

COMPETITIVENESS IN INTERNATIONAL TRADE: AN EXAMPLE OF THE
OLIVE OIL SECTOR



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COMPETITIVENESS IN INTERNATIONAL TRADE: AN EXAMPLE OF THE
OLIVE OIL SECTOR

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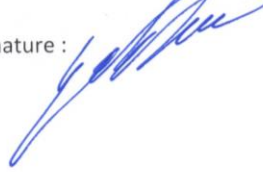
PLAGIARISM

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ABSTRACT

Olive oil sector is one of the important sectors in Turkey's impact on economic activity. Accordingly, from this research in the olive oil and its derivatives trading activities of the 2008-2018 year are performed in Turkey (11 years), according to the assessment of the competitive power with olive oil and sub-sectors and the year aimed to have an idea about the change. In addition, the fields of activity examined for the years 2008-2018 were also examined for the period between 1997-2007, and these two periods were compared in terms of competitiveness. It is predicted that the results obtained from this research will contribute to the olive oil sector and other researches to be carried out in this field. Revealed Comparative Advantages approach was used to measure the competitive advantage in the research and the relative import advantage included in the formula by Vollrath was also taken into consideration.

In calculating the competitiveness of the olive oil sector in Turkey SITC REV.3 '4214' subsector coded 'olive oil and other oil Obtained from olives' and '42141' coded 'Virgin Olive Oil', '42142' coded 'Other Olive Oil and its fractions' 'Oils and their fractions obtained solely from olives' coded and '42149' are used, and 'olive oil and other oil obtained from olives' coded as '4214' sub sector are included in the system as the sum of the other three. Access to these data between 2008-2018 and 1997-2017 has been accessed through TUIK Foreign Trade Statistics Data Inquiry Screen. Owned export and import figures for Turkey's total export and import figures have been taken in USD, was opened in front of international comparisons could be done.

It is observed that the RCA index of Turkey's olive oil industry is greater than +50 between 2008-2010. Therefore, it can be concluded that the olive oil industry and its fractions are among Turkey's leading export goods and Turkey has high competency power in these group of goods. Considering the overall tendency, it is observed that, the olive oil industry and its fractions followed a; high level competency power between 2008-2014, low level competency power in 2015 and 2016, similar level competency power in 2017 as in between 2008-2014, and a decline in 2018. In addition, according to the chart 4.2 and 4.3 "Olive Oil and Other

Oil acquired From Olives" sector of Turkey, 1997-2007 and 2008-2018 periods are similar to each other and the Competitive Power remained stable except for some years.

Keywords: *Competitiveness, International Trade, Olive Oil Sector*



ÖZET

Zeytinyağı sektörü Türkiye'nin ekonomik faaliyetlerine etkide bulunan önemli sektörlerden bir tanesidir. Buna göre bu çalışmada Türkiye'de gerçekleştirilen zeytin yağı ve türevlerinin ticari faaliyetlerinin 2008-2018 yılları arasındaki (11 yıllık dönem) zeytin yağı ve alt sektörlerinde sahip olduğu rekabet gücünün değerlendirilmesi ve yıllara göre değişimi hakkında fikir sahibi olunması amaçlanmıştır. Ayrıca çalışmada 2008-2018 yılı için incelenen faaliyet sahaları 1997-2007 yılları arasındaki dönem için de incelenmiş ve bu iki dönemim rekabet gücü bakımından karşılaştırılması yapılmıştır. Bu çalışmadan elde edilen sonuçlar ile zeytinyağı sektörüne ve bu sahada gerçekleştirilecek diğer çalışmalara katkı sağlayacağı öngörülmüştür. Çalışmada rekabet üstünlüğünün ölçülmesi adına Açıklanmış Karşılaştırmalı Üstünlükler yaklaşımı kullanılmış olup, Vollrath tarafından formüle edilmiş göreceli ithalat avantajı da dikkate alınmıştır.

Türkiye'de zeytinyağı sektörünün rekabet gücünün hesaplanmasında SITC REV.3 '4214'alt sektör kodlu 'Zeytinyağı ve fraksiyonları' ve '42141' kodlu 'Saf Zeytin Yağı', '42142' kodlu 'Zeytinyağı fraksiyonları' ve '42149' kodlu 'Zeytinden elde edilen diğer sıvı yağlar' alt bölümleri kullanılmış olup, '4214'alt sektör kodlu 'Zeytinyağı ve fraksiyonları' diğer üçünün toplamı olacak şekilde sistemde yer almaktadır. Söz konusu 2008-2018 ve 1997-2007 tarihleri arasındaki bu verilere erişim TÜİK Dış Ticaret İstatistikleri Veri Sorgulama Ekranından ulaşılmıştır. Sektöre ait ihracat ve ithalat rakamları ile Türkiye'nin toplam ihracat ve ithalat rakamları USD cinsinden alınmış olup, uluslararası kıyaslamaların yapılabilmesinin önü açılmıştır.

Sonuç olarak Türkiye'nin 2008-2010 yılları arasındaki zeytinyağı sektörü AKÜ endeksinin +50 değerinden büyük olduğu gözlemlenmiştir. Buna göre söz konusu aralıkta zeytinyağı ve fraksiyonları sektörünün Türkiye'nin öncü ihracat ürünleri arasında olduğu ve bu ürün gruplarında yüksek rekabet gücüne sahip olduğu ifade edilebilir. Grafiğin genel eğilimine bakıldığında ise Türkiye'nin zeytinyağı ve fraksiyonları sektöründe 2008-2014 yılları arasındaki yıllarda rekabet gücünün yüksek seyrettiği buna karşılık 2015 ve 2016 yıllarında düşük rekabet gücüne sahip olduğu, 2017 yılında ise bu iki sene dışındaki önceki yıllarla benzerlik gösterdiği ve

2018 yılında ise tekrar bir düşüş yaşadığı görülmektedir. Ayrıca Grafik 4.2 ve 4.3'e göre Türkiye'nin "Olive Oil And Other Oil Obtained From Olives" sektöründe 1997-2007 ve 2008-2018 dönemlerinin birbirine benzerlik gösterdiği ve rekabet gücünün bazı yıllar haricinde stabil kaldığı görülmüştür.

Anahtar Kelimeler: Rekabetçilik, Uluslararası Ticaret, Zeytinyağı Sektörü



LIST OF ABBREVIATIONS

| | | |
|--------------|---|---|
| WEF | : | World Economic Form |
| FAO | : | Food and Agriculture Organization of the United Nations |
| TUIK | : | Turkish Statistical Institute |
| DPT | : | State Planning Organization |
| SWOT | : | Strengths Weaknesses Opportunities and Threats |
| EU | : | European Union |
| USA | : | United States of America |
| TARIS | : | Agricultural Sales Cooperatives Union |

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1. INTRODUCTION

Since the concept of competitiveness is handled in academic research from different aspects, it can be said that more than one definition can be made. Overall competitiveness; It is defined as the efficiency ratio of the competitive structure of that market with the increase in welfare created by success in any market. In another definition, competitiveness; Efficiency is expressed as ensuring sustainable growth in all institutions, application areas of policy principles and production factors. Countries, markets and businesses will be able to obtain their competitive credentials to the extent that they are able to take part in international competition, the ability of production factors and all goods and services produced to obtain markets in the world, and the rapid implementation of state practitioners' competitiveness.

This study will examine the international competitiveness of the olive oil sector which is the one of the most important areas for Turkey. Accordingly, from this research, in the olive oil and its derivatives trading activities of the 1997-2018 years are performed in Turkey (21 years), according to the assessment of the competitive power with olive oil and sub-sectors and the year aimed to have an idea about the change. It is predicted that the results obtained from this research will contribute to the olive oil sector and other researches to be carried out in this field. Revealed Comparative Advantages approach was used to measure the competitive advantage in the research and the relative import advantage included in the formula by Vollrath was also taken into consideration.

1.1. Aim of The Research

Since the concept of competitiveness is handled in academic research from different aspects, it can be said that more than one definition can be made. Overall competitiveness; it is defined as the efficiency ratio of the competitive structure of that market with the increase in welfare created by success in any market (Wang, 2004). In another definition, competitiveness; Efficiency is expressed as ensuring sustainable growth in all institutions, application areas of policy principles and production factors (World Economic Forum (WEF)). Countries, markets and

businesses will be able to obtain their competitive credentials to the extent that they are able to take part in international competition, the ability of production factors and all goods and services produced to obtain markets in the world, and the rapid implementation of state practitioners' competitiveness (Civi, 2001).

Olive oil sector is one of the important sectors in Turkey's impact on economic activity. Accordingly, from this research in the olive oil and its derivatives trading activities of the 1997-2018 year are performed in Turkey (21 years), according to the assessment of the competitive power with olive oil and sub-sectors and the year aimed to have an idea about the change. In addition, Turkey's olive oil sector between 1997 and 2007 is aimed to observe the change between periods by comparing the situation between 2008 and 2018. It is predicted that the results obtained from this research will contribute to the olive oil sector and other researches to be carried out in this field.

1.2. Importance of The Research

Today, the concept of competition for companies and countries, which forces the abolition of commercial boundaries with globalization, comes to the fore. Likewise, it is important to make the olive oil sector competitive in world markets. The aim of this study was to measure the competitiveness of Turkey's olive oil with RCA approach and to compare with other countries. Turkey's olive oil exports in determining the potential competitiveness, increasing exports of the product and the strong need to strengthen the weaknesses have been revealed. From this point of view, it can also be a reference to the studies that want to provide policy recommendations for the development of competitiveness. In addition; most of previous studies in the literature focus on with a smaller number of countries to make this comparison. This approach makes comparison difficult to see the position in the overall perspective of Turkey. For instance; previous study in Turkey's olive oil competitiveness firstly determine Turkey's target market for olive oil export. All suppliers of this target market are accepted as Turkey's competitors. However, the opportunities brought by globalization, the development in logistics, and the increasing demand day by day make all the countries of the world competitors. Therefore, the scope of this study

was formed with the thought of contributing to the literature.



2. LITERATURE REVIEW

2.1. Competitiveness

2.1.1. Competitiveness

Despite competitiveness notion has used at many topics, there wouldn't provide a consensus about definition. The statement in the dictionary claims competitiveness as "competition which makes financial decision freely to enterprises between goods and service sector". Competitiveness word has economics, politics and social dimensions. Competitiveness Association defines the competitiveness with the broad meaning as "sharing a scarce stuff or a game between more than one player to gain a reward with obvious rules and restrictions while fundamental freedoms and human rights guaranteed and any discrimination or privilege has not existed".

In daily life, competitiveness has been used to pass other people for gaining an obvious benefit or compete with people who are at close position on the purpose of outclass to provide distinct benefit (Aktan and Vural, 2004). In the scope of network it should define as if deflection of customers so that shifting the dynamics of the network or detaining the advantageous position in the rivalry. It is the key that presenting a better understanding to the activity of a firm is about the decision making as first criteria whether customers or restraining other actors in the competitiveness environment (Medlin and Ellegaard, 2015).

Competitiveness concept progressed within the inter-firms relations while the scope of competition is extensive which can be provided from new insights. In the competition goal conceptualizing it is purpose of the firms to emulate with the rivals and to shape the activities according to the same or different objectives in the role of time. This approach brings the dynamic context with due to the fact that the competitiveness conceptualized as stable or static that causes the loss of competitive process (Medlin and Ellegaard, 2015).

Competitiveness is a multi-disciplinary concept which is used many areas such

as economics policy, national and international policy frameworks, strategies, business and engineering particularly when it is related with the growth. There are an ongoing debate about the scope of competitiveness, definition of competitiveness and whether competitiveness is an entrepreneurial skill or a development tool which could be used by firms to make profit (Voinescu and Moisoi, 2015).

Along the economic thinking evolved the concept of competitiveness changed and integrated with different approaches. Firstly, it was used to explain trade rivalry between nations as an instrument of classical economic theory of mercantilism then evolved to nations' absolute advantage. While recent past, neoclassical critiques used the competitiveness for international rivalry of countries, recent theories improved regional competitiveness concept and therefore applied economics and classical economy got near. Competitiveness is one of the main factors of growth and one of the main criteria for performance on the global market. To sustain stability and growth, moreover, to cope with the major economies providing deeper integration, increasing competitiveness is mandatory and prerequisite especially for the developing economies at the global level (Voinescu and Moisoi, 2015).

In the classical economics approach, it occurs against Mercantilism which enables state force over trade because of the fact that economics and social cost based on competitive trade. According to this approach, the relief of country relates to other countries and contrary to international tradesman, backing up residents with state protection programs and giving foreign trade surplus without competition stage. Economics decisions wouldn't let the initiative of individuals. Classical economics approach, contrary to Mercantilist approach, which focuses state and tradesman in the first place and don't care individual freedom, defenses parallelism of increase of relief and production, importance of people's happiness and relief (Aktan and Vural, 2004). International competitiveness scope of companies determines the competitive advantage as well as competitiveness of country (Herciu, 2013). While national competitiveness and effectiveness of economy growth are influenced by combined factors, namely as market size, technology development, infrastructure, institutions, health, environmental competence, macroeconomic environment and so on (Palei, 2015). Trimcev and Dimoska (2012) cited that the national competitiveness factors

included range of organizational and management variables, competitive environment and strategy.

