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## **A Market Share Analysis of Virgin Olive Oil Producer Countries with special respect to Competitiveness**

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**Paper prepared for presentation at the I Mediterranean Conference of Agro-Food  
Social Scientists. 103<sup>rd</sup> EAAE Seminar 'Adding Value to the Agro-Food Supply Chain  
in the Future Euromediterranean Space'. Barcelona, Spain, April 23<sup>rd</sup> - 25<sup>th</sup>, 2007**

# **A Market Share Analysis of Virgin Olive Oil Producer Countries with special respect to Competitiveness**

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## **Abstract**

In this study, Constant Market Share Analysis is used in order to determine the competitiveness of Turkey and its competitors, which are the main olive oil producers, in the USA, Australia, Canada, Brazil and Japan's markets between 1990/94 and 2000/04 periods. The analysis shows that during the period covered Italy is the most competitive in the destination markets. Greece and Turkey follow Italy. In the same period although Spain's export towards destination markets is increased, its competitiveness is affected adversely due to decrease in its market share. Turkey's success in sustainable and permanent international competitiveness in olive oil depends on production, organization and trade policy.

# **A Market Share Analysis of Virgin Olive Oil Producer Countries with special respect to Competitiveness**

## **1. Introduction**

Olive oil is a regional product. Nearly all the world's production is produced and consumed in the countries surrounding the Mediterranean. On the average 95 % of the world's production and 89% of the world's consumption is concentrated in the Mediterranean region.

The EU dominates world production with harvests that have steadily grown in the nineties. In the EU distribution of production is as follows in 2000-2005 period: Spain 48.4%, Italy 31.5%, and Greece 18.2 %. Tunisia, Turkey, Syria and Morocco are the other main olive oil producers. These countries account for 16.1 % of the world production.

Historically, olive oil consumption tended to be high only in the traditional producer countries. While olive oil still only represents about 3% of the total world oil consumption, since 1995/96 demand has risen at a rate of about 5.3 %, in the light of olive oil's positive image in terms of healthfulness and quality. Apart from the EU, the major consumers are Syria (4.3 %), Turkey (2.1%), Morocco (2.1 %), and Tunisia (1.7 %). With consumption now totaling 219.000 tones in 2005/06, the USA has become the world's second biggest market in olive oil. There have also been appreciable rises in Australia, Japan, Canada and Brazil with annual consumption in these countries ranging from 19.500 to 32.500 tones (IOOC; 2006).

Thus, trade has become an important feature of the international olive oil market. In the nineties the EU accounted for 53 % of the world exports of olive oil. The corresponding figures for Turkey and Tunisia are 9.3 % and 29.6 % respectively. In the 2000's these figures are 61.3 % for the EU, 18.7 % for Tunisia, and 11.0% for Turkey. The USA, Australia, Japan, Canada, and Brazil account for all the EU's exports. On these markets olive oil from the EU

has improved in recent years. In 2004 the other major exporters to these non-producing countries are Turkey and Tunisia. Turkey exports 11 million tones to the USA, 3.6 million tones to Canada, 970 thousand tones to Japan, 587 thousand tones to Australia and 11 thousand tones to Brazil. Tunisia exports 18 million tones to the USA, 956 thousand tones to Canada, 242 thousand tones to Japan, 154 thousand tones to Australia and 84 thousand tones to Brazil (COMTRADE, 2006).

So, maintaining and increasing the market shares in these new markets increases competition among the export suppliers of olive oil. Therefore the objective of this article is to analyze the export performance of Turkey and its competitors Spain, Italy, Greece, and Tunisia in the new markets. Export performance is captured by the changes in market shares of each countries' export value in the total import value of its major trading partners (The USA, Canada, Australia, Japan and Brazil). As a method, the constant market share analysis (CMS) is used to assess the export performances of the countries. This method identifies the different effects. The identification of these different effects is important as this has policy implications. Furthermore, this study is the first to carry out CMS analysis in the case of olive oil.

