/bizi-taniyin/e-kitaplar).

An olive weighs is 1-14 grams. If olives that are larger than 5 grams are considered large. An olive tree can be 3-18 meters high and it can yield to 800 kg of olive. Per unit of olive contains between 10%-35% of herbal oil. The ratio of olive

kernel diameter to olive diameter is 1/5, 1/9. As the ratio of diameter is smaller, the value of olive increases. The olive tree gives olives after 5 or 6 years from planting. The following years give products at intervals of one year. After 15 years, the productivity decreases in the olive tree (Yıldız, 2004:38).

The most important difference of olive tree from other fruit trees is long life. The average life time of an olive tree is approximately 300-400 years. There are also olive trees that live more than a thousand years (T.C. İzmir Valiliği, 2005:1). But the olive tree does not give the same amount of products or no products every year due to the biological nature of the tree. This happen is called "*periodicity*" or "*alternans*" term.

Olives are processed as table olives after they are harvested. Also, olive is a raw material for olive oil production and pomace oil production, so the industry sector as well as agriculture sector is concerned after harvesting of olives. Olive is an herbal product that supplies own raw materials to agricultural industry and production industry. Also, the olive sector is a business area that contributes both to employment and the economy of the country. For this reason, the importance and value of olive is increasing day by day both inside and outside.

2.1.3 The Place of Olive in the World

The olive is one of the Mediterranean climate plants and it is stated that its orijin or the first field of growth was Upper Mesopotamia and Anatolia region. It is believed that olive was migrated from these regions to the Aegean Islands then to Greece, Italy and Spain and then to the entire of Mediterranean. After the geographic discovery, olive had been taken to other parts of the World, such as; South America and Australia, which have appropriate climate conditions for olive plantation (Bülbül, 2007:11).

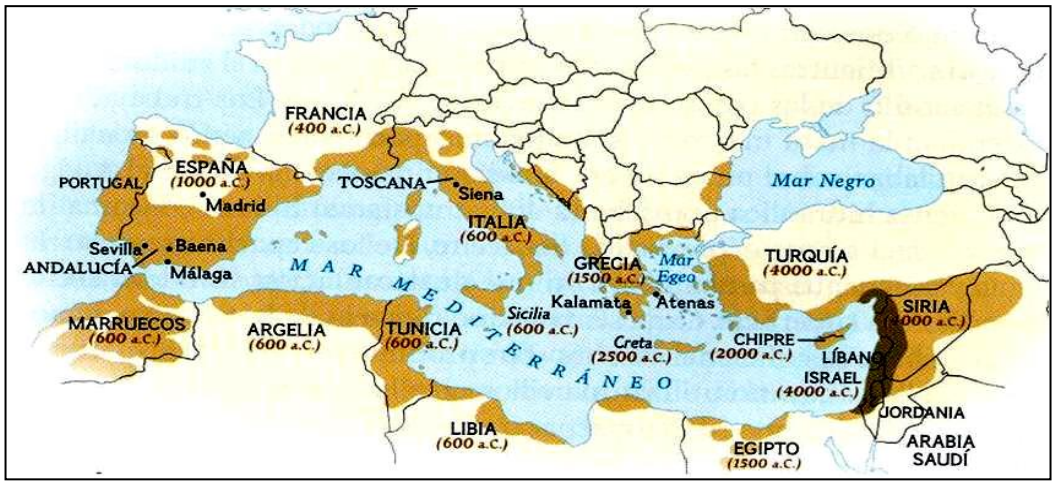


Figure 9: The Distribution Map of Olive Production in the World
Source: T.C. Sanayi ve Ticaret Bakanlığı, 2010.

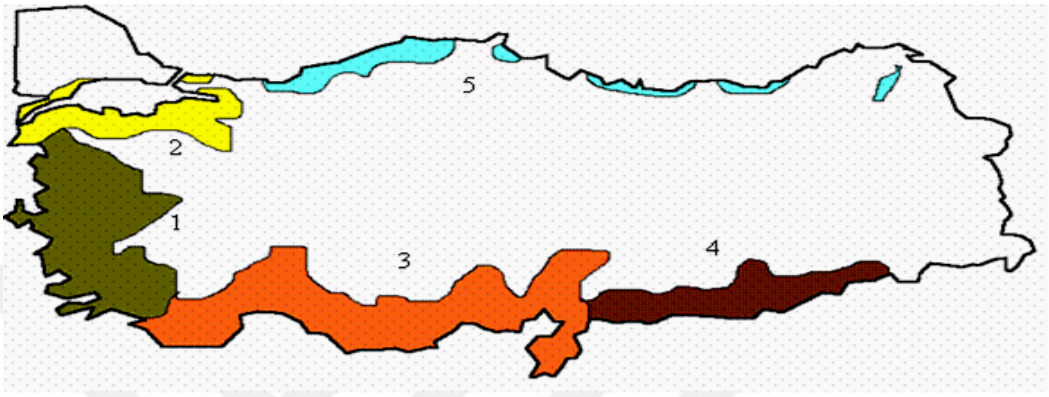
It is not exactly known that how many years the olive production has been done in the World. Despite this situation, it is estimated that the olive tree has been realized 12 thousand years of history and olive agriculture, harvest has been done for about 6 thousand years. Also, olive oil has been obtained for nearly 3 thousand years from many olive varieties. The olive oil is the only herbal oil that can be used in its natural form without any production processing in the World (Ünsal, 2003).

Olive product is making economic activity in the 38 countries. Also, olive agriculture is being made in a limited area in the World (Göğüş et al., 2009). Olive is one of the three products that people first recognize, to know the nutritional value and to evaluate it as a commercial product. In the exchange (swap) trades, olives were placed in three basic commodities, along with other important products, these were wheat and wine. Archaeological results have been showed that the olive and olive oil was one of the three products traded together with wheat and wine (Aktan and Kalkan, 1999:1).

In summary; the olive and olive oil products which are fundamental ingredients for people, provide economic contribution to millions of farmers in the worldwide and also subject to international trade. Because of these reasons, olive and olive oil are very important products in terms of producer and consumer countries.

2.1.4 The Place of Olives in Turkey

The olive has important position in the Turkey. Because of, olive is used in trade, industry, agricultural land protection, employment of labor force, human health and nutrition. The olive can be processed and served for consumption. This sector provides economic value by providing added value to the economy.



1. Ege, 2. Marmara, 3. Akdeniz, 4. Güneydoğu Anadolu, 5. Karadeniz.)
(numaralar bölgelerin ağaç sayısı ve üretim miktarlarına göre çoktan aza doğru verilmiştir:

Figure 10: The Map shows the Olive's Production Areas in Turkey
Source: T.C. Sanayi ve Ticaret Bakanlığı, 2010.

When figure 10 is examined; it can be said that olive is one of the main products of the Turkish agriculture sector with the reason that the country is grown it more intensively in the coastal areas.

Olive cultivition can also be done on less convenient soil than other agricultural products. Olive is grown in all regions except Central Anatolia and Eastern Anatolia Regions in the Turkey. And also groves of olive cover especially the Aegean coasts. In addition it has an important place in the domestic production and market; and also it is a product that provides foreign currency entry into the country economy (Akay, 1991:21).

Turkey has an important share in the World's table olive and olive oil market with production and export issues. In recent years, increasing of production and quality in the olive industry is provided by the supports because of the positive effects of olive products on human health and the consumption trends in the World. There is a rapid increases in the olive tree planting areas because of the supports are given to the sector by government.

Table 27: The Olive Trees Area in Turkey (1,000 Hectare)
Source: T.C. Gıda, Tarım ve Hayvancılık Bakanlığı, 2017.

Year	Area (1.000 ha)	Year	Area (1.000 ha)
2000	600	2009	778
2001	600	2010	784
2002	620	2011	798
2003	625	2012	814
2004	644	2013	826
2005	662	2014	826
2006	712	2015	837
2007	753	2016	846
2008	774	2017	846

When table is 27 examined; the area which has been covered by olive trees has increased each year in Turkey since from 2000. As a result of this situation shows that there is an increase in the amount of olive production in Turkey.

The Aegean Region is the first place in the olive tree density and olive production amount in Turkey. The Aegean region is followed by the Mediterranean region and the Marmara region. In Turkey's many provinces and cities, the only source of livelihood is the olive farming sector. 75% of the olive trees in Turkey have been found in the rugged terrain; 25% of them have been found in plain and lowland. This situation makes it difficult for the farmer who operates in the olive farming. Although the general structure of the olive production area differs, this sector contributes to the country's economy.

Table 28: The Amount of Olive Trees in Turkey (1.000 Pieces)
Source: T.C. Gıda, Tarım ve Hayvancılık Bakanlığı, 2017.

Year	Amount (1.000 Pieces)	Year	Amount (1.000 Pieces)
2000	97.770	2009	153.723
2001	99.000	2010	156.448
2002	101.600	2011	154.611
2003	102.750	2012	157.061
2004	107.100	2013	167.030
2005	113.180	2014	168.997
2006	129.265	2015	171.992
2007	144.329	2016	173.785
2008	151.630	2017	174.594

When table 28 is examined; the amount of olive trees has increased all over the years except for 2011 in Turkey since from 2000. The increases in the number of olive trees and groves area of olive in Turkey will increase the amount of its production.

2.1.5 The Definition of Olive Oil

The olive oil is obtained from mature fruit of olive tree (*Olea europaea sativa Hoffm et Link*). When producing olive oil, the natural qualities of the olive fruit should not be changed. The olive product is only subjected to washing, leaking, centrifugation and filtration processes in a specific thermal environment. When olive oil is obtained, mechanical and physical processes must be applied to the olive product. The olive oil that gets liquefied at room temperature is clear and the color is changing from green to yellow. Olive oil has a unique taste and smell. It is herbal oil that can be consumed naturally (Tibet, 2005:30).

The following steps can be followed in order to produce olive oil;

1) Harvesting of olives,
2) Transportation of olive to the factory,
3) Extracting of olives,
4) Washing of olives,
5) Breaking, crumbling and grinding of olives,
6) Kneading of olives,
7) Centrifugation of olive oil (decomposition),
8) Filtration and processing of olive oil,
9) Packing of olive oil.

(Access Date: June 25, 2017. http://www.komilizeytinyagi.com.tr/zeytinyagi-akademi/zeytinyaginin-seruveni)

In the production of olive oil, the period of time between collection of olive from its bough and processing of olive oil is very important. When this period is extended, the quality of olive oil is lost and also the amount of acid increases in oil which causes to deteriorate the taste of the olive oil.

It is recommended to apply the process of squeezing immediately after collecting olive from its bough for to have high quality olive oil production (Tunalıoğlu, 2004).

2.1.6 The General Informations about the Olive Oil

The ancient Greeks have been regarded the olive tree as a sacred tree and they provided a name to olive oil as a ‘’liquid gold’’. Olive oil is associated with the philosophy of healthy life all over the World. With the effect of this philosophy, the production, consumption and trade amount of olive oil is increasing and it is an important agricultural product.

2.1.7 The Types of Olive Oil

According to the the Turkish Standards Institute’s (TSE) TS 341 numbered document is *"The Edible Olive Oil Standard*" and The Official Gazette of the Turkish Republic informed about the olive oil types, to obtain of olive oil and to applies methods in olive oil production. According to these informations, olive oil types are divided into 3 groups.
These groups; (IOC, 2016:1-3)

1) Virgin Olive Oils;
   a) Extra Virgin Olive Oil,
   b) Virgin Olive Oil,
   c) Ordinary Virgin Olive Oil,
2) Refined Olive Oil;
3) Olive Oil Composed of Refined Olive Oil and Virgin Olive Oils;

Also, there is another type of olive oil. That is *olive pomace oil*. Olive pomace oil is divided into 3 groups.

These groups;
4) Olive Pomace Oil;
   a) Crude Olive Pomace Oil,
   b) Refined Olive Pomace Oil,
   c) Olive Pomace Oil Composed of Refined Olive Pomace Oil and Virgin Olive Oils,

The technical characteristics of the olive oil types that are mentioned above are detailed other page.

1) **Virgin Olive Oils**; are oils which are obtained from the fruit of the olive tree (*Olea europaea* L.) solely by mechanical or other physical tools under conditions, particularly thermal conditions, that do not lead to alterations in the oil and which have not undergone any treatment other than washing, decantation, centrifugation and filtration. Virgin olive oils shall be classified and designated as follows;

a) **Extra Virgin Olive Oil**; is virgin olive oil which has a free acidity, expressed as oleic acid, of not more than 0,8 grams per 100 grams and the other physico–chemical and organoleptic characteristics of which correspond to those fixed for this category in this standard. The highest quality and healthy olive oil is the extra virgin olive oil.

b) **Virgin Olive Oil**; is virgin olive oil which has a free acidity, expressed as oleic acid, of not more than 2 grams per 100 grams and the other physico–chemical and organoleptic characteristics of which correspond to those fixed for this category in this standard. Both in terms of its price and quality, it is much better to use it for cooking.

c) **Ordinary Virgin Olive Oil**; is virgin olive oil which has a free acidity, expressed as oleic acid, of not more than 3.3 grams per 100 grams and the other physico–chemical and organoleptic characteristics of which correspond to those fixed for this category in this standard. This type of olive oil is the lowest quality olive oil. Because of this reason, ordinary virgin olive oil can be used in fries.

The second types of virgin olive oils which should be processed or refined before consumption are listed below;

Lampante Virgin Olive Oil; is virgin olive oil which has a free acidity, expressed as oleic acid, of more than 3.3 grams per 100 grams and/or the physico–chemical and organoleptic characteristics of which correspond to those fixed for this category in this standard. It is intended for refining or for technical use. This kind of olive oil is not very suitable for to direct consumption. These types of olive oils, which are mostly moldy and defective, must be refined.

2) **Refined Olive Oil**; is olive oil obtained from virgin olive oils by applied refining methods which do not lead to alterations in the initial glyceridic structure. It has a free acidity, expressed as oleic acid, of not more than 0.3 grams per 100 grams and its other physico–chemical and organoleptic characteristics correspond to those fixed for this category in this standard. Refined olive oil can be used in fries.

3) **Olive Oil Composed of Refined Olive Oil and Virgin Olive Oils**; are oil consisting of a blend of refined olive oil and virgin olive oils fit for consumption as they are. It has a free acidity, expressed as oleic acid, of not more than 1 gram per 100 grams and its other physico–chemical and organoleptic characteristics correspond to those fixed for this category in this standard.

4) **Olive Pomace Oil**; is the oil obtained by treating olive pomace with solvents or other physical treatments, to the exclusion of oils obtained by re-esterification processes and of any mixture with oils of other kinds. It is marketed in accordance with the following designations and definitions;

a) **Crude Olive Pomace Oil**; is olive pomace oil, the physico–chemical and organoleptic characteristics of which correspond to those fixed for this category in this standard. It is intended for refining for use for human consumption, or it is intended for technical use.

b) **Refined Olive Pomace Oil**; is oil obtained from crude olive pomace oil by refining methods which do not lead to alterations in the initial glyceridic structure. It has a free acidity, expressed as oleic acid, of not more than 0.3 grams per 100 grams and its other physico–chemical and organoleptic characteristics correspond to those fixed for this category in this standard.

c) **Olive Pomace Oil Composed of Refined Olive Pomace Oil and Virgin Olive Oils**; are oil consisting of a blend of refined olive pomace oil and virgin olive oils fit for consumption as they are. It has a free acidity of not more than 1 gram per 100 grams and its other physico–chemical and organoleptic characteristics correspond to those fixed for this category in this standard. In no case shall this blend be called "olive oil".

There are also organic olive oil products which are in market are obtained by used organic production methods. This type of olive oil must be controled at every stage of production.

2.1.8 The Place of Olive Oil in the World

Almost all of the countries in the World support their agricultural sector with directly or indirectly methods. The EU applies the highest level of supports to the agricultural sector through its CAP. The CAP's aims are increase the income level and standard of living of the farmers. With this policy, the EU has become self sufficient in many agricultural products. Also, the EU has surplus in the agricultural products. And then, they export them to foreign countries. Because of this, the EU has reached the status of an important group of countries engaged in the trade of agriculture products in the World (Akay, 1991: 44-45).

Today, the olive oil is consumed as cooking oil in many countries of the World, because of its positive effects on human health. The consumption of olive oil increases every year. Olive oil sector's export volume or value is approximately 5.5 billion US $. Countries and companies which are operating in this sector need to take into account the potential economic gain of this sector to the economy.

2.1.9 The Place of Olive Oil in the Turkey

The agricultural sector is located at the forefront of economic development in Turkey. In this context, the development of agricultural based industrial sector can achieve with the most efficient agricultural production. In addition, the agricultural sector has great importance in terms of the improving the living conditions of the rural population. When we examined the Turkey's agricultural based industry, industrial sectors that use agricultural products as raw materials seem to have come to the forefront. Olive and olive oil industries are the most important sectors in among of these industrial branches.

Olive oil product is important in the Turkey's economy and human nutrition. The olive oil sector creates employment potential for many people in the Aegean region. And also this sector is a source of people subsistence. The olive oil sector creates net export income which is not underestimated in terms of Turkey. Moreover, it has a big economic potential for Turkey. There are some measures to be taken at the macro level on the basis of the entire country in order to increase this income.

There are also some measures to be taken at the micro level by the Small and Medium-sized olive oil Enterprises (SME).

The Mediterranean type of nutrition method has been recognized on The United Nations Educational, Scientific and Cultural Organization's (UNESCO) Intangible Cultural Heritage's list since from 2010. So in the future, demand for this type of nutrition will be increased and naturally consumption of olive oil will increase. Olive oil is a processed agricultural product. Because of this reason, food safety is an indicator of the quality in terms of olive oil producing enterprises. And also the product's quality is the guarantee of competition in the domestic and foreign markets (Tunalıoğlu, 2010:59).

2.2 The General Informations about Customs Tariff Statistics Position Numbers in Foreign Trade

In Turkey, the Customs Tariff Statistics Position (HS) is the code name that is given by the Customs Nomenclature consisting of 12-digits. In the entire World, the principles of tariff are constituted by the Harmonized System for each country. Harmonized System is the Harmonized Commodity Description and Coding Systems. The HS is a system that classifies international commercial goods used for all coomodities subject to international trade. All commodities have been subjected to the commercialization in HS are classified within a certain logic and system framework. The internationally HS's arrangements are carried out by the World Customs Organization (WCO). The Republic of Turkey's Ministry of Trade is the responsible authority for customs tariffs and tariffs schedule. In the all of customs, commodities of international products are traded on according to the HS codes. There is a HS code or number for each commodity or commodity groups in the international trade.

The HS consists of 21 chapters and 96 sections. The sections are divided into 2-digits code. Each section is divided into positions with 4-digits code. Also, each position is divided into sub-positions which are the 6-digits code.

The codes of 2-digits, 4-digits and 6-digits in the tariff schedules of each country are the same throughout the World. In other words, these codes refer to the same product all over the World. In the HS, the sections after the 6^{th} digits in code detail the countries according to their needs. Turkey classiffies the products with the

most detailed according to the 12-digits code base. Turkey is a country which is a member of the Customs Union that is exerted by the EU. Because of this, Turkey's 8-digits are in the codes and product group is the same with the EU countries.

The national sub-opening code which is the base of 10-digits in the Turkish Customs Tariff is the positions opened for different tax applications, but this method is not used in practice. For this reason, our country's customs taxes are determined on a 12-digits basis.

In the tariff schedule, the HS code which is the code of 12-digits, has the most detailed class of products, the customs tax of products and the statistical purposes.

The HS code includes and shows that;

- The first 4 figure; shows the position number of the goods,
- The first 6 figure; shows the HS Nomenclature code which is used by all the member states of the WCO,
- 7^{th} and 8^{th} figures; show the Combined Nomenclature code used by the EU countries,
- 9^{th} and 10^{th} figures; show the position codes opened due to different tax practices,
- 11^{th} and 12^{th} figures; show the total of HS codes.

(Aceess Date: July 01, 2018. http://www.mevzuat.net/fayda/gtip-nedir-nasil-tespit-edilir.aspx)

2.2.1 The Customs Tariff Statistics Position Numbers of Olive Oil in Foreign Trade

It is mandatory that the HS numbers are indicating these products are included in the custom's documents while importing and exporting each product subject to the trade. Olive oil is also among the products which have been exported by Turkey. For this reason, when exporting olive oil, HS numbers should be indicated in the necessary trade documents. When table 29 is examined; that shows the customs tariff statistical position numbers of the olive oil product are given in it on the product basis.

Table 29: Customs Tariff Statistics Position Numbers of Olive Oil in Foreign Trade
Source: The Official Gazette of the Turkish Republic, 2016.

The Harmonized Commodity Description and Coding Systems Number	Product Name
15.09	Olive oil and its fractions
1509.10	Virgin olive oil
1509.10.10.00.00	Lampant olive oil
1509.10.20.00.00	Extra virgin olive oil
1509.10.80.00.11	Prepackages whose net weight does not exceed maximum 1 kg.
1509.10.80.00.12	Prepackages whose net weight between minimum 1 kg. and they do not exceeding maximum the 2 kg.
1509.10.80.00.13	Prepackages whose net weight between minimum 2 kg. and they do not exceeding maximum the 5 kg.
1509.10.80.00.14	Others
1509.90	Others
1509.90.00.00.14	Prepackages whose net weight does not exceed maximum 1 kg.
1509.90.00.00.15	Prepackages whose net weight between minimum 1 kg. and they do not exceeding maximum the 2 kg.
1509.90.00.00.16	Prepackages whose net weight between minimum 2 kg. and they do not exceeding maximum the 5 kg.
1509.90.00.00.18	Others
1510.00	Other oils and their fractions obtained only from olives (refined or not refined but not chemically modified)

2.3 The Olive and Olive Oil Sector in the World

Because of the increases health awareness in the World, demand to food which is produced by natural ways is increasing. Naturally, the importance of olive and olive oil sector in the World trade has increased in recent years. In addition, rising income levels and increasing standards of living have created new markets for olive and olive oil sector. For this reason, the sector is materializing the significant developments in production, consumption and foreign trade in the World (Nizip Ticaret Odası, 2014:9).

Olives and olive oil are produced in many parts of the World, especially in countries with coasts to the Mediterranean. Approximately, there are more than 900 million olive trees on the World's 9 million hectares. 98% of the olive tree have been existed in countries where have the Mediterranean climate is present (Tunalıoğlu, 2009:10).

The World's main olive oil producer countries are; Spain, Italy, Greece, Turkey and Tunisia. The World's main olive oil consumer countries are; Italy, Spain, Greece and USA.

Countries that are not olive and olive oil producers are increasing their olive and olive oil consumption. So, olive and olive oil imports of these countries will increase over the years. According to this case, Turkey will need to quickly strengthen its position in this market. This sector's strengthening is important for Turkey's agricultural sector and its economy.

Parallel to the increases in production volume and value in the sector every year, the olive sector is also one of the main strategic sectors in the EU's Common Market Structure (Tuna, 2005:19). The major olive oil producers which are in the World are exporting a certain amount of their production and they are contributing significantly export income to their economies. However, olive tree physiologically has periodicity characteristic and therefore there are serious problems occur in its trade.

98% of the World's olive tree is being located in the Mediterranean climate region. Turkey is also in this region. In terms of developments in the agricultural technology, yield and quality in olive oil industry have increased. These developments have been provided by scientific research and R & D studies in many olive oil producing countries, especially Italy, Spain, Portugal, Israel and Greece. In recent years, scientific studies on the effects of table olive and olive oil on human health have also increased (Özkaya, 2015:636-637).

There are over 900 million olive trees in the World. Approximately 300 million of them are located in the Spain region. Spain is the World leader in olive and olive oil production sector. In Spain, it is not allowed to plant other trees in the area where olive trees exist in it. And also these areas are geographically registered by Spain government. Spain provides for 45% of the World's olive oil production alone. Spain is followed by Greece and Italy in term of production amount of olive oil. Turkey locates in the fourth rank in the World olive oil production sector.

Spain and Italy are two important countries that guide the World's olive oil trade in terms of their quality of table olives and olive oil. Their brand, their product prestige and their marketing infrastructure influence the customers to buy their products in the international market. Domestic olive oil consumption of these two countries is high and therefore it is inadequate to meet demand of domestic and foreign olive oil. As a result of this situation, Italy and Spain import bulk form of olive oil from other olive-oil producing countries. And then these countries sell these bulk forms of olive oils after processing, packaging and marking to other importer countries.

For example; Spain; it purchases raw olive oil from countries such as; Tunisia, Syria and Morocco through bilateral agreements or joint ventures application. The close commercial relations between in Italy and Syria are supported by the official institutions of both countries (Gönenç, 2011:10).