Classical economics approach enables to evaluate opinions from the point of Smith, Ricardo and Marx who have similar views when the dynamic process tackles. According to classical economics approach, it reflects the competitiveness notion as perceiving heuristically inside this approach (DPT, 2004).

Classical economists have made first definition of competitiveness inside the economics approach. Adam Smith, one of the founders of this approach, likens the competitiveness to behaviors of rivals in a competition and has thought that this could be caused because of the restriction of productive or consumptive goods amounts. According to Smith, competition is the adaptation of companies to market changes for getting profit while conditions of rivals were complicated by them (DPT, 2004).

Smith perceived competitiveness notion on economics meaning as freedom to clarify strategies and according to him, if market has an absolute freedom, over the price of anything there would be continuous pressure to keep them natural price level (Tokatlıoğlu, 1999).

Adam Smith depicts competitiveness as for the sake of getting the customer's likings, the war between companies and he believes a secret hand behind the economics to adjust it in best way. Competition between companies push the consumers to qualified products with best costs, unsuccessful and unproductive companies wouldn't stay in the market and be eliminated from the market (Şağbanşua, 2006).

Ricardo tackles competitiveness notion to explain rent theory like Smith's evaluation as a dynamic process. According to him, "if there isn't any other way to increase the amount of goods and the competition is just between buyers, the price of the goods will be monopoly price" (Tokatlıoğlu, 1999).

According to Tokatlıoğlu (1999), competitiveness notion of Marx based on four fundamentals. Firstly, competitiveness has a historical role. Secondly,

competitiveness is a generated notion. Thirdly, competitiveness is not just a balance provider, furthermore it can create or disrupt balance, it could allocate sources not optimally and lastly, and attraction center which was created by competitiveness is active. Based on these fundamentals, competitiveness would be an important analysis tool to shape production prices, technical changes and profit rates.

When the competitions tackle as market construction, price competition gets more importance. According to product and manufacturing process, technological changes and innovations are left out and competition tackles as a static construction. At the neo-classic approach, basic step to clarify competition is the company number. If there is just one company in the market, there wouldn't be competition, it is called monopoly. If there are limited number companies in the market, this leads lame competition, if there is not a single company power over the market and other companies keep going to live, it marks absolute competition (Kırankabeş, 2006).

Evolutionary competition trend developing by Schumpeter is mainly different from neoclassic approach. According to Schumpeter, competitiveness shouldn't be a balancing power. It must tackle from a broad spectrum involves in all phenomenon of capitalism evolution, and it must dispose of narrow frame of price and amount adaptations (Tokathioğlu, 1999).

Inspected thesis, competitiveness description would tackle the issue as in a relative industry in order to acquire similar benefits with competitors, when this situation has occurred struggling with the rivals, which target to gain identical benefits, and it states entire attempts for this purpose.

2.1.2. Competitive Environment

Competitive environment is a place where the competition makes pressure to the all competitors. There are four fundamental conditions to comprise of a competitive market or effective competitive environment. Primarily, it should have provided that all production factors includes initiatives, consumers, goods and services need to enter the market without any barrier, so there must be free market to

enter for the actors. Second condition is the equal rivalry for the competitors. There mustn't be privileged actors in the market. Third, equal enter and equal treatment rights must be protected under inspection effectively. Lastly, participation in the market based on voluntariness and the participants need to expect more benefits than the costs they will put up with from the market formation (Türkkan, 2010).

The competitive environment has influenced over the competitor amount and types. Managers need to handle it and get how the competitors will behave in there. If the competition is inevitable, managers need to choose sufficient strategies due to avoiding head-to-head competition when they wouldn't control the competitive environment (Perreault and McCarthy, 2000).

The creation of a competitive environment is based on creating the high competition conditions for all competitors in the whole industry besides inducing exports strategy instead of import substitutes (Hornianschi, 2014). Competitive environment has a great impact on today's economy instruments such as information technology, product architecture, world economies structural alter, R&D, virtual integration, horizontal integration and relation of firms (Takakuwa and Veza, 2014).

Competitive environments can be observed in two groups generally, namely perfect market and imperfect market. In perfect markets, it is supposed that the products are homogeny, no barrier for both buyers and sellers to enter the market, absolute information about the market for the all actors and the market value accepted when a decision made. All buyers and sellers are the units to accept the price and they have no influence over the price (Ardiyok, 2001).

Imperfect markets clusters as oligopoly, monopolistic competition and monopoly. Every firm has an impact on the product price in these markets. In oligopoly, identical products are suggested by competitors there the firms are able to compete in lower prices and profit margins. In monopolistic competition, each competitor attempts control its related market by suggesting marketing mixes as numerous firms do in this market. It occurs when some customers see different products or sellers perceive competition in this market. The competition is to acquire

the monopoly position. By customers, many substitutes seem as alternative and to charm customers competitors differentiate identical products by trustingly marketing mix but it should not be so affective if the competitors adapt new ideas easily and imitate new products. Monopolistic competition mostly prevails in developed economies (Perreault and McCarthy, 2000).

On the other hand, monopolies describes a single firm controls the market. Entry to a monopolistic industry is way costly compare with the other markets. Sometimes governments can encourage a firm to be monopoly and set some barriers for other firms to enter the market such as high enter price, this kind of firms called government regulated monopoly. Governments aim the specific products or services are easy to reach with reasonable prices compared to competitive markets in these types of monopolistic industries (Barney and Hesterly, 2015).

It's beneficial to utilize decision making in competitive environment because there is competitive pressure to push firms to take risks easily (Dereli, 2015). Moreover, competitive environments are crucial to follow and select the right competitive strategies from the point of firms.

2.1.3. Competitive Advantage

Competitive advantage is the creation more economic value of a firm than its rivals in the same sector while competing with similar objectives. Economic value can be described as the difference between perceived customers interest related to buying product or services of a firm and the cost of these products or services (Barney and Hesterly, 2015). Competitive advantage states higher productivity and after that profitability. A firm is considered as a competitive if it evaluates the opportunities to ensure higher productivity and sustainable competitive advantage (Ahmedova, 2015).

The competitive advantage of a firm might be temporary or sustained advantage. Temporary advantage is just for short time period advantages and it lasts after that period, while sustained advantages state longer advantageous period a firm can hold against its rivals (Barney and Hesterly, 2015).

Sustained competitive advantage is crucial for the firms because of the fact that sustained advantage provides economic reasons to exist and continuous profit, firms are condemned to decline so that competitive advantage guarantees the competitive strength of the firms. Without considering of the company size, location and industry competitive advantage must be purposed and firms have to clarify an efficient competitive strategy to get it due to the combined leverage effect (Pearson et al., 2015).

Sustainable competitive advantage is related to balance of internal resources and capabilities of the firm and its external environment where the circumstances are easy to change (Pearson et al, 2015). Flexibility, products range and customer satisfactions are the some parts of external resources where quality of work, quality of stuff and know-how are some parts of internal resources. According to the findings, business owners perceive competitive advantage as the quality of product and the quality of labor in the first place. Flexibility and know-how are following it. Personal approach and reputation of the company take the last place (Svarova and Vrchota, 2014).

No single new product can generate a sustained competitive advantage; some firms might be skillful to apply strategies and innovative new products. But if the competitors are able to imitate the new products quickly it would be resulted in a reduction in the profits after a rapid increase in profits in the short run. Increased competition and sufficient source of the rivals and skill to duplicate the new products bring about the temporary advantage. A firm cannot respond the competitive advantage of its rivals due to the inappropriate resources and the capabilities such as financial, organizational, human or physical. Therefore, the firm will not be able to imitate the resources of its rivals through substitutions or duplications of the products. A firm's resources and capability advantage reveal the sustained competitive advantage over time thanks to several continuous product introductions (Barney and Hesterly, 2015).

External environment can change easy and rapid, besides internal resource portfolios will vary. Some business decision makers consider the situation as threats,

while the others consider as possibilities. Best companies have internal strengths and keep away from the threats in uncertain external environments than its rivals. Therefore, they possess the competitive advantage to take advantage of opportunities in the competitive environment (Nilssen et al, 2015).

The source of the competitive advantage for firms is based on two pillars called market-based view and resource based view for the firms. Market based view interests the external environment, the factors such as market structure and market power which effect competition and pricing, moreover, the four competitive forces, namely threat of substitutes, threat of new entrants, bargaining power of buyers and bargaining power of suppliers have an impact on competition and market attractiveness (Pearson et al.,2015). Resource based view is related to company and its resources. The importance of the resource based view is that firms have different priorities and abilities to select and apply competitive strategies based on the resources they have and the difficulty of the heterogeneous resources to imitate (Nilssen et al, 2015).

The nimety of cost reducing or benefit-building opportunities some companies face to possess competitive advantage. On the other hand, some companies can find temporary competitive advantage chances but it is mostly perishable and easy to imitate in the long run. Constantly penetrating the new products or identify the potential new advantages and present them one after another to spoil the balance of their competitors can help this kind of firms to have competitive advantage. Even though, achieving a great sustained competitive advantage is not realistic but rather to have market share by routinizing innovation process, penetrating the industry and putting the rivals in a tight spot by many little differences over time (Kotler, 1994).

Porter (1992) describes three types of generic strategies for sustained competitive advantage in the competitive environment. They are cost leadership, differentiation, and focus. According to Porter, generic strategies provide a good starting point for strategic thinking (Kotler, 1994).

The differentiation strategy has to be supported by prospering investments in

research, product or service design and marketing. Porter's differentiation strategy has implemented in many fields such as quality of customer services or differentiating types of technology. Frequently, differentiation contains new technology and forecasting of the customer and competitor reactions. As a consequence of that, it has a dynamic and uncertain environment (Altuntaş et al., 2014).

According to Dimoska and Trimcev (2012), differentiation strategy makes difference and provides diversity than competitors through products in certain characteristics or quality. Differentiated products can be sold out higher profit compared to the products of competitors, thereby decreasing demand's price elasticity. Products' design, technology usage and performance, offering an outstanding service, better distribution channels, strong brand name via innovation, advertising and technical improvements, and distinct product promotion are tools of creating differentiation than competitors in the competitive environment.

As a strategy, product differentiation can be defined as firms attempt to have a competitive advantage by raising the perceived value of their products or services concerning the other firms' perceived value of the products or services. The other firms can be the rivals in the competitive environment or substitute goods producers influencing same market. A firm can charge a higher price if it is able to increase perceived value of its products or services. Therefore, revenue of the firm should be increased and competitive advantage is generated (Barney and Hesterly, 2015). Besides, companies need differentiation through advertisement and marketing due to increase in sales volume (Debnath, 2015).

Customer perception is the fundamental to create differentiation; firms try to influence this perception by a series of actions. These actions can be supposed as different bases of product differentiation. First of all, firms can focus on the attributes of products or services in order to differentiate its products through product features and complexity, timing of product introduction and physical location of the firm. Secondly, firm relationship between itself and its customers crucial for differentiation such as consumer marketing, product customization and product reputation. Finally, firms can focus on linkages within or between firms through as product mix,

distribution channels, service and support or linkages among functions within a firm or with other firms (Barney and Hesterly, 2015).

Barney and Hesterly (2015) state the relationship of sustained competitive advantage and product differentiation in terms of competitors for the imitability of product differentiation. If it is costly to imitate or duplicate differentiated products can able to create competitive advantage thereby reducing variety of environmental threats and take advantage of the variety of environmental opportunities.

Cost leadership is another generic strategy of Porter in order to provide competitive advantage. As a strategy, cost leadership attempts to present lowest cost among producers in the target market so that cost leader firm should capture the competitive advantage. It is based on presenting less costly production of goods and services compare to rivals thereby influencing market (Altuntaş et al., 2014). This strategy is especially important for the markets where price elasticity of demand prevails (Dimoska and Trimcev, 2012).

Many firms pursue cost leadership strategies through emphasizing reliability and low prices attributes of their products by advertisements. Some reasons can encourage cost leadership strategy such as technological advantages, differential low cost access to productive inputs, the decision of selling what kind of products should influence firms relative cost position so that policy choice is a reason of seeking cost leadership and if the firm has a high production volume that can cause usage of specialized machines, building of larger plants, increasing qualified employee and distribution of overhead costs over more units produced, thus higher production volume is another reason to apply cost leadership strategy against rivals (Barney and Hesterly, 2015).

Cost leadership strategy can provide many benefits for the firms in the competitive environments. It should lead up to higher profits by charging equal price or lower than competitors, it can allow market share growth and increase sales by reducing price, moreover, by charging the price lower than competitors firms can enter new markets easily and they can set additional barriers in target market to

prevent entrants of new competitors (Dimoska and Trimcev, 2012). Cost leadership strategy also has an impact on information technology enabled sharing capability and flexibilities in the supply chain (Jin et al., 2014).

In terms of sustained competitive advantage, cost leadership strategy has to be difficult to imitate by competitors. If competitors are able to implement cost leadership strategy easily or any competitors wouldn't face to cost disadvantage in imitating this strategy in a relative industry, being a cost leader in the market would be meaningless to create competitive advantage (Barney and Hesterly, 2015).

The last generic strategy is focus. According to this strategy firms should focus on only a market or narrow market segments rather than running after a large market. In order to be successful in the target segments firms have to know the requirements of the segment and pursue either differentiation or cost leadership strategy against competitors (Kotler, 1994).

