EXPORT PERFORMANCE OF GREECE DURING THE ASSOCIATION PERIOD WITH THE EUROPEAN ECONOMIC COMMUNITY:

Application of the Constant Market Share Approach

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1. Introduction

Greece has been an Associate Member of the European Economic Community (EEC) since November 1, 1962 and she will be a full-member on January 1, 1981. Although much discussion has centered around the effects the association had upon the economic performance of Greece in general and the export growth of the country in particular, the question has not been given a complete answer so far.

The purpose of this paper is to analyze the export performance of Greece during the association period with the EEC, in comparison with the export performance of Spain and based on the export growth of the OECD countries, using the Constant-Market-Share (CMS) approach.

The empirical results show that Greece has concentrated the export efforts on commodities with relatively slowly increasing demand in the world market. With such an export policy, it faces the risk of experiencing immiserizing growth. Furthermore, geographical diversion of the exportable commodities, due to the association, does not seem to have been experienced during the study period.

The background of the literature concerning the posed question is the subject of the next section. The model of the CMS approach as applied in this paper is presented in section 3 and the empirical application is given in section 4. The qualifications to the model are discussed in section 5 and in section 6 further results to compare the Spanish performance are given.

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2. Background

Reviewing the literature on the association of Greece with the EEC the following comments and arguments may be mentioned. Papandreou (1962) criticizing the terms of the association agreement wrote:

> It is fair to say that, given the terms of the association, Greece has a small margin of time in which to achieve the structural transformation needed for survival in the European Common Market.

Triantis (1965) argued that the price elasticity of aggregate demand in the EEC for products exported by Greece is lower than the price elasticity of demand of Greece for exports of the EEC. This means that in a potential full membership of Greece in the EEC, the gains of free intraunion trade will be divided disproportionally in favor of the EEC. For this reason he concluded that the Athens Agreement of 1961 does not adequately protect the economy of Greece and it should be radically revised.

In support of the agreement, Pesmazoglou (1967) argued that Greece could if needed withdraw from the EEC or revise the agreement.[1]

Hitiris (1972) studied the effects of the EEC on the balance of trade of Greece using a partial equilibrium Vinerian model. He used one-digit disaggregation of the economy according to the Standard International Trade Classification (SITC), and he estimated import and export functions of the pre-association period. He found by extrapolation that the association period (1962-67) affected negatively the balance of total trade of Greece with the EEC. Even for the SITC sections 0 (food and live animals) and 1 (beverages and tobacco), he estimated that the balance of trade would be affected negatively by a full membership of Greece in the EEC. Two shortcomings should be mentioned in Hitiris' (1972) study of the association period. First he had limited observations (five years) for the post-association period, and second he did not take into consideration the competitive ability of Greece with respect to other countries. McQueen (1976) used the share approach both in exports to and imports from the EEC for certain Mediterranean countries. He concluded that Greece has experienced substantial gain in its exports to the EEC (but) at some possible cost in terms of higher share of imports from the EEC. His method avoids the shortcomings of Hitiris' (1972) study.

Marsh (1976), Aliboni (1976), and Vassiliou (1976) argued that the structure of the Common Agricultural Policy (CAP) of the EEC has restricted the imports of the EEC from the Mediterranean countries, and this has resulted in decrease of the

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1. It is true that except for a timetable on the reduction of tariffs by both parties, the Athens Agreement is generally vague; it includes many exceptions and allows for –under certain circumstances– measures to be taken independently by each party to avoid economic disturbances and major crises.

potential development of the region. Kebschull (1976) in a special study of tobacco examined the market share and showed that the countries which had preferential agreements with the EEC (Greece, Turkey, and Brazil) have hardly changed their position in the period of the agreement, while Bulgaria's market share increased until the mid-sixties, and then came back to its previous share.

Kalamotousakis (1976) studied the effects of the EEC on the Greek economy using a modified model of Lawrence (1968). However, this model is not relevant to the Greek case because it assumes that Greek production can affect the world prices. He looked at the export side of the economy only, to conclude that the EEC have positively affected the export growth of Greece.[2] Similar results are given by Nugent (1974, table 3.4) for Greece and Turkey using the export performance approach in a cross-section analysis. But generally, the effect on the growth of exports alone has not any conclusive significance, because it does not say anything about the effect on imports, or more important, on the balance of trade.[3] Higher growth in exports may also be due to an increase in the demand for imports by the EEC, or to an increase in the competitiveness of the country with respect to the rest of the world.