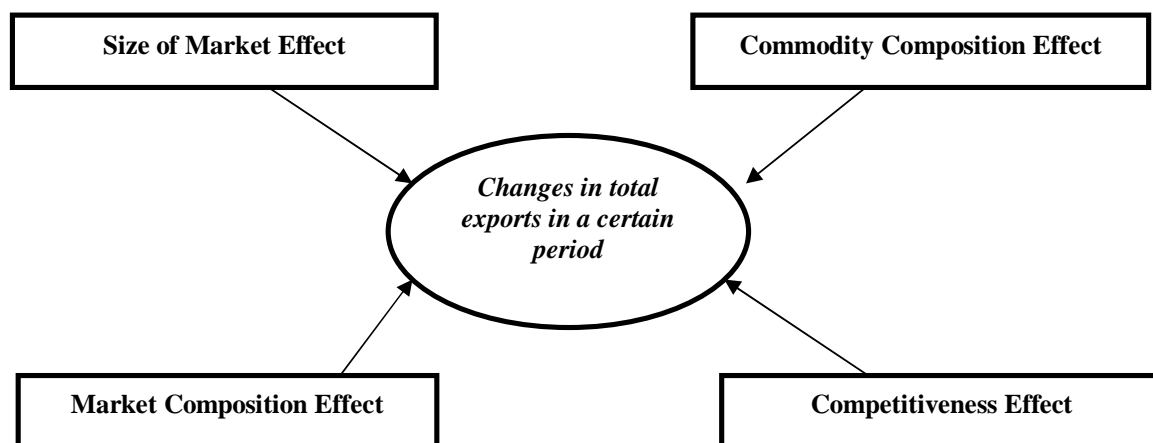
This article is divided into four sections. Section 2 gives an overview of the data and constant market share analysis; Section 3 presents the empirical findings; and finally Section 4 offers policy implications and concludes.

## **2. Data and Methodology**

The data are obtained from the COMTRADE produced by the United Nations Statistical Office. The data contains 1990/94 and 2000/04 periods' by countries. Based on their relative importance to the main producer countries' export in olive oil, as destination markets the USA, Canada, Australia, Japan and Brazil are chosen.

Constant market share analysis is applied to the data in order to investigate export performance in the USA, Canada, Australia, Japan and Brazil market for olive oil. The CMS model can be expressed in a schematic representation as shown in Figure 1.

**Figure 1: Schematic Representation of the CMS Model**



CMS analysis is used to identify four components of export performance: market size effect, market composition effect, competitive effect and commodity composition effect (Richardson, 1971; Milana, 1988, Simonis, 2000).

Market size effect indicates that part of a country's export growth is attributable to the general increases in destination market imports. The magnitude of this effect shows the potential increase of a country's exports if it were able to maintain its share of destination imports.

Market composition effect indicates a country's ability to concentrate on relatively rapidly growing countries. The change in exports due to market distribution depends on trade policies and income growth in foreign countries (Anonymous, 1996).

Commodity composition effect points out whether a country has concentrated on the export of commodities for which markets have been expanding rapidly, or on commodities for which markets have been expanding less rapidly. This effect reflects the factor endowment of

export country and the income and price elasticities of demand for the products in which that country specializes.

Competitiveness effect is defined by the residual term of the CMS model. The residual term picks up everything not explained by the first three effects. However, this term is taken to indicate the improvement or the deterioration in the competitiveness of exports depending on whether it has a positive or negative sign. It is usually assumed that this effect is independent of the three other effects discussed above and it largely reflects the role of domestic factors of the exporting countries.

The underlying assumption of the CMS approach is that base period export shares are maintained in other market periods. The structural components of the market share are calculated under this assumption. For the purpose of this study, the producer countries' olive oil exports in the period 2000-04 were analyzed in comparison to those in the base period 1990-04.

Based on Ongsritrakul and Hubbard (1996), we use the following equation:

$$q^1 - q^0 = S^0 (Q^1 - q^0) + \sum_i (S_i^1 - S_i^0) \times Q_i^1 + (q^1 - \sum_i S_i^1 Q_i^1 - S^0 q^0)$$

where;

$q$ : quantity of an exporter country's exporters of olive oil to the destination markets

$S$ : An exporter country's market share of total exports of olive oil to the destination markets

$S_i$ : An exporter country's market share of total exports of olive oil to each destination markets, (i=1,2,...5)

$Q$ : the quantity of total exports of olive oil to the destination markets

$Q_i$ : the quantity of total exports of olive oil to each destination market; and superscripts 0 and 1 to the base period and subsequent period respectively.

This equation indicates that changes in quantity of an exporter country's exports of olive oil to the destination markets between the two periods ( $q^1 - q^0$ ) can be decomposed into

the three terms on the right hand side of the equation, representing the size of market effect, the market composition effect and the competitive effect, respectively. Since we apply the method to one product, the commodity composition effect is dropped.

### 3. Empirical Findings

Historical characteristics of olive oil are generally those of a balanced market. However, since the mid 1990s available data indicates a trend towards a world production superior to global demand (Table 1).