Focus strategy makes entrance into new markets less costly and easy, focusing on specific segments allows firm to specialize in the related industry through products and makes the firm capable to have greater knowledge of the target segment. Compare to entire market focusing on the target segments needs lower investments in resource (Dimoska and Trimcev, 2012).

According to Porter (2000), if the firm applies to focus strategy it might potentially have more than average profit in the sector. On the other hand focus strategy brings some constraints over market and inevitably requires some sacrifice either sales volume or profitability.

Biggest marketing mistake of the firms is that they are not capable to use their competitive advantage or they know this advantage but fail to utilize. Others suppose that they have competitive advantage but they don't possess competitive advantage in reality. Based on this approach competitive advantage can be defined as difference between other firms and the tool to keep the firms alive and growing. While the competition is getting severe, customers are able to choose products not only from national companies but from worldwide international companies and companies

penetrates new markets to grow and increase their marketing mix, it is not easy to maintain competitive advantage for companies in the world of globalization (Svarova and Vrchota, 2014).

2.1.4. Competitive Position

The basic purpose of all companies is to maintain their presence in the market. Inevitable and increasingly brutal competition is the biggest handicap for them. Therefore, if the companies want to sustain their presence and to obtain competitive advantage, in the first stage they have to possess competitive position.

Competitive position can be described as the result of qualitative and quantitative assessment of a company compared to its competitors within a specific sector or industry. On the purpose of obtaining market advantage, companies applying several competitive strategies with competitive instruments. It has resulted from their competitive potential and the main purpose is to provide competitive position of a business entity. The owners, decision makers of the companies or managers are expected to think as if they have an entrepreneur manner to reach competitive position because faith in the repeatability of market phenomena or loyalty of customers are not enough competitive actions to obtain competitive position. The role of decision makers of the companies finding new ways and to maintain the activities, strategies and long term plans for strengthening competitive position (Piatkowski, 2012).

Generally, competitive position should be defined as the relatively high income and employment level power of the firms, industry, countries, territory or unions in the global competition (Kırankabeş, 2006). As a relative criterion, competitive position provides the benchmark the current situation of sector and companies in the competitive environment.

Enterprises face with the worsening competitive conditions in the domestic and foreign markets based on globalization. For this reason, if the corporations want to survive they should have advantages against their rivals in both domestic and foreign markets; competitive position can be described as the accumulation of these

advantages an enterprise purpose to achieve. Competitive position is the profit level of the companies to say the least.

A firm can perform its activity to get a better competitive position vis-à-vis its competitors in order to have more profit from the value that its rivals have created. If competitors need the firm more than the firm needs its competitors in the competitive environment that would pave the way for superior position for the good of firm. After gaining that competitive position, firm may increase its power over both customers and rivals because there are just a few competitors in the market for a customer to play against each other. Such a competitive position can be used to influence suppliers to produce or provide second sources for inputs of the firm. If firm's bargaining power over the suppliers increases, it can take advantage of dependency of suppliers and extract some privileges so that lower price and higher quality would be presented, both can increase the profit of firm (Afuah, 2009).

Afuah (2009) cites that competitive position can also be obtained with value creation vis-à-vis competitors. If the firm produce a new product it wouldn't be just a value creation, same time the firm can have better competitive position than its rivals and potential new entrants in the competitive environment due to differentiation breaks rivalry and decreases competition, power of suppliers and the threat of new entry. Therefore, the firm can reach the great competitive position by creating value and outdistance its competitors. Further, the firm can achieve monopolistic position in the market if this advantage transforms a sustainable competitive advantage in the long run.

Competitive position notion is observed generally at the level of firm, industry and international competitiveness stage. The most important competition factors at the level of firm are quality, cost and price. Industrial competitive position is the ability of an industry to reach the same or better efficiency level than its competitors, protecting this position or the ability to produce or to sell same level or lower cost products than its rivals. On the other side, competitive positioning can be examined international level as the ability of export, providing balance of trade, increasing level of income and employment of country, increasing the standard of living level to an

acceptable level and sustaining this level and finally enhancing market share in the global markets (Kırankabeş, 2006).

The internal environment instruments of the companies such as culture, structure and characteristics and the competitiveness of the companies have a great effect on sustaining competitive advantage, possessing and improving the competitive position therefore increasing their market share (Zain and Kassim, 2012).

Sectorial structure is important for the firms to clarify their strategies and indicate the competitive rules in the game. According to Porter, there are five forces impact on competitiveness on industry. They are threat of new entry, threat of substitute products, bargaining power of suppliers, bargaining power of buyers and rivalry among existing firms (Porter, 2000).

Firms have to consider five forces of competitive position model of Porter to get profit as much as possible from future situation and consideration of five forces helps firms to have competitive advantage (Uçmak and Arslan, 2012). Applying Porter's five forces is beneficial for the industry attractiveness. It can be useful in terms of the extent of an industry or profitability basis. Besides, five forces analysis should be used to determine opportunities and threats. Determinants of each force, where opportunities called as friendly forces and threats as repressive forces of the competitive environment, are analyzed by Porter's five forces. After that, firms can take advantage of the friendly forces as its strength in order to remove the threats. A five force analysis can also provide advantage for managers to build up a framework. They can use it as an organizing framework to drive discussions to decisions in the strategic planning content (Afuah, 2009).

Five forces demonstrate that the competition exceeds and move beyond existing players in the industry. In the eyes of firms in the industry; buyers, suppliers, substitutes and new entrants are threats and each one of all is a rival. The best strategy for the firms to have a competitive position considering five forces so that they can defend themselves against rivals or they can take advantage of the strength of their position. All the determinants of five forces have an impact on identifying sectorial

competitiveness and profitability (Porter, 2000).

Profit of industry attracts some firms to exist in this industry and make them enter new markets (Grant, 2008). The main purpose is to gain more than average in order to have competitive advantage. Entrance handicaps are attributes of industrial structure to increase costs of entrance to a new market (Barney and Hesterly, 2015). New entrances to an industry raise the competition automatically, while the attractiveness of industry should decrease after entrance of many companies (Uçmak and Arslan, 2012). Companies have to imply dynamic strategies to defend their existing position against new entrants and to get better competitive position in order to increase their market share (Tavitiyaman et al., 2011). High level of entrance limits and counter attacks of existing rivals reduce the threat of new entrants (Porter, 2000).

If suppliers have a big influence over firms, the attractiveness of industry reduces because in the market there are many buyers and a few suppliers. They can dominate all market and they can threaten firms to integrate forward into the industry in order to create their own brand (Uçmak and Arslan, 2012).

The cost of items such as raw materials and components can have an important impact on firms. These instruments are bought from suppliers and they are important for the profitability of firms (Uçmak and Arslan, 2012). Suppliers can have a bargaining power on firms by threatens such as increasing price, decreasing the quality of products and services (Porter, 2000).

Powerful buyers can reduce the price therefore effect the profitability of industry or they can push the firms to provide better and qualified service by their bargaining power (Porter, 1992). The bargaining power of buyers is maximal when there are many sellers and a few buyers in industry. There buyers can threaten industry to integrate backward (Uçmak and Arslan, 2012).

Every firms of industry are in a competition with substitute creating firms (Porter, 2000). Substitute products can reduce the attractiveness of industry and profitability by provoking the price levels. Threat of substitutes takes courage from the willingness of buyers to have similar products as substitute because of the price

advantage (Uçmak and Arslan, 2012). Customers can turn to substitute products if substitutes give good price and present a similar service (Afuah, 2009).

Intensity of rivalry realizes through some tools such as switching costs, degree of differentiation, service optimization, the structure of industry, strategic objectives. Rivalry is more intensive when the firms are implementing aggressive growth strategies while the intensity is less in the mature industries (Uçmak and Arslan, 2012). The firms in the competitive environment interact with each other and any activity of any player should affect the others.

With regards to industry, competitive strategies are useful to grasp where the competitive position of firms is and even these strategies can point out the competitive position of country. Better understanding and clarifying the competitive strategy, which is a dynamic phenomenon not a static term so that unfold that over time, can explain where competitive position weakest or strongest and it helps to get how competitiveness changes over time (Dimoska and Trimcev, 2012). Successful organizations select correct strategies and provide sufficient flexibility to respond varying market situations so that sustainable growth and improvement in the competitive position can be gained (Stefanikova et al, 2015).

Marketing strategies used by the companies depend on their positions in the marketplace relative to their competitors. Design of winning marketing strategies is an important part of competitive strategies and the leverage of marketing strategies takes part in competitive position occupancy of companies. They can be classified by the role they play in the target market as market leader, market challenger, market follower or market nicher (Kotler, 1994).

Table 1. Marketing Strategies (Kotler, 1994: 385-405)

| Position | Strategy | Definition |
|--------------------------|---|---|
| Market Leader | Position Defense Flanking Defense Preemptive Defense Counteroffensive Defense Mobile Defense Contraction Defense | <p>The impervious fortification around the leader states position defense. Flanking defense is the protection not only own territory, meanwhile protection the weak front for counterattack. Direct attack to rival before it starts offense against the leader called preemptive defense. In mobile defense, leader widens its territory through market broadening and market diversification. Abandonment of weaker territories and reassigning of resources the other territories indicate the contraction defense strategy.</p> |
| Market Challenger | Frontal Attack Flank Attack | <p>Company conducts frontal attack strategy, If the challenger company perceives its strength is much more than opponent, it can attack head-on the strengths of competitors than weak fronts. Flank attack indicates concentration of strength against weakness. Company can attack strong side of defender to prevent its troops but the main attack is at the side.</p> |

| | | |
|---------------------------------|--|---|
| <p>Market Challenger</p> | <p>Encirclement Attack Bypass Attack Guerilla Attack</p> | <p>Encirclement attack is the attempt to comprise broad slice of rival's territory and then attack several fronts. Bypass attack is to enlarge resource base by capturing easier markets through diversifying into unrelated products, new geographical markets and new technology. Guerilla attack strategy involves waging small, intermittent attacks on several territories of the rival so that it can demoralize the opponent and securing position.</p> |
| <p>Market Follower</p> | <p>Cloner Imitator Adapter</p> | <p>Cloner originates nothing new but desires leader's products, distribution and advertising sometimes with knock-off products. Imitator duplicates some service and products from leader but doesn't attack directly. Imitators differentiate their service and products in terms of pricing, packaging and advertising. On the other hand, adapters adapt the leader's products and usually improve them.</p> |
| <p>Market Nicher</p> | <p>End-User Specialist Vertical-Level Specialist Customer-Size Specialist Specific-Customer Specialist Geographic Specialist Product-Line Specialist Job-Shop Specialist Quality/Price Specialist Service Specialist Channel Specialist</p> | <p>End-user specialist strategy triggers to be specialized in serving one type of end user. If the firm specializes in production-distribution value chain, it is called vertical level specialist. Customer-size specialist focus on selling service and products to small, medium or large customers, although, specific- customer specialist concentrates just one. If the firm sells only in a specific location, it indicates geographic specialist strategy. Product line specialist firms focus on producing only one product line. Job-shop specialist strategy customizes service and products to satisfy individual customers. Quality/price specialist firms operate high or low quality and price. Unique service offer amongst</p> |

| | | |
|--|--|---|
| | | the competitors indicates service specialist strategy. Finally, channel specialist firms seek to customize just in one channel or distribution. |
|--|--|---|

Market leaders are big companies with regards to sales capacity volume and they achieve high growth rate (Wiegmans et al., 2001). While trying to increase market share, ruling companies have to defend its position against rivals and conduct defense strategies (Kotler, 1994). Leader companies attain favorable competitive environment quickly in order to ease the exit of rival companies form market (Barney and Hesterly, 2015). However, challengers seek to have high growth rate but they possess relatively low market shares (Wiegmans et al., 2001). A market challenger company can attack the leader or other competitors to get more market shares (Kotler, 1994).

Market followers have high market share in terms of sales volume, although, but they have low growth rate compared to other actors of the market (Wiegmans et al., 2001). Followers pursue the market leader and follower strategies, namely cloner, imitator and adapter (Kotler, 1994). On the other hand, market nichers have low market shares and growth rate (Wiegmans et al., 2001). If only a few companies choose a specific niche, they would possess competitive advantage (Barney and Hesterly, 2015). Market nichers focus on creating, expanding and protecting niches. They try to be customized on some particular fields and conduct specialization strategies to increase market shares and growth rate (Kotler, 1994).

Firms have to focus on marketing innovations to build up continuous improvements in their organizations so that this reflects positive influence on their competitive position. The positive relationships between innovation practices, creative climate and internal environment of the firms on the performance and competitive position have been demonstrated in the previous studies (Zain and Kassim, 2012).

2.1.5. Competitiveness in International Trade

The concept of international competition has been defined in the academic environment from two perspectives, macro and micro. Enterprises and industries in micro angles and countries in macro angles are evaluated. While the international market strategies of domestic businesses and industries are made at micro level, the advantages of countries in international competition are detailed at the macro level (Scoot, 1996: 20).