3. The model

For an intertemporal comparison to be meaningful, it is necessary to express the variables under consideration in real values. This practice will be followed throughout the analysis in the present paper. However, this transformation is not required, and the results do not change when international comparisons are considered, and in the ensuing analysis the variables for such exercises are expressed in value terms of a common currency. Since the effective date of the association agreement of Greece with the EEC is November 1, 1962, 1963 will be considered as the first year of the association period.

The constant-Market-Share (CMS) analysis assumes that a country will retain its share in world markets over time. If its share is different, this might be so because: (1) the country changed the commodity composition of its exports; (2) it changed the market-destination; or (3) its competitiveness has decreased or increased over the time period the analysis is conducted. The model will be tested for Greece and Spain, and the OECD countries will be used as a standard.[4] The first two years of each one

2. Kalamotousakis (1976) used as an example tobacco. However, for tobacco Kebschull (1976) did not find an increase in the share of exports of Greece to the EEC. On the contrary Greece's exports of tobacco have been declining.

3. The overall effects of the association upon the Greek economy are the subject of the working paper No 96 "Trade Effects of the Greek Association with the European Economic Community, 1963-1977", by K. Christou and A. Sarris, California Agricultural Experiment Station, Giannini Foundation of Agricultural Economics, July 1980.

4. The OECD member countries are the most developed countries. Using total OECD as a standard, it might be argued that it is very demanding for countries like Greece and Spain to follow such a standard. However, the selection of a most restrictive standard is a difficult problem and any other standard (e.g. world) may not provide an appropriate constant-shares norm (Leamer and Stern, 1970).

of the periods to be studied will be referred to as the early period, while the last two years as the late period.[5] The export rates of growth between early and late periods will be the determining factors of the performance of a country, call it G (see, Leamer and Stern, 1970, pages 172-175).

Define:

i = an exportable commodity $\quad i = 1,2,...,N$

j = a market-destination of commodity i $\quad j = 1,2,...,K$

$V_{i.}$ = value of G's exports of commodity i in early period

$V'_{i.}$ = value of G's exports of commodity i in late period

$V_{.j}$ = value of G's exports to country j in early period

$V'_{.j}$ = value of G's exports to country j in late period

V_{ij} = value of G's exports of commodity i to country j in early period

V'_{ij} = value of G's exports of commodity i to country j in late period

r = percentage increase in total OECD exports between early and late periods

r_i = percentage increase in OECD exports of commodity i

r_j = percentage increase in OECD exports to market j

r_{ij} = percentage increase in OECD expots of commodity i to market j

It follows that:

$$\sum_{j=1}^{K} V_{ij} = V_{i.}, \quad \sum_{i=1}^{N} V_{ij} = V_{.j}, \qquad (1)$$

$$\sum_{i=1}^{N} \sum_{j=1}^{K} V_{ij} = \sum_{i=1}^{N} V_{i.} = \sum_{j=1}^{K} V_{.j} = V..$$

The same relations also hold for the late period. If country G maintained its share in the world market (i.e. its exports grow as much as the OECD exports), its exports would increase by

$$r \sum_{i=1}^{N} \sum_{j=1}^{K} V_{ij} = r\,V.. \qquad (2)$$

and the following identity may be written

$$V'.. - V.. \equiv r\,V.. + (V'.. - V.. - r\,V..) \qquad (3)$$

Identity (3) divides the export growth of country G into the general increase of OECD exports ($r\,V..$) and an unexplained residual. This residual will be referred to

5. Two years averages have been used in order to avoid effects on the results due to cyclical problems especially in agricultural production. Sample tests with three of four years averages gave approximately the same results with the two years averages analysis.

as the competitiveness effect. From the compeititveness effect the commodity composition effect is isolated by writting according to identity (3) for commodity i:

$$V'_{i.} - V_{i.} = r_i V_{i.} = r_i V_{i.} + (V'_{i.} - V_{i.} - r_i V_{i.}) \quad (4)$$

aggregated to

$$V'_{..} - V_{..} \equiv \sum_{i=1}^{N} r_i V_{i.} + \sum_{i=1}^{N} (V'_{i.} - V_{i.} - r_i V_{i.}) \equiv$$

$$\equiv \sum_{i=1}^{N} rV_{i.} + \sum_{i=1}^{N} r_i V_{i.} - \sum_{i=1}^{N} rV_{i.} + \sum_{i=1}^{N} (V'_{i.} - V_{i.} - r_i V_{i.}) \equiv$$

$$\equiv rV_{..} + \sum_{i=1}^{N} (r_i - r)V_{i.} + \sum_{i=1}^{N} (V'_{i.} - V_{i.} - r_i V_{i.}) \quad (5)$$