**Table 1: Figures of the World Olive Oil Market (1990/91-2004/05)**

	Average (1000 t)	Coefficient of Variance (CV) (%)	Min (1000 t)	Max (1000 t)	Growth (1990/91- 2004/05)	Growth (1990/91- 1995/96)	Growth (1996/97- 2004/05)
World Production	2335.0	20.8	1453.0	3174.0	3.7	3.0	4.1
World Consumption	2324.1	17.1	1666.5	2885.5	3.2	2.1	2.6
World Exports	439.7	27.9	256.5	657.5	4.2	-4.4	3.3
World Imports	462.4	26.6	288.5	682.5	5.1	2.1	3.8

Production trend by countries is ascending but the great influence of the two major producing countries introduced a high level of uncertainty in the production level. Indeed, the fact that production in Turkey and Tunisia changed much more than the one of the other producing countries, explains the high volatility of global production (Table 2).

**Table 2: Production Figures in Major Producer Countries (1990/91-2004/05)**

	Italy	Greece	Spain	Turkey	Tunisia	Syria
Growth (1990/91-2004/05)	4.7	2.6	1.2	1.6	-0.8	2.0
Growth (1990/91-1995/96)	10.1	6.4	-4.5	-4.9	-7.5	-0.6
Growth (1996/97-2004/05)	3.8	0.5	0.1	-1.4	-3.1	1.5
CV (%)	30.4	20.9	36.3	53.0	48.8	37.4

The evolution of production and consumption shows a slight growth from the 1970s to the early nineties. In the mid 1990s there was a strong increase in consumption in the non-



traditional producing countries. Despite the consumption slightly increase in the traditional producing countries. In other relevant markets, although in terms of volume imports were lower than those of the United States, the average annual growth were even higher (Table 3).

**Table 3: Consumption Figures in Traditional and Non-Traditional Countries (1990/91-2004/05)**

	Italy	Greece	Spain	Turkey	Tunisia	Syria	USA	Canada	Australia	Japan	Brazil
Growth (1990/91-2004/05)	1.2	0.9	1.1	0.2	-0.7	2.1	2.5	2.6	2.4	5.9	1.7
Growth (1990/91-1995/96)	1.4	0.9	-0.8	1.0	-3.3	2.0	1.0	2.5	1.5	10.8	2.5
Growth (1996/97-2004/05)	0.9	0.7	1.1	-1.0	-2.2	1.7	2.2	1.4	1.7	1.0	0.2
CV (%)	10.9	12.6	17.9	20.8	23.3	28.0	31.9	31.8	32.4	54.8	24.2

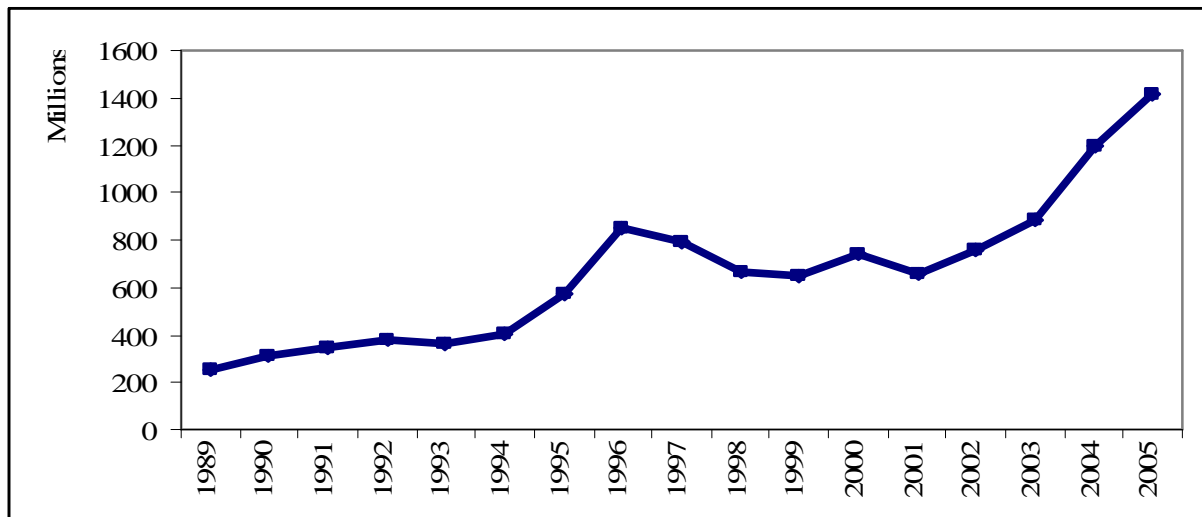
The market share index, which assesses the export share of a country in percentages relative to the exports of a group of countries for a specific sector, is shown in Table 4. The range of the index values goes from zero to 100: in the case of zero, the country has no exports for that sector while for the case of 100 the country is the only exporter. Therefore, the market share index outlines the competitive position of a country in the international market for a sector. As seen in Table 4, the highest export market share was found in Italy, 54.1% in 2004. Significant market share values were observed for Spain (20.7%). Tunisia had an intermediate value (4.1 %), and following this was the market share level of Turkey (3.7%).