The SWOT analysis of the EU's olive oil sector shows the main strengths, weaknesses, oppourtunities and threats factors. These strengths are; product characteristics, quality of products and marketing strategies of the olive oil enterprises. The basic weaknesses of the sector are; the olive oil supply amount has been increased, but the olive oil demand amount has been stabled, high marketing costs and the inadequacy of reliable secondary data that will allow for a good market transparency. The main opportunities in the market are; due to the health concern in the World, consumption of olive oil increases by consumers. To encourage the quality olive oil production through reforms of the EU's CAP. And to reduces the protections in the trade of international agricultural commodities. The main threats into the development of the EU olive oil industry are; the prices of other herbal oils are cheaper than olive oils on the market, increases in World's olive oil supply amount and dependence of producers on supports in the sector (Mili, 2006). Recently, the EU countries are struggling to provide origin documents or geographical signs for products in the table olive and olive oil sectors. Besides this, consumers are informed by olive sector firms about consuming the products which have the origin document. Legal arrangements about on this issue have been increasing since from 1992. Until 2003, the origin of 16 products in table olive sector was registered in the whole EU. Countries such as Spain, Greece and Italy, which dominate the World table olive market, have recently implemented a marketing strategy that will create an image of the country and the region in the markets.

The dominance of the EU countries in the table olive sector is due to efforts to develop the sector in its entirety by bringing together the consumption stage with the production stage and from the support given to the sector (Duman, 2003:121).

In the 1990s, consumers increasingly went to the olive oil manufacturer and bought olive oil which had annual needs of consumer, in bulk form with barrels or demijohns. In recent years, consumers have been bought the olive oils from supermarkets because of changes in their social and economic characteristics. Products are purchased by consumers who preferred those have packaging and food safety certificate (Belletti and Marescotti, 1997).

2.3.1 The Production of Olive and Olive Oil in the World

Olive and olive oil products are unique to the Mediterranean countries. However, with the discovery of America in 1492, olive agriculture exceeded the Mediterranean borders. Today, in addition to the Mediterranean region, olive cultivation and olive oil production are being carried out in countries such as USA, South Africa, Australia, Japan and China. In the World olive and olive oil production, EU's countries have a high importance. 74% of the total World olive oil is produced by Italy, Greece and Spain. Other main producing countries are outside the EU in the World; Turkey, Syria, Tunisia and Morocco. Inevitably, olive oil production is concentrated in the Mediterranean countries; Spain, Portugal, Italy, Greece, Turkey and Tunisia. These six countries supply 90% of the total World olive oil production amount (Uruç, 2010:1-2).

90% of the World's olive cultivation has been realized in the Mediterranean basin and the rest is in the Latin America. In the World, there are approximately over the 900 million olive trees in the 9 million hectares, so olives are obtained from this area. In Spain, about 1 million tonnes of olive oil is produced from 315 million olive trees. Italy produces 300,000 tonnes of olive oil from 159 million olive trees.

The shares of the countries in World olive cultivation areas and their share in olive production amount are parallel to each other. In addition, more product efficiency is gained with innovative works in the sector. If the countries use the new centrifugal system in olive oil production, they have developed and renewed themselves in the sector. Olive oil enterprises which are in the EU countries have almost completely removed the aqueous (water) press production system and they

have started to use the super press production method when they produce olive oil. In reverse, the Turkey have been still widely used the aqueous (water) press production system when it produces olive oil.

Table 30: The World Table Olive Production Amount (1.000 Tonnes)

Source: International Olive Council, June 2018. (*2017/2018's data is provisional.)

Country	2000/1	2001/2	2002/3	2003/4	2004/5	2005/6	2006/7	2007/8	2008/9	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18 (*Prov.)
Albania	-	-	-	-	-	-	-	6.0	20.0	18.0	28.0	27.0	41.0	28.5	30.0	30.0	38.0	30.0
Algeria	33.5	48.0	63.5	59.0	85.5	68.5	81.0	91.0	98.0	136.0	192.5	145.5	175.0	208.0	233.5	221.0	293.0	280.0
Argentina	30.0	38.0	50.0	70.0	60.0	85.0	75.0	100.0	95.0	220.0	90.0	150.0	60.0	140.0	120.0	73.0	96.0	105.0
Egypt	70.0	135.0	340.0	95.0	194.5	200.0	436.0	432.0	440.0	409.0	350.0	384.5	453.0	400.0	450.5	335.5	550.0	500.0
Iran	-	-	-	12.0	18.0	24.0	39.5	39.5	30.5	47.5	47.0	35.0	48.0	67.5	68.0	60.5	75.5	70.0
Jordan	24.0	13.0	28.0	26.5	29.0	23.0	24.0	29.5	27.0	34.0	54.0	26.0	28.0	19.5	34.5	35.5	19.0	35.0
Lebanon	7.0	5.5	6.0	7.0	6.0	6.0	6.0	22.5	19.0	19.5	40.0	17.5	17.5	16.5	17.0	19.0	23.0	27.0
Morocco	80.0	90.0	80.0	120.0	80.0	100.0	90.0	100.0	100.0	90.0	110.0	100.0	100.0	120.0	100.0	120.0	120.0	130.0
Tunisia	11.5	6.5	6.5	26.0	13.0	26.5	15.0	18.0	18.0	22.0	20.0	24.0	25.0	22.0	26.0	26.0	22.0	28.0
Turkey	**224.0**	**85.0**	**165.0**	**125.0**	**240.0**	**280.0**	**240.0**	**200.0**	**300.0**	**390.0**	**330.0**	**400.0**	**410.0**	**430.0**	**390.0**	**397.0**	**430.0**	**460.0**
EU	**576.5**	**764.5**	**644.5**	**759.0**	**739.5**	**623.5**	**714.5**	**720.5**	**677.0**	**675.0**	**828.5**	**741.0**	**780.5**	**794.0**	**868.0**	**886.5**	**842.0**	**875.0**
USA	60.0	120.0	81.0	100.0	87.0	116.0	18.0	109.0	47.5	24.0	154.0	26.0	78.0	82.5	33.5	70.5	60.5	66.0
Peru	13.0	16.0	37.5	31.0	32.0	30.0	52.0	112.0	9.0	75.0	72.5	81.0	57.5	110.0	40.5	56.0	79.5	70.0
Syria	142.0	80.0	170.0	120.0	200.0	120.0	200.0	100.0	120.00	135.0	147.0	172.0	134.0	120.0	75.0	150.0	190.0	100.0
Other Countries*	71,5	72	101,5	51,5	68	59,5	97,5	71,5	81,5	74	99,5	103	105	102	94,5	96	91	94,5
World Total	**1.343**	**1.473,5**	**1.773,5**	**1.602**	**1.852,5**	**1.762**	**2.088,5**	**2.151,5**	**2.082,5**	**2.369**	**2.563**	**2.432,5**	**2.512,5**	**2.660,5**	**2.581**	**2.576,5**	**2.929,5**	**2.870,5**

Other Countries*: Cyprus, Croatia, Iraq, Israel, Libya, Montenegro, Palestine, Saudi Arabia, Australia, Brazil, Chile, Mexico, other countries of out list.

The table 30 shows; the amount of table olive production in the World has generally increased since from 2000. Some years, it is seen that due to the genetic structure, that name is periodicity, of the olive product; there is a decrease in production. The EU's countries, Egypt, Turkey, Algeria, Morocco, Syria, and Iran are the leader countries in the World table olive production. For the period of 2017/2018, 2.870,5 tonnes of table olive production is expected in the World. In addition, the production of Morocco and Egypt is directed only to table olives.

Table 31: The EU Table Olive Production Amount (1.000 Tonnes)

Source: International Olive Council, June 2018. (*2017/2018's data is provisional.)

Countries of EU	2000/1	2001/2	2002/3	2003/4	2004/5	2005/6	2006/7	2007/8	2008/9	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18 (*Prov.)
Spain	415.8	575.4	448.3	579.4	537.5	420.3	499.7	553.3	485.7	492.6	608.6	521.5	491.0	572.2	555.6	601.0	596.1	562.1
Greece	85.0	115.0	117.0	92.0	115.0	125.5	108.0	95.0	105.0	107.0	135.0	130.0	197.0	130.0	249.0	194.0	180.0	235.0
Italy	65.0	60.0	66.0	65.0	63.4	61.0	80.0	55.7	68.5	58.6	69.7	75.7	76.0	69.3	42.0	66.0	39.9	48.0
Portugal	8.7	12.0	11.0	11.3	11.4	8.0	19.2	11.0	13.0	12.3	10.3	9.0	12.5	17.5	17.4	20.8	21.7	25.5
Other EU Countries*	1.8	2.0	2.0	11.1	12.1	8.7	7.6	5.5	4.5	4.6	4.9	4.8	4.2	4.9	4.1	4.7	4.2	4.6
EU Total	**576.3**	**764.4**	**644.3**	**758.8**	**739.4**	**623.5**	**714.5**	**720.5**	**676.7**	**675.4**	**828.5**	**741.0**	**780.7**	**793.9**	**868.1**	**886.5**	**841.9**	**875.2**

Other EU Countries*: Cyprus, Croatia, France, and Malta.

The table 31 shows; for the period of 2017/2018, the total amount of table olive that will be produced by the EU countries is estimated at 875 thousand tonnes. Spain, Greece and Italy almost meet the all of the EU's total table olive production amount. For the period of 2017/2018, the total amount of table olive production in the EU is thought to supply 30% of the total World table olive production amount. Also, Portugal can find its place in the EU's table olive producers.

Table 32: The World Olive Oil Production Amount (1.000 Tonnes)

Source: International Olive Council, June 2018. (*2017/2018's data is provisional.)

Country	2000/1	2001/2	2002/3	2003/4	2004/5	2005/6	2006/7	2007/8	2008/9	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18 (*Prov.)
Albania	-	-	-	-	-	-	-	4.0	6.0	5.0	8.0	7.0	12.0	10.5	11.0	10.0	11.5	11.0
Algeria	26.5	25.5	15.0	69.5	33.5	32.0	21.5	24.0	61.5	26.5	67.0	39.5	66.0	44.0	69.5	82.0	63.0	80.0
Argentina	4.0	10.0	11.0	13.5	18.0	23.0	15.0	27.0	23.0	17.0	20.0	32.0	17.0	30.0	30.0	24.0	24.0	43.5
Egypt	0.5	1.5	5.0	2.0	2.5	2.5	10.5	7.5	5.0	3.0	4.0	9.0	16.5	20.0	17.0	16.5	30.0	28.0
Iran	3.0	2.5	1.5	2.5	4.0	4.5	4.0	4.5	4.5	4.0	4.0	7.0	3.5	5.0	4.5	5.0	3.5	9.0
Jordan	27.0	14.0	28.0	25.0	29.0	22.0	37.0	21.5	18.5	17.0	27.0	19.5	21.5	19.0	23.0	29.5	20.0	25.0
Lebanon	6.0	5.0	6.0	7.5	6.0	5.5	6.0	10.5	12.0	9.0	32.0	14.0	14.0	16.5	21.0	23.0	25.0	25.0
Morocco	35.0	60.0	45.0	100.0	50.0	75.0	75.0	85.0	85.0	140.0	130.0	120.0	100.0	130.0	120.0	130.0	110.0	140.0
Tunisia	130.0	35.0	72.0	280.0	130.0	220.0	160.0	170.0	160.0	150.0	120.0	182.0	220.0	70.0	340.0	140.0	100.0	280.0
Turkey	**175.0**	**65.0**	**140.0**	**79.0**	**145.0**	**112.0**	**165.0**	**72.0**	**130.0**	**147.0**	**160.0**	**191.0**	**195.0**	**135.0**	**160.0**	**150.0**	**208.0**	**263.0**
EU	**1.940,5**	**2.463,5**	**1.942,5**	**2.448**	**2.357**	**1.928,5**	**2.031**	**2.118,5**	**1.939**	**2.224,5**	**2.209**	**2.395**	**1.461,5**	**2.482,5**	**1.434,5**	**2.324**	**1.751,5**	**2.174,5**
USA	0.5	0.5	1.0	1.0	1.5	1.0	1.0	2.0	3.0	3.0	4.0	4.0	4.0	12.0	5.0	14.0	15.0	16.0
China	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.5	5.0	5.0	6.0
Syria	165.0	92.0	165.0	110.0	175.0	100.0	154.0	100.0	130.0	150.0	180.0	198.0	175.0	180.0	105.0	110.0	110.0	100.0
Other Countries*	52.5	51	63.5	36	61.5	46.5	87	66.5	92	77.5	110	103	95,5	97,5	115	113	110	110,5
World Total	**2.565,5**	**2.825,5**	**2.495,5**	**3.174**	**3.013**	**2.572,5**	**2.767**	**2.713**	**2.669,5**	**2.973,5**	**3.075**	**3.321**	**2.401,5**	**3.252**	**2.458**	**3.176,5**	**2.586,5**	**3.311,5**

Other Countries*: Cyprus, Croatia, Israel, Libya, Montenegro, Palestine, Uruguay, Saudi Arabia, Australia, Chile, Mexico, other countries of out list.

The table 32 shows; for the period of 2017/2018 season, the total amount of olive oil production in the World is estimated at 3.311,5 tonnes. Approximately, 66% of this production amount is provided by the member countries of the EU. The EU countries, Turkey, Tunisia and Syria are the leader producer countries in the World olive oil production sector. China and USA gradually have been started to produce olive oil. It is noteworthy that there is civil war and confusion in Syria; however Syria produces a large amount of olive oil.

Table 33: The EU Olive Oil Production Amount (1.000 Tonnes)

Source: International Olive Council, June 2018. (*2017/2018's data is provisional.)

Countries of EU	2000/1	2001/2	2002/3	2003/4	2004/5	2005/6	2006/7	2007/8	2008/9	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18 (*Prov.)
Spain	973.7	1.411,4	861.1	1.412	989.9	826.9	1.111,9	1.236,1	1.030	1.401,5	1.391,9	1.615	618.2	1.781,5	842.2	1.403,3	1.290,6	1.251,3
Greece	430.0	358.3	414.0	308.0	435.0	424.0	370.0	327.2	305.0	320.0	301.0	294.6	357.9	132.0	300.0	320.0	195.0	346.0
Italy	509.0	656.7	634.0	685.0	879.0	636.5	490.0	510.0	540.0	430.0	440.0	399.2	415.5	463.7	222.0	474.6	182.3	428.9
Portugal	24.6	33.7	28.9	31.2	41.2	29.1	47.5	36.3	53.4	62.5	62.9	76.2	59.2	91.6	61.0	109.1	69.4	134.8
Other EU Countries*	3.2	3.6	4.7	11.8	12.1	12.1	11.4	9.1	10.3	10.6	13.3	10.2	10.9	13.9	9.3	17.4	14.2	13.5
EU Total	**1.940,5**	**2.463,7**	**1.942,7**	**2.448**	**2.357,2**	**1.928,6**	**2.030,8**	**2.118,7**	**1.938,7**	**2.224,6**	**2.209,1**	**2.395,2**	**1.461,7**	**2.482,7**	**1.434,5**	**2.324,4**	**1.751,5**	**2.174,5**

Other EU Countries*: Cyprus, Croatia, France, Malta, and Slovenia.

The table 33 shows; Spain, Italy, Greece and Portugal, which are members of the EU, are in the first place in the olive oil production both in the World and in the EU. These countries are operated in high-volume production also they are the dominant countries in the sector. For a long time, Spain is the World's largest olive oil producer country and also as a country, the olive oil sector is seriously invested. And the sector is protected and supported by government.

In the amount of total World table olive production, countries that are belonging to the EU are producing the highest values with an average level is 70%. In the production of table olives, the first rank among the EU countries is Spain with 60% production share. Spain is followed by Greece and Italy about production amount (Nizip Ticaret Odası, 2014:9-10).

When table 33 is examined; Turkey's and Tunisia's olive oil production quantities are close together. Because of this reason, the fourth rank of producer country differs by years. Spain is in the first place in the production of olive oil in the World as well as in the production of table olives. Spain is followed sequentially by Italy, Greece, Tunisia and Turkey in the olive oil production.

In the period of 2016/2017 season, the World had experienced a decline of approximately 20% in total olive oil production. This decline was occured in Italy, 62%; in Greece, 40% and in Spain, 8%. Turkey had been raised olive oil production amount approximately 38% in this season. Naturally, in this season there was big demand to Turkey's olive oil products.

Some of the EU countries are at an important point in the World's olive oil production. As the World olive oil production is increasing or decreasing year by year, EU countries are leading the World olive oil market.

Before 1980, Italy was the major producer country in the nine member states. With the participation of Greece was in the European Economic Community (EEC) in 1981, the European Community's olive oil market has become 100% self-sufficient. In 1986, Spain and Portugal have been joined as a member to the union. Thus, the community has nearly doubled in the total production of olive oil. At the same time, Italy also is an important olive oil importer country in the union.

The most demanded olive oil type in the World is natural and natural extra virgin olive oil. In Turkey, natural virgin olive oil production ratio is in between 30% to 40%, while it is 70% to 80% in EU countries.

2.3.2 The World Olive and Olive Oil Consumption

Scientific researches which are revealing the benefits of olive oil on human health have been started from 1970's years. Especially after the 1990s, the positive effects of olive oil on the cancer diseases have been proven. As a result of this situation, olive oil has become a universal product. Also, olive oil has been consumed outside of the production areas. Naturally, the World's olive oil trade has increased. (Bakırlıoğlu, 2006:5).

At the current situation, consumption amount is falling rapidly in the countries where is producing olive oil. However, in the non-producer countries' consumption amount of olive oil shows an increase.

In countries where olive oil production is not realized, has an average of 200,000 tonnes of olive oil consumption amount. Drought and climate change affect to countries that produce olive oil in the EU, olive oil production amount decreases. This situation causes the unit price of olive oil to increase. If we look at the olive oil consumption amount according to the country basis; the annual consumption of olive oil per capita in Greece is 12.8 liters, 11.3 liters in Spain, 10.5 liters in Italy, 7.2 liters in Portugal, 5.5 liters in Cyprus, 3.2 litres in Luxembourg, 3.0 litres in Malta, 1.7 litres in France. In recent years, there have been significant increases in the per capita consumption of olive oil in Turkey. Nevertheless, Turkey's olive oil consumption amount is 1.4 liters. The per capita consumption of olive oil in Lebanon, Jordan and Tunisia approximately is 3 liters. In USA, which is not a member of the International Olive Council (IOC), consumption per capita is rising day by day, though nowadays its consumption amount in per capita is 0.9 liters (Access Date: June 10, 2018. http://www.zeytindergisi.com/dunyada-kisi-basi-zeytinyagi-tuketimi/)

Table 34: The World Table Olive Consumption Amount (1.000 Tonnes)
Source: International Olive Council, June 2018. (*2017/2018's data is provisional.)

Country	2000/1	2001/2	2002/3	2003/4	2004/5	2005/6	2006/7	2007/8	2008/9	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18 (*Prov.)
Albania	-	-	-	-	-	-	-	7.5	20.0	19.0	28.5	28.0	41.0	29.0	31.0	30.0	31.5	31.5
Algeria	33.0	47.0	60.5	64.0	80.0	80.0	81.5	86.0	97.5	134.0	189.0	166.0	172.0	205.0	240.0	234.0	300.5	289.0
Argentina	12.5	13.0	13.5	20.0	15.0	15.0	15.0	13.0	14.0	35.0	35.0	35.0	35.0	35.5	25.0	35.0	40.0	40.0
Egypt	57.0	75.0	190.0	138.0	200.0	170.0	300.0	350.0	360.0	340.0	300.0	300.0	330.0	319.0	369.0	319.0	400.5	400.0
Iran	-	-	-	12.0	19.5	25.5	40.5	40.5	32.5	47.5	50.5	37.5	49.0	63.5	67.0	58.5	71.0	68.0
Jordan	23.5	11.5	26.5	24.0	26.0	20.5	24.0	19.0	25.5	30.5	51.0	19.0	23.0	17.5	28.0	32.5	16.0	30.0
Lebanon	8.0	9.0	5.5	6.5	9.0	5.5	5.5	20.0	20.0	20.5	25.0	25.0	25.0	20.0	19.5	20.0	21.0	25.0
Morocco	21.0	22.0	31.0	45.0	27.5	35.0	32.0	35.5	29.0	32.0	32.0	32.0	32.0	33.0	30.0	31.0	31.0	31.0
Tunisia	11.0	6.0	6.5	24.0	13.0	24.0	16.0	18.0	10.0	20.0	20.0	20.0	22.0	21.0	26.0	23.0	20.0	25.0
Turkey	**125.0**	**100.0**	**114.0**	**96.0**	**175.0**	**221.0**	**180.0**	**190.0**	**240.0**	**260.0**	**300.0**	**350.0**	**350.0**	**355.0**	**330.0**	**318.5**	**350.0**	**380.0**
EU	**461.0**	**525.0**	**538.5**	**572.5**	**548.0**	**564.5**	**628.0**	**577.0**	**549.0**	**510.0**	**592.0**	**664.5**	**589.0**	**530.5**	**542.0**	**578.5**	**598.5**	**600.5**
USA	185.0	205.0	205.0	210.0	205.0	220.0	220.0	240.5	210.0	203.0	240.0	210.0	210.0	210.5	185.0	215.0	206.0	206.0
Peru	9.0	9.0	30.5	20.5	19.0	19.0	40.0	60.0	25.5	50.0	50.0	50.0	40.0	40.0	40.0	32.0	45.0	45.0
Syria	110.0	74.0	156.5	131.5	162.5	102.0	148.0	94.0	94.0	116.0	122.0	132.0	104.0	107.0	92.0	147.0	180.0	112.0
Other Countries*	247.5	286.0	350.0	306.0	332.0	327.0	348.5	379.5	383.0	381.5	431.0	483.0	530.5	507.0	455.5	425.5	461.5	462.0
World Total	**1.303,5**	**1.382,5**	**1.728**	**1.670**	**1.831,5**	**1.829**	**2.079**	**2.130,5**	**2.110**	**2.199**	**2.466**	**2.552**	**2.552,5**	**2.493,5**	**2.480**	**2.499,5**	**2.772,5**	**2.745**

Other Countries*: Cyprus, Croatia, Iraq, Israel, Libya, Montenegro, Palestine, Uruguay, Saudi Arabia, Australia, Brazil, Bulgaria, Canada, Chile, Japan, Romania, Russia, Switzerland, Mexico, other countries of out list.

The table 34 shows; the World consumption of table olive generally increases. For the period of 2017/2018 season, it is expected that consumption of table olive will be approximately 2.745 thousand tonnes in the World. Egypt is the World's most olive-consuming country. Egypt is followed by Turkey, Algeria, USA, Spain, Italy and Syria in terms of consumption issue. Table olive has been consumed by many countries of the World. The table olive consumption habit contributes to the olive-producing countries as a commercial and economic value.

Table 35: The EU Table Olive Consumption Amount (1.000 Tonnes)

Source: International Olive Council, June 2018. (*2017/2018's data is provisional.)

Countries of EU	99/00	2001/2	2002/3	2003/4	2004/5	2005/6	2006/7	2007/8	2008/9	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18 (*Prov.)
Spain	167.5	215.6	192.7	205.0	167.4	214.1	243.8	183.6	147.7	107.9	150.0	217.9	188.6	175.4	189.3	182.7	197.2	190.0
France	34.1	39.0	62.0	44.9	53.9	53.9	55.1	52.7	53.0	56.8	58.0	56.2	67.3	60.0	60.0	65.0	65.0	65.0
Greece	26.6	29.5	33.0	30.0	43.0	28.0	26.0	24.0	20.0	20.0	16.0	15.0	20.0	14.0	20.0	15.0	15.0	15.0
Italy	116.8	150.0	150.0	150.0	147.2	139.0	122.0	122.0	138.5	122.4	148.0	139.8	145.2	119.7	101.0	126.3	105.0	116.8
Portugal	15.0	14.1	13.8	17.1	12.7	9.4	8.8	12.8	12.7	7.0	10.0	7.0	6.0	6.0	5.0	5.8	6.0	6.0
Germany	26.6	36.5	37.4	39.5	41.4	40.0	48.9	51.6	47.2	57.8	62.9	65.1	40.8	36.7	37.2	41.9	42.7	61.0
Romania	-	-	-	-	-	-	23.2	31.0	16.5	22.9	23.5	22.0	17.5	19.2	20.9	25.4	27.3	25.1
United Kingdom	12.8	13.0	18.1	21.1	23.6	26.8	41.6	26.4	28.7	33.7	39.6	41.6	34.6	34.1	34.2	36.7	37.7	35.8
Poland	-	-	-	8.1	6.4	3.4	1.7	5.3	6.9	8.3	9.8	8.5	7.6	9.0	10.6	10.8	11.4	10.2
Other EU Countries*	22.3	27.2	31.3	56.8	52.1	50.0	57.0	67.6	78.1	73.3	74.6	91.5	62.0	56,4	63.6	69.2	91.3	75.7
EU Total	**421.7**	**524.9**	**538.3**	**572.5**	**547.7**	**564.6**	**628.1**	**577.0**	**549.3**	**510.1**	**592.4**	**664.6**	**589.2**	**530.5**	**541.8**	**578.8**	**598.6**	**600.6**

Other EU Countries*: Cyprus, Croatia, Malta, Slovenia, Austria, Belguim, Bulgaria, Denmark, Estonia, Finland, Hungary, Ireland, Latvia, Lithuania, Luxembourg, Netherlands, Czech Rep., Slovakia, Sweden, other countries of out list.