where

$$\sum_{i=1}^{N} (r_i - r)V_{i.} \quad (6)$$

indicates the commodity-composition effect and it will be positive if country G concentrates its exports on commodities with growth rates greater than the OECD average r, while it will be negative in the opposite case. To isolate finally the market distribution effect, for each commodity i and each market j identity (3) can be written as:

$$V'_{ij} - V_{ij} \equiv r_{ij} V_{ij} + (V'_{ij} - V_{ij} - r_{ij} V_{ij}) \quad (7)$$

which by aggregation gives

$$\sum_{i=1}^{N} \sum_{j=1}^{K} V'_{ij} - \sum_{i=1}^{N} \sum_{j=1}^{K} V_{ij} \equiv \sum_{i=1}^{N} \sum_{j=1}^{K} r_{ij} V_{ij} + \sum_{i=1}^{N} \sum_{j=1}^{K}$$

$$(V'_{ij} - V_{ij} - r_{ij} V_{ij}) \equiv \sum_{i=1}^{N} \sum_{j=1}^{K} r_{ij} V_{ij} + \sum_{i=1}^{N} \sum_{j=1}^{K} rV_{ij} -$$

$$\sum_{i=1}^{N} \sum_{j=1}^{K} rV_{ij} + \sum_{i=1}^{N} \sum_{j=1}^{K} r_i V_{ij} - \sum_{i=1}^{N} \sum_{j=1}^{K} r_i V_{ij} + \sum_{i=1}^{N} \sum_{j=1}^{K}$$

$$(V'_{ij} - V_{ij} - r_{ij} V_{ij}) \equiv \sum_{i=1}^{N} \sum_{i=1}^{N} rV_{ij} + \left(\sum_{i=1}^{N} \sum_{j=1}^{K} r_i V_{ij} - \sum_{i=1}^{N} \sum_{j=1}^{K} rV_{ij} \right) +$$

$$+\left(\sum_{i=1}^{N}\sum_{j=1}^{K} r_{ij}V_{ij} - \sum_{i=1}^{N}\sum_{j=1}^{K} r_i V_{ij}\right) + \sum_{i=1}^{N}\sum_{j=1}^{K} +$$

$$(V'_{ij} - V_{ij} - r_{ij}V_{ij}) \equiv rV.. + \sum_{i=1}^{N} (r_i - r)V_{i.} + \sum_{i=1}^{N}\sum_{j=1}^{K} +$$

$$(r_{ij} - r_i)V_{ij} + \sum_{i=1}^{N}\sum_{j=1}^{K} (V'_{ij} - V_{ij} - r_{ij}V_{ij}) \qquad (8)$$

Identity (8) decomposes G's export growth into: (1) the general increase in OECD exports, equation (2); (2) the commodity composition effect, expression (6); (3) the market-distribution effect, third RHS term of identity (8); and (4) the residual attributed to competitiveness effect, fourth RHS term of identity (8).

4. Empirical Application

The CMS model is applied to Greece and Spain with the main objective to compare the performance of these two countries first for the period 1963 to 1970, when Spain had no preferential agreements with the EEC, and secondly for the period 1971 to 1976, when Spain had trade agreements with the EEC. Greece, during both of these periods, was an associate member of the EEC.

The world market is disaggregated into the following groups of counries:

(1) European Community (six countries)[6]
(2) Rest of West Europe
(3) Rest of OECD
(4) East Europe
(5) Rest of World
(6) Total

Total exports are also decomposed into the following commodity groups according to the Standard International Trade Classification (SITC):

	SITC	Commodity
(1)	0	Food and live animals
(2)	1	Beverages and tobacco
(3)	2	Crude materials, inedible, except fuels
(4)	4	Animal and vegetable oils and fats

6. The six countries of the EEC are Belgium, France, Germany (West), Italy, Luxemburg, and the Netherlands. In the group, Rest of West Europe, Yugoslavia is not included, and Finland is included in the data after 1969. The group, Rest of OECD, includes the U.S.A., Canada and Japan. After 1971, Australia and New Zealand are also included. In the group, East Europe, after 1969, China, North Korea, North Vietnam and Mongolia are also included.

(5)	5	Chemicals
(6)	6	Manufacturing goods classified chiefly by material
(7)	7	Machinery and transportation equipment
(8)	8	Miscellaneous manufacturing articles
(9)	3+9	Mineral fuels, lubricants and related material (SITC 3) and commodities and transactions not classified according to kind (SITC 9)
(10)	0 to 9	All commodities

The results obtained from the application of the CMS approach are reported in tables 1 to 5. These tables are identical in their structure differing only in time period and country of reference. A detailed analysis of only the first table I will follow, and for the other tables, the main points of interest will be discussed.