**Table 4: Market Shares of the Producer Countries in the Destination Markets**

	Italy	Greece	Spain	Turkey	Tunisia
1990	65.4	3.1	21.5	0.0	0.9
1991	56.1	3.5	20.9	1.5	1.7
1992	65.9	4.4	21.9	1.6	2.8
1993	62.0	4.2	22.3	0.7	1.2
1994	62.1	3.0	21.4	2.7	0.7
1995	55.8	2.2	18.8	5.0	1.0
1996	56.5	2.4	22.5	2.5	0.4
1997	55.2	2.7	19.8	3.5	0.7
1998	51.4	2.7	20.1	0.3	1.3
1999	54.1	2.3	20.0	3.9	1.6
2000	56.1	2.6	19.4	1.6	1.2
2001	55.5	2.6	18.0	3.5	0.4
2002	59.8	2.6	22.5	1.8	0.6
2003	56.9	2.7	21.2	4.4	5.5
2004	54.1	2.1	20.7	3.7	4.1
Average	57.8	2.9	20.7	2.4	1.6

Kaynak: FAO, Statistical Database and Statistics Division, <http://faostat.fao.org>.

In this study based on their importance in olive oil consumption and import, as destination markets the USA, Canada, Australia, Japan and Brazil are chosen. The development in their olive oil import is shown in Figure 2. In the period concerned the increase in the destination markets' imports is five fold. The average annual growth in import value is 12.7 %.

**Figure 2: The Development in the Destination Markets' Olive Oil Import**

In this section the results of the CMS model and examine the relative importance of destination changes in the performance of Turkey and its competitors during 1990-94 and 2000-04 periods.

Constant market share analysis is applied to olive oil exports, separately for each of the five markets, the USA, Canada, Australia, Japan, and Brazil. As explained above, this analysis will compare Italy, Greece, Spain, Turkey, and Tunisia's export performances in each market. The results are summarized in the following table and figure.

Turkey's share of total exports of olive oil to the destination markets increased over the period from 5.8 % to 6.3 %, an increase of 7.330 tonnes. The size of market effect is 687 tonnes (88.5 per cent of the total gain), the market composition effect is 167 tonnes (2.3 per cent) and the competitive effect is 676 tonnes (9.2 per cent). Clearly, the size of market effect dominates the CMS analysis.

**Table 5: Results of Constant Market Analysis**

	Market Share		Overall Gain		Size of market effect		Market composition effect		Competitive effect	
	1990-94	2000-04	tonnes		tonnes	%	tonnes	%	tonnes	%
<b>Turkey</b>	5.8	6.3	7330	100.0	6487	88.5	167	2.3	676	9.2
<b>Spain</b>	17.4	17.5	19602	100.0	19417	99.1	2268	11.6	-2083	-10.6
<b>Italy</b>	34.0	46.6	58411	100.0	37993	65.0	4831	8.3	15586	26.7
<b>Greece</b>	2.6	3.4	4214	100.0	2905	68.9	319	7.6	990	23.5
<b>Tunisia</b>	17.3	4.4	-1597	100.0	19375	-1213.0	-1036	64.9	-19036	1248.0

Spain's share of total exports of olive oil to the destination markets is stable. The size of market effect is 19.417 tonnes (99.1 per cent of the total gain), the market composition effect is 2.268 tonnes (11.6 per cent) and the competitive effect is -2.083 tonnes (-10.6 per cent). Although the size of market effect dominates the CMS analysis, the competitive effect is negative. This negative effect indicates the deterioration in the competitiveness of Spain's exports to the USA, Canada, Australia, Japan and Brazil.

On the other hand Italy increased its share from 34.0 per cent to 46.6 per cent. This increase is caused by the size of market effect. The same situation is also seen in the case of Greece.