2.1.5.1. Macro Competitiveness Level

From the macro point of view, the emergence of the concept of international competitiveness is the theory of absolute advantages. Although there are many assumptions at the basis of this theory announced by Adam Smith, the increase in net prosperity in trade has been revealed. Later, Comparative advantage theory was developed by David Ricardo in order to overcome the deficiency in the case that a country in absolute advantage theory does not have superiority in all production branches. Labor and capital factors have been added to the macro competitiveness, which is based on classical trade theory, with the factor equipment theory. Qualified Workforce Theory developed by Keasing in 1965 in order to solve the Leontief Paradox formed as a result of researches on the efficiency of the labor force, the way the labor factor is not homogeneous and the way to obtain competitive advantage; links to the trade of qualified labor-intensive products. Efficiency in labor with Qualified Workforce Theory and demand factor with Similarity Theory in Preferences were included in the analysis. With the quality of the labor factor, the integration of productivity into the production process, the speed of technological change, differentiated products and economies of scale have become standard factors that increase competitiveness (Seyidoğlu, 2007: 69).

In terms of macro competitiveness, it was compared to two indicators in general. The first one is total factor productivity; It can be called as productivity based use of labor force, capital and natural resources and adaptation to technological changes rapidly. The second indicator is the purchasing power, that is, the

development of per capita national income.

In classical-based studies, competitiveness was characterized by the superiority of the absolute price of goods and services offered in international markets and the unit labor cost. After the price-based competitive approach, the country's import figures, export figures, foreign trade balance and budget were associated with competitiveness. Independent variables such as change in workforce structure and density, rate of change and development of technology, capital structure and movements, management and organizational structure, government policies, exchange rate, unemployment rate, GDP, interest and inflation were examined in terms of competitiveness. Stability of macroeconomic variables; The high saving rate and the strategic use of international capital contribute to the growth of the country's economies and the increase in living standards, absolute prosperity and competitiveness (Blecker, 1998:495-526).

In the study published by Michael E. Porter in 1990, he identified the diamond model and drew attention to micro components of macro development and tried to explain the competition in all dimensions. Six factors strengthen the system mutually in the study. The model is described below.

- **Factor conditions:** Supply of goods and services, qualified labor, capital and infrastructure elements.
- **Demand conditions:** Total demand, potential markets, consumer behavior, etc. elements
- **Relevant and supportive industries:** Reducing input costs, lean manufacturing, etc. innovative ideas.
- **Strategic structure and competitive environment of the company:** The structure of other companies operating in the sector, the reasons and purposes of their establishment, whether there is competition in their environment, domestic and foreign capital, innovation capacities of companies, their approach to competition, local competition.

- **Government:** Indirectly, it ensures the development of four main elements in all processes.
- **Chance:** This factor is reserved for the factors that occur under the control of the enterprise and cannot be evaluated under other factors.

The model has received many different responses in economics and business literature. Robert M. Grant, who has studied the positive and negative aspects of the study, stated that the strategic management and international economic theories put forward in the study are related, and that this study has done an important job. However, he criticized the model's ability to analyze international competitiveness only within the framework of developed countries, and said that it is wrong to standardize the model on developing countries (Grant, 1991:540).

In light of this criticism, Rugman and D'Cruz announced Canada's international competitiveness in 1993 with the interactive double diamond model. He emphasized that the competitiveness of the undeveloped or developing countries is shaped by the influence of their own country diamonds and the diamonds of the developed countries (Rugman, 1993:17-39). In the double diamond model, the activities of multinational companies have been missing. John H. Dunning, who criticized the exclusion of multinational companies, stated that "Internationalizing Porter's Diamond" has made the diamond model of Porter global, making foreign investments and the existence of multinational companies a significant contribution to the development of countries (Dunning, 1993:7-15). Porter's diamond model is missing and is not given enough attention; technological structure, scientific developments, international enterprises, labor costs, the effects of exchange rates on international competitiveness and welfare cannot be denied from a macroeconomic perspective. In addition to these, microstructures that develop macro competition cannot be considered separately from these definitions.

2.1.5.2. Micro Competitiveness Level

Michael E. Porter the importance of micro competition for business; “It is businesses, not countries under international competitive pressure.” explained with words. He emphasizes the importance of micro competition in terms of industry: “The group of companies producing competing products and services is called industry.” (Porter, 1990: 33). Afterwards, in the study of Nobel Economics award-winning author Paul Krugman published in 1994, he mentioned that government interventions in competition can have harmful consequences. The study also advocated that discussions in which national competitiveness studies are meaningless should be concentrated more on businesses (Krugman, 1994:28-44).

Companies have to increase their resistance to struggle against the increasingly difficult competition conditions. In academic studies conducted without rejecting macroeconomic factors, competitiveness can be defined at enterprise and industry levels.

The definition of microeconomic competitiveness at the enterprise level is expressed as follows in the study of Timothy A. Luehrman and Kester W. Carl:

“Although competitiveness is accepted as a national concept, the institution that competes in the markets is not governments but businesses. Whether enterprises are private or public enterprises does not change the situation. Undoubtedly, effective or passive government policies have a major impact on the competitiveness of businesses. However, investment, price policies and organizational structure, in short, the strategy is determined by the managers / managers of each business. In short, businesses compete in markets (Carl, 1989:19-28).”

Country conditions are extremely important for an environment where national enterprises can gain sustainable competitive advantage in global markets, but they are the competence and dynamic strategic decisions of businesses that need to evaluate the opportunities that arise in the market. As a result of the work performed by Michael E. Porter on a group of businesses, he defined three types of competitive strategies (Robinson, 2015: 183).

- **Low Cost Leadership:** It is aimed at increasing the market share by emphasizing and announcing the low costs owned by competitors. In the cost strategy, the enterprise focuses on increasing the efficiency of the facilities, reducing costs and producing services more efficiently.
- **Differentiation:** Businesses try to differentiate their products and services from the products and services of other businesses in the industry. It can gain competitive advantages, but also fights with substitute goods and services. Because customers often have brand dependencies.
- **Focus:** According to Porter's strategy, the business should focus on a particular market or group of customers. Enterprises should try to achieve cost or differentiation advantage in a narrowly defined market on a scale basis.

Low cost, focus and differentiation studies are the main distinctive concepts in micro international competitiveness. In this context, enterprises can sustain their competitive advantage by integrating them into all processes of differentiation concept.

Researches have been conducted on the impact of businesses on organizational, structural and environmental variables in international competitive advantage. In these studies, it is emphasized that the organizations that are able to adapt to the flexible environment are successful, not the enterprises that make fixed mass production with rules. A different perspective has compared the strength of the financial structure of businesses with the competitive power. In these studies, the effects of mergers, borrowing possibilities, immovable values and cash flows on competitiveness were revealed (Hitt, 1991:7-22). Some academic experts state that the concept of competitiveness is applied at the most real business level, and a business that cannot make a profit will not be sustainable.

The concept of micro competition at the industry level is the competition level of the group of companies producing competing products and services (Porter, 1990). From this point of view, competitive industries are those that have competitive businesses at the regional or global level. Competitiveness at the industry level is a

high income struggle with at least two units of a sector subject to competition.

The definition of microeconomic competitiveness at the industry level is expressed by James R. Markusen as follows:

“The ability of an industry to achieve the same or higher level of efficiency than its competitors is the ability to maintain this level of efficiency or the ability to produce and sell products at a lower cost than its competitors” (Markusen, 1992: 53)

Based on these ideas, while investigating the competitiveness, the structures of businesses and industries were examined and also synthesized with macro factors.

Flexible production planning has created a global production network with the help of technology that develops in harmony with all aspects of production processes. Effective use of structural activities such as innovative developments, R&D activities and advanced education in industries where scale economy is actively used, enhances the industry's competitiveness in global markets. With the globalization of production, the concept of the global value chain has entered the literature. The global value chain is the analysis of the cost advantage of each part by separating the production process of the final product or service with the flexibility of production (Porter, 1990)

The distribution of the cost advantage that can occur is not limited to a single country, it is globalized with sub-stages. With this development, countries have turned from an import substitution policy to an export-oriented growth strategy. In the chains formed within the framework of these developments, a dual structure with concentration and competition is observed. Gary Gereffi examined the dual structure in his article (Gereffi, 1994:95-122).

- It is gathered within the chain that carries out the functions of production, trade and capital in global value chains. Production in this part of the chain; It can be divided into certain stages and distributed to businesses that can shift production globally, through contract manufacturing or through partnership.

- On the capital side; Functions such as design, audit, promotion activities, brand management, retailing have been gathered within the company that guides the chain, and most of the production activities have been transferred to local businesses. These companies, which are described as "factoryless factory", play a big role in shaping labor.

Labor-intensive parts of disassembled production processes have been directed to developing countries, taking into account the cheap labor cost. Between 1953 and 1995, the share of industrialized countries in the world manufacturing industry products decreased from 95% to 80%, while the share of developing countries increased from 5% to 20% (Dicken, 1998: 456).

The competition level of the companies that make up the industries directly affects the industrial competition. In order to talk about the competitive power at the industrial level; quickness in delivery on the basis of goods and services (price, technical specifications, reliability and durability) produced by a region or country and other countries or regions (price, technical specifications, reliability and durability), personalization in line with customer requests, product development, flexible and lean production volume, qualified labor power and value added production etc. Some of the macro-competition determinants, such as, should have an advantage (DPT, 2002: 229).

2.1.6. Components of International Competitiveness

The factors that determine the competitiveness are versatile. For this reason, the main factors frequently mentioned in the literature are briefly explained below. It is important to determine the factors affecting competitiveness in order to reveal what needs to be done to achieve sustainable competition in international markets. In studies conducted for competitiveness, it was observed that many different macro and micro variables were taken into consideration as an indicator of competitiveness.

Table 2. Competition Components (Kesbiç, 2004: 58-59)

| Macro Components | | Micro Components | |
|-----------------------------------|-----------------------------|--|-----------------------------------|
| 1. Economic Place of the State | | 1. Profitability | |
| 1.1 | Taxes | 2. Productivity | |
| 1.2 | Bureaucracy | 3. Resource Utilization Effectiveness | |
| 1.3 | Public Economic Enterprises | 4. Innovation | |
| 1.4 | Incentives | 5. Competition Intensity | |
| 1.5 | Public Expenses | 6. Price | |
| 2. International Trade | | 7. Cost | |
| 3. Intercompany Competition | | 7.1 | Labor Cost |
| 4. Structure of Financial Markets | | 7.2 | Capital Cost |
| 5. Judicial System | | 7.3 | Social Security Cost |
| 6. Natural Resources | | 7.4 | Tax Cost |
| 7. Foreign Capital | | 8. Organization and Management Structure | |
| 8. Infrastructure | | 9. Speed | |
| 9. Exchange | | 10. Quality | |
| 10. Internal Economic Stability | | 10.1 | Leadership and Management Quality |
| 11. Labor Market Flexibility | | 10.2 | Labor Quality |
| 12. Domestic Demand Structure | | 10.3 | Product Quality |
| | | 11. Science and Technology Level | |
| | | 12. Production Factors | |
| | | 12.1 | Human Resources |
| | | 12.2 | Physical Resources |
| | | 12.3 | Capital |
| | | 12.4 | Information |

It is also possible to examine the competitiveness variables under two titles, macro and micro. When we look at the literature, the determining factors of competitiveness are described as macro and micro as mentioned above or as "in-firm" and "outside-firm", "price" and "non-price". Macro and micro components that affect competitiveness are given in table 2

Cluster staff operating in market conditions formed by the globalization of the cluster consisting of all competitive elements (countries, industries and enterprises) interact with the macro structure of the countries in which they operate together with the macro structure in their countries.

2.2. Olive Oil Sector

2.2.1. 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.

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).

2.2.2. The General Information 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.

2.2.3. 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, 2019: 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;

d) **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.

2.3. Information about Olive Oil Tariffs, Olive and Olive Oil Production and Sector Around The World

2.3.1. 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 3 is examined; that shows the customs tariff statistical position numbers of the olive oil product are given in it on the product basis.

Table 3. Customs Tariff Statistics Position Numbers of Olive Oil in Foreign Trade (The Official Gazette of the Turkish Republic, 2017)

| 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) |

2.3.2. 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, 2018: 263-274).

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, opportunities 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).

2.3.3. 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 4. The World Table Olive Production Amount (1.000 Tonnes) (International Olive Council, 2019)

| 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 |
|-----------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 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 | 670.0 | 675.0 | 828.0 | 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 | 120.0 | 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 | 1343 | 1473.5 | 1773.5 | 1602 | 1852.5 | 1762 | 2088.5 | 2151.5 | 2082.5 | 2369 | 2563 | 2432.5 | 2512.5 | 2660.5 | 2581 | 2576.5 | 2929.5 | 2870.5 |

The table 4 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 5. The EU Table Olive Production Amount (1.000 Tonnes) (International Olive Council, 2019)

| 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 |
|--------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| 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 |

The table 5 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. 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 oliveoil.

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).

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 occurred 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.

2.4. Information About Olive and Olive Oil Sector, Production, Import and Export in Turkey

2.4.1. 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 occurred 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 (<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 (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 Kırilangıc 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 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.