The table 35 shows; Spain, Italy, France, Germany, UK are the EU's most table olive-consuming countries respectively. Consumption of table olives is increasing the in European countries. This situation provides to increase the number of new potantial export markets for Turkey. Approximately, 22% of the World table olive consumption is realized by EU countries.

Table 36: The Wold Olive Oil Consumption Amount (1.000 Tonnes)

Source: International Olive Council, June 2018. (*2017/2018's data is provisional.)

Country	2000/1	2001/2	2002/3	2003/4	2004/5	2005/6	2006/7	2007/8	2008/9	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18 (*Prov.)
Albania	-	-	-	-	-	-	-	4.5	7.0	6.0	9.0	8.0	13.0	11.5	12.5	11.5	13.0	12.5
Algeria	26.0	25.0	21.0	60.0	38.0	35.0	23.0	25.0	55.0	33.5	59.0	42.5	60.5	48.5	65.0	80.0	67.0	85.0
Argentina	6.0	5.5	5.5	5.5	5.0	5.5	3.0	7.0	5.0	5.0	5.5	6.0	6.0	6.5	6.5	7.5	7.5	8.0
Egypt	1.0	1.5	3.5	2.0	2.5	2.0	8.0	7.0	5.0	7.0	5.0	7.5	12.0	18.5	20.0	16.5	22.0	22.0
Iran	3.0	2.0	1.5	3.5	5.0	6.5	5.5	7.5	7.0	6.5	7.5	11.0	8.5	10.0	9.0	10.5	11.0	12.0
Jordan	17.0	20.0	25.0	24.0	25.0	19.0	21.0	23.5	23.5	20.0	20.0	17.0	20.0	25.0	22.0	29.0	19.0	24.5
Lebanon	8.0	7.0	4.5	5.0	5.0	5.5	5.0	9.0	20.0	9.5	20.0	20.0	20.0	18.0	18.0	18.0	20.0	22.0
Morocco	45.0	60.0	60.0	70.0	38.0	55.0	65.0	65.0	70.0	90.0	100.0	122.0	129.0	120.0	120.0	120.0	120.0	120.0
Tunisia	58.0	28.0	30.0	56.0	44.0	38.0	45.0	50.0	21.0	30.0	30.0	35.0	40.0	37.0	30.0	35.0	21.0	33.0
Turkey	**72.5**	**55.0**	**50.0**	**46.0**	**60.0**	**50.0**	**80.0**	**85.0**	**108.0**	**110.0**	**131.0**	**150.0**	**150.0**	**105.0**	**125.0**	**116.0**	**150.0**	**160.0**
EU	**1.835**	**1.894,5**	**1.918,5**	**1.997,5**	**2.079**	**1.918**	**1.905**	**1.866**	**1.856**	**1.846**	**1.866,5**	**1.790**	**1.621**	**1.731**	**1.604,5**	**1.660**	**1.398,5**	**1.573,5**
Australia	31.0	27.5	31.5	34.5	32.5	34.5	47.5	35.0	37.0	44.0	44.0	40.0	37.0	37.0	37.0	42.0	45.0	45.0
Brazil	25.0	22.5	21.0	23.5	26.5	26.0	34.5	40.0	42.0	50.5	61.5	68.0	73.0	72.5	66.5	50.0	59.5	70.0
Canada	24.5	24.0	25.0	26.0	32.0	30.0	32.5	29.0	30.0	37.0	40.0	39.5	37.0	40.5	37.5	41.0	39.5	40.0
China	-	-	-	-	-	-	-	-	12.0	18.0	29.5	40.0	39.0	32.0	33.5	39.0	44.0	45.0
USA	194.5	188.5	184.0	216.5	215.5	223.0	248.0	246.0	256.0	258.0	275.0	300.0	287.0	301.5	295.0	321.0	315.0	312.0
Japan	30.0	31.5	30.5	32.0	32.0	30.0	30.5	29.0	30.0	40.5	35.5	43.0	51.0	54.0	59.0	53.5	54.5	55.0
Syria	110.0	86.0	128.5	150.0	135.0	79.0	110.0	80.0	110.0	120.5	130.5	135.5	160.5	170.5	126.0	104.0	98.0	100.0
Other Countries*	104.0	128.0	137.5	130.5	148.5	133.5	135.0	146.0	137.0	170.5	191.5	210.5	224.5	236.5	229.0	225.0	220.0	238.5
World Total	**2.590,5**	**2.606,5**	**2.677,5**	**2.882,5**	**2.923,5**	**2.690,5**	**2.798,5**	**2.754,5**	**2.831,5**	**2.902,5**	**3.061**	**3.085,5**	**2.989**	**3.075,5**	**2.916**	**2.979,5**	**2.724,5**	**2.978**

Other Countries*: Cyprus, Croatia, Iraq, Israel, Libya, Montenegro, Palestine, Uruguay, Saudi Arabia, Chile, Mexico, Norway, Russia, Switzerland Taiwan, other countries of out list.

The table 36 shows; the consumption amount of olive oil that is in the World has been increased 1.8 times since from 1999. There have been a few decreases in the total consumption of olive oil amount in the some years. However, the overall picture of consumption amount of olive oil is followed by an increasing graphic. For the period of 2015/2016 season, olive oil consumption amount increased by 4.6% compared to the previous season. The countries, which are not member to the IOC, provided the most important contribution to this sector's increase. People, who want to be in prosperity life and much longer live, consume more olive products. Because of this reason, olive oil production and consumption will increase in the World absolutely further in the coming years. In the 2017; Spain, Italy, USA, Turkey, Morocco, Syria, Greece and France are the countries that consumed the most olive oil in the World. The number of countries that have begun to consume olive oil product rapidly in recent years is also not few number. USA, Canada, Japan, Australia, Germany and UK have consumption potential of olive oil products in the World. Sector will see these countries on the top of olive oil consumption list in the coming years.

The olive oil's the cheapest shelf selling price is 10 US $ in the World. Also, 15-18 US $ is normal shelf selling prices for olive oil consuption markets. Turkey is the one of the mainland of olives in the World. Because of this reason, we must need to evalute this sector efficiently.

Table 37: The EU Olive Oil Consumption Amount (1.000 Tonnes)

Source: International Olive Council, June 2018. (*2017/2018's data is provisional.)

Countries of EU	2000/1	2001/2	2002/3	2003/4	2004/5	2005/6	2006/7	2007/8	2008/9	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18 (*Prov.)
Spain	580.8	631.2	591.3	613.9	615.7	477.8	538.7	546.3	533.6	539.4	554.2	574.0	486.9	524.8	492.2	494.5	454.4	470.0
France	92.0	95.1	97.0	94.0	97.1	99.5	101.8	101.6	113.5	114.8	112.8	112.0	113.1	110.6	106.0	113.4	94.0	111.0
Greece	270.0	270.0	270.0	270.0	283.0	265.0	269.5	264.0	229.0	228.5	227.5	200.0	180.0	140.0	130.0	140.0	105.0	130.0
Italy	729.0	735.0	770.0	785.0	840.0	848.2	730.0	705.0	710.0	675.7	660.0	610.0	550.0	641.1	571.7	598.1	438.9	560.7
Portugal	60.5	61.5	64.9	67.0	74.5	71.6	76.8	75.8	87.5	87.8	82.0	78.0	74.0	75.0	70.0	70.0	70.0	80.0
Germany	36.3	38.6	40.0	38.5	46.3	45.3	48.3	48.0	47.7	50.1	58.8	61.0	60.5	66.0	64.2	62.7	60.9	62.3
Belguim	12.4	12.7	11.8	11.4	12.3	11.7	6.2	3.2	11.5	12.3	13.7	13.4	13.8	15.4	14.9	16.7	14.4	14.3
United Kingdom	33.8	25.5	47.0	71.6	60.1	48.8	47.6	56.1	56.4	55.3	69.5	59.2	62.0	61.3	62.9	65.1	69.6	60.5
Poland	-	-	-	3.2	3.3	3.2	3.4	3.5	5.1	3.5	9.6	10.4	7.9	8.0	7.8	7.4	6.7	10.4
Other EU Countries*	20.3	24.8	26.6	42.7	46.6	46.8	82.3	62.4	61.7	78.6	78.4	72.3	73.2	88.7	85.0	92.5	84.8	74.3
EU Total	**1.835,1**	**1.894,4**	**1.918,6**	**1.997,3**	**2.078,9**	**1.917,9**	**1.904,6**	**1.865,9**	**1.856**	**1.846**	**1.866,5**	**1.790,3**	**1.621,4**	**1.730,9**	**1.604,7**	**1.660,4**	**1.398,7**	**1.573,5**

Other EU Countries*: Cyprus, Croatia, Malta, Slovenia, Austria, Bulgaria, Denmark, Estonia, Finland, Hungary, Ireland, Latvia, Lithuania, Luxembourg, Netherlands, Czech Rep., Slovakia, Sweden, other countries of out list.

The table 37 shows; olive oil consumption was close to 2 million tons in European countries due to campaigns and advertisements. However, this level was not maintained and the consumption amount went down. The most consumption of olive oil in the EU countries occurs in producer countries. Italy is the leader country in the consumption of olive oil among European countries in terms of overall consumption volume. However, consumption of olive oil in Italy has also started to fall significantly since from 2006. For the period of 2016/2017 season, the consumption of olive oil in Italy was limited to 440 thousand tonnes. This consumption rate is the lowest rate that seen in the last 20 years. The situation was not very different in Spain and Greece. The fall in consumption of olive oil, which started in 2006, has accelerated due to the economic crises in the following years and for the period of 2016/2017 season, consumption of olive oil decreased by 22%.

2.3.3 The World Olive and Olive Oil Import

The countries belongs to the EU, which generally import as a bulk type of olive oil in large quantities from the other olive oil producer countries (such as; Turkey, Tunisia). The European countries export these bulk types of olive oil to foreign markets after they processed and packaged them. The importation of olive oil, which the EU has done, is carried out according to the country's inward processing regime agreements (Arpazlı, 2008:32).

The most of the World olive oil imports are carried out by Italian origin companies. Italy imports a significant portion of its olive oil as bulk (raw olive oil or unprocessed olive oil) type of olive oil. Italy processes this raw olive oils in its country, puts them in small bottles, in packages and then exports them to both the World and EU countries again. Approximately, 80% of Italy's olive oil importation is occured from Spain. In addition, Italy's major olive oil suppliers are Greece, Tunisia and Portugal. Italy is able to import cheap olive oil especially from Spain.

When table 38 is examined; the total amount of table olive imports in the World is a dominant structure that has generally increased since from 2000. Most of the World's table olive imports are carried out by some countries which are USA, Brazil and the some countries in the EU. It can be said that table olive imports have increased in many other countries. Many countries that do not have the ability to produce table olives supply these products from other producer countries through imports. As it is in the olive oil sector, table olive sector is one of the sectors that have high commercial and economic potential in terms of producer countries.

Table 38: The World Table Olive Import Amount (1.000 Tonnes)

Source: International Olive Council, June 2018. (*2017/2018's data is provisional.)

Country	2000/1	2001/2	2002/3	2003/4	2004/5	2005/6	2006/7	2007/8	2008/9	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18 (*Prov.)
Albania	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	1.0	3.0	2.5	2.5	2.0	2.5	4.5	4.0	4.0	5.0
Algeria	0.0	0.0	0.0	0.0	0.0	0.5	0.5	2.0	4.0	1.5	0.0	15.5	12.0	8.0	0.0	11.5	15.0	0.0
Argentina	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0
Egypt	0.5	0.0	0.5	0.5	0.5	0.5	0.0	0.0	0.0	0.5	0.0	1.0	0.5	0.0	0.5	0.0	0.0	0.0
Iran	0.0	0.0	0.0	0.0	2.0	2.0	1.0	1.0	1.0	1.0	3.0	3.5	1.0	0.5	0.0	0.0	0.0	0.0
Iraq	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.0	6.0	15.5	15.5	15.5	22.0	15.5	16.0	15.5
Jordan	0.0	0.5	0.5	0.0	0.5	15.0	0.5	0.0	0.5	0.5	0.0	1.0	0.0	2.0	1.0	1.0	3.0	1.0
Lebanon	1.0	3.5	0.0	0.5	4.5	0.5	3.5	9.5	6.0	5.0	1.0	2.0	2.0	3.0	4.0	3.0	2.5	2.5
Libya	3.0	4.0	4.0	2.5	3.5	4.5	4.5	4.5	4.5	4.5	4.5	11.0	11.0	11.0	8.0	13.5	13.5	13.0
Turkey	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
EU	**56.5**	**58.0**	**73.0**	**70.5**	**79.0**	**83.5**	**104.5**	**115.0**	**96.5**	**101.0**	**114.0**	**98.5**	**82.0**	**93.0**	**93.0**	**94.0**	**99.0**	**101.0**
USA	111.0	113.0	115.0	117.5	124.5	120.0	148.5	140.0	126.0	185.0	138.0	132.0	143.0	135.5	152.0	154.0	146.0	146.0
Saudi Arabia	15.0	18.0	20.0	20.0	20.0	20.0	27.0	27.0	27.0	27.0	27.5	36.5	36.5	38.5	30.0	26.0	28.0	28.0
Brazil	45.0	50.0	46.0	51.0	56.0	55.0	60.5	74.0	69.0	79.0	87.0	101.5	109.0	114.0	103.0	102.0	114.0	115.0
Canada	20.5	22.0	23.5	23.5	23.5	25.0	25.5	26.0	26.0	27.5	27.5	27.5	29.0	29.0	29.0	30.0	28.5	28.5
Russia	21.0	30.0	40.0	40.0	45.0	45.0	70.0	80.0	90.0	67.0	71.5	68.0	75.0	72.5	23.0	22.0	25.0	25.0
Other Non Production Countires	33.0	39.0	56.0	40.0	40.0	45.0	30.0	40.0	40.0	40.0	50.0	70.5	70.5	70.5	70.0	60.0	80.0	75.0
Other Countries*	49.5	62.0	71.5	115.0	81.0	78.5	46.0	62.0	54.5	67.0	61.5	59.0	56.5	72.0	69.0	73.0	72.5	71.5
World Total	**358.0**	**400.0**	**449.5**	**441.0**	**480.0**	**495.0**	**522.0**	**582.5**	**546.0**	**628.5**	**594.0**	**647.5**	**645.5**	**667.5**	**609.0**	**609.5**	**647.0**	**627.0**

Other Countries*: Cyprus, Croatia, Israel, Morocco, Montenegro, Palestine, Tunisia, Uruguay, Australia, Bulgaria, Chile, Japan, Romania, Switzerland, Mexico, Peru, other countries of out list.

Table 39: The EU Table Olive Import Amount (1.000 Tonnes)
Source: International Olive Council, June 2018. (*2017/2018's data is provisional.)

Countries of EU	2000/1	2001/2	2002/3	2003/4	2004/5	2005/6	2006/7	2007/8	2008/9	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18 (*Prov.)
Spain	1.9	1.0	2.1	2.7	3.2	15.8	13.0	5.1	2.0	1.9	2.5	1.5	5.3	7.8	11.8	7.3	6.8	9.1
France	26.4	23.4	34.8	25.7	30.5	30.5	27.3	28.3	25.9	28.3	44.0	26.8	27.3	28.9	28.6	31.6	32.0	31.0
Greece	0.0	1.5	2.0	4.0	9.0	0.5	0.0	3.0	1.7	1.5	2.1	3.5	3.9	4.1	3.7	5.5	7.7	8.0
Italy	3.8	5.9	5.6	8.8	7.5	7.2	7.9	10.7	8.3	8.7	6.5	6.9	5.5	7.9	6.8	8.2	9.2	10.4
Belgium	5.5	5.6	6.5	6.8	5.1	4.8	5.0	6.0	6.9	8.5	8.3	14.3	9.2	10.1	9.9	10.9	12.1	12.1
Germany	12.1	13.3	12.3	13.0	12.7	12.8	14.5	13.4	14.5	11.5	13.2	9.4	7.1	7.8	7.7	9.2	9.3	9.2
Romania	0.0	0.0	0.0	0.0	0.0	0.0	17.9	23.6	7.0	16.6	18.2	16.9	8.3	11.4	9.3	9.4	9.4	9.2
Bulgaria	0.0	0.0	0.0	0.0	0.0	0.0	6.4	16.4	22.8	11.7	9.5	9.9	8.5	8.0	7.5	4.6	4.8	4.6
Other EU Countries*	6.9	7.1	9.6	9.4	11.2	11.9	12.4	8.4	7.3	12.6	10.0	9.3	6.9	7.0	7.5	16.3	8.0	7.7
EU Total	**56.6**	**57.8**	**72.9**	**70.4**	**79.2**	**83.5**	**104.4**	**114.9**	**96.4**	**101.3**	**114.3**	**98.5**	**82.0**	**93.0**	**92.8**	**94.0**	**99.3**	**101.3**

Other EU Countries*: Cyprus, Croatia, Malta, Portugal, Slovenia, Austria, Denmark, Estonia, Finland, Hungary, Ireland, Latvia, Lithuania, Luxembourg, Netherlands, Poland, Czech Rep., United Kingdom, Slovakia, Sweden, other countries of out list.

The table 39 shows; the amount of table olive imports of the EUis increasing by the general structure of the year. France, Belgium, Germany, Romania and Italy which are the member countries of the EU, import table olive from other producer countries.

Table 40: The World Olive Oil Import Amount (1.000 Tonnes)

Source: International Olive Council, June 2018. (*2017/2018's data is provisional.)

Country	2000/1	2001/2	2002/3	2003/4	2004/5	2005/6	2006/7	2007/8	2008/9	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18 (*Prov.)
Egypt	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0	3.5	4.0	1.0	1.5	1.0	1.0	6.0	0.5	0.0	0.0
Turkey	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
EU	**127.0**	**42.5**	**93.5**	**231.5**	**186.0**	**189.0**	**224.0**	**162.0**	**96.0**	**78.0**	**82.0**	**96.5**	**153.0**	**53.0**	**224.5**	**97.5**	**90.5**	**160.0**
Saudi Arabia	4.0	5.0	7.0	7.5	5.5	4.5	4.0	5.0	5.5	5.5	13.5	13.5	19.5	20.0	22.0	22.0	23.0	23.0
Australia	30.0	26.5	31.5	31.0	28.5	29.0	41.5	27.0	28.5	35.0	32.0	31.5	28.5	28.0	22.0	26.0	29.0	29.0
Brazil	25.0	22.5	21.0	23.5	26.5	26.0	34.5	40.0	42.0	50.5	61.5	68.0	73.0	72.5	66.5	50.0	59.5	70.0
Canada	25.5	24.0	25.0	26.0	32.0	30.0	32.5	29.0	30.0	37.0	40.0	39.5	37.0	40.5	37.5	41.0	39.5	41.0
USA	200.0	193.0	191.5	226.0	221.0	232.0	250.0	245.0	255.0	258.0	275.0	300.0	288.0	302.5	294.5	314.0	305.0	305.5
Japan	29.0	31.5	30.5	32.0	32.0	30.0	30.5	29.0	30.0	40.5	35.5	43.0	51.0	54.0	59.0	53.5	54.5	55.0
China	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.0	18.0	29.5	40.0	39.0	32.0	31.0	34.0	39.0	39.0
Russia	4.0	4.0	6.0	7.0	9.0	9.5	10.5	17.0	15.0	22.0	21.0	24.0	27.0	30.0	19.0	19.5	19.5	20.0
Switzerland	8.0	9.0	10.0	11.0	11.0	11.5	12.0	12.5	6.0	13.0	13.0	13.5	13.5	13.5	14.0	14.5	14.5	15.0
Other Non Production Countries	20.0	38.0	34.0	31.0	50.5	41.5	25.0	25.0	20.0	35.0	40.0	55.0	60.0	70.0	70.0	65.0	60.0	75.0
Other Countries*	44.0	40.5	42.0	36.5	32.0	36.0	40.0	44.5	57.0	55.5	60.5	43.0	62.5	62.5	54.5	53.0	52.5	47.5
World Total	517.0	437.0	492.5	663.0	634.0	639.0	704.5	636.0	600.5	652.0	704.5	769.0	853.0	779.5	920.5	790.5	786.5	880.0

Other Countries*: Albania, Algeria, Argentina, Croatia, Iran, Iraq, Israel, Jordan, Lebonan, Morocco, Libya, Palestine, Uruguay, Chile, Mexico, Norway, Syria, Switzerland Taiwan, other countries of out list and other non production countries.

The table 40 shows; the amount of World olive oil imports has declined for some years and some years have increased since from 2000. We can say that according to the table the import of olive oil is increased by the general structure. USA, some of the EU countries, Brazil, Japan, Canada and countries that do not have the opportunity to produce olive import olive oil the most. China and Russia also have the potential to import olive oil.

Table 41: The EU Olive Oil Import Amount (1.000 Tonnes)

Source: International Olive Council, June 2018. (*2017/2018's data is provisional.)

Countries of EU	2000/1	2001/2	2002/3	2003/4	2004/5	2005/6	2006/7	2007/8	2008/9	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18 (*Prov.)
Spain	15.8	1.6	18.2	49.4	39.2	48.0	67.9	40.3	10.8	13.7	14.7	14.2	54.7	14.4	104.7	47.3	41.0	61.7
France	0.2	0.1	0.4	0.2	0.4	1.2	2.5	3.7	4.4	4.7	6.3	6.7	8.9	7.3	10.9	4.5	7.7	9.4
Italy	110.8	40.7	74.3	180.2	144.0	135.6	149.3	116.6	79.5	56.3	58.0	73.9	79.2	26.8	96.0	40.6	35.9	84.6
Portugal	0.0	0.0	0.2	1.4	1.8	3.2	2.2	0.1	0.1	1.1	0.0	0.1	8.1	2.1	9.4	0.9	1.9	0.0
Germany	0.1	0.0	0.1	0.1	0.3	0.2	0.0	0.3	0.3	0.2	0.8	0.6	0.4	0.7	0.6	0.6	0.6	1.0
Other EU Countries*	0.2	0.0	0.1	0.5	0.5	0.5	1.8	1.0	1.1	2.0	2.5	1.1	1.9	1.9	2.9	3.6	3.4	3.2
EU Total	**127.1**	**42.4**	**93.3**	**231.8**	**186.2**	**188.7**	**223.7**	**162.0**	**96.2**	**78.0**	**82.3**	**96.6**	**153.2**	**53.2**	**224.5**	**97.5**	**90.5**	**159.9**

Other EU Countries: Greece, Slovenia, Austria, Bulgaria, Ireland, Netherlands, United Kingdom, Slovakia, Sweden, other countries of out list.

The table 41 shows; Italy, Spain and France import the most olive oil amoung the EU countries. Italy and Spain are the most important olive and olive oil producer countries in the World. Because of the periodicity characteristic affect the countries olive production. So, imports and exports of olive oil in these two countries rise for some years and some years decrease. Especially in Italy and Spain, it makes economic gain by purchasing and exporting olive oil according to the form of inward processing regime trade.

2.3.4 The World Olive and Olive Oil Export

The easiest and the at least risky way to get involved in the foreign markets is export activity. *Export* is defined as the sale of commercial goods to abroad according to the applied export regulations and current customs rules. The export method uses administrative and financial resources at the minimum level when a company intends to enter international markets. In shortly, export is selling the commodities to foreign market's customers (Bradley, 1995).

The geographical, cultural and historical proximity of the countries with each other increases trade transactions. In addition, the implementation of trade and investment agreements which are organized by government states increases the commercial activities and export incomes.

There are a limited number of countries in the olive oil production and its export sector. Because of olive production takes place in the countries where are in the with Mediterranean climate region. Countries that have a significant share in the World olive oil production also have a play important role in the World olive oil foreign trade. Italy, Tunisia, Portugal and Turkey produce approximately 85% of the World's olive oil production volume. The increases in the demand of olive oil in the World further increase the importance of these countries in the trade of olive oil (Karabulut, 2013:13).

When we examine the export of table olive and olive oil in the World, as a result of the policies and reforms that the EU countries have implemented in production and export stages, the EU countries have more reliable and influential position in the World trade than Turkey. (Bayramer, 2015:3)

Regional trade agreements and direct marketing strategies are made in the olive oil sector. These advantageous situations increase the export of related countries. The olive oil sector creates an important production area in the EU. The reasonable and stable policies which are applied in the EU increase the production efficiency in the olive oil sector. Also, new countries have been joined to the EU. As a result of this situation, the EU's export amount of olive oil has reached a high level. Particularly with Greece joined the EU, the EU's share in the World total olive oil export increased by about half.

Table 42: The World Table Olive Export Amout (1.000 Tonnes)

Source: International Olive Council, June 2018. (*2017/2018's data is provisional.)