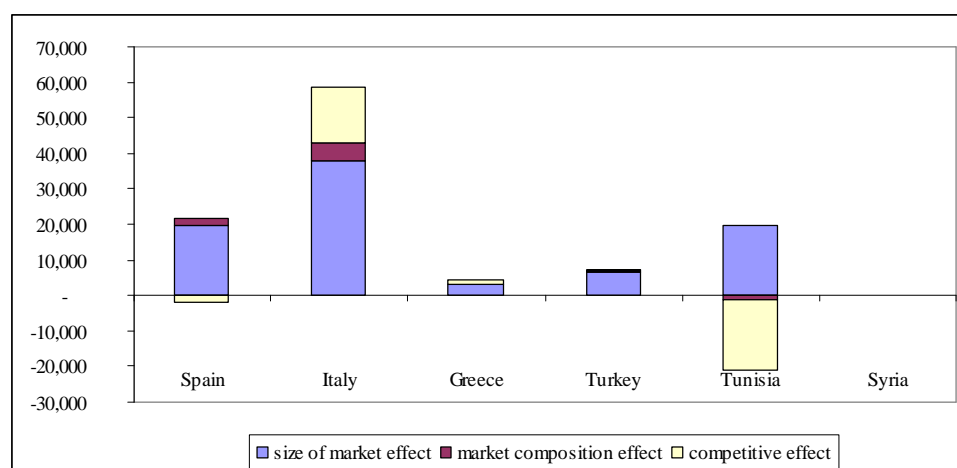
For Tunisia, the competitiveness effect is significantly negative. This indicates that there has been a loss in the competitiveness of Tunisia's exports to the USA, Canada, Australia, Japan and Brazil. The market composition effect Tunisia is also negative which indicates that Tunisia does not concentrate on the countries whose imports grew relatively fast.

When all the competitors are considered together, it is seen that Italy and Spain were able to concentrate on the countries whose imports grew relatively fast. For Turkey this effect is small which indicates that Turkey concentrate to limited degree on the countries whose imports grew relatively fast.

The size of market effect is favorable for the suppliers of olive oil except Greece during the periods examined. Except Tunisia, the other countries increase their market share in the USA, Canada, Australia, Japan, and Brazil.

Finally, the competitiveness effect indicates the amelioration for especially Italy in the competitiveness. Also to a lesser extent Turkey sustains its competitiveness in the destination markets.

**Figure 3: Results of Constant Market Analysis**



#### **4. Conclusion**

Olive oil is accepted as a regional product. Still world olive oil production is concentrated in the Mediterranean countries. Olive growing is gradually spreading in newcomers, such as Argentina, Chile, China, Brazil, Australia and South Africa. The EU accounted for 79.3% of world production during 2000-2005. Up to 1980, Italy was the leading producer worldwide; 1980 onwards, Spain became the leading producer. Syria, Tunisia, Turkey are the other leading producer countries. In these six countries the production is increased gradually.

On the other hand, in the major producer, consumption has been progressing fairly steadily, without the fluctuations that are a feature of production. Since 1995/96 the average annual increase in the consumption has been 6 per cent, with even higher relative growth in new markets.

These supply and demand conditions cause more competitive environment. The analysis showed that Italy has a competitive advantage among EU members and Turkey in the new markets such as the USA, Canada, Australia, Japan, and Brazil. Greece and Turkey follow Italy in case of competitive effect. In the same period although the quantity of export is increased, the decrease in the market share cause Spain to lose its competitive advantage. The size of market effect plays an important role in the increase of Spanish exports to the new markets.

The international competition is affected from domestic factors as well as external factors. The success to be obtained in maintaining and increasing market share and achieving sustained, stable competitive advantages in international markets will depend on the production, organization and foreign trade policies adopted.

Achieving sustained production and quality is the key factor in increasing Turkey's market share in the new markets. In order to reduce the effect of alternance, on the

production, to draw its level to the EU levels and to increase cheaper and qualified production, cultivation activities such as irrigation and mechanism should be improved.

Alternance and insufficient stocking are the two factors that is adversely affecting Turkey's competitiveness. Achieving sustained production depends on stabilizing the balance between the production, domestic consumption and exports. Within the context of licensed storekeeping and Agricultural Specialized Stock Exchange, olive oil is one of the most adequate agricultural products. Therefore, incentives aimed at stocking should be taken.

On the other hand, exporting 70 % of olive oil as bulk causes value added losses. This also causes Turkish olive oil to be little known. To be distinguished in foreign markets, Turkey should be intensified on packaged and branded exports. Export and marketing strategies which consider the consumers' demands and expectations in the destination markets should be developed. And lastly, Turkey should introduce a new country image by participating in international fairs and organizations.

In the EU, the olive sector is organized with all actors such as producers, firms, exporters and consumers. Therefore the EU is very effective in international olive oil markets. Particularly, there is an absolute necessity for an organization like the one in the EU to improve country image in foreign markets. A national olive oil council should be established in order to consider problems as a whole, to gain competitiveness.

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