Table 1 is composed of a market report, a commodity report and an analysis of these reports. Columns (1) through (4) of the table contain part of the data upon which the computations are based. These are the actual data deflated by the United States wholesale price deflator.[8] Column (1) is the average of the first two years (early period) OECD exports and column (2) the average of the last two years (late period) of OECD exports. Columns (3) and (4) are averages of two years of data of Greek exports in early and late periods respectively.

According to the definitions given in the model (section 3) and as they are applied here:

$$i = 1,2,....,9 \text{ and}$$
$$j = 1,1,....,5$$

Column (3) in the market report is $V_{.j}$, that is, the value of Greece's exports to country j in the early period. Column (3) in the commodity report is $V_{i.}$, that is, the value of Greece's exports of commodity i in the early period. Column (4) gives $V'_{.j}$ and $V'_{i.}$ corresponding to $V_{.j}$ and $V_{i.}$ but for the late period. Row 6 in the market report and row 10 in the commodity report for all columns are Summations over j and i respectively. For example, the value of the element in row 10 and column (3) in table 1 is:

7. SITC Section 9 is an insignificant part of this group (SITCs 3+9).

8. The data for the CMS analysis is obtained from: OECD, *Foreign Trade Statistics*, Series B and C, Various years. The U.S. whole-sale index obtained from the International Financial Statistics with base year 1970 = 100 is given next.

Year	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965
Index	79.5	82.2	84.5	85.7	85.9	86.0	85.6	85.7	86.5	85.8	87.5
1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977
90.4	90.6	92.8	96.5	100.0	103.3	107.9	122.0	145.0	158.4	165.8	175.9

$$\sum_{i=1}^{9} V_{i\cdot} = \$349.28 \text{ Mil.} \tag{9}$$

Column (5) gives the change in OECD's exports between early and late periods defined as r_j for the market change, r_i for the commodity change and r for the total. That is,

$$\text{Column (5)} = \frac{\text{Column (2)}}{\text{Column (1)}} - 1 \tag{10}$$

Column (6) is simply the product of column (5) times column (3) for i = 1,2,...,9 and j = 1,2,...,5. Row 6 of this column in the market reports is

$\sum_{j=1}^{5} r_j V_{\cdot j}$ and row 10 in the commodity report is

$$\sum_{i=1}^{9} r_j V_{i\cdot}$$

It should be noted that the summation in each column over markets and commodities are equal except for column (6) where:

$$\sum_{j=1}^{5} r_j V_{\cdot j} \neq \sum_{i=1}^{9} r_i V_{i\cdot} \tag{11}$$

Column (6) shows what Greece's export change would have been if it had realized for each market and commodity the OECD changes, given its composition of commodities and markets in the early period. Column (7) shows what Greece's exports change would have been if it had realized the average OECD export growth rate r. The summation of this column over markets and commodities which is equal to

$$\sum_{j=1}^{5} rV_{\cdot j} = \sum_{i=1}^{9} rV_{i\cdot}$$

represents the change in Greece's exports due to the general increase in OECD trade. Column (8) gives the summations

$$\sum_{i=1}^{9} r_{ij} V_{ij} \text{ for each market and } \sum_{j=1}^{5} r_{ij} V_{ij}$$

for each commodity, where r_{ij} is computed from the cross classification of OECD exports by market destination and commodity groups and V_{ij} is the cross classifica-

tion of Greek exports by market destination and commodity groups in the early period. The summation over all markets and commodities is

$$\sum_{i=1}^{9} \sum_{j=1}^{5} r_{ij} V_{ij} = \$137.81 \text{ mil}$$

Finally, table 1 gives an analysis of the Greek export performance according to identity (8) of the model reproduced here as:

$$\sum_{i=1}^{9} \sum_{j=1}^{5} V'_{ij} - \sum_{i=1}^{9} \sum_{j=1}^{5} V_{ij} \equiv \sum_{i=1}^{9} \sum_{j=1}^{5} rV_{ij} + \left(\sum_{i=1}^{9} r_i V_{i.} - \sum_{i=1}^{9} rV_{i.} \right) +$$

$$+ \left(\sum_{i=1}^{9} \sum_{j=1}^{5} r_{ij} V_{ij} - \sum_{i=1}^{9} r_i V_{i.} \right) +$$

$$+ \left(\sum_{i=1}^{9} \sum_{j=1}^{5} V'_{ij} - \sum_{i=1}^{9} \sum_{j=1}^{5} V_{ij} - \right.$$

$$\left. - \sum_{i=1}^{9} \sum_{j=1}^{5} r_{ij} V_{ij} \right) \qquad (12)$$

The LHS of this identity is the change in the value of Greek exports between early and late periods. The first RHS term represents the change in its exports due to increase in OECD trade. The second RHS term represents the change in Greek exports due to commodity composition. The third RHS term represents the change due to market distribution and the last RHS term is the residual attributed to increased competitiveness of the country.