Country	2000/1	2001/2	2002/3	2003/4	2004/5	2005/6	2006/7	2007/8	2008/9	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18 (*Prov.)
Albania	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.5	2.0	1.5	2.0	2.0	3.0	4.0	4.0	3.0
Argentina	29.0	24.0	35.0	45.0	50.0	61.0	70.0	90.5	73.0	110.0	72.0	89.5	68.0	72.0	46.5	56.0	61.5	55.0
Egypt	12.0	25.0	80.0	45.0	17.0	7.0	100.0	110.0	88.0	71.5	78.0	93.5	127.5	65.0	46.5	56.5	107.5	120.0
Jordan	0.5	1.5	2.0	3.0	3.0	17.5	0.5	11.0	2.0	4.0	3.0	7.5	0.5	4.0	5.0	7.0	9.5	5.0
Lebanon	0.0	0.0	0.5	1.0	1.0	1.0	1.5	11.0	2.0	4.0	2.0	1.5	1.0	2.0	2.0	2.0	4.0	4.0
Morocco	62.5	61.0	52.0	69.5	59.0	63.0	58.5	66.0	57.0	68.0	77.0	68.0	72.5	87.0	78.0	88.0	86.0	90.0
Turkey	**32.0**	**56.0**	**35.0**	**51.0**	**58.0**	**54.0**	**55.0**	**20.0**	**65.00**	**65.5**	**72.0**	**60.0**	**70.0**	**70.5**	**63.5**	**72.0**	**60.0**	**90.0**
EU	**205.5**	**214.0**	**229.0**	**208.5**	**237.0**	**254.0**	**261.0**	**248.0**	**239.0**	**300.0**	**290.5**	**298.0**	**270.0**	**283.5**	**315.0**	**278.5**	**284.5**	**290.5**
USA	4.0	4.0	5.5	4.0	4.5	5.0	4.0	4.0	4.5	4.0	4.0	4.0	3.5	8.0	6.0	5.5	6.0	6.0
Mexico	2.5	12.0	5.0	4.0	3.0	3.0	0.0	0.0	0.0	15.0	0.5	0.0	0.0	2.5	0.0	10.5	5.5	4.0
Peru	4.0	6.0	7.0	11.0	13.5	11.0	12.0	18.0	16.0	20.0	21.5	32.0	23.0	32.0	31.5	24.5	21.5	22.0
Syria	8.0	16.0	6.0	18.5	34.0	23.0	29.0	23.0	24.0	24.0	30.0	35.0	23.0	5.0	4.0	3.0	0.0	0.0
Other Countries*	4.0	2.0	2.5	1.5	0.0	3.5	6.5	5.0	13.0	5.5	6.5	9.0	9.0	4.5	3.0	3.5	3.5	3.5
World Total	**364.0**	**421.5**	**460.5**	**462.0**	**480.0**	**503.0**	**598.0**	**606.5**	**584.5**	**693.0**	**659.0**	**699.5**	**670.0**	**638.0**	**604.0**	**611.0**	**653.5**	**693.0**

Other Countries*: Croatia, Israel, Palestine, Tunisia, Australia, Chile, other countries of out list.

The table 42 shows; table olive export volume generally increased in the World. However, in some years it appears that table olive export volume have decreased. In the worldwide, the EU has the countries which are at most exporting table olive. Egypt is at the top of the export list after the EU. Also, Turkey and Morocco are among the countries in which exports of table olives. Some innovator countries which have suitable climatic characteristics and olive growing conditions have started working on olive cultivation sector since from 2000. These innovator countries collect the fruits of their work in recent years. In additon, these countries export gradually even in small quantities.

Table 43: The EU Table Olive Export Amount (1.000 Tonnes)

Source: International Olive Council, June 2018. (*2017/2018's data is provisional.)

Countries of EU	2000/1	2001/2	2002/3	2003/4	2004/5	2005/6	2006/7	2007/8	2008/9	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18 (*Prov.)
Spain	165.7	172.0	188.8	169.7	184.1	187.4	193.0	198.3	165.2	225.1	211.3	209.1	179.3	195.2	218.4	177.3	177.2	177.4
Greece	31.0	34.0	30.0	28.0	38.0	51.0	39.0	30.0	53.0	49.0	53.0	57.5	61.5	55.5	66.2	72.9	78.0	84.6
Italy	1.3	2.0	1.9	2.0	2.1	2.3	3.0	2.6	2.9	3.3	4.7	5.0	6.2	7.5	7.9	9.8	9.7	10.0
Portugal	5.0	3.1	4.1	5.6	5.3	6.5	18.5	9.7	11.4	15.2	15.6	16.5	10.3	12.6	12.4	12.8	13.2	13.6
Other EU Countries*	2.6	2.9	4.0	3.3	7.6	6.7	7.3	7.2	6.3	7.2	6.1	9.8	13.0	12.8	10.0	5.7	6.6	5.2
EU Total	**205.6**	**214.0**	**228.8**	**208.6**	**237.1**	**253.9**	**260.8**	**247.8**	**238.8**	**299.8**	**290.7**	**297.9**	**270.3**	**283.6**	**314.9**	**278.5**	**284.7**	**290.8**

Other EU Countries*: Cyprus, Croatia, France, Slovenia, Germany, Austria, Belguim, Bulgaria, Denmark, Estonia, Finland, Hungary, Latvia, Lithuania, Netherlands, Poland, Czech Rep., United Kingdom, Slovakia, Sweden, other countries of out list.

The table 43 shows; table olive export volume generally increased in the EU. However, in some years it appears that table olive export volume have decreased. Spain and Greece which are the EU countries are among the first countries in the World export table olive sector. And also, these countries are leading the sector. Italy and Portugal have been increasing the amount of table olive exports over the years.

Table 44: The World Olive Oil Export Amount (1.000 Tonnes)
Source: International Olive Council, June 2018. (*2017/2018's data is provisional.)

Country	2000/1	2001/2	2002/3	2003/4	2004/5	2005/6	2006/7	2007/8	2008/9	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18 (*Prov.)
Argentina	4.0	5.0	5.5	5.5	12.5	16.0	15.0	18.5	14.0	19.0	12.0	23.5	12.0	21.5	12.0	31.0	16.5	36.0
Lebanon	0.0	0.0	1.5	1.5	1.5	1.0	3.0	2.5	2.5	3.0	3.0	4.0	4.0	6.0	7.5	9.5	7.0	7.0
Egypt	0.5	0.5	2.0	0.0	0.0	0.5	2.0	1.0	3.5	0.0	0.0	3.0	4.0	2.0	4.0	1.0	6.5	7.5
Palestine	2.0	0.0	0.0	8.0	10.0	10.0	11.5	0.0	3.0	0.5	4.0	3.5	3.5	4.0	6.5	4.5	4.0	4.0
Morocco	0.0	0.5	3.0	20.5	31.0	21.0	4.5	2.0	3.0	21.0	30.5	11.0	10.0	9.5	25.0	17.0	9.0	15.0
Tunisia	95.0	22.0	40.0	209.0	98.0	115.5	175.0	130.0	142.0	97.0	108.0	129.5	170.0	58.0	304.0	102.5	89.5	200.0
Turkey	**92.0**	**28.0**	**74.0**	**46.0**	**93.5**	**73.0**	**45.0**	**15.0**	**31.0**	**29.5**	**12.0**	**20.0**	**92.0**	**35.0**	**30.0**	**15.0**	**45.0**	**90.0**
EU	**291.0**	**324.5**	**313.5**	**324.5**	**330.5**	**310.5**	**351.0**	**357.0**	**376.0**	**444.0**	**481.0**	**555.5**	**491.0**	**600.5**	**508.0**	**573.5**	**558.0**	**578.5**
Australia	0.0	0.0	0.0	0.5	1.5	3.5	2.5	4.0	6.5	8.0	6.0	6.5	2.5	4.5	4.5	4.0	4.5	4.5
Chile	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.5	2.0	3.0	6.5	10.0	10.0	10.0	14.5	10.5	13.0	10.5
USA	3.5	5.0	9.5	9.0	12.0	10.0	3.0	3.0	3.0	2.5	3.0	4.5	6.0	5.5	6.5	7.5	7.0	12.0
Syria	10.0	5.5	30.5	28.0	36.0	35.0	40.0	20.0	15.0	18.0	23.0	25.0	30.0	10.0	0.0	6.0	12.0	0.0
Other Production Countries	1.0	0.0	0.5	0.5	0.5	3.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Other Countries*	3.0	3.5	1.5	3.0	5.0	3.5	0.5	0.5	7.0	2.5	1.5	2.0	3.0	13,5	1.5	1.5	1.0	1.0
World Total	**502.0**	**394.5**	**483.0**	**657.5**	**633.5**	**603.5**	**662.0**	**562.5**	**608.5**	**653.0**	**695.5**	**803.0**	**843.0**	**785.0**	**929.0**	**788.5**	**778.0**	**971.0**

Other Countries*: Cyprus, Croatia, Israel, Jordan, Libya, Saudi Arabia, Mexico, other countries of out list.

The table 44 shows; countries which are members of the EU export approximately 50%-65% of the World's olive oil for many years. These countries have an important position in the olive and olive oil sector. Tunisia, Turkey, Argentina, Morocco are located in the top of olive oil export list. The amount of olive oil export has decreased in some countries (such as; Syria, Palestine) where have internal confusion is experienced from time to time.

Tablo 45: The EU Olive Oil Export Amout (1.000 Tonnes)

Source: International Olive Council, June 2018. (*2017/2018's data is provisional.)

Countries of EU	2000/1	2001/2	2002/3	2003/4	2004/5	2005/6	2006/7	2007/8	2008/9	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18 (*Prov.)
Spain	88.3	112.5	107.0	114.2	110.9	99.0	124.8	133.9	153.4	196.5	196.2	248.0	197.6	289.7	236.8	297.8	291.3	304.2
France	1.3	1.0	1.3	1.3	0.0	1.3	1.6	1.5	1.6	1.4	1.8	1.9	1.7	2.3	2.0	2.3	2.9	1.9
Greece	10.0	10.0	15.0	10.0	10.0	10.0	12.8	9.8	11.0	12.0	13.0	15.5	18.0	15.7	16.8	19.3	18.7	9.8
Italy	173.0	182.9	176.1	181.5	191.5	181.7	185.8	180.2	176.9	195.1	223.5	233.2	217.6	233.3	199.6	208.1	199.5	217.7
Portugal	17.3	16.2	13.1	15.9	16.6	16.7	23.2	29.0	30.7	35.8	42.7	51.5	50.5	53.8	47.6	40.5	39.5	39.7
Other EU Countries*	1.1	1.7	1.1	1.5	1.5	1.9	2.7	2.6	2.6	3.6	4.1	5.4	6.0	5.9	5.3	5.5	6.2	5.2
EU Total	**291.0**	**324.3**	**313.6**	**324.4**	**330.5**	**310.6**	**350.9**	**357.0**	**376.2**	**444.4**	**481.3**	**555.5**	**491.4**	**600.7**	**508.1**	**573.5**	**558.1**	**578.5**

Other EU Countries*: Cyprus, Croatia, Germany, Slovenia, Austria, Belguim, Bulgaria, Denmark, Estonia, Finland, Hungary, Ireland, Latvia, Lithuania, Netherlands, Poland, Czech Rep., Romania, Sweden, United Kingdom, other countries of out list.

The table 45 shows; Spain, Italy, Portugal and Greece have high levels of export olive oil products. The total olive oil export volume of the EU has generally increased. However, fluctuations were experienced in the export of olive oil sector between the years of 2011-2016. Mediterranean climate characteristics are experienced in some countries in Europe. Because of this situation, these countries are in the top rank in the olive oil sector.

2.4 The Olive and Olive Oil Sector in Turkey

In Turkey, olive and olive oil sector has risen rapidly in the years 1929-1950. The sector was slowed down in the period of 1950-1960, but then sector was continued to develop regularly. In 1963, this development was slowed down because of the *Delice Design Project*. And then, sector was regressed by the abolition of by this project in 1965. In the 1970s, economically different products had begun to produced. An event that was occured is the destruction of olive grove areas for various uses in conjunction with the *Tourism Encouragement Act*. in 1980. As a result of this phenomenon, the sector was very depressed. It is known that the revitalization of the industry and the begining of its development were carried out in the 1990s. This development has been occurred with the transition from traditional olive cultivation to modern olive cultivation (Tunalıoğlu, 2010:17).

Turkey is a country that has significant production amount potential in the olive and olive oil sector with existing ecological conditions and increasing number of olive trees. While some part of the olive oil produced is supplied to the domestic market and a significant amount of it is exported to abroad (Savran and Demirbaş, 2012:11).

Turkey which is in the olive and olive oil products sector in terms of production and export quantities is located in the top five countries in the World list. Because of this list, olive and olive oil sector has great importance for Turkey.

Turkey that is in the olive and olive oil production sector is one of the leading countries in the World. However, especially in the olive production sector the desired production level and quality standards can not be achieved because of a number of structural defects.

The main problem is the problem of *alternans*. Alternans problem does not have solved yet. This problem leads to a fluctuating in the course of production. This situation creates some negativitiy especially about in the export of olive products. The fluctuating structure in the production negatively affects the creation of a continuous market and the competitive power in them (Özden, 2006:2-3). Moreover, the fact that products are not processed as demanded by foreign market customers negatively affects the sector. There are some problems in the Turkey's olive and olive oil sector. Turkey should take measure as soon as possible for the solution.

Agricultural Sales Cooperatives Union (TARIS) have an important position in order to establish unity and solidarity, to form a strong organizational structure and to depend on sound foundation in the olive and olive oil sector. TARIS Olive and Olive Oil Agricultural Sales Cooperatives Association is a large producer organization. It has approximately 28 thousand partners or members and its activities continue especially in the Aegean Region. TARIS Olive and Olive Oil Agricultural Sales Cooperatives Association Union which was established in 1913 and the union were also adopted by law in 1935. The main aim of TARIS Olive and Olive Oil Agricultural Sales Cooperatives Association Union is; olives bought on behalf of its partners to process and marketing in the fastest and highest quality manner. When TARIS Olive and Olive Oil Agricultural Sales Cooperatives Union which are developing and growing the living standards of the cooperative partners increases domestic or regional olive cultivation developments (Accessed Date: January 10, 2018. http://www.tariszeytinyagi.com/www.tariszeytinyagi.com/taris-hakkinda.html).

Turkey was leaved from the IOC's membership by the goverment decision in 1998. In the same year, the National Olive Farming Congress was organized in İzmir. In this congree, voiced these negative reactions about the IOC. And at the same time, the National Olive and Olive Oil Council (UZZK) were thought to organize in our country. In these circumstances, the UZZK was established to become the first product council in 2007, Turkey. The purpose of this council is; to bring together public, non-governmental organizations and private sector, the development of the structural power of Turkey's olive farming, the promotion of branding, the production development in the olive and olive oil products, the development of consumption and trade. And the registration of production, the integration of producers, industrialists, domestic and foreign markets by bringing together (Access Date: January 10, 2018. http://uzzk.org/Belgeler/uzzk_tarihce.txt).

The Aegean Olive and Olive Oil Exporters' Association (EZZIB) which has made great contributions to the Turkish olive and olive oil sector and is trying to increase production and exports amounts in the sector. EZZIB is a member of the Aegean Exporters' Association (EIB) which is established for to take a big step in the sector. In addition, Zeytindostu Association which is one of the successful non-governmental organizations of the olive industry in our country is working for the development of the sector. Bilge Agac Magazine and Zeytin Bilimi Magazine which contain current academic informations and all developments about the olive sector in

Turkey and the World. Zeytin Bilimi Magazine which depends on the Republic of Turkey Ministry of Agriculture and Forestry is prepared and published by the Olive Research Institute. Exhibition of Olivtech is one of the most important fair for related person of olive and olive oil sector. In addition, there are many doctoral and master's thesis, nationally and internationally published articles and papers, sectoral report have written about olives and olive sector in Turkey.

For further development in the industry, Turkey's first Olive and Olive Oil Derivatives and Products Organized Industrial Zone was laid in the year 2017, Akhisar, Manisa province. The olive and olive oil sector has needed special organized industrial zone for a long time and this project will be a pilot application when the zone will start activity. This specialized organized industrial zone will provide many advantages to the firms which will operate in the olive and olive oil sector.

Advantages of the Organized Industrial Zone;

- The SMEs that will produce products in these areas will be able to benefit from the planned infrastructure, common infrastructure services and can make production easier and cheaper than other,
- More industrial investments will be encouraged to zone, employment, production and exports will be increased,
- Planned settlement will be ensured and regular urbanization will develop.

Komili company which is the first Turkish origin olive oil brand. It was founded in 1878 and it has operated in the sector. While, Komili company is maintaining its leadership in the Turkish olive oil sector with 35% market share. Komili is followed by TARIS company. TARIS has 27% market share in the sector. Marmarabirlik company has a significant market share that is 22% in the table olive sector, but it has a lowest market share that is 1%-%2 in the olive oil sector in Turkey (İpek, 2010:86). In recent years, Marmarabirlik has taken the leader position in the table olive sector and also it is on the top of many commercial lists.

Komili company was founded in 1878, Madra company was founded in 1914, and Kırlangıc company was founded in 1953 in Turkey. These companies have an important position in Turkey’s main sectors and economy. Unfortunately in 2017, these companies are sold to Bunge company which is the Netherlands’ global company. Also, this Bunge company bought Salat company which was a Turkish brand from 1966.

Turkey's Turyağ company now owned by the USA's Cargill company, Turkey's Koza and Vadi companies now owned by the USA's Seaboard Cooperation company, Turkey's Yudum company now owned by the Afia International company which is Saudi Arabia origin. Turkey's Oruçoğlu company now owned by the Trans-Atlantic Group DMMC company which is United Arab Emirates origin. Dutch's the Unilever company which is operating in the Turkey's oilseed and herbal oil sector as a manufacturer is the largest global company in the World and Turkey. In addition, The Dutch's company is Bunge, Cargill is an American company, Amylin company is a partnership of British-USA, French company is Limagrain continues its activities in Turkey.

2.4.1 The Olive and Olive Oil Production in Turkey

Turkey is among the most important olive and olive oil producing country in the World. In 1967, the number of olive tree was 67 million; in 1985 it was reached 82 million, Turkey. Approximately, it has reached to 173 million levels by the end of year 2017. Olive and olive oil production is expected to increase in terms of the plans and applications for the future. This expectation of increase in olive production volume is aimed not only to increase domestic consumption, but also to ensure the continuity of existing markets and new markets in exports. To provide regular and high quality olive products production is very important to sell them to international markets. Producers who are in Turkey have newly begun to be more conscious about the extra virgin olive oil. During the packaging of olive oil, the plastic pet is given up and colored glass bottle is used in the sector.

Turkey which has suitable geographical location has the appropriate climate features for grown of olive like that Mediterranean countries such as Tunisia, Italy, Greece, and Spain. Turkey has these characteristics that provide to Turkey to make the World's leading olive and olive oil producers. Turkey's share in the World total olive and oil olive production shows a fluctuation from year to year. But, generally Turkey has second rank in the World production of table olives. And also it has fourth rank in the World production of olive oil (Karabulut, 2013:7-8).

Olive has a different genetic structure, this name is periodicity. Because of this reason, production of olive amount is different each year. One year production of olive has increased and next year production amount of olive has decreased. If the necessary

maintenance operations are performed on the olive tree, the effect of the period can be reduced. Turkey's olive periodicity problem affects the production of olive oil production. Turkey has approximately 173 million olive trees. This amount of olive tree provides second rank to Turkey in the World olive tree wealth list after Spain. But, Turkey is ranked at the 5th in the 5-years average of production. Turkey's last 5 year olive oil production averange is 170 thousand tonnes in the World production list. This amount corresponds to 5.75% share of the World total olive oil production volume. Thus, Turkey has 5th rank in the production list. Turkey's last 5 year olive oil consumption averange is 130 thousand tonnes in the World consuption list. This amount corresponds to 4.28% share of the World total olive oil consumption volume. Thus, Turkey has 6th rank in the consumption list. Turkey's last 5 year olive oil exportation averange is 43 thousand tonnes in the World exportation list. This amount corresponds to 5% share of the World total olive oil exportation volume. Thus, Turkey has 4th rank in the exportation list. In terms of internationally, Turkey is not a major manufacturer. But, Turkey finds position owns in the sector because it is constantly seller-exporter in the sector. Because World's stockpiles of olive oil are no longer in circulation stocks, all produced olive oils are consumed in the same year.

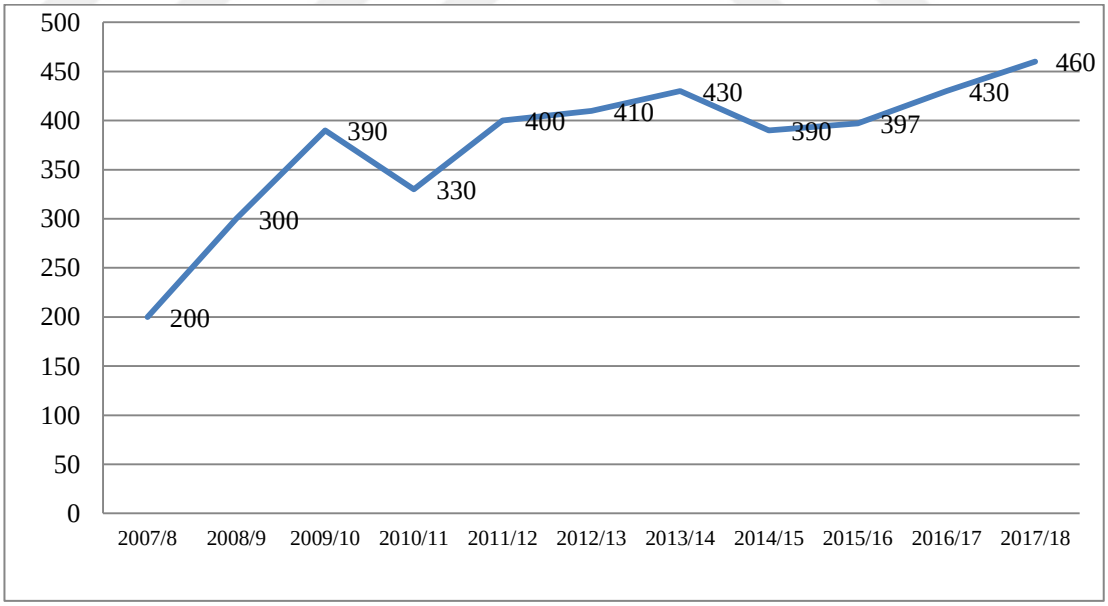


Figure 11: The Table Olive Production Amount in Turkey (1.000 Tonnes)
Source: International Olive Council, June 2018. (2017/2018's data is provisional)

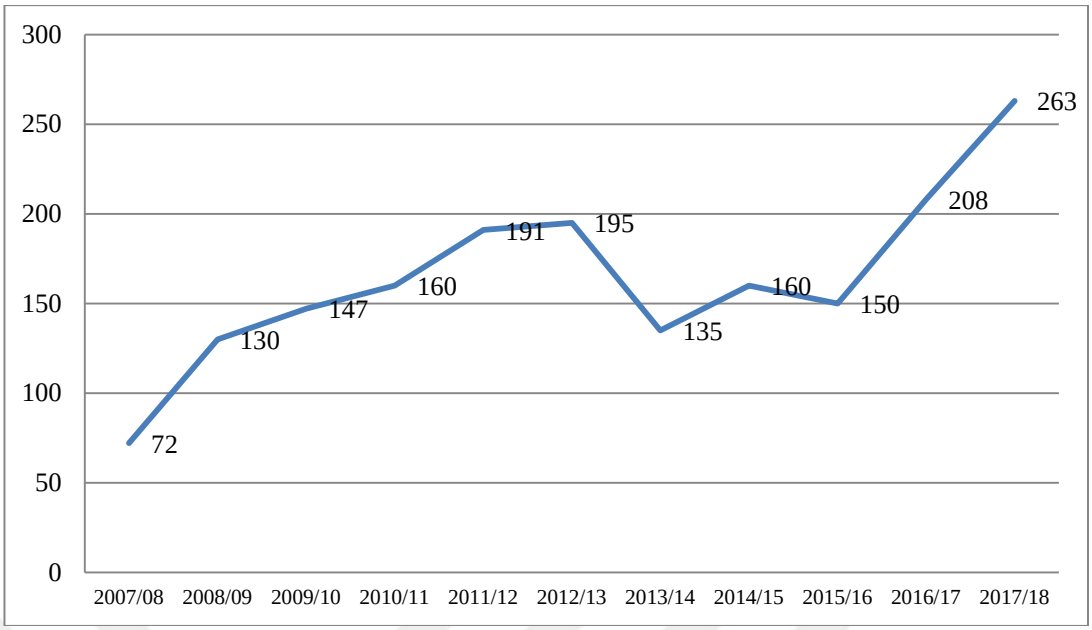


Figure 12: The Olive Oil Production Amout in Turkey (1.000 Tonnes)
Source: International Olive Council, June 2018. (2017/2018's data is provisional)

The figure 11 shows; the production amount of table olive in Turkey is fluctuating in the last 10 years. But, overall it is seen to be increasing graphic. The figure 12 shows; the production amount of olive oil in Turkey is increasing in the last 10 years. But, the production amount of olive oil declined in the period of 2013/2014 season and then in the following years this reduction was compensated.