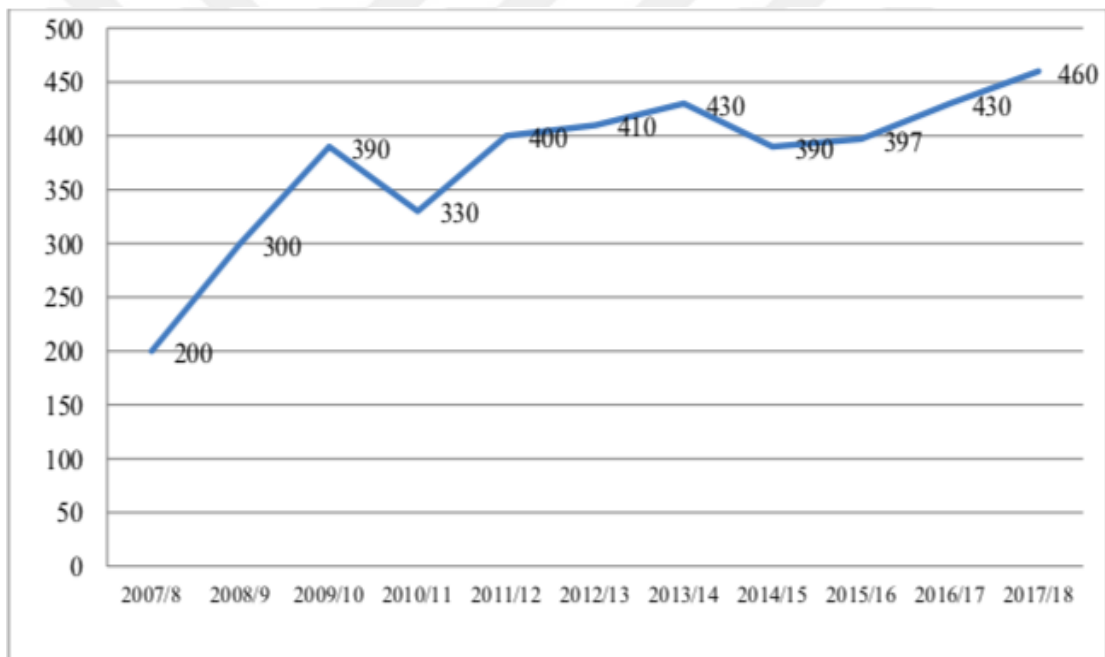
2.4.2. The Olive and Olive Oil Production in Turkey

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.

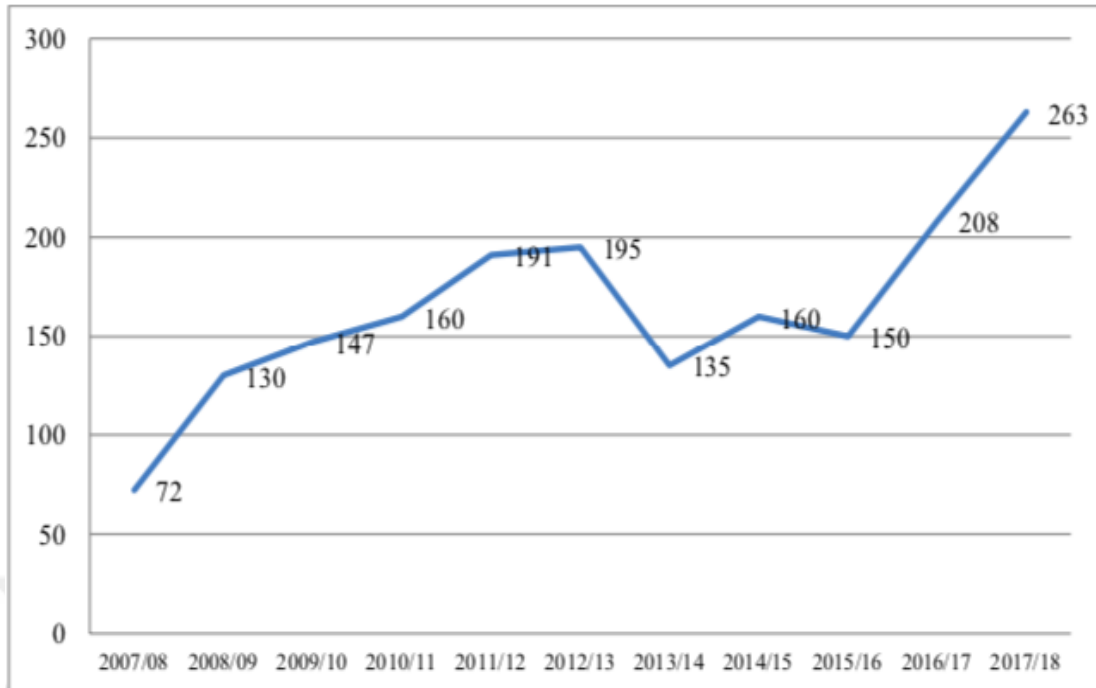
Turkey which has suitable geographical location has the appropriate climate features for grown of olive like that Mediterranean countries such as Tunisia, Italy, Greece, and Spain. Turkey has these characteristics that provide to Turkey to make the World's leading olive and olive oil producers. Turkey's 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 average 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 average is 130 thousand tonnes in the World consumption 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 average 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 1. The Table Olive Production Amount in Turkey (1.000 Tones)
(International Olive Council, 2019)**



**Figure 2. The Olive Oil Production Amount in Turkey (1.000 Tonnes)
(International Olive Council, 2019)**

The figure 1 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 2 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 ositively 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).

2.4.3. 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 information 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.

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).

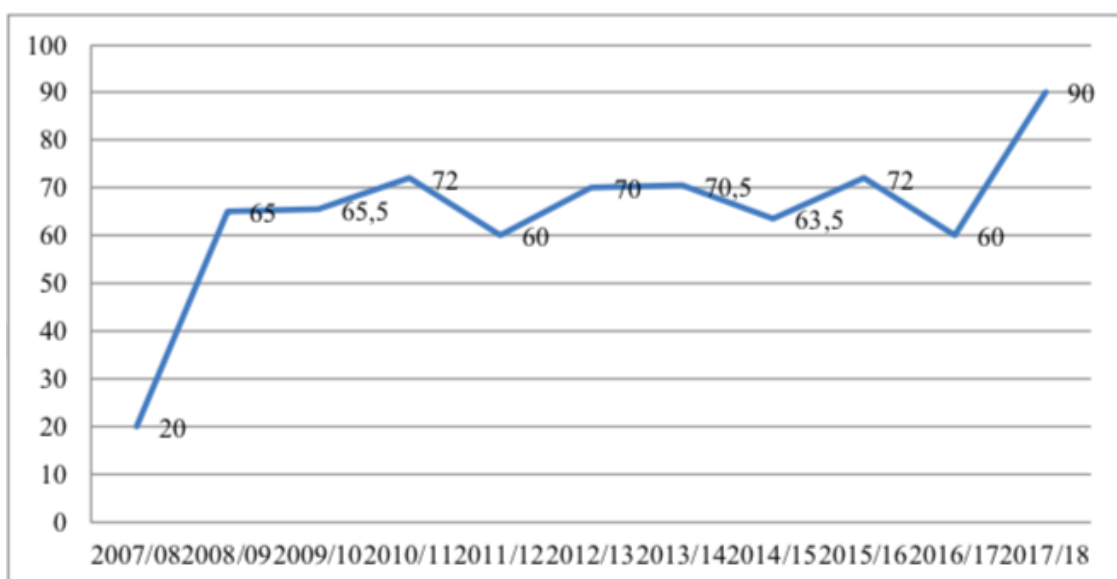
There are some expectations about Turkey's olive and olive oil sector for the year 2023. In 2023, 650.000 tonnes of commercial olive oil production target for the year and is intended to generate earnings of 3,8 billion US \$. This goal will provide to Turkey the second largest producer country position 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.

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).

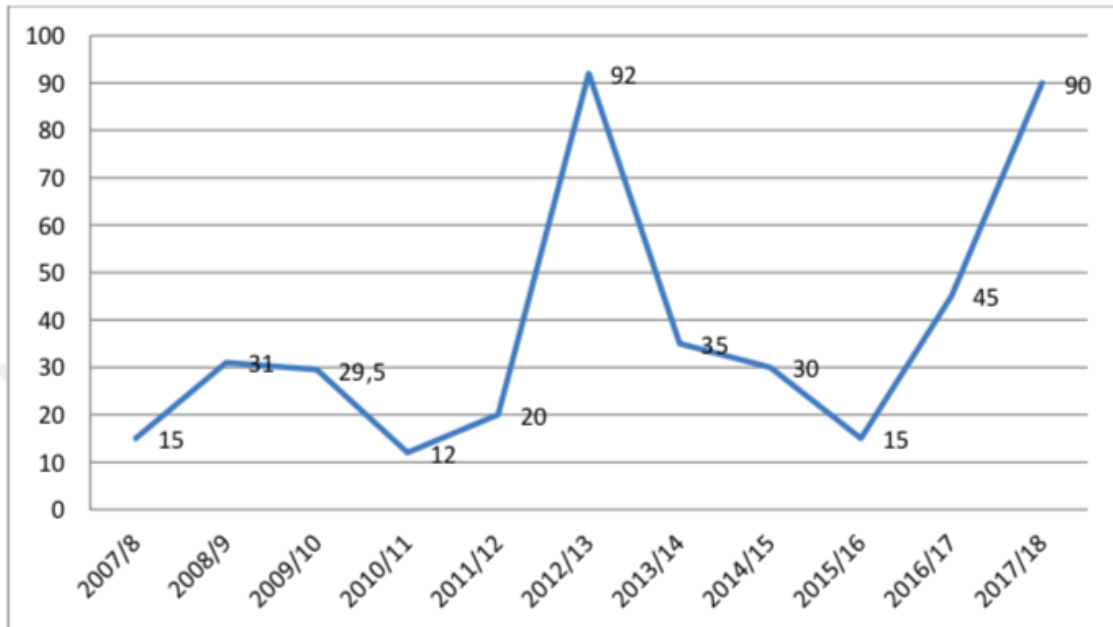
The amount of bulk form of olive oil which is unbranded product exports more than the amount of olive oil products which is branded product in some periods, Turkey. The income from the export of unbranded olive oil products is lower than branded olive oil products export income.

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 3. The Table Olive Export Amount in the Turkey (1.000 Tones)
(International Olive Council, 2019)**

When the figure 3 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 4. The Olive Oil Export Amount in the Turkey (1.000 tons)
(International Olive Council, 2019)**

When the figure 4 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.

3. METHODOLOGY

3.1. Purpose of The Research

The purpose of this research is to analyze and investigate growth opportunities on olive oil export of Turkey. In addition, another goal of the study is to show that how the regulations can affect the export of olive oil in Turkey.

3.2. Scope of The Research

The main purpose of the study, taking into consideration the 1997-2018 period, Turkey's stronger and weaker competition in olive oil compared to other countries when it has the power to reveal in detail. In order to make this comparison by spreading to all countries of the world, 102 exporting countries were taken into consideration. The method to be used for this study to compare with other studies in the literature was determined as Revealed Comparative Advantage Approach. Furthermore, this study from the TUIK Turkey as well as the comparison base will be underpinned by many empirical indicators published for olive oil.

According to Turkey's other olive oil exporter in the world in line with the scope of work and competitiveness in the high prior to analysis in order to determine the year to be lower following hypotheses were formed. This generated hypotheses of competition in Turkey's olive oil sector products will be made taking into account the classification of products in the olive oil sector in order to see some of the decomposition. In addition, in order to see the effect of the notification published in 2007 on the olive oil sector, the analyzes will be made in two periods.

3.3. Research Hypotheses

Considering the issues determined within the scope of the study above and the purpose of the study, the following hypotheses have been formed:

Competitiveness in years pre-2007 in all sub-product groups for Turkey's olive oil sector will be determined following hypotheses by RCA.

H₁: Turkey's competitiveness in the olive oil sector based on in 2008 - 2018 period is much stronger than the 1997 - 2007 period.

H_{1a}: Turkey's competitiveness in the olive oil sector based on "4214-Olive oil and other oil obtained from olives" in 2008 - 2018 period is much stronger than the 1997 - 2007 period.

H_{1b}: Turkey's competitiveness in the olive oil sector based on "42141- Virgin Olive" in 2008 - 2018 period is much stronger than the 1997 - 2007 period.

H_{1c}: Turkey's competitiveness in the olive oil sector based on "42142 - Other Olive Oil and its fractions" in 2008 - 2018 period is much stronger than the 1997 - 2007 period.

H_{1d}: Turkey's competitiveness in the olive oil sector based on "42149-Oils and their fractions obtained solely from olives" in 2008 - 2018 period is much stronger than the 1997 - 2007 period.

The following hypotheses is prepared to see the trend in all product groups in Turkey's olive oil sector and these will be analyzed with the Mann-Kendall Correlation Test.

H₂: Turkey's export for olive oil industry has not a monotonic trend between 2008-2018 period.

H_{2a}: Turkey's export for olive oil industry based on "4214 - Olive oil and other oil obtained from olives" has not a monotonic trend between 2008-2018 period.

H_{2b}: Turkey's export for olive oil industry based on "42141 - Virgin Olive" has not a monotonic trend between 2008-2018 period.

H_{2c}: Turkey's export for olive oil industry based on "42142 - Other Olive Oil and its fractions" has not a monotonic trend between 2008-2018 period.

H_{2d}: Turkey's export for olive oil industry based on “42149-Oils and their fractions obtained solely from olives” has not a monotonic trend between 2008-2018 period.

3.4. Research Method

3.4.1 Revealed Comparative Advantage Approach

The method of the study includes usage of an index which is formulated by combining Balassa's Revealed Comparative Advantage (RCA) approach and Relative Import Advantage that was incorporated by Vollrath. Competitiveness of Turkey's Olive Oil Industry was determined by using RCA method. The calculation method used is as follows:

$$RCA = \left[\frac{\ln(X_{ij} / X_{it})}{(X_{nj} / X_{nt})} \right] - \ln \left[\frac{(M_{ij} / M_{it})}{(M_{nj} / M_{nt})} \right] \quad (1)$$

$$RCA = \ln \left(\frac{X_{ij}}{X_{it}} \right) - \ln \left(\frac{X_{nj}}{X_{nt}} \right) - \ln \left(\frac{M_{ij}}{M_{it}} \right) + \ln \left(\frac{M_{nj}}{M_{nt}} \right) \quad (2)$$

As shown in the formula above, (X_{nj} / X_{nt}) indicates the ratio of total global export of product “j” to the total export of the World (M_{nj} / M_{nt}) indicates the ratio of total global import of product “j” to the total import of the World. When the calculation differences (insurance, freight, etc.) between export and import are disregarded $(X_{nj} / X_{nt}) = (M_{nj} / M_{nt})$; the total export of a good in the world is equal to the total import of that good in the world $\ln (X_{nj} / X_{nt}) - \ln (M_{nj} / M_{nt}) = 0$. In this case, it is possible to write this statement as follows;

$$RCA = \ln \left[\frac{X_{ij} / X_{it}}{M_{ij} / M_{it}} \right] \quad (3)$$

RCA index is designed to compare relative superiorities of the same group of goods of different countries (i) when the group of goods (j) are constant.

Therefore, considering import and export of Turkey's olive oil industry, arbitrary country in the formula (i) is constant in every industry (j) and can be disregarded (i). In this case, the new formula would shown as;

$$RCA = \ln \left[\frac{(X_j / X_t)}{(M_j / M_t)} \right] \quad (4)$$

Furthermore, power of competence of a good (industry) would be equal to the natural logarithm of the ratio of total import and export of the good (olive oil industry import and export) to the country's import and export. If right of the equilibrium is to be multiplied by 100, to calculate the RCA value precisely and express as an index, the formula would be;

$$RCA = \ln \left[\frac{(X_j / X_t)}{(M_j / M_t)} \right] * 100 \quad (5)$$

In this frame work, according to the RCA the power of competence of the industries are considered; high if $RCA > +50$, borderline if $-50 < RCA < +50$, and low if $RCA < -50$, (Adıguzel, 2013).

3.4.2 Mann-Kendall Correlation Test

This test, also known as Kendall's tau statistics, is a widely used method in determining the trends of hydro-meteorological time series (Zhang et al., 2001). The Mann-Kendall statistical test is generally used to determine whether the time series have statistical significance of increasing or decreasing trends (Yue et al., 2002). The statistic S of the Mann-Kendall test applied to data where seasonality is eliminated is calculated with the following (6) statement. The sign of $(x_j - x_k)$ value in this equation is found from the expression (7).

$$S = \sum_{k=1}^{n-1} \sum_{j=k+1}^n \text{sgn}(x_j - x_k) \quad (6)$$

$$\text{sgn}(x_j - x_k) = \begin{cases} +1 & \text{if } (x_j - x_k) > 0 \\ +1 & \text{if } (x_j - x_k) = 0 \\ -1 & \text{if } (x_j - x_k) < 0 \end{cases} \quad (7)$$

Asymptotically, the test statistic, which has a normal distribution and has a mean of zero, is calculated with the variance equation of S.

$$\text{Var}(S) = \frac{n(n-1)(2n+5)}{18} \quad (8)$$

If there are similar values (bond state) in the time series, the variance calculation is made as:

$$\text{Var}(S) = \frac{n(n-1)(2n+5) - \sum_t t(t-1)(2t+5)}{18} \quad (9)$$

Whether the Mann Kendall test, whose variance is determined, is important is determined by calculating the standard normal variable z with the following equation and comparing it with the critical z value.

$$z = \begin{cases} \frac{S-1}{\sqrt{\text{Var}(S)}} & \text{if } S > 0 \\ \frac{S-1}{\sqrt{\text{Var}(S)}} & \text{if } S > 0 + 1 \text{ if } (x_j - x_k) > 0 \\ 0 & \text{if } S = 0 \\ \frac{S+1}{\sqrt{\text{Var}(S)}} & \text{if } S < 0 \end{cases} \quad (10)$$

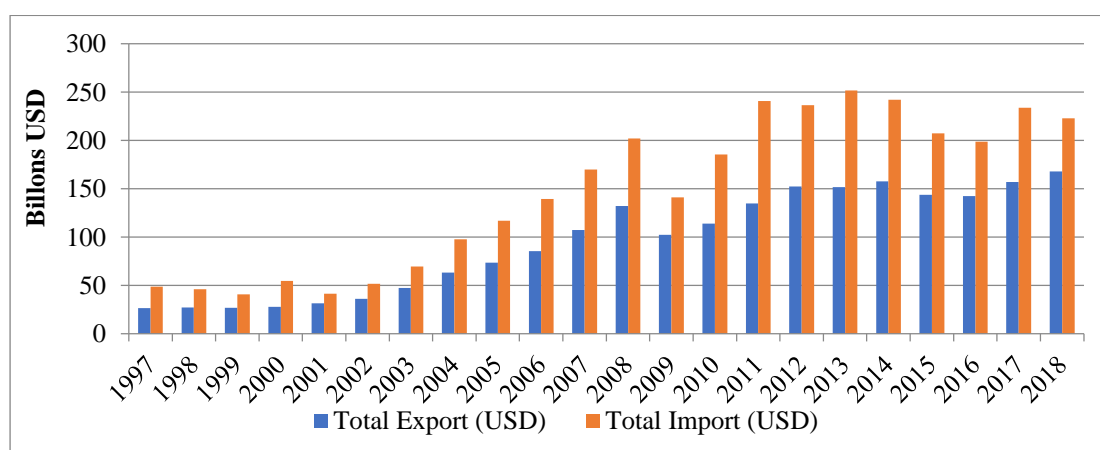
If the chosen significance level α is $z \leq z_\alpha$, then the H_0 hypothesis is accepted, otherwise it is rejected. If the calculated S value is positive, there is an increasing trend. If it is negative, a decreasing trend exist. This method is useful because it allows for

incomplete data and does not seek to oblige the data to fit a distribution (Yu et al., 1993)

3.5. Data Set of The Research

In calculating the competitiveness of the olive oil sector in Turkey SITC REV.3 '4214' subsector coded 'Olive oil and its fractions' and '42141' coded 'Virgin Olive Oil', '42142' coded 'Other Olive Oil and its fractions' and '42149' 'Oils and their fractions obtained solely from olives' are included in the system, which is the sum of the other three 'Oils and their fractions obtained solely from olives'. Access to these data sets between 2008-2018 and 1997-2007 have been accessed from TUIK Foreign Trade Statistics Data Inquiry Screen (<https://biruni.tuik.gov.tr/disticaretapp/menu.zul>) Olive oil export and import figures for the sector with total import and export figures of Turkey is taken in USD, was opened in front of international comparisons could be done.

The total export and import figures between Turkey and the years have been rendered visually in Figure 5.



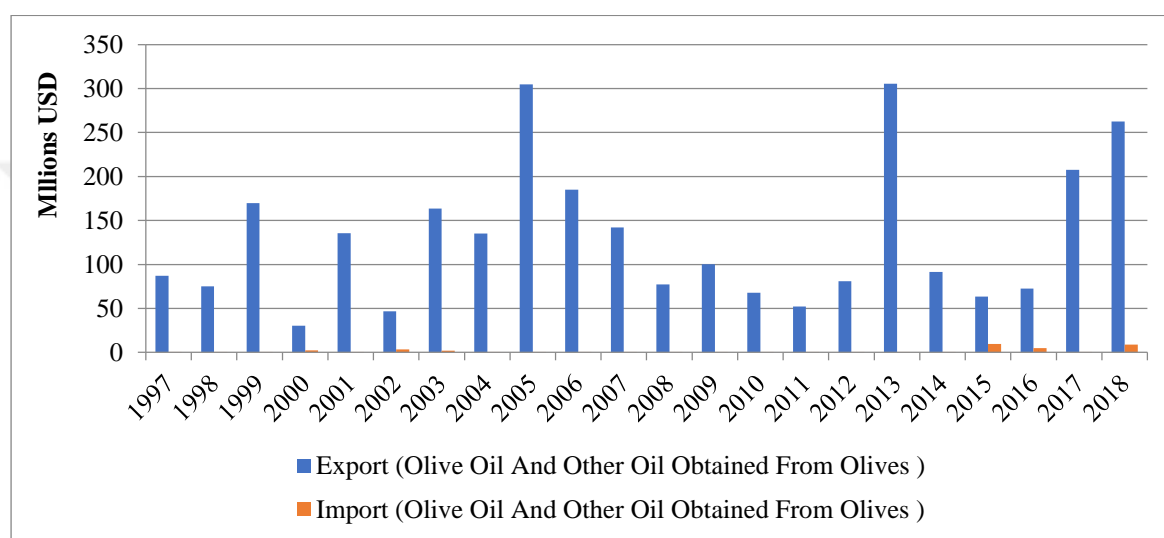
Source: TUIK, Foreign Trade Statistics Data Inquiry Screen

Figure 5. Between 1997-2018 The Year of Turkey's Import and Export Figures

Turkey's export and import figures between 1997 and 2002 remain at the same

level, while imports and exports between 2003 and 2007 show an increasing trend in parallel. Turkey's total imports between the years of 2008-2018 is seen in Graph 3.1 is greater than its exports. Accordingly, it can be stated that the export and import figures movement profile is parallel in this period.

Total exports and imports of 'olive oil and other oil obtained from olives' of Turkey between the years 1997-2018 were visualized in Figure 6.



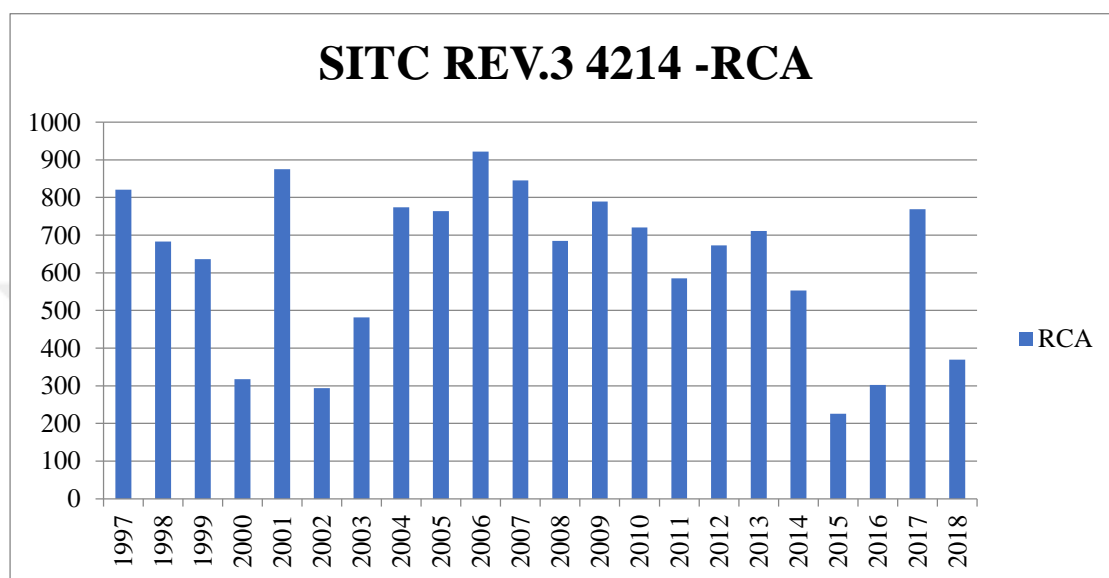
Source: TUIK, Foreign Trade Statistics Data Inquiry Screen

Figure 6. Import / Export Figures of 'Olive Oil and Other Oil Obtained from Olives' (coded as 4214) of Turkey Between the Years 1997-2018

According to Figure 6. "Olive Oil and Other Oil acquired From Olives" between the years 1997-2007, the year in which the highest value of exports in the sector is 2005 and the year in which the lowest value is 2000. The highest number of exports in the year is around 300 million dollars. Turkey's olive oil and its fractions during these years have almost no import value. According to Figure 6., The export of 'Olive Oil And Other Oil Obtained From Olives' of Turkey is extremely more than its import of 'Olive Oil And Other Oil Obtained From Olives' and it is clearly mentioned that Turkey is expressed as an exporter country of 'Olive Oil And Other Oil Obtained From Olives'.

4. FINDINGS

Revealed Comparative Advantage (RCA) to assess the international competitiveness of Turkey's olive oil sector (olive oil and other oil obtained from olives) index the years between 1997-2018 is calculated in Figure 7.