In Turkey, Aegean, Marmara, Mediterranean, and Southeast Anatolia Region are important olive producing regions. Especially Aydın, İzmir, Muğla, Balıkesir, Bursa, Manisa, Çanakkale, Gaziantep and Mersin produce olive products. The Aegean Region has 74% of the total number of olive trees and 73% of total olive production. 25% of the olive from olives produced in Turkey, while 75% is produced for obtaining olive oil (T.C. Sanayi ve Ticaret Bakanlığı, 2010:4-5).

Olive and olive oil production is important for all around the World. Because olive and olive oil products are healthy nutritions. This sector that provides employment potential to unemployments is contributing positivley to the country's economy. But, when the operations are correctly completed from the first stage to the last stage in the sector, there can be success in the sector. There are many problems in olive and olive oil sector. At the beginning of the main problems; are the enterprises that realize processing production. These enterprises are usually located in product manufacturing areas as small companies. In addition, they can not renew themselves because of the insufficient economic power availability (Akay, 1991:131).

Despite of these situations, table olive production has increased in recent years in Turkey. This increases in the table olive production also reflected in the export of table olives. This situation can be explained by the fact that table olives are introduced abroad better, the exporters are interested more in the sector and they are placed in the outer market with quality products according to the competitor countries (Savran and Demirbaş, 2011: 89).

2.4.2 The Olive and Olive Oil Consumption in Turkey

Olive and olive oil which have an important position in the human nutrition have been consumed as daily food by people who are living in the Mediterranean region since from 4000 years. However, it is noteworthy that the consumption of annual olive oil per capita in our country is very low compared to other olive producing and consuming countries (Akay, 1991:20).

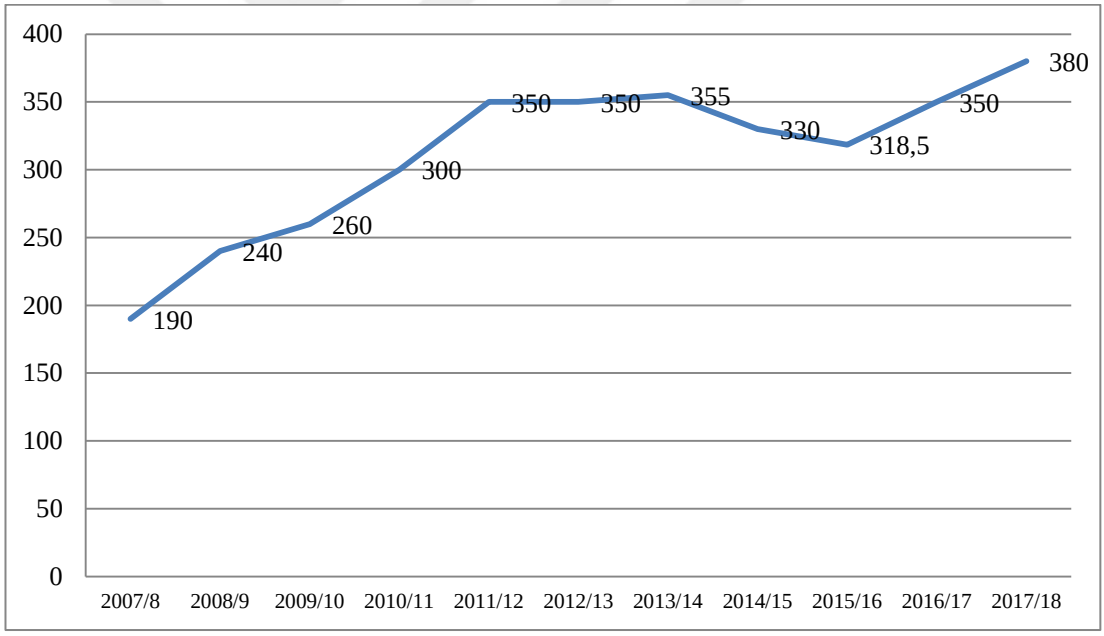


Figure 13: The Table Olive Consumption Amout in Turkey (1.000 Tonnes)
Source: International Olive Council, June 2018. (2017/2018's data is provisional)

When figure 13 is examined, the last 10 years in Turkey shows the increase in consumption of table olives. The average per capita consumption of table olive in Turkey is approximately 4,3 kg (IOC, 2016).

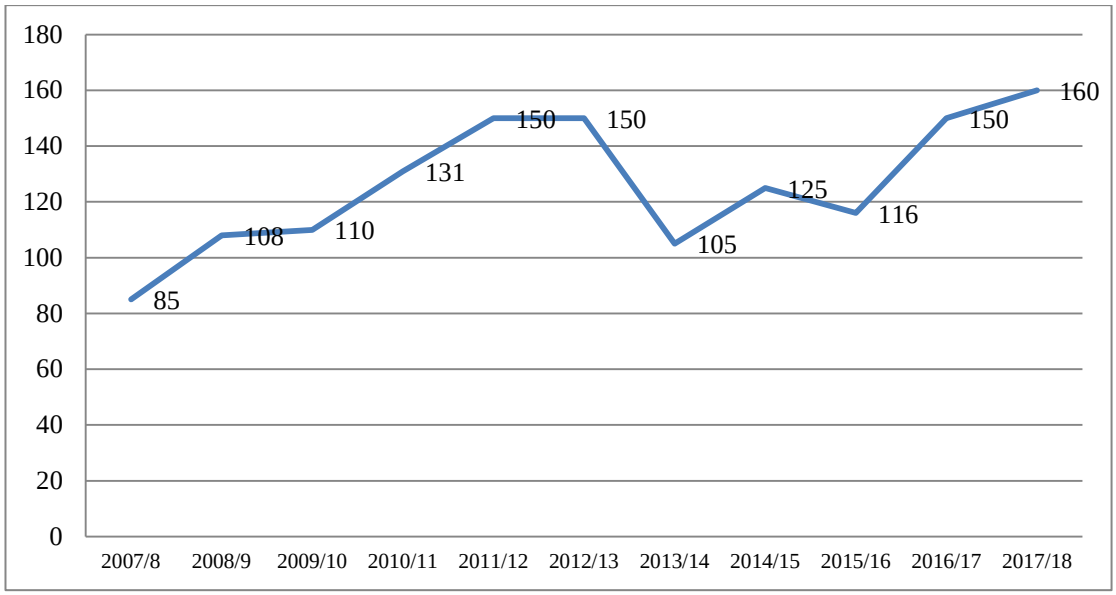


Figure 14: The Olive Oil Consuption Amout in Turkey (1.000 Tonnes)
Source: International Olive Council, June 2018. (2017/2018's data is provisional)

When figure 14 is examined, in the last 10 years, there is an increase in consumption of olive oil in Turkey. But, it is seen that a decrease in consumption in the year 2013/2014. The average per capita consumption of olive oil in Turkey is approximately 1.5 liters (IOC, 2016).

The consumption of olives and olive products in Turkey compared to other countries which are members of the EU less than others. Most olive and olive oil production and consumption in Turkey is in the Aegean region and the Mediterranean region. The result is here; producers consume or sell the vast majority of the olive oil they produce themselves. In the Central Anatolia Region and the Eastern Anatolia Region, which do not produce olive oil, consumption of olive oil is less due to animal oil consumption habit.

2.4.3 The Olive and Olive Oil Import in Turkey

Importation of herbal oils except olive oil was released in Turkey in the 1980s. In addition, the price of olive oil had increased and consumption level of olive oil in the country had started to decrease. The necessity of evaluating a significant part of the production with the reason of showing the decrease in demand in the country has come out in foreign markets.

Turkey is engaged in olive oil exports for many years. From time to time because of shortness of olive oil that created with various speculative reasons had compelled Turkey to importation. As a consequence of deteriorating climatic conditions

experienced in 1982, olive oil has started to be imported periodically since from 1984. After 1990, very small quantities of table olives has imported for luxury consumption. According to the IOC's data shows that Turkey does not have a huge impact on the economy by in table olives and olive oil product imports since from 2000.

According to the informations which are about the Turkey's table olive and olive oil imports volume, is not important enough to affect the economy. Due to this reason, there is no graphic about the Turkey's import of table olives and olive oil. Turkey is a country which can be self-sufficient in olive and olive oil products.

2.4.4 The Olive and Olive Oil Export in Turkey

Olive oil is one of the traditional export products of Turkey. Although, Turkey that is located in the World olive oil production and export sector in the forefront of the country, it is not at desired level in the World market when compared to other producer countries. Turkey that owns the first olive oil export began in 1967; today is a country that is self-sufficient and a net table olive and olive oil exporter. In Turkey, depending on fluctuations in production since from 1970, olives and olive oil exports occur. In recent years, it is observed that the export of olive oil tends to increase (Öztürk et al. 2009: 35).

Turkey's olive oil export includes volatility in the olive oil production from year to year. Processing technology, marketing policies and others increases and decreases in olive oil production of our competitors from olive oil producers are among the important factors affecting our exports (T.C. Gümrük ve Ticaret Bakanlığı, 2015:10).

The export prices of our country in the olive oil products due to the above the actual export prices in the World has a significant disadvantage in international trade in this case of Turkey. Despite of this situation, Turkey's average oil export revenues in the 1981-1986 year was 45 million US $. This export gain is followed by an increasing level for each year. According to the years in Turkey stands out as fluctuations in the olive oil export prices. Export subsidies are created by the EU according to the market conditions of the EU sometimes cause prices to stay above the World prices and decrease exports (Sevinç, 2005:48).

Turkey's olive and olive oil to increase the amount of revenue to be derived from the export of olive oil exporter in the sector, focused on the quality of business systems and the need to be revised. In Turkey, many of companies that are SMEs are operating in the olive and olive oil sector. While SMEs are engaged in international marketing

activities, it is sufficient to participate in the relevant fairs in the target markets and to examine the market research reports prepared by state or private institutions. Although, there are many ways to open up to international markets, our SMEs that are operating in the sector are usually opened to foreign countries through export. In Turkey's production of both olive and olive oil sector, there are many small firms in both sectors within sales operations. For the purpose of the thesis is prepared, the legal entity details of the biggest Turkish exporting companies in the sector are shared in the table 46.

Table 46: The List of the Biggest Exporters is in the Turkish Olive and Olive Oil Sector
Source: TIM, Top 1000 Exporters Reports of Turkey (2013, 2014, 2015, 2016 and 2017)

Rank	2013	2014	2015	2016	2017
1	Company does not want to disclose their name	Zer Yağ San. Ve Tic. A.Ş.	S.S. Marmara Zeytin Tarım Sat. Koop. Birliği / Marmarabirlik A.Ş.	S.S. Marmara Zeytin Tarım Sat. Koop. Birliği / Marmarabirlik A.Ş.	Marbil Yağ San.Ve Tic. A.Ş.
2	Ana Gıda İhtiyaç Maddeleri San. Ve Tic. A.Ş.				Surtaş İşletmecilik İnş. San. Ve Nak. Ltd. Şti.
3	Company does not want to disclose their name				Nejat Atalan Dış Tic. A.Ş.
4	S.S. Marmara Zeytin Tarım Sat. Koop. Birliği / Marmarabirlik A.Ş.				
5	Verde Yağ Besin Maddeleri San. Ve Tic. Anonim Şirketi				

When the table 46 is examined, the World's largest producer of table olive company is Marmarabirlik company. According to the TIM's export of olive and olive oil sector list shows the champions of 2013, 2014, 2015 and 2016 years. Today, Marmarabirlik exports directly to 53 countries. Marmarabirlik has become a big company that exports of Turkey's 25% of black table olives to abroad. In addition, Marmarabirlik has applied to take advantage of Turquality advantage. Marbil company took the place as export champion in the sector in the year of 2017. In the production of

olives and olive oil products in the near future will provide an increase in Turkey's exports that is estimated according to the survey results.

Estimated that by 2020, 1 million 875 thousand tonnes of olive production will be reached, 165 thousand tonnes of olive oil will be produced and 80 thousand tonnes of olive oil will be exported (Uruç, 2010: 30).

There are some expectations about Turkey's olive and olive oil sector for 2023 year. In 2023, 650 thousand tonnes of commercial olive oil production target for the year and is intended to generate earnings of 3,8 billion US $. This goal will provide to Turkey the second largest producer country position after Spain. We must have to create a World brand in the olive oil sector in order to realize these aims. Otherwise, we must work to sell our olive oil products to Italy for 3-4 US $ per liter as a sub-supplier. But, if we can create a World-renowned brand, we can sell our olive oil at higher prices to foreign countries. On this count, we can earn 8-9 billion US $ from annual olive oil exports. For this reason, we can create branded and packaged products, add value to the products and contribute the sales and exports of the products to the country's economy. We need to focus on the target markets in olive and olive oil products in order to reach our 2023 targets. Target markets for olive products are the USA, Russia and Romania. Target markets for olive oil products are the USA, Russia and Japan (TIM, 2009: 280).

The creation of effective branding strategy in olive and olive oil sector will increase the companies' competitiveness in the international market. Turkey has followed a wrong policy over the years by exporting the olive oil in bulk form. However, exports of the products are in a packaged form that will increase the added value in significant amounts. Exporter countries import the Turkish olive oil in a bulk form and unbranded format. And then export them to the World markets by labeling their own brands. This is an indication that Turkish olive oil products can be consumed all over the World. The Turkish olive oil sector will take its rightful place on the international platform with the right branding strategies to be implemented (İpek, 2010:111).

The amount of bulk form of olive oil which is unbranded product exports more than the amount of olive oil products which is branded product in some periods, Turkey. The income from the export of unbranded olive oil products is lower than branded olive oil products export income.

In these circumstances, in 1985, tax refunds were applied to the export of packaged or branded olive oil products and the export of lampant (raw, bulk form) type of olive oil was prohibited. This situation has been a positive application in terms of the protection of the olive oil industry and the increase of foreign exchange currency inflows to Turkey (Tiryaki, 1992).

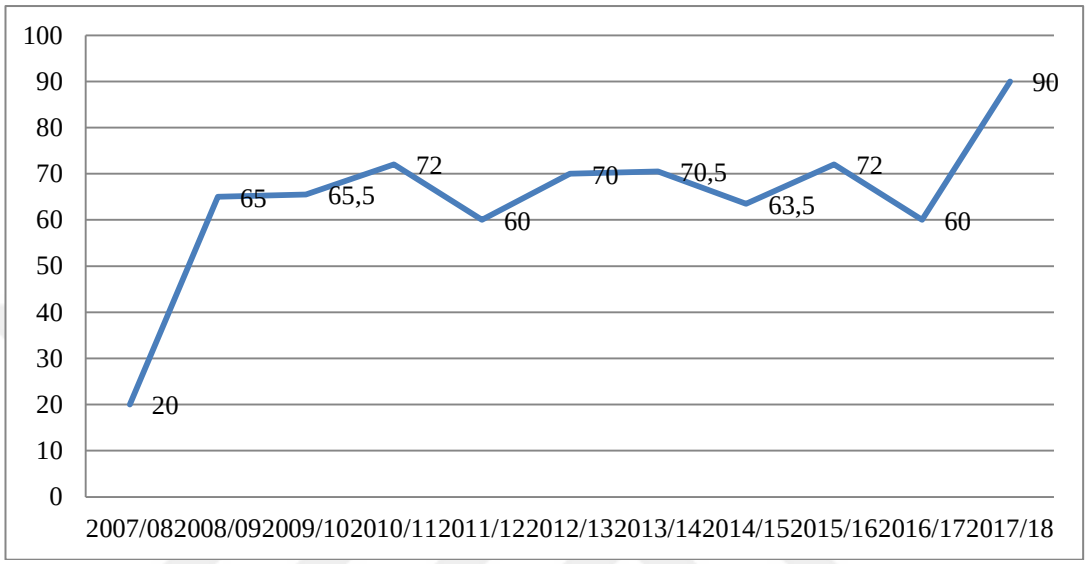


Figure 15: The Table Olive Export Amout in the Turkey (1.000 Tonnes)
Source: International Olive Council, June 2018. (*2017/2018's data is provisional)

When the figure 15 is examined; the amount of table olive export increases in the last 10 years, Turkey. Especially, in the 2007/2008 agricultural season, olive exports increased by approximately 325% in Turkey.

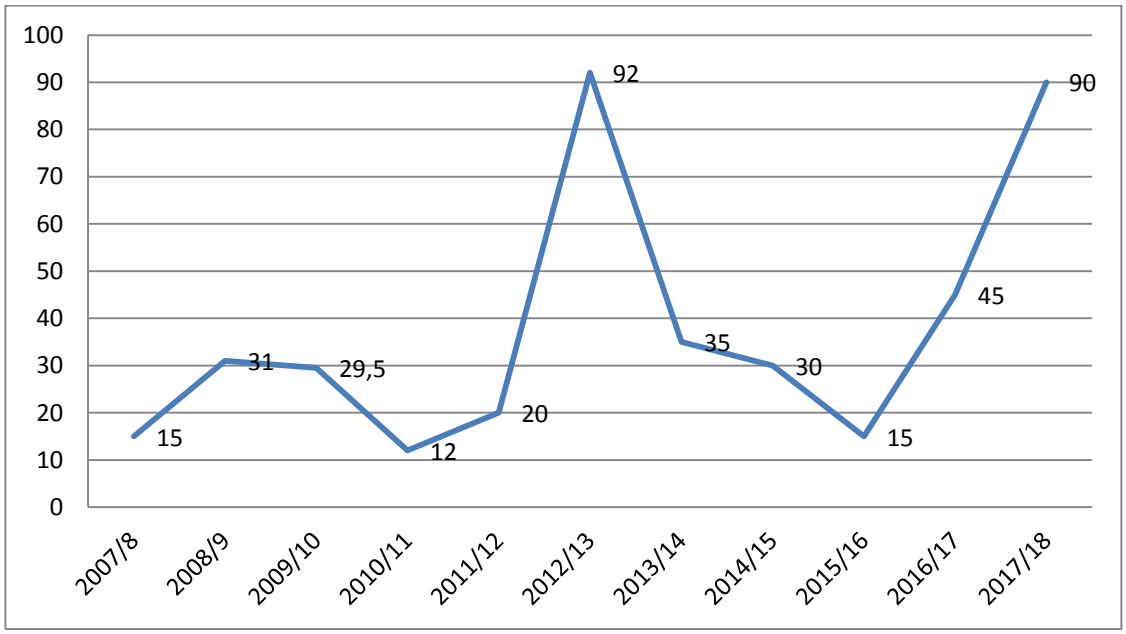


Figure 16: The Olive Oil Export Amount in the Turkey (1.000 tonnes)
Source: International Olive Counsil, June 2018. (*2017/2018's data is provisional)

When the figure 16 is examined; the amount of olive oil export increases in the last 10 years, Turkey. Especially, in the 2012/2013 agricultural season, olive oil exports increased by approximately 405% in Turkey. The increase of export provides contribution to the country's foreign trade balance. However, there was a reduction in the amount of olive oil export in the agricultural period of 2013/2014. This happen negatively affected the sector.

Turkey's olive oil products are exported to 80 foreign countries. Demand to olive oil has increased in the last 10 years and there is a prediction approximately 13% growth in the sector in the coming years. Demand to olive oil is increasing but production does not increase at the same rate. One of the biggest reasons is the global warming factor in the World. Therefore, Turkey should increase the efficiency and to protect olive groves very well.

2.4.5 The Economic Contribution of Olive Oil Export in Turkey

The importance of the olive oil sector in Turkey has recently understood by both the public and private sectors. Although, there are many problems in every fields of this industry; Turkey is contributing to the economy through the export of olive oil.

Years	Net Export Value of Olive Oil To Turkish Economy (1.000 US $)	Years	Net Export Value of Olive Oil To Turkish Economy (1.000 US $)
1999/2000	26.992,450	2008/2009	99.027,671
2000/2001	133.737,681	2009/2010	67.083,528
2001/2002	43.286,392	2010/2011	50.846,505
2002/2003	161.644,524	2011/2012	76.858,642
2003/2004	135.035,094	2012/2013	294.118,855
2004/2005	303.433,645	2013/2014	87.305,225
2005/2006	183.477,585	2014/2015	50.539,565
2006/2007	140.269,465	2015/2016	64.856,731
2007/2008	75.392,113	2016/2017	200.564,046

Table 47: The Economic Contribution of Olive Oil Export in Turkey (1,000 US $)
Source: TURKSTAT, 2018.

When the table 47 is examined, the olive oil sector is affected by the periodicity situation. The result of this effect is also reflected to the export revenues. In general, export revenues increase in one year and the next year export revenues decrease.

2.5 The Problems are Encountered in Olive and Olive Oil Sector in Turkey

Olive and olive oil sector has an increase in the production amount and the sector renews itself in recent years, Turkey. However, there has not been a special policy and strategy that works regularly and steadily in the olive market. Due to this reason, there are problems in every aspects about production, consumption, foreign trade and prices (Tunalıoğlu and Karahocagil, 2006:119).

If the problems which has encountered in the olive farming sector are examined in detail;

- Many producers are small scale enterprises such as the SMEs.
- Low yield and poor quality in olive products.
- Instability in income and prosperity level of producers due to periocidicity.
- The agricultural lands are divided by fragmented and inherited causes.
- The existence of old olive trees that have completed their economic life.
- Unnecessary drug and fertilizer usage for more production.
- The applications of modern agriculture systems and machines are inadequate.
- The unconscious irrigation and pruning in the area.
- Harvested olives are processing in the classical system machines and low-capacity facilities for production.
- There are excessive number of intermediaries between producer and consumer.
- The lack of trained intermediate staff and the inadequate training of the existing staff can lead to serious quality losses on the production.
- There are some the tricks and the deceptions in the olive products.
- Government authorities must explain the when and how much production support premiums will be given to the olive producer. Also support premiums and government incentives are low for production of olive and olive oil.
- The inadequacy in the infrastructure limits the production quality and its productivity.
- Marketing activities are weak and agricultural sector loan’s interest rates are very high.
- The supporting policy instruments are not fully implemented in the sector.
- Quantity limitations (quota) are imposed by the EU on Turkey's olive oil export products.

- EU applies high customs duty rates to Turkish olive and olive oil products.
- Foreign customers' desires and demands are not fully understood by our producers.
- Products unit prices are too high to compete with foreign competitors in market.
- The Turkish brands can not perform effectively in the outer market.
- There is a waste of time to payment of the tax refunds amount to exporter firms about their table olives and olive oils exported from Turkey.
- Unable to continue the supply of quality raw materials to production.
- Big part of Turkish olive oil is exported as an '' in bulk form'' which is no brand name.
- The prices of the machines, agrochemicals and inputs used in the sector are high.
- The agricultural area subsidies and government support policies that are implemented in Turkey provide advantages to large producers instead of the small producers.
- Adverse situations in marketing organization.

These problems are negatively affecting the olive sector.

If the olive and olive oil sector is to be profitable sector for Turkey, it is necessary to solve the existing problems in the sector. In recent periods, there is not enough domestic demand according to the increasing amount of production. As a result of this situation, the sector may encounter supply, demand and stock problems. More marketing and more market research activities are needed to solve this situation.

Most of the olive oil processing facilities use the new infrastructures and modern technologies. Nevertheless, the lack of trained intermediate staff and the inadequate training of the existing staff can lead to serious quality losses on the production.

The tricks and the deceptions on olive products which are made by the some producers are breaking the consumer's confidence in the olive oil sector. This happen causes to reduction in the olive oil consumption. It is not logical and economical to sell the pure or raw olive oil for 10 TRY per liter on the market, because their cost is 15 TRY per liter in producers. Consumers need to be aware of these situations. Moreover, there are some inconsistencies in the olive oil sector's production, storage, processing and marketing policies. This situation causes to excess supply, price instability and serious quality losses on the sector.

Olive producers sold their olives per kilogram with 4 TRY to wholesaler in the 2016. But, this price only met the procusers' cost and expense of the production. The relevant authorities of the state already have to explain these informations about when and how much production support premiums will be given to the olive producer. According to its information, the manufacturers should adjust themselves to the situation. For these reasons, productivity falls in the olive and olive oil sector. If state or government subsidies can be increased, productivity will rise with quality production. At this point, the producer's deficit will be closed and the welfare level of the producers will increase.

The small-capacity table olive firms are composed of a lot of families and businesses in Turkey. The inadequacy in the infrastructure limits the production quality and its productivity (T.B.M.M., 2008).

On the other hand, small but modern table olives production firms have problems in the supply of quality raw materials which are necessary for standard and sustainable production (Bayramer, 2015:4-5).

There are some problems in the olive and olive oil sector since from production stage in Turkey. The poor quality that occurs during the processing of the produced raw materials, marketing activities are weak, the supporting policy instruments are not fully implemented in the sector. These situations restrict the sector. For the development of the sector, quality enhancing applications in products should be adopted in the producers. In addition, long-term and stable publicity policies should be developed to increase domestic consumption. Also, in Turkey there is different type of production method which is expressed as a "under the counter production". This production type is negatively affects the every sector. Because of this type of production is knockoffing for the sector.

Also there are some problems in the olive and olive oil sectors's since from export stage in Turkey. Quantity limitations (quota) are imposed by the EU on Turkey's olive oil export products, foreign customers' desires and demands are not fully understood by our producers, the technological shortage that businesses have, products unit prices are too high to compete with foreign competitors in market. The consumption of olive oil is low in the inner market, the Turkish brands can not perform effectively in the outer market. These negativities cause the Turkish exporter companies in the World olive oil sector to qualify as a subcontractor when they trade in the foreign market.

There is a waste of time to payment of the tax refund amount to exporter firms about their table olives and olive oils exported from Turkey. It is important that the amount of tax refunds should be paid as soon as the exporting process is over in terms of their trade motivation and financial strength of the companies.

Another problem that is experienced in Turkey is unable to continue the supply of quality raw materials. For this reason, unit prices are fluctuating. It is imperative that the qualifications of olive products are always provided to the same standard for the continuation of exports and customers' satisfaction in foreign markets. In addition, there should be balanced between the quality and unit price of product. But if the price is balanced with the quality, the export amount can be increased. It is very important to keep old customers as well as to enter new markets for exporting companies.

Another problem in the export of olive and olive oil products is; the EU applies high customs duty rates to Turkish olive and olive oil products. Also, the EU applies high quota rights to other countries but this right is not recognized to Turkey's products. These applications make it difficult to compete with foreign market in terms of Turkey.

Big part of Turkish olive oil is exported as an ''in bulk form'' which is no brand name. We are not able to create added value when we export olive oil with in bulk form to abroad. So, we do not make as much profit as we desire. Olive oils exported as an in bulk form are branded abroad. It is repackaged, attractive glass bottled and presented to the market at high prices. Our political authority, which is empowered to overcome these situations and to rotate these situations into favor of our own country, must negotiation with the EU and must solve these problems in terms of Turkey. Otherwise, Turkish olive oil exporters will be expressed as subcontractors in the sector.

The producers complain that there are few government incentives. It is mentioned that diesel fuel oil, fertilizer and drug support are inadequate for current conditions. The prices of the machines, agrochemicals and inputs used in the sector are high; because of this reason the producers can not buy and use agrochemicals and intermediate inputs at the right place and at the right time. Also, the agricultural area subsidies and government support policies that are implemented in Turkey provide advantages to large producers instead of small producers.

In the 1997/1998 season, Turkey has 90 million olive trees. However, Turkey's olive oil production amount reached to approximately 220 thousand tonnes. But, today Turkey still has not reached these numbers in production perspective. Because

while the olive tree planting that was supported according to the domestic features was not take care to select the olive seedlings features.

The olive agriculture areas has divided into number of parcels which are increasing into days, the topographic structure is not suitable for machine cultivation, lack of adequate knowledges for to use of fertilizer, agricultural sector loan interest rates are very high, the lack of mass agrochemical spraying in agricultural area is felt. Sector cooperatives do not be effective enough in the market. These are the other problems in the sector.

The olive and olive oil cooperatives which do not provide to loan as much credit as needed for the sector and make extreme interruptions in their purchase prices that causes producers are at risk in the industry. Some of olive producers give up the production of olives because of the product does not provide enough income as much as they desire from time to time.

The USA sent a diplomatic note to Turkey at February 21, 1963 (Official Gazette of T.C., 1963). On this diplomatic note, the USA restricted the Turkey's olive oil exports with 10,000 tonnes limit in between the dates of November 1, 1962 and October 31, 1963. If Turkey's olive oil exports amount exceeded the permitted limit, the Turkey would be punished by importing the same amount of herbal oil from to the USA with its own foreign exchange currency in this period. Turkey did not export more oil olive than allowed limit because it did not have a power to stand against this USA's decision. For this reason, there was a lot of olive oil product in the domestic market so olive oil prices decreased, producers had suffered from this situation and olive trees were cutted as a solution. Later on, they used olive tress as a winter material to be burned and they went to Istanbul or Germany as a worker in stead of farming of olive. USA demaned that Turkey's exports of herbal oils and oilseeds products was reduced to limit 6,400 tonnes in 1963, 1964 and 1965. Under these circumstances, the herbal oil need of domestic and foreign markets had been met by USA's soybean oil products.

In the USA and Spain, olive producers receive a premium and incentive that is approximately 1 Euro 35 Cents per a liter. In other words, USA's and Spain's this payment of premium, as Turkish Lira, equals to approximately 10 TRY per a liter nowadays. However, Turkish olive producers receive premiums for supporting of olive plantation only 75 TRY Cents per a liter. This situation adversely affects Turkish olive producers.

Direct Income Support application is located in Turkey. This system is also applied in USA and EU countries. These countries are applied this application according to producers' amount of production in direct proportion way. This application is completely independent from production amount in Turkey. Because, government provides support premiums those who only have field deed with regardless of production amount. In Turkey, 2.2 billion TRY was paid as a support payment to producers in 2000. Support payment was increased to pay 6.5 billion TRY in 2008. In the year of 2017, 12.9 billion TRY of agricultural support payment was distributed.

Importance should be given to international marketing and new export methods in order to increase the export amount. Turkey has some problems when it is opening up to foreign markets. One of them is to create a strong and internationally approved Turkish brand in the market. Turkish olive oil is exported in bulk form to abroad. These importer countries are selling them with their own brands to other consumer countries. This situation causes to Turkey's added value losses in terms of Turkey and this affects the competitiveness of Turkish olive oil enterprises in international markets negatively. (İpek, 2010:4).

The olive and olive oil sector in our country is not as well understood as it is in other countries. Also, there are problems in sector such as the existing olive which is presented to the internal market but does not have the potential to present to foreign market so lack of foreign market potential to our olive. The inability to obtain sufficient foreign exchange transfers from exported olive oil, inadequate infrastructure and lack of marketing activities prevent to take place in new foreign markets. The not to happen of decrease the periodicity effect in olive production that is negatively affect the development of the industry. In order to find solutions to these problems, structural and visionary improvements have to be provided in the sector (Memiş, 1998:1-2).

2.6 The Agricultural Policies Implemented in the Olive and Olive Oil Sector in Turkey

Turkish agricultural sector has been supported by the government since from 1938 and also this implementation continues today. Olive is a plant that has been grown in our country for many years. Olive production has been supported since from 1966/1967 agricultural season. Olive oil production has been greatly influenced by the applied price and support policies (Tiryaki, 1992:26).

Olive tree plantation and olive farming has been one of the most important fields of agricultural activities in Turkey after from the foundation of the republic regime. Atatürk made a trip to Yalova in 1929. In this trip, Atatürk gave some directives about the importance of olive farming to public and then olive mobilization has been started in Turkey. And also Bornova Olive Research Institute was established to conduct research on olive cultivation in 1937. The olive product is the only plant that allows for penalties to producers who do not care for the olive garden according to the laws. This law is ‘’The Improvement of Olive Farming and Vaccinate of Wild Olive Trees’’ and the Law No.is 3573 dated on 26/01/1939 (Özkaya et al., 2010: 1).

The zoning construction proposal of olive grove areas has been one of the major topics on the agenda of our country a short while ago. This topic is discussed on many platforms. This zoning construction draft text which relates to the destiny and future of olive grove areas has been discussed in the Parliamentary Industry Commission. Then, this draft was forwarded to the General Assembly of the Parliament as a law design proposal. As a result of some controversies and discussions, the draft text was withdrawn from the commission by the authorities. Turkey is the fifth largest country in the World olive sector and Turkey’s olive and olive oil sector provide to maintain living to a big population that is approximately 500 thousand and 1.5 million people. If an adverse decision was taken from the commission, the olive groves, social life and the economy could be adversely affected. The zoning construction proposal of olive grove areas has been sixth times discussed in the commission previous years. For these reasons, the seventh law proposal was again rejected. Also, society was sensitive to this situation. Many citizens, olive producers, non-governmental organizations, artists and politicians have shared their adverse opinions on this proposal.

The first export of olive oil in Turkey was held in 1967. Imports of olive oil were made by permission until 1985. Later on, olive oil was among the products that started to be freely imported in the period of 1985 to 1988 with trade liberalization policies, especially in the periods of production amount was inadequate. However, with the parliamentary decision that was taken in 1988 about on imports of olive oil, importers were forced to pay taxes per an olive oil tonnes. About a year after this decision, T.C. Official Gazette that was published on dated 24.05.1989 was concerned about the importation regime; olive oil was removed from the list of imports with tax payment. Since from the 1980s, olive oil imports in Turkey generally has been low amount. Also, imports of olive oil within the scope of the inward processing regime have been forbidden (Arpazlı, 2008:55).

2.6.1 The Government Supports and Incentives Applied in the Olive Oil Sector in Turkey

Turkey's soil and climate characteristics are suitable for olive farming. Because of this reason, olive sector has development potential in our country. Government incentives and subsidies need to be increased in order to develop of this sector. There are significant increases in the olive fields and in the number of olive trees plantation with the supports that has been going on for many years in our country.

T.C. Ministry of Food, Agriculture and Livestock has started the implementation of the "National Agricultural Project". Within the scope of this project, it is aimed to become self-sufficient as a country in vegetable production with the Basin-based Agricultural Production Support Model. This project is based on ecological and economic compatibility. In addition, with this project is aimed to provide effective production planning system, to establish rational and directive support policy, to create production efficiency and to increase the quality of production. With this agricultural production model, 21 agricultural products have been included in the support of the basins where the most suitable cultivation possibility is available. Olive oil products are also supported according to this model.

The project of Traditional Olive Gardens Rehabilitation Support has been started in 2016. The aim of this project contributes to the country's economy by rehabilitating the olive groves which has lack of yield and insufficient quality. 100 TRY is paid as a support payment per a decare for identifying areas to be rejuvenated pruning and pruning methods (Fakıbaba, 2017:67).

In 2018, the olive sector projects are listed by the T.C. Ministry of Food, Agriculture and Livestock. These are; ‘’Çanakkale; Use of Green Fertilizer in Olive Gardens Project’’, ‘’Hatay; Olive is Reborn in its Mainland and Re-Growing Project’’, ‘’Şanlıurfa; Proper Pruning Education and Traning on the Olive Tree Project.’’

On January 24, 1984, the Economic Stability Measure rules were put into effect. With these rules a large number of financial funds owned different purposes have been established in the economy. One of the most important agricultural funds is the ''Supportiveness and Price Stabilization Fund''. Also certified olive sadling support is a new application in the sector. In order to realize our production targets, we need productivity enhancing supports in production field.

2.7. The Benefits of the Olive Oil to People's Health

The value of olive and olive oil has risen in the World in recent years. Now people want to live healthy and long. For this reason they are increasing their consumption of olive oil. Olive oil which is the oldest and healthiest food in the World is used in the treatment of the long-lasting diseases.

The mediterranean type nutrition model was firstly introduced in the 1950s. The basic feature of this model is; daily solid and red meat consumption is low, milk and dairy milky products, cereal, dry legumes, vegetables and fruit consumption is high and olive oil is also used as fat requirement (Tunalıoğlu et al., 2003:49).

Cardiology Specialist is Dr. Timur Timurkaynak states that consumption of olive oil is very important for heart health. Timurkaynak said that "It is only olive oil that is miraculous in the nature." In recent studies, it has been shown that Mediterranean Foods' protective properties for heart health are; extra virgin olive oil, walnuts, hazelnuts and almonds. For this reason, it is enough to eat only olive oil to be healthy, to protect against heart diseases and to protect for many years."

Olive oil contains some active ingredients. These substances play an important role in protecting against diseases such as large intestine, breast and skin cancer. Some studies show that; in countries where the consumption of olive oil is less than in the Mediterranean countries (Scandinavian countries, United States of America, Great Britain, and Japan) have these types of diseases that are more frequent.

Olive oil is one of the most important nutrients in the "healthy life" that transforms into a universal ideology. Accordingly, the mediterranean type nutrition model which can reduce the risk of cancer diseases, has adopted by Western countries. As a result, consumption of olive oil is steadily increasing in countries far from the Mediterranean, particularly in the USA, Canada, Australia and Japan (Bakırlıoğlu, 2006:28).

Researchers have shown that 20%-30% of the daily energy consumed must be derived from energy-derived oils. Oils are consumed for nutrition. The contribution of these consumed oils to the amount of energy differs from person to person. 45% of the total calorie intake in Western countries is obtained from oils. In most of the developing countries, 20% or less of the total calorie intake is provided from the oils (Akay, 1991:2).

The nutritional value of olive oil is quite high. Olive oil contains A, D, E and K vitamins. These vitamins have significant positive effects on cardiovascular diseases, digestive system, bone structure, brain and nerve tissues, skin and hair health (İzmir Ticaret Odası, 2011:5).

Olive oil is the easiest digestible oil in oil varieties. According to studies show the olive oil increases the ratio of beneficial cholesterol in the blood which is called HDL (High Density Lipoprotein); it reduces the proportion of harmful cholesterol called LDL (Low Density Lipoprotein). Also, olive oil has Omega 6 fatty acid which is essential for the body. Olive oil is beneficial for bone development. It prevents calcium loss from body. The vitamins that are contained in the olive oil are important for refreshing the cells and refreshing the skin. It also acts as an antioxidant. Olive and olive oil are a healthy food for newborn babies and children in their developmental ages. Olive oil reduces acidity of the stomach and protects the stomach against diseases such as gastritis and ulcer.

Professor Dr. Canan Karatay argues that ‘’the olive oil is equivalent to the mother's milk’’. Everyone needs to eat 30-40 olives a day for health. In addition, it is healthy for to avoid of reduction in muscles power, alzheimer, parkinson, nervous system diseases, hypertension, heart diseases, liver fatigue, vascular occlusion, arteriosclerosis, depression, paralysis, chronic inflammation, autism, forgetfulness, intestinal disturbances, diabetes, skin diseases and bone power. She said that the solution of every disease is olive oil consumption. Dr. Karatay specifies that each component that is in the mother milk is present in olive oil. Researches have shown that people who consume olive oil have reduced their joint pain by half. Heart patients are advised to consume olive oil instead of aspirin used to dilute the blood. It is stated that olive oil can be used in all cancer treatments due to its prebiotic, antibacterial, anticancer and antibiotic substances.

According to experts, the calorie of olive oil is high, so you need to be careful in daily consumption of olive oil. It is said that 2 tablespoons of olive oil per a day makes a miraculous effect that protects the heart health for many years.

Internal Medicine Specialist is M. Nafiz Karagözoğlu stated that olive oil contains 60%-75% water, 10%-25% vitamin E, protein, fiber, sugar, polyphenols, organic acids and salts. In addition, high blood pressure can be reduced with consumption of olive oil.

Olive oil is 100% natural fruit juice. It that helps to lose weight is tasty and aromatic oil. Also, it is the healthiest oil for frying meals. It reduces the level of glucose in the blood, which is one of the important characteristics of olive oil for diabetic patients. Because of these stated benefits of oil olive, a soup spoon of olive oil can be drunk on an empty stomach every morning for healthy life.

CHAPTER III

ECONOMETRIC ANALYSIS OF THE RELATIONSHIP BETWEEN TURKEY'S OLIVE OIL NET EXPORT INCOME AND ECONOMIC GROWTH FIGURES IN TURKEY

3.1 The Review of Sectoral Studies

This topic heading that is here is known as literature review in some other studies. If the national and international studies or databases are searched or examined up to this time, we can reach a lot of studies about the olive and olive oil in Turkey and in the World. Also, these studies contain the economic structure of the olive, olive oil and its status. In addition, the World's and Turkey's olive and olive oil sector's export, import, consumption and foreign market informations have investigated by researchers. Moreover, the examination of agricultural policies that has implemented in the olive and olive oil sector in the World and in Turkey has been identified during the literature survey. Despite that, there is no scientific study, thesis and economic analysis about the relationship between Turkey's olive oil net export income and Turkey's economic growth figures that are covering the period of 1999/2017 time interval. Because of this reason, this master thesis is focused on according to the relationship between Turkey's olive oil export and economic growth.

Some previous studies about olive and olive oil have been given chronologically below.

FREIDBERG (1983) prepared the title of ''Olive Oil in the European Union" as an article and it was published. In the context of the article, informations were given about the involvement of Spain into the EU common market in the 1980s period. With the participation of Spain in the union, the problems to be experienced in the olive oil sector have been mentioned. It was mentioned that there was financial difficulties in the union because of Spain involved in the support policy which was being implemented in

the Community. Previously, some sectors suffered from difficulties due to other countries participation in the EU. And also in the article, recommendations were made for these situations not to happen again.

OLGUN (1988) prepared the title of ‘’The Research on Ongoing and Planned Support Policy’s Various Effects on the Olive and Olive Oil Economy and Especially in the Aegean Region, Turkey’’ as a study and it was published. The study includes informations about the effects of applied on agricultural support policies to Aegean Region’s olive and olive oil sector economy in Turkey. The informations were collected from the persons and organizations which were engaged in the production, processing and marketing of olive oil in Aydın, İzmir, Balıkesir and Muğla provinces. And also these collected data are analyzed economically. In addition, there are some general information about the olive and olive oil sector’s production volume, consumption amount and commercial situations between 1967/1984 periods in Turkey. In the results of the study; it is stated that a large part of the increase in the amount of production is due to the increase in the number of olive trees. And it is mentioned that the businesses’ agricultural land are fragmented and the agricultural lands are far from the operation center of the firm. It is stated that 5.07 kg of olive must be processed in order to obtain 1 kg of olive oil. It has also been determined that there is an important link between olive oil prices and the number of trees according to the calculation of multiple regressions. And there is a positive correlation was found between prices and production quantities in this analysis. The supportiveness purchase prices which were applied in the olive oil sector were not able to increase the producer income during the period under review. And in this study it has been determined that these practices negatively affected the sector. Turkey's olive oil exports showed large fluctuations in the examined period. But, there was the largest increase in olive oil exports in the 1970s and 1980s era. There were significant changes in the structure of Turkey's olive oil exports when Olgun was preparing this study. In the 1970s, a considerable number of olive oil was exported in bulk type to EEC’s countries. After 1980, olive oil was exported to other markets as boxed, bottled and packed.

AKAY (1991) prepared the title of ‘’Comparison of Various Aspects of Turkey and the European Community in Support of Application for Oil Policy’’ as a thesis and it was published. In this work, has made a comparison of support policies for olive oil in Turkey and the European community and has examined various effects of the oil economy of these policies. Information has been provided on the situation of Italy,

Spain and Greece before and after joining the European Community, which are important for the World and EU olive oil sector. If Turkey becomes a member of the EU comments were made about the potential developments in the oil sector. In the results of the survey, it was concluded that as a result of the support and protection practices implemented in the European Community. The community is at the forefront of World olive farming and is leading the World olive oil economy. Although Turkey also supports the olive sector applications, this support in terms of both production and consumption amount has not yet been brought to the desired level. In case of full membership in the EU these policies implemented in Turkey has been referred to depriving the producer of competitiveness. Also, later in the process if Turkey wants to join the EU also made some modernizations, such as olive and olive oil sector arrangements to be made in every sector have been mentioned requirements.

BRIZ et al. (1991) in their article titled ''Econometric Analysis of Olive Oil Demand in Spain''; general information about the olive oil sector in Spain is mentioned. They also made econometric analysis of the demand for olive oil product. The end of Spain's common market integration gave information about the extent to which the Spanish olive oil industry was affected.

PIERRANI et al. (1991) examined the current status of Italy's supply, demand and foreign trade in the olive oil market. That is titled ''Econometric Analysis of the Olive Oil Market of Italy''. They prepared it. Olive oil has taken its place in the topics of researching price, income and substitution elasticities.

TİRYAKİ (1992) prepared the title of ''Watched Olive Oil Policy and the European Community in Turkey Confronting Problems'' as a thesis and it was published. In this work; olive oil policies in Turkey and the European Community have been found to share information about the challenges facing. Tiryaki gave information about production, consumption, import and export of olive and olive oil products. They also made comparisons by sharing information about the current structure of the olive and olive oil industry in the European Community. If the results of the research, production of olive oil yield per tree is said to be in the low country of Turkey. It has been mentioned that the production of olive and olive oil is carried out under primitive conditions. Consumption has decreased because of the high prices of olive oil. Tiryaki commented on the importance of advertising and marketing activities and raising awareness for people consuming olive oil. The first official step that is related to the olive sector in Turkey has mentioned that taken in 1937. In order to sustain and increase

the export of olive oil, it is mentioned that the importance of tax incentives in the export of these products. Opposite strategies that have applied for the olive oil sector in the European Community, have developed strategies against Turkey. It is stated that some of the farmers are separated from the olive industry and the other agricultural products team is heading to different fields because the olive tree gives a product for one year and the less product for the next year and the processing cost of olive oil is high. Since olive cultivation sector is periodic, it has been mentioned that in some years imports should be done.

TUNALIOĞLU (1994) prepared the title of ‘’Important Olive Producing Countries with Turkey with the Olive Comparison of Some Aspects of the Olive Watched Olive Oil Policy and the European Community in Turkey Confronting Problems’’ as a thesis and it was published. In this study of the olive sector comparison has been made of the economic and technical aspects. Turkey has a position in the development of the olive. Analyzing the olive farming policies in other competing countries, study was examined the effects. Accordingly, in second place in the table olive production in Turkey, but the lack of success of small family farms and processing technology in exports, due to the high cost of raw materials. The consensus can not be achieved.

ALPER (1996) prepared the title of ‘’The Export of Olive Oil in Turkey and Problems’’. It gave information about the current state of the olive oil industry in the World and Turkey in this work. Olive oil in the World and sharing their business data in Turkey, incentives implemented in the sector, have been found in solutions and problems experienced in marketing strategies. In the results of the research, it is mentioned that the export of olive oil in our country, which is one of the most important producer and exporter countries of olive oil in the World, has not achieved a stable structure since 1960's. Italy is one of the World's largest manufacturers and exporters, and buying as an in bulk type olive oil from Turkey. Olive oils by refining these which have been imported by packaging and exporting to other countries with higher prices. The lack of national olive oil policy in our country is a problem as a problem in the sector. It is mentioned that there is an official establishment in order to solve problems and problems in this area. Particularly, the necessity of finding new potential markets and producing value added products has been mentioned.

BELLETI and MARESCOTTI (1997) prepared the title of ‘’The Reorganization of Trade Channels of a Typical Product: The Tuscan Extra Virgin Olive Oi’’. In the Tuscan region of Italy, they interviewed producers who produce extra virgin olive oil and examined changes in purchasing behaviors of consumers. According to the results obtained, there have been significant changes in consumer behaviors. At the beginning of the 1990's, consumers are going directly to the producers and buy olive oil, which has annual needs, as an in bulk form with barrels or demijohns. In recent years, due to changes in social and economic characteristics, consumers are purchasing more olive oil from supermarkets. In purchases, it is stated that packaged products with food safety certificate are preferred.

MEMİŞ (1998) prepared the title of ‘’Turkey and the European Union Olive and Olive Oil Production and Market Comparative Analysis of Structures’’. In this work, it gave information about Turkey and the EU olive and olive oil sector. According to the findings of the study, 80% of total World olive oil production is covered by the EU. Turkey, which the World of olive and olive oil sector, despite having an important position in our country can not be said to be the desired place in World production and trade in these products. This is, because the irregularities in production, the defects in the marketing organization and the lack of policies regarding foreign trade are shown as important reasons affecting the sector. In addition, the severe periodicity experienced in the production of olive oil and the inefficiency and inadequacy of the technology used in domestic production negatively affects the supply of olive oil and marketing opportunities. A significant portion of our olive oil exports are made to the EU countries, which have the World's largest producers, exporters and importers. It is suggested that market researches, marketing and sales activities should be directed to countries where olive oil can not be produced, instead of these countries saturated with olive oil. It would be beneficial for the exporters of olive oil to be able to introduce their products more and to provide freight support by the state to make more sales. With investments to be made in the olive oil product, olive oil sector will bring much more important contributions to our country's economy.