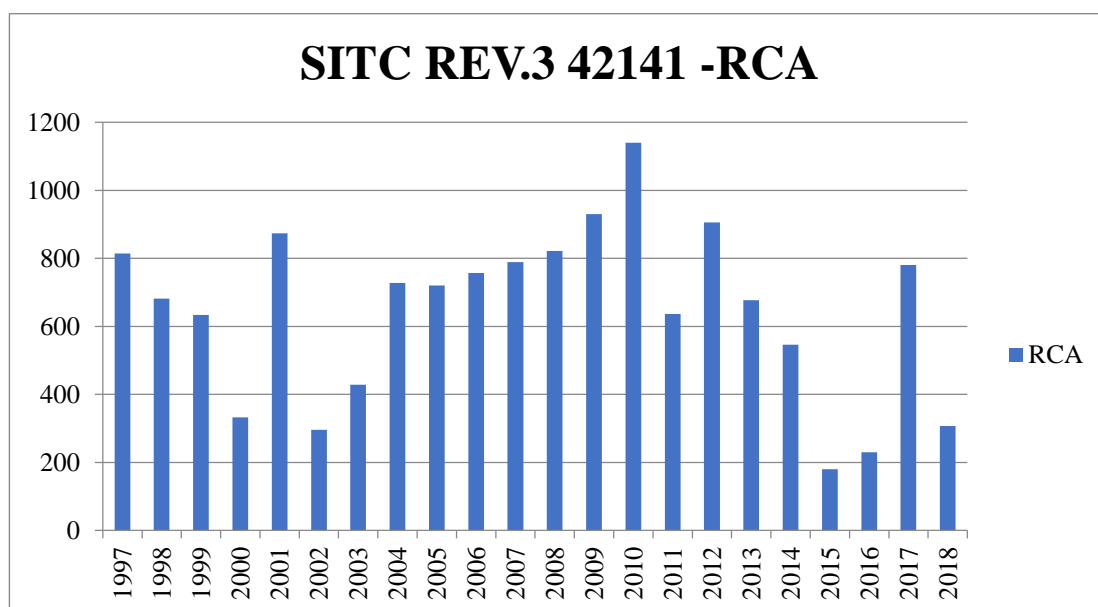
Source: Calculated by the author.

Figure 7. RCA Value of SITC REV.3 4214 Coded 'Olive Oil and Other Oil Obtained from Olives' According To The Calculated Years (1997-2018)

According to Figure 7. , the highest competitive years of Turkey's "olive oil and other oil obtained from olives" sector between 1997 and 2007 are 1997,2001, 2004, 2005, 2006 and 2007. In 2000 and 2002, it is noticeable that it has the lowest competitiveness in this sector. RCA index value of Turkey between the years 2008-2010 was observed to be greater than +50. Accordingly, the range of 'Olive Oil And Other Oil Obtained From Olives', said that Turkey is among the leading export sectors and products that can be expressed with high competitiveness in this product group. Looking at the general trend of the graph, while Turkey's olive oil and its fractions industry in 2008-2014 years of watching high of the year in competitiveness between that whereas in 2015 and 2016 that have reduced competitiveness, and in 2017 to be similar to previous years except for these two years and the 2018 repeat it seems to have experienced a decline. Morocco, Algeria, Libya, Egypt, Jordan and Syria are not among the countries that produce olive oil in the Mediterranean.

However, they continue their activities in this field in the world age. When we look at the American continent, there are olive trees in the United States, especially Argentina. Looking at the amount of olive oil and it is observed that Turkey's export revenues showed sharp increases and decreases. The reason for this is the olive production that changes from year to year and fluctuations in olive oil production depending on this production. Factors affecting Turkey's olive oil exports are the technology owners of the processing, marketing strategies and increase and decrease in production from other manufacturers are principles. One of the most important methods to be permanent in foreign markets is to ensure a steady flow of products to these markets. Yet deep fluctuations occurring in Turkey's olive oil exports pose a problem for the markets to be permanent and to gain new markets (Ozden, 2006). In addition, according to Figure 7, it was observed that the periods 1997-2007 and 2008-2018 were similar to each other in Turkey's "Olive Oil and Other Oil Obtained From Olives" and that the competitiveness remained stable for some years.

Revealed Comparative Advantage (RCA) to assess the international competitiveness of Turkey's olive oil sector (Virgin Oil) index the years between 1997-2018 is calculated in Figure 8.

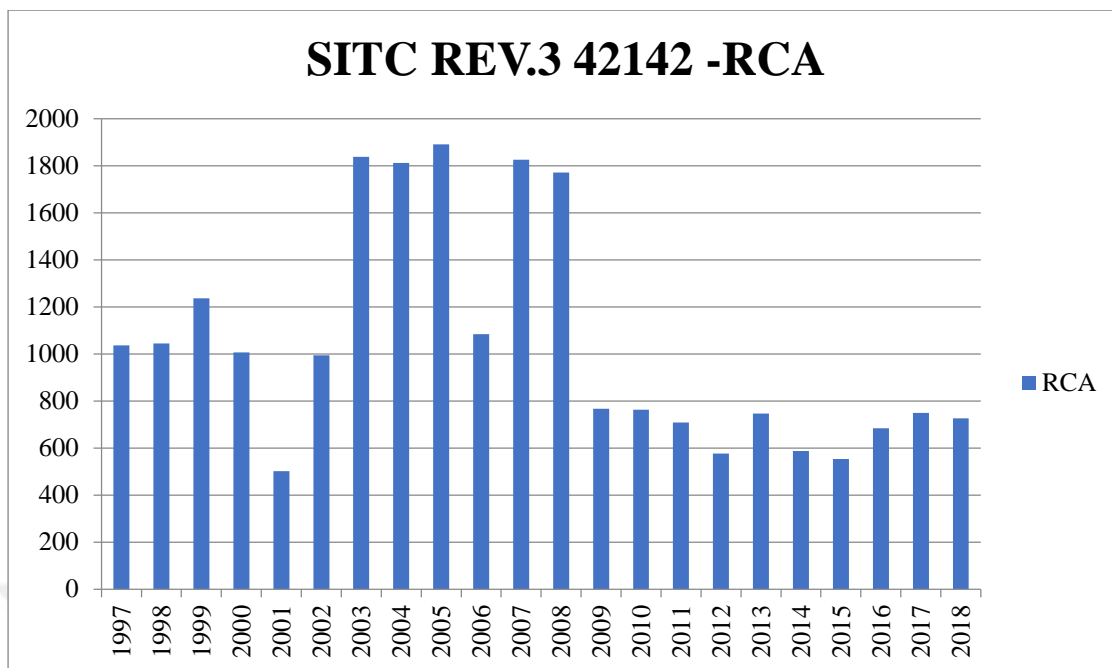


Source: Calculated by the author.

Figure 8. RCA Value of SITC REV.3 42141 Coded 'Virgin Oil' According to The Calculated Years (1997-2018)

According to chart in Figure 8, the most competitive years of Turkey's "virgin oil" sector between 1997 and 2007 are seen as 1997,2001, 2004, 2005, 2006 and 2007. In 2000, 2002 and 2003, it is evident that this sector had the lowest competitive power. It is seen that Turkey's competitiveness is on a steady course in the years of production other than 2000,2002 and 2003. The virgin oil category, which is in the subset of 'Olive Oil and Other Oil Obtained from Olives', appears to have an unstable structure between 2008-2018, and it can be stated that the competitive power between these years is > 50 . Moreover, Turkey's virgin oil of competitiveness in the sector is on the rise in 2008.2009 and 2010, it declined in 2011 and this decline that lasted until 2016, while in 2017 that the 2008-2010 level and said again showed decline in 2018. Turkey has a substantial share of the oil production when we viewed the world. However, it is not among the dominant countries of the market. The reason is not sufficient to establish dominance in the market due to the amount of the production Turkey. Turkey's olive oil production varies according to the amount of years. This situation is called periodicity. In this context, Turkey's first production in order to fix the amount is necessary to combat periodicity. In order to combat periodicity, olive trees and seedlings must go through some maintenance on a monthly basis. For example, in March and November, planting takes place in olive trees, just like other plants. However, unlike other fruits, olives are harvested on the table in October, and if they are used as oil, they are harvested in November. As we mentioned earlier in the titles, the actions to be taken in order to reduce the impact of periodicity should be applied in a timely and duly manner. In addition, according to Figure 8, turkey's competitiveness in the field of 'Virgin Oil' may be similar in the periods 1997-2007 and 2008-2018. Turkey's competitiveness in the relevant area in 2015, 2016 and 2018 has decreased and similar statements occurred in 2000 and 2002 in 1997-2007.

Revealed Comparative Advantage (RCA) to assess the international competitiveness of Turkey's olive oil sector (Other Olive Oil and its fractions) index the years between 1997-2018 is calculated in Figure 9.



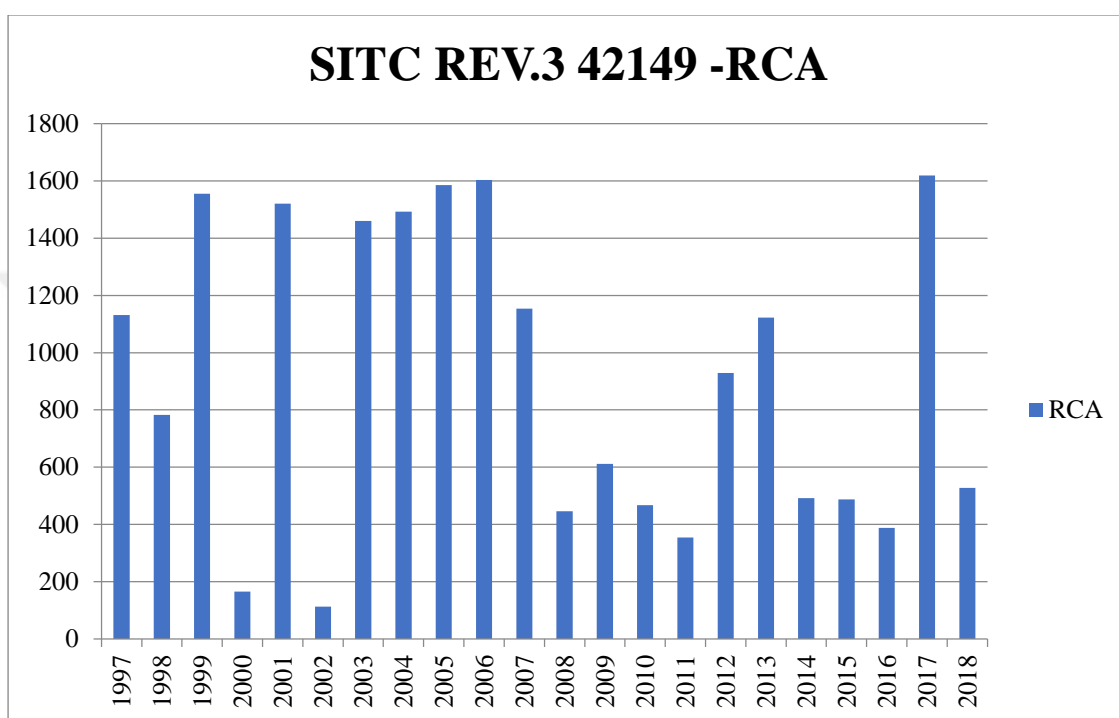
Source: Calculated by the author.

Figure 9. RCA Value of SITC REV.3 42142 Coded 'Other Olive Oil and its fractions' According to The Calculated Years (1997-2018)

According to Figure 9, Turkey's competitiveness in "Other Olive Oil and its fractions" was stable between 1997 and 2002, and was seen to have risen considerably between 2003 and 2005 and in 2007. It can be stated that the category of 'Other Olive Oil and its fractions', which is in the subset of 'Olive Oil And Other Oil Obtained From Olives', is in a stable structure between 2008-2018 and that its competitive power between these years is > 50 . It is seen that the competitiveness in other olive oil and its fractions products had the highest level in 2008, but the competitiveness decreased in half in the following years and maintained this trend until 2018. In addition, previously conducted analysis, the olive oil produced in the European Union and Turkey have investigated whether the world standards. In this study certificates that have these oils which have been produced from oil production factory in Turkey it has been requested. Then, what certificates they need to have in order to comply with the world and European Standards were examined. As a result, many have been found to be suitable for the oil produced in Turkey with these standards and competition. In addition, according to Figure 9 Turkey's 'Other Olive Oil and its fractions' area was highly competitive in the period 1997-2007, while in 2009 and later, international competitiveness in this area decreased compared to the previous

10-year period.

Revealed Comparative Advantage (RCA) to assess the international competitiveness of Turkey's olive oil sector (Oils and their fractions obtained solely from olives) index the years between 1997-2018 is calculated in Figure 10.



Source: Calculated by the author.