DÖLEKOĞLU (2000) prepared the title of ‘’Analysis of Turkey Olive Foreign Exchange’’. It has carried out an economic analysis of exports is working. Production of the olive oil sector in the World and in Turkey, consumption, imports and exports has made the comparison. The companies that are exporters have touched on the problems they have encountered in the markets and suggested solutions to these problems. In this

study, it is also noted that the average annual World olive production in the 1995-1997 period was about 13 million tonnes and the olive oil production was 2 million 300 tonnes, according to the FAO data. It is mentioned that Turkey is an important country in the category, which olives and olive oil has been producted in Italy, Spain and Greece. In the period 1985-1997, World olive oil consumption increased by 0.74% per annum on average. In the same period, it was mentioned that the import of World olive oil has an annual average growth rate of 4%. The increase in the World oil trade and consumer shows that Turkey will encounter with the lack of demand in the export of olive oil. It is proposed that as soon as possible to raise production per olive tree and to reduce production periodicity, production increase can be achieved. According to the *''Household Consumption Survey''*, which is included is in the study. It is seen that more olive oil is consumed in the upper income groups in the urban areas. In addition, it is mentioned that the quality of the product is more important than the amount of export made if the olive oil export wants to generate more income.

APAYDIN (2002) prepared the title of ''Turkey's European Union Integration Process to Contribute to the Development of Olive Oil Exporting Standardization, Quality and Certification Study''. This study is the thesis. It stated in the existing technical barriers and the important point of the harmonization process industry. The EU and the customs union were mentioned in this work. Turkey's relations with the EU were discussed. Olive oil sector emphasized the importance of certification, standardization and also quality. One of the requirements to compete with a major and important market such as the EU is to produce according to World standards and to certify that the products comply with quality, environment, food safety and health conditions. The results of the study, Turkey and the EU in product properties compared to the olive oil sector where the differences are striking. It is suggested that the institutions and organizations of our government should increase their activities in order to eliminate these differences and to be able to more export.

GÖKALP (2004) prepared the title of ''Operating in the Aegean Region Major Olive Oil Producing Company of External Marketing Force and Exports Increased in Finance and Power Association Opportunities''. In this study, olives and the olive oil sector were discussed current situation in the World and Turkey. In addition, production, consumption and foreign trade data in the sector are shared. It provides information on the marketing methods that companies demand to export olive oil can use. They can benefit from the sources of financing and the opportunities for power

alliances and touches on the problems that exporter's face and what needs to be done to increase exports. Work on the added value created in both the olive oil production process has been mentioned that the olive oil sector is an important sector for Turkey due to its high share in both export revenues. In the foreign trade of olive oil, the dominance of the EU countries, which produce about 80% of the olive oil production, is mentioned. In recent years, it has been emphasized that countries where olive oil is consumed most are USA, EU countries, Japan, Australia and Canada. Exports of olive oil are mostly realized in the Aegean region in proportion to production. It is emphasized that the incentives given to the olive oil producers and exporters in our country are very low compared to the olive oil producers and exporters in the competing countries. This situation indicates that our exporters in international markets have reduced the competitive power. It has been mentioned that there are many problems in the sector and it has been stated that to solve these problems, both the public sector and the private businesses operating in the olive sector fall into great responsibility.

BAKIRLIOĞLU (2006) prepared the title of ''Important Olive Oil Exporters and Turkey in the European Union''. This is the study which is referred to general information about the olive and olive oil sector. They shared statistical data about the sector. Olive and olive oil sector in Turkey, comparing with other important sectors in the EU countries, some suggestions were made to Turkish exporters. Defended the idea of modernizing policies are in the sector. In the results of the study, it is mentioned that the philosophy of healthy life increases the demand for olive oil. It has been mentioned that the amount of potential market is increased thanks to advertisements and advertisements about olive oil. Because of the periodicity in the olive farming sector, the necessity of introducing intensive farming to prevent the waves in production has been mentioned. Due to the fact that, the olive oil production technology and infrastructure of our country are not developed efficiently, the production of natural and natural extra virgin olive oil is the least demanded in the World. Since the sector operates in scattered agricultural areas and can not be organized, businesses can not have a strong structure. Both manufacturers and consumers are more harmful due to the increase of intermediaries and commissioners in the sector. Spain, Greece and Turkey as an in bulk type of exports are to a large part of Italy. Italy, on the other hand, exports olive oil, which it has taken as an in bulk type to the whole World with its own brand by bottling. Turkey to become a member of the EU and olive oil as a result of the inclusion

in the scope of the customs union in exports to EU countries can not be competitive in terms of price because of customs duties.

MILI (2006) prepared the title of ‘’Market Dynamics and Policy Reforms in the EU Olive Oil Industry: An Exploratory Assessment’’. That study is examined the EU olive oil industry by analyzing strengths, weaknesses, opportunities, threats (SWOTs) during the ongoing market and policy change process. The main strengths of the EU olive oil market are; product characteristics, quality of products and marketing strategies of olive oil enterprises. The main weaknesses of the sector are; the lack of reliable secondary data that would allow a high demand for marketing and good market transparency, although the supply volume continues to increase. The main opportunities in the market are; the increase in consumption of olive oil by consumers after health worries in the World, the promotion of quality production of the last reform of the CAP for olive oil and the reduction of protection in the trade of international agricultural commodities. The main threats are; the development of the EU olive oil industry have been expressed as the cheaper price of other vegetable oils, the increase in World olive oil supply and the dependence of producers on support.

ÖZDEN (2006) prepared the title of ‘’Turkey's Olive Oil Foreign Trade, Applied Politics, Problems and Solution Proposals’’. In this study, Turkey’s and World’s olive oil production has examined in terms of consumption and foreign trade topics. Production of olive oil in Turkey's economy primarily focused on foreign trade after the consumption of olive oil situation. In addition, a survey was conducted with three companies that are exporting olive oil sector. In the study, the majority of the exports made as an in bulk type, as a result of the acquisition of value-added block Turkey wants removed from the olive oil trade.

GAZANFER (2007) prepared the title of ‘’In Full Membership Process Turkey and the European Union Comparative Analysis of Olive Oil Sector’’. In this work, in the World with regard to the olive oil sector in Turkey and the EU shared the available data. The policies and strategies applied in the olive oil sector are explained and compared. If the results of the study, the revision of the olive oil policy of our country in the process of accession to the EU and has been mentioned these policies to be harmonized with EU requirements. It has been emphasized that olive oil exports will face some problems if they become a member of the EU. IOC is referring to our relationship with Turkey has also mentioned the necessity of creating a permanent olive oil policy in the adaptation process to the EU.

ZIRAPLI (2008) prepared the title of ‘’Trademarking, Olive Oil Sector and European Union Dimension, The Case of TARIS". In this study, emphasizes the importance of brand, branding process and branding. Turkey has provided information with data about the EU and World olive and olive oil sector. The study refers to the branding process in the olive oil sector and the role of TARIS within this process. Packaged with Turkey that Turkey was made due to the absence of members of the EU it is stated that the implementation of higher taxes on oil exports. Because of the lower customs duties in countries such as the US and Canada, we have to consider these countries as target markets and we need to increase our exports to these regions.

APRAZLI (2008) prepared the title of ‘’The Olive Oil Policies Being Applied in Turkey’’. In this study, the olive oil sector in the World and in the EU has been evaluated in the general framework. Especially the applications related to the sector in the EU and reforms related to the olive oil market regime have been emphasized. In line with the main aim of the work; Turkey has been described in general terms with olives, olive oil sector in the existing legislation and policies were investigated. Thus, Turkey's to reveal the current situation in this area and especially aimed to evaluate the situation with the manufacturers’ eyes. In the results of the study; it is stated that fluctuations in production are at high levels due to periodicity in the olive sector. It has been mentioned that this sector is at the beginning of a very small number of sectors, enabling us to achieve net export gains without significant input costs. The lack of publicity in internal and external markets was mentioned and emphasis was put on the necessity of applying the policies which are continuity. Aprazlı also included the opinions of the exported olive oil on the export market. The Council of the EU and the international olive oil policy is implemented in Turkey have not revised according to what is mentioned requirements.

In the Parliamentary Research Commission Report about olive and olive oil product is prepared by TBMM (2008). For the determination of the measures to be taken by investigating the problems in the production and trade of olive and olive oil and other herbal oils, the problems experienced from production to export of table olive and olive oil were examined and related support policies solutions have been proposed.

ÖZKAYA et al (2010) prepared the title of ‘’Problems and Solutions of Turkey’s Olive Sector’’. In this work, place the olive until our current process and olive today in the World and Turkey has put forward. Export of olive oil and table olives

issues discussed in, Turkey has examined in detail the targets to be achieved in the olive.

URUÇ (2010) prepared the title of ‘’Econometric Analysis of Olive and Olive Oil Products in Turkey’’. In this work; Turkey's position has explained URUÇ’s thoughts about the World olive and olive oil sector. Despite of being a major producer of olive it stated that Turkey is a country can not be effective on the World market. The most important reason for this situation is that the products can not be processed in the foreign markets as demanded and quality standardization can not be achieved. In the results of the study, the necessity of increasing the production by supporting the producers has been mentioned. It also mentions the necessity of organizing the producers and increasing the co-operative rates. With respect to the results of the econometric analysis in olive production in Turkey, in the 2020 will reach 1 million 875 thousand tons of the olive harvest, olive oil production of 165 thousand tons and 80 thousand tons of olive oil exports to be made is estimated to be performed.

İPEK (2010) prepared the title of ‘’The Impacts of Branding on Competition of Enterprises and a Study of Turkish Olive Oil Sector’’. In this study, it has named the importance of branding in the sector and examined the competition and brand issues. Turkey has continued its work on the three companies operating in the olive oil sector, brand strategies. In the results of the study; emphasizing that this sector is the source of 400 thousand families and it is mentioned that 1.5 million people work in the sector from time to time. According to the type of packaging of olive oil exports in Turkey is seen to have a 76% share of the oil spill. Information that the olive oil consumption was 1.5 kg per capita in Turkey was shared. This amount is confronted as the least per capita consumption in the countries with the highest output in the World. Operating in the olive oil sector in Turkey has been mentioned that there are 850 factories. The brand awareness of the basic marketing problem experienced by Turkish olive oil companies is not yet established abroad. In addition, olive oil product prices are higher than the competitors are mentioned in the problem. During approximately 5 years (1999-2004) which leaved from the IOC and a member of the Turkey again be actively involved in this council has been referred to the necessity.

SAVRAN and DEMİRBAŞ (2011) prepared the title of ‘’Quality Issues in Table Olive in Turkey and its Recommendations’’. In this study, table olive production in Turkey, consumption and trade have been discussed in general terms. In table olives, quality features, legal regulations and industry problems are examined. They have

proposed solutions to the problems of the sector. Support given to the use of certified seedlings are set forth in the table olive industry in Turkey. They planted olive trees in Gemlik olives due to the concentration of people dealing with the kind of Gemlik. It is stated that salted olives, which are suitable for Turkish taste, have a low chance of exporting in the foreign market. Material for public and private institutions and organizations engaged in research in olive in Turkey and enhancing the moral support is indicated as required.

BAŞARAN (2011) prepared the title of ‘’The Problems of Olive and Olive Oil Producing Small and Medium Sized Firms and Alternative Solutions to the These Problems". In this study, stages of development of SME in Turkey, about the process and the current situation they watched information. Başaran has shared information about olive and olive oil sector in the World and in Turkey. Başaran touched on the problems of olive and olive oil producers and businesses and found solutions.

SEÇER and EKMEKSİZ (2012) prepared the title of "Olive and Olive Oil Production, Marketing and Development Possibilities of Olive Oil in the Eastern Mediterranean Region". They have made olive and olive oil production and marketing organizations' evaluations in their work. They have proposed solutions for identified deficiencies and disruptions. Hatay, Mersin, Osmaniye and Adana in the table olive and olive oil producers and intermediaries operating in the marketing of these products have made surveys.

ERBAŞ (2012) prepared the title of ‘’Branding Agricultural Products in European Union Accession Process: Olive Oil Case’’. In this study, the importance of branding in the olive oil sector and the concepts of brand creation are mentioned. In the World and Turkey gave information about the current status of the olive and olive oil sector. In the results of the study; liquid appears to be behind other countries, but in Turkey the olive oil consumption in Turkey (sunflower) is reported to have high levels of oil consumption. It is mentioned that most of the companies that exports olive oil exports as an in bulk form. This situation is experienced the biggest problem is that Turkey and Turkish goods considered negative image of products in foreign markets. Turkey besides being a country that imports oil, up import costs after fuel oil also has to pay. The easiest solution is to give importance to olive oil sector and consumption. Erbaş stressed the necessity of supporting small producers, emphasizing the importance of organizing and cooperating between small producers.

GÖNEN (2014) prepared the title of ‘’International Price Survey in the Target Markets and Olive Oil Example’’. This study focused on product pricing, pricing objectives and targets, pricing factors, pricing strategies and policies. Also it has included the status of the olive oil sector in the World and Turkey. If the results of the study; Spain, Tunisia, Italy such as olive sector of the largest manufacturers reduced their production areas in the country or stated that remained at similar levels. Morocco, Greece, the second largest manufacturer group of countries in the olive sector, such as Turkey and Syria is noteworthy that be rising. The excess rainfall in our country has an important role in the olive production and the ripening of the olive fruit. However, when the relation between the total production amount and the annual rainfall average data is analyzed, it is seen that the periodicality existing in Turkey is effective. It is also stated that 92% of the olive trees in our country are not watered. In the worldwide, the ratio of olive oil to total edible oil consumption is estimated to be about 1% to 2%. It is stated that many exporters are active in the sector but only major companies can compete with international markets except cooperatives. Each company in the olive oil sector in Turkey has mentioned that acted alone. In Spain, the sector is guided by several large cooperative enterprises and the factors that make up the export price are decided collectively.

BAYRAMER (2015) prepared the title of ‘’The Evaluation of Turkey's Table Olive and Olive Oil Export Problems’’. In this study, in the World, data on olive and olive oil sector in Turkey and the EU have shared and information. It refers to the policy that the EU applies in the sector. In this study, the EU reported that olive oil production had a share of 1.3% in total animal and plant production. It has conducted negotiations with the authorities and business owners of non-governmental organizations operating in the sector. It is stated that firms prefer branded exports due to their added value, sensitivity to branding in foreign markets and state support of branded exports. Exporters are experiencing problems in the sector because they can not fully respond to outside market requests. The negative effects of the technology used in the production of olive oil and the lack of qualification power in the sector are mentioned in the sector. It is stated that the palate cultures of the outer market can not be caught. Licensed warehousing and promotional activities, it referred to the dissemination of branding requirements in Turkey. European high tariffs in the EU, Turkey has stated that create barriers to exports of olive oil. While some sectors in the sector prefer to apply the processing regime in others, some sectors indicate that the sector will harm if the

processing regime is applied in the sector.

ÖZKAYA et al. (2015) prepared the title of ‘’Changes in Olive Production and New Seeking". This study has published the latest developments in the olive industry in the olive farm sector. In addition, research and development (R & D) studies and achievements made in countries dealing with olive cultivation have been mentioned. Within the targets that The Ministry of Food, Agriculture and Animal has determined for 2023, topics related to olive farming have been discussed and included in their studies.

ÇARIKCI (2015) prepared the title of title ‘’The Selection ff Target Markets for Turkish Olive Oil by Multi-Criteria Decision Techniques". In this study, the shared information on production, consumption and trade conditions of the olive and olive oil sector are provided in the World. Turkey in the last 10 years in large quantities along with the number of olive trees, which rose by 60% (about 500 thousand tons), emphasizes that produce olive oil. As a result of the analyses made in the study; potential countries that should be selected and focused as target markets are Central Asian Turkish Republics, Asian countries, rich Arab countries in the Middle East, North American countries and Brazil. Although Europe is the biggest market in the olive oil sector, it has been stated that it is a region where high customs taxes, quotas, unbranded and low value added bulk and barrels and olive oil exports can be made. To be the target market in terms of European Turkey in line with our 2023 objective and it was emphasized that not be possible in the circumstances.

YENER (2017) prepared the title of ‘’The Effect of Elasticity Ten Foreign Trade: The Case Of Price, Income And Substitute Goods Elasticity For Turkey's Olive Oil Export". In this study, the production of olive oil in Turkey and the World, consumption and foreign trade data from have been examined comparatively. With the analyses Yener has done, Yener has identified the main factors of olive oil exports. In the study, Turkey ranked fourth in the World is found in olive and olive oil production and the export of olive oil in the World. Yener has said it received sixth place. Olive oil, including Turkey was mentioned that products recognized as having strategic value by many countries of the World. As a result of the economic analyzes made, it has been stated that the export amount of olive oil is sensitive to the unit sales price of olive oil according to flexibility.

3.2 The Econometric Method

The concept of stationarity is a very important concept in the analysis of time series. In order to obtain meaningful relationships between the variables used in the analysis, the series must be stationary or homogeneous at the same level. If the series are stable at the same level, the relationship between them is a real relationship. These series are also called *cointegrated series*. If a time series becomes stable after the difference has been received, it is said to be integrated into this series d and is expressed as I (d) (Gujarati, 2001: 726).

Unit root tests are performed to determine stationarity. If the serial unit contains root, it is not stationary and it is necessary to make the series stationary (Özer and Erdoğan, 2006). The Augmented Dickey–Fuller Test (ADF) (1981) and Phillips-Perron (PP) (1988) unit root tests are used to determine whether the series used in this study have unit roots. Cointegration which is a technique developed to study the correlation between two non-stationary time series. Johansen-Juselius (1990) can be tested for multiple cointegration vectors by cointegration test and maximum likelihood estimates of adaptation parameters can be obtained. Johansen-Juselius (JJ) Co-integration Technique consists of the Vector Auto-Regression Model (VAR) estimate, which includes the differences and levels of the non-stationary series.

VAR analysis is one of the methods used to analyze the dynamic effects of random shocks in the time series analysis related to each other and in the system of variables. It is possible to reveal unexpected shocks of variables on error terms in VAR analysis. VAR analysis according to Sims (1980), it is aimed to determine the relationships among many variables from parameter estimation. However, the main goal is not only to determine the one-way relationship between variables, but also to show the forward and backward links between variables (Kearney and Monadjemi, 1990: 197-217). VAR analyses have a more flexible structure than univariate AR models. Because, VAR analyses take into account the lagged values of a variable's value as well as its delayed values (Bozdağlıoğlu and Özpınar, 2011). The reason for the frequent use of VAR models in time series is that they can give dynamic relationships without any restrictions on the structural model (Tarı and Bozkurt, 2006: 4-5). The reason for the VAR model to have a stronger prediction power than the one-equation time series a model is that the shocks given in the model can be interpreted (Ceylan, 2006: 39). An important advantage of VAR models is that it is unnecessary to find meaningfulness in t

tests for each of the variables (Enders, 1995: 25). The VAR model is also an important technique in that the variables in the model interact with each other as a system (Kargı ve Terzi, 1997: 29).

According to Engle and Granger (1987), if there is a long-run relationship between variables, there is way causality at least between variables. In such a case, the Vector Error Correction Model (VECM) will be used. If the first set of stationary [I(1)] variables is co-aggregated, failure to take the error correction term specified in the VAR model into the vector error correction model may lead to specification error in causality tests. Therefore, the inclusion of error correcting terms (ECT) in the VECM model, where each variable is treated as an independent variable in order to determine the direction of possible causality in the VAR structure, can eliminate this problem. In the VECM model, it is very important to distinguish between short-term and long-term causality relations. Delay values in the independent variables represent short cyclical causal effects, while error correcting responses represent long-run causal influences (Love and Chandra, 2005: 136). In order to determine the source of causality according to VECM, it is necessary to look at the t test applied to the coefficients of a term lagged error correction term obtained from Wald test and long term cointegration relation applied to all coefficients of explanatory variables. It is possible to draw the conclusion that the short-term causality is valid if the coefficients of the explanatory variables are statistically significant as the group F statistically as a result of the applied Wald test. In addition, long-term causality is mentioned when the coefficients of error correction terms are significant according to the t statistic.

The hypothesis of this study is that ’’there is a long and short causality relation between net exports of olive oil and economic growth’’. The difference of this study from other studies in the literature is that net exports of olive oil are directly related to economic growth and an empirical study on this subject.

3.3 The Data and Empirical Findings

In the study, quarterly data that is covering the period of 1999:Q1-2017:Q1 were used. The series used in the study are seasonally adjusted with the "Census X12 Seasonal Adjustment" method and used in logarithmic form.

Data of olive oil net export and 2009 = 100 base Gross Domestic Product (GDP) data that were calculated using the chain volume index was obtained from the TSI's website. GDP is used to represent economic growth.

The variable definitions used in the research are as follows:

NX = Net Exports of Olive Oil (1,000 US $) (Total Export of Olive Oil – Total Import of Olive Oil = Net Export of Olive Oil = NX)
Y = 2009=100 based GDP calculated using the chain volume index (1.000 TRY)

To have more information about the structure of the variables were used in the model, firstly time line charts are examined and then they are evaluated with the help of unit root tests that they provide the stationary condition. Figure 17 shows the time course of the series used in the study.

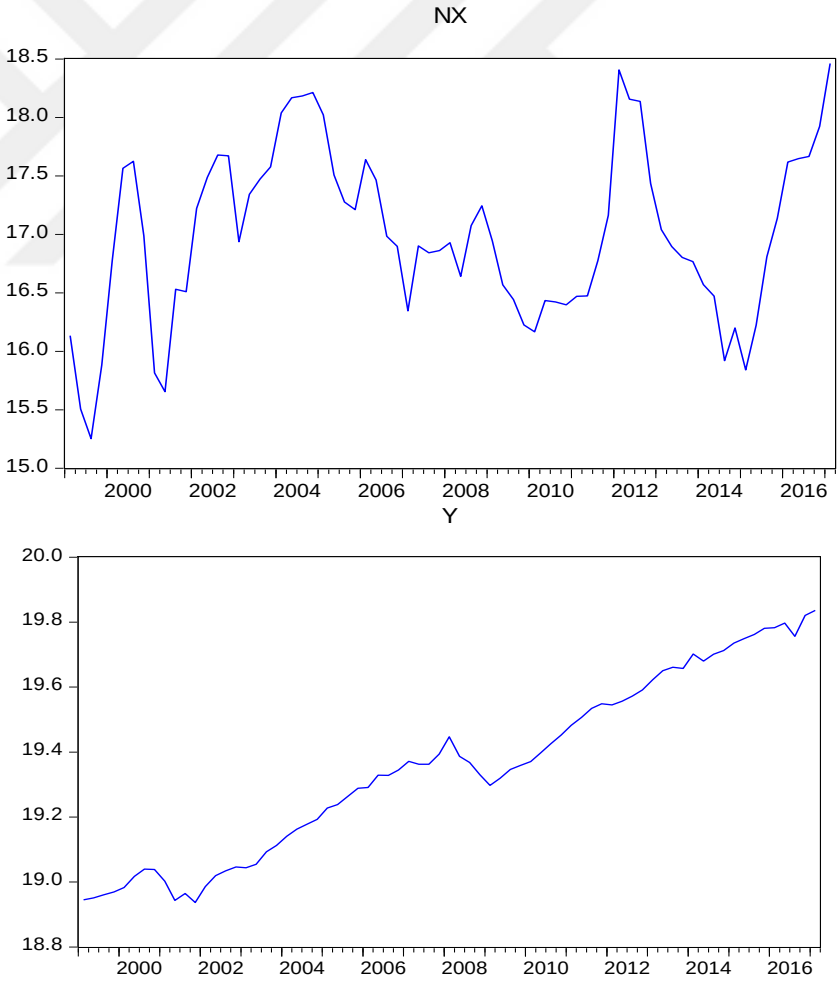


Figure 17: Time Line Charts for NX and Y Series

When we examine the figure 17; the series seem to be trending. The seasonally adjusted logarithmic export of olive oil net exports (NX) is a generally with ups and downs structure. This series has the lowest levels in 1999:Q3, 2001:Q2, 2015:Q1; the highest levels seen in 2004:Q4, 2012:Q1 and 2017:Q1.

The seasonally adjusted logarithmic GDP (Y) series is also with ups and downs structure. But, this series seems to be on the upward trend in general since from 2008. After reviewing the time line charts of the series were used in the study, it is necessary to test whether the time series is stationary in the second step. The Augmented Dickey-Fuller (ADF) (1981) and Phillips-Perron (PP) (1988) unit root tests are used to determine whether the series used in this study have unit roots.

The table 48 gives the ADF and PP unit root test results for the variables used in this study. The values which are in parentheses indicate the length of the delay. In the unit root tests, the Schwarz Information Criterion (SIC) was used to decide how many period delays of the dependent variable would be to the right of the regression equation.

Table 48: ADF and PP Unit Root Test Results

Variable	**ADF test statistic**		**Constant and Trend**	**Phillips-Perron test statistic**		**Constant and Trend**	**Result**
NX	-1,759919 (4)	P=0.3971	Constant	-2,714723(3)*	P=0.2341	Constant and Trend	Unit has root
Y	-2,267125 (0)	P=0.4459	Constant and Trend	-3,043129(2)*	P=0.1305	Constant and Trend	Unit has root
DNX	-6,438767(0)	P=0.0000	None	-6,448910(0)*	P=0.0000	Constant	Unit has root
DY	-7,759917(0)	P=0.0000	Constant	-7,757158(1)*	P=0.0000	Constant	Unit has root

Note: That is decided, if the p-value is higher than 0.05, as a result of the tests, there is a unit root, otherwise there is not a unit root.
*Bandwidth (Newey-West using Bartlett kernel) Phillips-Perron.

The results of the ADF and PP unit root tests applied to the levels of the variables show that the variables are not static. The results obtained by applying the variables of the same tests to the first order difference show that the difference of the variables is stationary.

It is possible to switch to VAR analysis after the stagnation test phase. When we look at the variables that will be included in the model, it is seen that all of them are stable at the same level, i.e. the first order. This situation allows the analysis of co-integration together with the VAR analysis.

The most important condition when the VAR model is established is the accurate estimation of the VAR delay length is determined by the information criteria. In addition, since the variables that to be included in the model is co-integrated at the same level. The levels of these variables are used in the VAR analysis.

The table 49 shows, the determination of the delay length of the VAR model generated using the NX and Y variables.

Table 49: VAR Determination of the Delay Length (Series: NX-Y)

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-73.06034	NA	0.032221	2.240607	2.306419	2.266649
1	**125.5163**	**379.3704***	**9.68e-05***	**-3.567652***	**-3.370217***	**-3.489526***
2	128.6264	5.755855	9.94e-05	-3.541085	-3.212027	-3.410876
3	130.3499	3.086932	0.000107	-3.473131	-3.012449	-3.290838
4	132.3607	3.481354	0.000113	-3.413751	-2.821446	-3.179375
5	137.4476	8.503441	0.000110	-3.446196	-2.722267	-3.159735
6	141.0755	5.848044	0.000112	-3.435090	-2.579537	-3.096545

* indicates lag order selected by the criterion

LR: sequential modified LR test statistic (each test at 5% level)

FPE: Final prediction error

AIC: Akaike information criterion

SC: Schwarz information criterion

HQ: Hannan-Quinn information criterion

In addition, the table 49 shows; the LR, FPE, AIC, SC and HQ information criteries indicate 1 delay. Therefore, the VAR delay length is determined as a one. Whether or not ‘’one’’ delayed VAR model is stable and is tested by the following tests.

Table 50: Inverse Roots of AR Characteristic Polynomial

Root	Modulus
0.943088	0.943088
0.732024	0.732024
No root lies outside the unit circle. VAR satisfies the stability condition.	

The table 50 shows, as can be seen, no modulus value is outside the reference range. All of modulus values are in the reference range. This situation that is the established VAR model is stable. In figure 18, this allows the interpretation by the same analysis method. It is necessary to evaluate the inverse roots of the AR characteristic polynomial in a unit circle analysis.

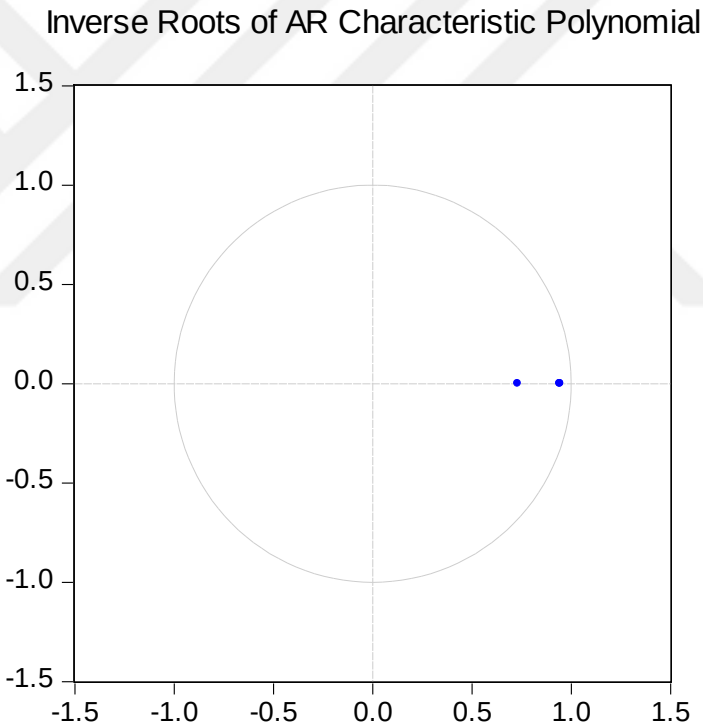


Figure 18: Inverse Roots of AR Characteristic Polynomial

According to the figure 18, the fact that no AR root is outside the circle of the unit clearly shows that the VAR model is stationary. After the analysis of the stability of the VAR model was completed, the co-integration analysis was undertaken. Johansen-Juselius (JJ) co-integration test results are given in the table 51.

Table 51: Unrestricted Co-integration Rank Test (Trace)

Unrestricted Co-integration Rank Test (Trace)				
Hypothesized		Trace	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.411698	45.37586	25.87211	0.0001
At most 1	0.102895	7.709349	12.51798	0.2763
Trace test indicates 1 co-integrating eqn(s) at the 0.05 level * denotes rejection of the hypothesis at the 0.05 level **MacKinnon-Haug-Michelis (1999) p-values				
Unrestricted Co-integration Rank Test (Maximum Eigenvalue)				
Hypothesized		Max-Eigen	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.411698	37.66651	19.38704	0.0000
At most 1	0.102895	7.709349	12.51798	0.2763
Max-eigenvalue test indicates 1 co-integrating eqn(s) at the 0.05 level * denotes rejection of the hypothesis at the 0.05 level **MacKinnon-Haug-Michelis (1999) p-values				
Normalized co-integrating coefficients (standard error in parentheses)				
NX	Y			
1.000000	-6.710692			
	(1.00766)			
Y	NX			
1.000000	-0.149016			
	(0.14137)			

According to the table 51, the absence of hypothesis that there is no co-integration and the rejection by the maximum eigenvalue test statistics and it is found that there is one c-ointegration relation in the model. In other words, it can be stated that there is a long cyclical relationship between the variables of NX and Y.

This is normalized equation according to the NX:

NX = 6,710692 Y

(T-value= 6,9597)

That is normalized equation according to the Y:

Y = 0,149016 NX

(T-value= 1,0541)

Regarding to the NX-normalized equation, in the long-term between net exports of olive oil and GDP, there is a positive correlation between GDP and NX (t value= 6,9597). In other words, as GDP (Y) increases in the long run, net exports of olive oil also increase. However, regarding to the GDP (Y)-normalized equation, we can not say that there is such a relationship from NX to GDP (Y) (t = 1,0541 < 2,0000).

There is a first conclusion in there. That is shows there is a positive correlation between GDP and NX. If GDP increases in the long run, net exports of olive oil also increases.

- **CONCLUSION 1: Y ↑ → NX ↑ (Long term)**

Table 52: Unrestricted Co-integration Rank Test (With Dummy)

Unrestricted Co-integration Rank Test (Trace)				
Hypothesized		Trace	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.419411	46.49020	25.87211	0.0000
At most 1	0.105132	7.886593	12.51798	0.2611
Trace test indicates 1 co-integrating eqn(s) at the 0.05 level * denotes rejection of the hypothesis at the 0.05 level **MacKinnon-Haug-Michelis (1999) p-values				
Unrestricted Co-integration Rank Test (Maximum Eigenvalue)				
Hypothesized		Max-Eigen	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.419411	38.60361	19.38704	0.0000
At most 1	0.105132	7.886593	12.51798	0.2611
Max-eigenvalue test indicates 1 co-integrating eqn(s) at the 0.05 level * denotes rejection of the hypothesis at the 0.05 level **MacKinnon-Haug-Michelis (1999) p-values				
Normalized co-integrating coefficients (standard error in parentheses)				
NX	Y			
1.000000	-5.223496			
	(0.77993)			
Y	NX			
1.000000	-0.191443			
	(0.13984)			

In the analysis of co-integration (November 2000-February 2001 and 2008 Global crisis) when the dummy variable is used and repeated, the cointegration analysis results were obtained in table 52.

According to the table 52, nonexistence hypothesis that there is no co-integration track and maximum eigenvalue test statistics are rejected and it is found that there is one co-integration relation in the model. This indicates that there is a long-run relationship between the NX and Y variables.

This is normalized equation according to the NX:

NX = 5,223496 Y

(T-value= 6,6974)

That is normalized equation according to the Y:

Y = 1,191443 NX

(T-value=1,3690)

Regarding to the NX-normalized equation, in the long-term between net exports of olive oil and GDP, there is a positive correlation between GDP and NX (t value= 6,6974). However, regarding to the GDP (Y)-normalized equation, we can not say that there is such a relationship from NX to (GDP) Y **(**t = 1,3690 < 2,0000).

There is second conclusion in there. That is shows there is a positive correlation between GDP and NX. If GDP increases in the long run with dummy, net exports of olive oil also increases.

- **CONCLUSION 2: Y↑ → NX↑ (Long term with dummy)**

These results are similar to the model in which the dummy variable is not used. Therefore, in this study, analyzes are made on the basis of dummy unchanged model.

It has been attempted to determine the source of causality by making it possible to construct a vector error correction model (VECM) that explicitly includes the error correcting term obtained from co-integration regressions. The test results of the vector error correction model are shown in the table 53.

Table 53: Error Correction Model Test Results

	(1)	(2)
	D(NX)	D(Y)
ECT(-1)	-0.048931	0.131707
	[-3.02983]	[6.67211]
D(NX(-1))	0.050027	-0.108812
	[0.38951]	[-0.69312]
D(Y(-1))	-0.066691	0.317434
	[-0.64497]	[2.51160]
C	1858484.	1635972.
	[0.82618]	[0.59500]
R-squared	0.141149	0.414149
Adj. R-squared	0.102693	0.387917
Sum sq. resids	2.31E+16	3.45E+16
S.E. equation	18566646	22694021
F-statistic	3.670413	15.78784
Log likelihood	-1287.004	-1301.257
Akaike AIC	36.36632	36.76779
Schwarz SC	36.49380	36.89526
Mean dependent	1629046.	2825857.
S.D. dependent	19600313	29007227

T-statistics in [ ]

ECT (-1) is the long-term co-integration related error correction term which is derived from the correlation and shows the size of the past imbalance. In practice, the error correction co-efficient is expected to be negative and statistically significant. According to the test results of the error correction model, the sign of the error correction co-efficient is negative and statistically significant (t value = -3,02983) in equation 1, where D (NX) is the dependent variable. This implies the existence of a relationship between NX and Y in the long run; it means that the causality direction is from D (Y) to D (NX). This result is consistent with the interpretation of the

normalized equations. However, looking at the R^2 and Adj.R^2 values which are belonging to the VECM Model, it is seen that these values are very low. Therefore, it can be said that the reliability of the VECM model is not reliable for this model. For this reason, the Wald test was not conducted to see the existence and direction of the short-term relationship for this model. Instead of the Wald test, the Pairwise Granger Causality Test was used to examine whether there is a short-term relationship between the variables of NX and Y in the study. The findings from this test are shown in the table 54.

Table 54: Pairwise Granger Causality Tests

Pairwise Granger Causality Tests			
Sample: 1999Q1 2017Q1			
Lags: 1			
Null Hypothesis:	Obs	F-Statistic	Prob.
DY does not Granger Cause DNX	71	0.73051	0.3957
DNX does not Granger Cause DY		1.29931	0.2583

According to these results, it can be said that there is no causality relation between the real changes in short term of economic growth at the level of 5% significance and the change in net exports of olive oil.

- **CONCLUSION 3: There is no causality relationship between NX and Y in the short term**.

There is a summary part which includes the data and empirical findings section.

Empirical Findings Summary:

1. NX's the lowest levels are 1999:Q3, 2001:Q2, 2015:Q1; the highest levels are 2004:Q4, 2012:Q1 and 2017:Q1. and GDP (Y) seems to be on the upward trend in general since from 2008 according to the Time Line Charts for NX and Y Series,

2. The results of the ADF and PP unit root tests shows the variables are not static and the differences of the variables is stationary,

3. No modulus value is outside the reference range and this situation that is the established VAR model is stable according to the Inverse Roots of AR Characteristic Polynomial,

4. No AR root is outside the circle of the unit clearly shows that the VAR model is stationary according to the Inverse Roots of AR Characteristic Polynomial,

5. There is a long cyclical relationship between the variables of NX and Y. In the long-term between net exports of olive oil and GDP, there is a positive correlation between GDP and NX. As GDP (Y) increases in the long run, net exports of olive oil also increase. CONCLUSION 1: Y ↑ → NX ↑ (Long term) according to the Unrestricted Co-integration Rank Test (Trace),

6. There is a long-run relationship between the NX and Y variables. In the long-term between net exports of olive oil and GDP, there is a positive correlation between GDP and NX. CONCLUSION 2: Y↑ → NX↑ (Long term with dummy) according to the Unrestricted Co-integration Rank Test (With Dummy),

7. There is no causality relation between the real changes in short term of economic growth at the level of 5% significance and the change in net exports of olive oil. CONCLUSION 3: There is no causality relationship between NX and Y in the short term according to the Pairwise Granger Causality Tests

3.4 Evaluation of Research Results and Recommendations

The main objective of this study is to examine the relationship between Turkey's olive oil export income and economic growth figures, olive oil sector problems and solutions proposals in Turkey.

First of all, in this section, ideas are shared about how to solve the problems in the sector. There are experienced some problems in Turkey's olive and olive oil sector for a long time. The state administration, public institutions and organizations, non-governmental organizations, businesses and citizens are showing the effort to solve these problems. Some comments, thoughts and suggestions are given below in terms of creating solutions to the problems which are experienced in the sector.

Research centers and institutions must be established for olive and olive oil products and its sector. The number of research and development (R & D) activities should be increased. The coordination and communication should be provided between these research units. The researches and studies which will be prepared about the olive sector in Turkey will provide the development plans and programmes in accordance with sector needs.

The economic crises experienced in recent years in Turkey, the World trade begins to rapidly liberalize and more competition occurs in the sectors. Because of these situations, companies must update their marketing strategies and production methods according to innovations. The crises have taught the Turkish industrialists to open up abroad, to grow and export by partnering with international companies. Indeed, Turkey's international trade volume has increased from year to year. However, these developments create some problems. The most important problem was to branding in terms of Turkey's company (Çelik, 2007:162). Due to the differentiation in developing technology and consumer structure, the branding is an important feature for companies that are taking a position or maintain their position in today's markets. It is important for the companies operating in the sector which should act with the aim of institutionalization and must create their brands.

In Turkey country-based oil policies should be implemented to ensure efficient, high quality production and to reduce of periodicity in the sector. The manufacturer should be informed about the aware of quality and efficient production. Also, the producer must be supported by financially. The most demanded olive oil products are virgin and extra virgin olive oil in the World. Because of this reason, virgin olive oil

production should be encouraged to produce (In Turkey, natural olive oil production ratio is between 30% and 40%, while this ratio is approximately between 70% and 80% in EU countries). Olive oil processing facilities and the infrastructure of the production area should be renewed. The use of modern production systems should be widespread in the Turkey. Stainless steel tanks will be more suitable for product storage considering in terms of temperature, light and humidity conditions.

Turkey's olive planting areas are increased by given supports and incentives. It is expected that the amount of products such as table olives and olive oil will increase in the future as a result of increasing olive planting areas. This increase in olive products should be reflected to Turkey's economic growth. Because of this reason, it is necessary to solve the problems experienced in the marketing in the olive and olive oil sector and to focus on the target markets.

Turkey's olive and olive oil sector's economic performance and its profit potential are not at desired level. Environmental, climatic and demographic factors provide advanteges to Turkey's economic sectors. But, Turkey does not use this potential efficiently. To gain more foreign trade income from this sector, that should research leader countries in the olive and olive oil sector, should examined their system from the production stage to marketing stage detaily and appropriate applications will be used in our companies.

Companies which are operating in the olive and olive oil sectors should try to adjust their negative status by seeing their weaknesses by doing SWOT analysis. Companies must be aware of external threats and they should demonstrate performance against these threats.

The maintenance and input costs must be low in the olive cultivated sector. If the olive trees are cared, the effect of periodicity can be reduced. So that the maintenance costs and the amount value of product are produced must compensate each other. In addition, it is suggested that producers should be informed by scientific information about olive production.

In the World olive and olive oil sector, Spain, Italy, Greece and Turkey are competing with each other. Spain, Italy and Greece have many olive oil brands which are well known in the World. But Turkey does not have well known brand in this sector and also as in other sector. Even if this is the case, Turkey has a chance in the olive sector. Because, Turkey has a lot of olive trees and olive is grown itself. Only we must focus on the sector in terms of production, plantation, consumption, exportation etc…In

addition government and private sector should support the olive sector in a stable manner.

Olive is a regional product in terms of growing conditions. But also, olive is a global product in terms of trade conditions. A lot of countries in the World demand it. There is an ever increasing demand for export of olive products. It is also a net exporter sector because there are no inputs supplied from abroad. We should squeeze this fruit that grows in our own soil and we must make the best bottle and marketing of them.

In order to develop the olive sector in Turkey it must be organized as whole, relevant institutions and organizations are operating in this field. These institutions should be in close cooperation with each other. We have a chance to increase our sales and export revenues by creating product diversity in olive and olive oil product by applying product differentiation strategy. Companies which are operating in the sector should focus on farmers' organizations such as cooperatives and producer associations.

In the section of econometric method; there is a hypothesis which is a study is that ''there is a long and short causality relation between net exports of olive oil and economic growth''. In the section of the data and empirical findings; there are some econometric analyses which are Time Line Charts for NX and Y Series (Figure 17), ADF and PP Unit Root Test Results (Table 48), VAR Determination of the Delay Length (Series: NX-Y) (Table 49), Inverse Roots of AR Characteristic Polynomial (Table 50 and Figure 18), Unrestricted Cointegration Rank Test (Trace) (Table 51), Unrestricted Cointegration Rank Test (With Dummy) (Table 52), Error Correction Model Test Results (Table 53), Pairwise Granger Causality Tests (Table 54). Some findings have been obtained from result of econometric analysis.

The results are;

The seasonally adjusted logarithmic export of olive oil net exports (NX) is a generally with ups and downs structure. This series has the lowest levels in 1999:Q3, 2001:Q2, 2015:Q1; the highest levels seen in 2004:Q4, 2012:Q1 and 2017:Q1.

The seasonally adjusted logarithmic GDP (Y) series is also with ups and downs structure. But, this series seems to be on the upward trend in general since from 2008.

The results of the ADF and PP unit root tests applied to the levels of the variables show that the variables are not static. The results obtained by applying the

variables of the same tests to the first order difference show that the difference of the variables is stationary.

It is possible to switch to VAR analysis after the stagnation test phase. When we look at the variables that will be included in the model, it is seen that all of them are stable at the same level, ie the first order. This situation allows the analysis of co-integration together with the VAR analysis.

The fact that no AR root is outside the circle of the unit clearly shows that the VAR model is stationary. The absence of hypothesis that there is no cointegration and the rejection by the maximum eigenvalue test statistics and it is found that there is one co-integration relation in the model. In other words, it can be stated that there is a long cyclical relationship between the variables of NX and Y.

- CONCLUSION 1: Y↑ → NX↑ (Long term)

Regarding to the NX-normalized equation, in the long-term between net exports of olive oil and GDP, there is a positive correlation between GDP and NX (t value= 6,9597). In other words, as GDP (Y) increases in the long run, net exports of olive oil also increase. However, regarding to the GDP (Y)-normalized equation, we can not say that there is such a relationship from NX to GDP (Y) (t = 1,0541 < 2,0000).

The nonexistence hypothesis that there is no cointegration track and maximum eigenvalue test statistics are rejected and it is found that there is one cointegration relation in the model. This indicates that there is a long-run relationship between the NX and Y variables.

- CONCLUSION 2: Y↑ → NX↑ (Long term with dummy)

Regarding to the NX-normalized equation, in the long-term between net exports of olive oil and GDP, there is a positive correlation between GDP and NX (t value= 6,6974). However, regarding to the GDP (Y)-normalized equation, we can not say that there is such a relationship from NX to (GDP) Y **(**t = 1,3690 < 2,0000).

According to the Pairwise Granger Causality Tests results, it can be said that there is no causality relation between the real changes in short term of economic growth at the level of 5% significance and the change in net exports of olive oil.

- CONCLUSION 3: There is no causality relationship between NX and Y in the short term.

In summary of econometric analysis; according to the obtained results; the long-term real income increase (economic growth) leads to an increase in the net exports of olive oil (in the trade of olive oil). But, there is no relationship between economic growth and olive oil trade in the short-term period. It can be said that; the long-term economic growth provides to the growth of net exports of olive oil. This happen is occurred because of the economic growth has a positive effect on trade in terms of confidence conditions.

To conclude the study with a brief summaries of important notes are given below. The summary of the study; the olive and olive oil are important agricultural product in the World and Turkey. They create economic contribution to the countries' budget from the production stage to the consumption stage. Olive and olive oil products are known and consumed for a long time in Turkey's geography. But, these products' economic and commercial importances are newly understood by enterprisers. Turkey's climatic conditions, soil properties and demographic features are available for more production of olive. However, production, consumption and exports in the olive and olive oil sectors are not at the desired level. Because of there are many problems in the sector from the production stage to the marketing stage.

It is imperative that the national and international problems existing in the sector must be solved immediately. If these problems are solved, Turkish olive and olive oil sector can be improved. It is known that olive and olive oil have positive effects on human health. Because of this situation, olive and olive oil production and consumption amounts are increasing in the World. Turkey is a country which has significant share in the production and export of olive and olive oil sector. It is imperative that we must use these advantages into our own favor. Olive is Turkey's traditional product and it is a selfly cultivated or grows up plant. And also, costs are not high for olive production. Because of these features, olive is worth as much as gold. Turkey is not as efficient, active and familiar as Spain, Italy and Greece in the international market of olive and olive oil sector.

Spain and Italy are the biggest producer and exporter countries in the olive and olive oil sector. Turkey is following in these countries. But in order to be able to catch up with these countries, the Turkey must make important decisions and work with its

all the power for this sector. Turkey generally exports its olive oil as an in bulk form. Turkey has got to change this export method. It is more important that we must sell olive oil as branded, packaged type. If Turkey wants to increase its position in the olive and olive oil sector, consistent and modern policies must be applied to the sector. Exports are important enough to not ignore economic growth. The more the exports of olive and olive oil are increased, the more economic development and economic development of the country will be increased.

In this study the relationship between Turkey's olive oil net export income and economic growth figures is examined by using the quarterly data between 1999:Q1-2017:Q1 by means of several econometric methods. As a result of the Unrestricted Co-integration Rank Test (Trace), there is a long cyclical relationship between the variables of NX and Y. In the long-term between net exports of olive oil and GDP, there is a positive correlation between GDP and NX. As GDP (Y) increases in the long run, net exports of olive oil also increase. As a result of the Unrestricted Co-integration Rank Test (With Dummy), there is a long-run relationship between the NX and Y variables. In the long-term between net exports of olive oil and GDP, there is a positive correlation between GDP and NX. As a result of the Pairwise Granger Causality Tests, there is no causality relation between the real changes in short term of economic growth at the level of 5% significance and the change in net exports of olive oil. As a result, it is seen that there is a relationship between economic growth and olive oil net export income in the long term, but there is no relationship in the short term.

Recommendations about study;

- The government subsidies and incentives can be increased so productivity will rise with quality production.
- Supplies of quality raw materials are important which are necessary for the standard and sustainable production.
- The quality enhancing applications in products should be adopted by the producers.
- Long term and stable publicity policies should be developed to increase domestic and foreign consumption.
- Tax refunds should be paid as soon as the exporting process is over in terms of their trade motivation and financial strength of the companies.

- Effective production planning system must be provided in the olive oil sector.
- Domestic olive and olive oil companies should be protected and not to be sold foreigners.
- The government authorities must negotiation with the EU and must solve the high tax duty and quota problems.
- Research centers and institutions must be established for olive and olive oil products and its sector.
- The number of research and development (R & D) activities should be increased in the olive sector.
- Companies must update their marketing strategies and production methods according to innovations.
- The country-based olive oil policies should be implemented to ensure efficient, high quality production and to reduce of periodicity in the sector.
- The most demanded olive oil products are virgin and extra virgin olive oil in the World. Because of this reason, virgin olive oil production should be encouraged to produce.
- Olive oil processing facilities and the infrastructure of the production area should be renewed.
- The use of modern production systems should be widespread in the Turkey.
- Turkey's olive planting areas should be increased because this situation will provide net export income to Turkey's economy.
- To gain more foreign trade income from this sector, that should research leader countries in the olive and olive oil sector, should examined their system from the production stage to marketing stage detaily and appropriate applications will be used in the our companies.
- Companies which are operating in the olive and olive oil sectors should try to adjust their negative status by seeing their weaknesses by doing SWOT analysis.
- The maintenance and input costs must be low in the olive cultivated sector so the effect of periodicity can be reduced.
- Producers should be informed by scientific information about olive production.
- To increase sales and export revenues by creating product diversity in olive and olive oil product by applying product differentiation strategy.

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