Figure 10. RCA Value of SITC REV.3 42142 Coded 'Oils and their fractions obtained solely from olives' According to The Calculated Years (1997-2018)

According to Figure 10, Turkey's international competitiveness in the area of 'Oils and their fractions acquired exclusively from olives' was significantly lower in 2000 and 2002 than in other years between 1997-2007. It can be stated that the 'Oils and their fractions obtained solely from olives' category, which is in the subset of 'Olive Oil And Other Oil Obtained From Olives', is not stable in the competition between 2008-2018, but the competitive power between these years is > 50. Accordingly, in the 2008-2009-2010 and 2011, Turkey has a relatively low competitiveness, it is observed that in 2013 and returned to the first course in this year's rise in the 2014,2015,2016 and 2017. Turkey 'oils and their fractions obtained solely from olives' when the category is experiencing a leap in competitiveness, but

the point can be stated that 2018 return to normal. In addition, the quality of the oil produced is of great importance in order to remain in the olive oil market worldwide. The higher the quality of olive oil, the more it is in demand and the higher the price. In this context, the production phase is of great importance. While olive oil is being produced, the fact that the seeds of the olives are not broken brings the idea that the quality of the oil obtained is higher. Another factor affecting the quality of the oil is in the production phase of olives. When olive grains reach maximum maturity with their oil ratio and quality, they are brought to olive squeezing facilities very quickly after harvesting and cannot be oxidative and microbial degradation and must be processed quickly.

In addition, according to Figure 10, it was found that Turkey's international competitiveness in the field of "Oils and their fractions acquired exclusively from olives" was high in 1997-2007 (excluding 2000 and 2002) and that the international competitiveness in this field was low in 2008-2018 except for 2017.

Mann - Kendall test results of olive oil export amounts by sectors are shared in Table 6, Table 7, Table 8 and Table 9. According to the results shown in Table 6, there is no trend between 1997 - 2007 and 2008 - 2018 period for Olive Oil and Other Oil Obtained from Olives.

Table 6. Mann - Kendall Test Results of The Sector of “Olive Oil and Other Oil Obtained from Olives” Between 1997 - 2018

| Periods | N | Z - Value | p-value |
|--------------------|----------|------------------|----------------|
| 1997 - 2007 Period | 11 | 1.4013 | 0.1611 |
| 2008 - 2018 Period | 11 | 0.9342 | 0.3502 |

When the Virgin Oil subsector is analyzed, it was seen that monotonic trend did not observed between 1997 - 2007 and 2008 - 2018 periods. The test statistics about trend analysis can be seen in Table 7.

Table 7. Mann - Kendall Test Results of The Sector of “Virgin Oil” Between 1997 - 2018

| Periods | N | Z - Value | p-value |
|--------------------|----------|------------------|----------------|
| 1997 - 2007 Period | 11 | 0 | 0,98 |
| 2008 - 2018 Period | 11 | 1.2456 | 0.2129 |

Table 8 shows that there is no trend between 1997 - 2007 and 2008 - 2018 period for “Other Olive Oil and its fractions” subsector.

Table 8. Mann - Kendall Test Results of The Sector of “Other Olive Oil and its fractions” Between 1997 - 2018

| Periods | N | Z - Value | p-value |
|--------------------|----------|------------------|----------------|
| 1997 - 2007 Period | 11 | 1.7127 | 0.08677 |
| 2008 - 2018 Period | 11 | 0.6228 | 0.5334 |

When looking at Table 9, there is a monotonic trend between 1997 - 2007 periods for Oils and their fractions obtained solely from olives. According to the test results, the export amount realized in 1997 - 2007 period for the sector has an increasing trend. On the other hand, the 2008 - 2018 period trend is not observed.

Table 9. Mann - Kendall Test Results of The Sector of “Oils and their fractions obtained solely from olives” Between 1997 - 2018

| Periods | N | Z - Value | p-value |
|--------------------|----------|------------------|----------------|
| 1997 - 2007 Period | 11 | 2.6469 | 0.008123 |
| 2008 - 2018 Period | 11 | 0.1557 | 0.8763 |

According to the RCA analysis and Mann - Kendall analysis, hypothesis results of this research are concluded in Table 10.

Table 10. Hypothesis Results

| Hypothesis | Supported/ Not Supported |
|--|---|
| H ₁ : Turkey's competitiveness in the olive oil sector based on in 2008 - 2018 period is much stronger than the 1997 - 2007 period. | Supported |
| H _{1a} : Turkey's competitiveness in the olive oil sector based on "4214-Olive oil and other oil obtained from olives" in 2008 - 2018 period is much stronger than the 1997 - 2007 period. | Supported |
| H _{1b} : Turkey's competitiveness in the olive oil sector based on "42141- Virgin Olive" in 2008 - 2018 period is much stronger than the 1997 - 2007 period. | Supported |
| H _{1c} : Turkey's competitiveness in the olive oil sector based on "42142 - Other Olive Oil and its fractions" in 2008 - 2018 period is much stronger than the 1997 - 2007 period. | Supported |
| H _{1d} : Turkey's competitiveness in the olive oil sector based on "42149-Oils and their fractions obtained solely from olives" in 2008 - 2018 period is much stronger than the 1997 - 2007 period. | Supported |
| H ₂ : Turkey's export for olive oil industry has not a monotonic trend | Supported |

| | |
|--|-----------|
| between 2008-2018 period. | |
| H _{2b} : Turkey's export for olive oil industry based on “42141 - Virgin Olive” has not a monotonic trend between 2008-2018 period. | Supported |
| H _{2c} : Turkey's export for olive oil industry based on “42142 - Other Olive Oil and its fractions” has not a monotonic trend between 2008-2018 period. | Supported |
| H _{2d} : Turkey's export for olive oil industry based on “42149-Oils and their fractions obtained solely from olives” has not a monotonic trend between 2008-2018 period. | Supported |

5. CONCLUSION

The aim of the research was analyzed the competitiveness of Turkey in olive oil industry in whole world olive oil sector. In addition to this, when competitiveness is evaluated, the effect of the declaration of Turkish government about olive oil export on Turkey's export volume was examined. According to these arguments there are two main hypothesis was created. The first hypothesis is Turkey's competitiveness in the olive oil sector based on in 2008 - 2018 period is much stronger than the 1997 - 2007 period. The second is Turkey's export for olive oil industry has not a monotonic trend between 2008-2018 period.

In this study, Turkey's competitiveness in the olive oil industry was examined between 1997 and 2018. The research dataset consists from the data which are taken from TUIK and Eurostat. To examine the competitiveness, Revealed Comparative Advantage (RCA) is used. Furthermore, to be able to evaluate competitiveness correctly, trend analysis was applied on the dataset. For investigating the existence of any trend, Mann - Kendall test was used.

According to results, Turkey's competitiveness is much stronger in 2008 - 2018 when we compare with 1997 - 2007. In 2008 - 2018, it observed higher RCA scores than 1997 - 2007 period. Furthermore, when the trend effect is analyzed, there was no trend in export volumes for Turkey.

In terms of food security, Turkey is a country that can produce self sufficient food. However, the existence of an access problem arising from poor income distribution and poverty in accessing all households to food is a fact. Social benefits from the State Budget contribute positively to the access of low-income households to food, but it is not enough. On the other hand, there has been not enough progress in food safety, which forms one of the most important pillars of food security. The main actors for food insecurity lies on small scale and informal production. The prevalence of unregistered and unhealthy food production is a very important problem not only because it leads to unfair competition, but also because it is large enough to threaten food safety.

The olive oil, food industry, agriculture and livestock sectors are form the rings of a chain. It is known that the weaknesses in the agricultural and livestock sectors negatively affect the food industry, and the negativity in the food industry affect the developments in the olive oil sector. For this reason, policies such as R&D, incentive, tax, foreign trade, science and education, innovation and invention should be designed and implemented by considering the effects on agriculture, animal husbandry, food and olive oil industry.

Turkey does not have a variety of products and countries in olive oil exports. The export structure of the sector also reflects the structure of agriculture and livestock production. In olive oil exports, the variety of products and markets is inadequate. Olive oil exports have been concentrated in a small number of countries, mainly Spain, Italy and the United States.

With new production, consumption and foreign trade strategies put forward in the olive oil sector, with new regional integrations and the establishment of effective and fair connections in the formation of the existing Customs Union, Turkey can increase agricultural product (hence olive oil) exports to the desired level in a quality and economic sense.

6. EVALUATION

The agricultural sector, which provides raw materials to the food industry, is primarily important sectors for all countries. As long as nutrition takes the first place in the scale of human needs, this importance of food and agriculture will not change. Although very important technological developments have been made, the food sector is becoming increasingly important due to reasons that agricultural production is still largely dependent on nature and climate conditions and the world's population continues to grow. Food industry is great importance in reducing the impact of fluctuations in agricultural production.

The agricultural sector, which provides raw materials to the food industry, is primarily important sectors for all countries. As long as nutrition takes the first place in the scale of human needs, this importance of food and agriculture will not change. Although very important technological developments have been made, the food sector is becoming increasingly important due to reasons that agricultural production is still largely dependent on nature and climate conditions and the world's population continues to grow. Food industry is great importance in reducing the impact of fluctuations in agricultural production.

Production fluctuations caused by dependence on weather conditions, the upward trend in energy prices, investments in increasing biofuel capacity and rising population, stand out as determinants of world agricultural production. In particular, the tendency to increase energy prices encourages agricultural production of less energy-intensive products and make investments in bio-fuel production facilities.

According to the decisions taken at the World Trade Organization, important steps have been taken to reduce agricultural support, particularly those with large trade-disruptive effects. Total agricultural supports in OECD countries tends to decline markedly. It works that efficiency per hectare should be increased by more efficient use of existing resources such as manpower, financing, new technology and new input, rather than expanding agricultural land in developed countries. Therefore, agricultural added value per employee is the main factor.

The food sector is generally a labor-intensive sector. The sector is directly related to the evaluation of agricultural products, the supply of raw materials to the industry, contribution to employment and the balanced nutrition of the people. The food sector has a socio-economic strategic importance in all countries.

According to FAO data; the first 6 products in Turkish food industry production in 2010 are fresh cow's milk, tomatoes, wheat, grapes, chicken meat and olives. When we look at the most produced in 2016, unlike 2010, we see that apples and red/green peppers are replaced by only grapes and olives. The total production of these products in Turkey is \$17 billion. When looking at the world production of these six products produced the most by Turkey; It is estimated to have reached \$542.5 billion. Turkey's food industry does not catch the trend of increase in the world, even in the products it produces the most. The share of olive oil exports in Turkey's food exports is 1.51% in 2018 and 0.58% worldwide.

In the period 2010-2018, world food exports increased more than the average rate of food imports in the world. However, in 2015 and 2016, food exports fell by 0.90% and 1.02% respectively, and in 2017, it began to return to positive. Between the years 2010-2018 total food exports in Turkey are also positive in parallel with world food exports. However, the average rate of increase in imports in Turkey has been higher than the World.

In the period 2008-2018, Turkey's exports of food industry products increased to \$16.67 billion and imports increased to \$12.34 billion. The foreign trade balance of the Turkish food industry has yielded more throughout the whole period. In the olive oil sector, which is part of Turkey's food industry exports, the countries with the most exports are Spain, Italy, Saudi Arabia, Japan, Iraq and Iran, mainly in the United States. Turkey's total olive oil exports in 2018, with these target markets, are worth approximately \$220 million, which accounts for 1.2% of Turkey's total food industry exports.

7. SUGGESTIONS

Although 95% of the companies in the food sector in Turkey are very small and small-scale companies, the majority of production is carried out by medium and large companies. Informality is a very serious and common problem, especially in small companies. The fact that informality has reached both widespread and high rates, it leads to unfair competition against regular companies in the sector. Also, informality is causing life-threatening and increasingly deep-growing problems in terms of food security and food safety.

Today, when competition in the global food industry is gaining momentum, technological innovation and R&D studies are the most important element for a country to have a power in the global market. The most important step in R&D and innovation policies, which are essential for the development and competitiveness of the Turkish food industry, should be aimed at increasing the share of the budgets to R&D studies and the development of the science/technology/R&D activities of the industry. In Turkey, with measurements taking consideration of the year 2010, only %1,50 expenditure were allocated for food production on R&D budget. This rate appears to have fallen to 1.41% in 2018. In addition, this decrease appears to be negatively impacted in food products, although the share rate of total R&D spending 232% was between 2010 and 2017.

Olive oil sector in Turkey has an important place within the manufacturing industry. However, the sector is experiencing bottlenecks because it cannot realize the economies of scale and scope. It could not provide enough product differentiation. In this case, public policies have a share as well as the internal dynamics of the sector. The fact that R&D expenditures are very low in the sector is the biggest obstacle to the development of new products and innovations.

The olive oil industry is dominated by small-scale companies. So that there is a sufficient resource for R&D. The fact that the state's R&D activities are not focused on the content, also causes the sector to be left alone in this area. Another important negativity is the lack of industrial-university cooperation. The fact that scientific research projects carried out in universities are in cooperation with the sector, that the

research is aimed at the concrete problems of the sector and that it is carried out in the areas applicable in the production process will ensure the effective use of national resources and contribute significantly to the realization of the innovations needed by the sector.

The instability in olive oil prices can be attributed to the European Union's customs duty on Turkey and the lack of quota opportunity granted to other countries under non-union bilateral trade agreements. Bayramer and Tunalioglu (2016) said that if exporters encounter such problems, they agreed that the "Licensed Storage System" would be the solution, as the European Union countries supported in unity. Also, not continuing to "bulk" export to the foreign market will support efforts to create global brand value. The global climate crisis, all the expected variations in food and water supply, but permanent solutions to structural problems should be brought in a way to encourage exports in the fastest way and stable policies should be implemented. (Bayramer and Tunalioglu, 2016)

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