Thus, it is shown in table 1 that the change in Greek exports between 1963-64 and 1969-70 was:

$$V'_{..} - V_{..} = 608.08 - 349.28 = \$258.80 \text{ Mil.}$$

which, according to the analysis, was due to:

(1) increase in OECD trade $\sum_{i=1}^{9} \sum_{j=1}^{5} rV_{ij} = \$243.12$ Mil.

(2) commodity composition $\sum_{i=1}^{9} r_i V_{i.} - \sum_{i=1}^{9} rV_{i.} = \$-106.18$ Mil.

(3) market distribution $\sum_{i=1}^{9} \sum_{j=1}^{5} r_{ij} V_{ij} - \sum_{i=1}^{9} r_i V_{i.} = \$0.87$ Mil.

(4) increased competitiveness Residual = \$120.98 Mil.

This decomposition of the change in Greek exports is also given in percentage terms. Thus, from the total change in Greek exports during the period 1963 to 1970, 93.94 percent was explained by the increase in OECD trade, −41.02 percent was the negative effect of the commodity composition, 0.33 percent was due to market distribution, and the residual 46.74 percent is attributed to increased competitiveness of the country relative to other countries.

There are four important results derived from the analysis of table 1 concerning Greece's exports during the period 1963-70.

(1) Greek total exports grew slightly faster than the exports of OECD countries;

(2) Greece's exports were composed of commodities for which demand was growing slower than the average increase of demand for all commodities (negative commodity composition);

(3) The market distribution did not affect its exports; and

(4) The country increased significantly its competitive ability in the foreign market.

5. Qualifications to the Model

It is necessary at this point to examine some reservations and their implications for the derived conclusions when the CMS analysis is applied. Firstly, the results depend very much on the standard, which the country is compared with. This means that different conclusions may be derived if instead of OECD a more restrictive standard is used. However, it is not clear if a more restrictive standard will provide more appropriate results. The decision to choose OECD as standard was based on the rationale that Greece and Spain have many similarities in economic aspects with the OECD countries. Data availability was also a decisive factor. Secondly, a more substantive criticism of the model is that the results change if one first computes the market distribution effect and then the commodity composition effect. In such cases, the analysis of table 1 will give in percentage terms the following results:

(a) The terms representing increase in OECD trade and increased compeititveness will remain unaffected;

(b) The market distribution effect will be

$$\sum_{j=1}^{5} r_j V_{\cdot j} - \sum_{j=1}^{5} r V_{\cdot j} = \$34.85 \text{ Mil.}$$

or 13.47 percent, and the commodity composition will be

$$\sum_{i=1}^{9} \sum_{j=1}^{5} r_{ij} V_{ij} - \sum_{i=1}^{9} r_j V_{\cdot j} = \$140.16 \text{ Mil. or } -54.25 \text{ percent.}$$

However, the summation of the commodity composition and the market distribution effects do not change, that is, $(-41.02 + 0.33) = (-54.16 + 13.47)$. Furthermore, this change in the procedure of computation substantiates even more the basic conclusion that Greece's exports are composed of commodities whose markets do not expand rapidly in the world trade. Thirdly, the term "increased competitiveness" does not actually measure competitiveness in the usual economic meaning of the term. It is rather just the residual of the change in exports when subtracting the effect of the other terms (see Fleming and Tsiang, 1958). Finally, the model can be criticized in that different results may emerge if late –rather than early– period data weights are used in the computations. This criticism seems to be valid if a country changes its economic policy on foreign trade during the study period.

6. Further Results and Discussion

Despite the preceding reservations, the Constant-Market-Share analysis poses some interesting questions especially for intertemporal and international comparisons of export performance, and as far as commodity composition and market distribution are concerned. Questions of this content are examined and analyzed from the results given in tables 1 to 5. Table 1 was discussed in section 4, where Greek exports for the period 1963-70 were analyzed. Comparing the results of table 1 with those of table 2, which refers to Greece's exports during the 1971-76 period, there are two important differences to be discussed.

First, during the latter period Greek exports grew almost twice as fast as exports of OECD countries. Exports due to increase in OECD trade explain only 51.49 percent of the change in Greek exports. This clearly indicates the export expansion policy that Greek policy makers followed in the 1970's. This policy was an outgrowth of the necessity to balance part of the even faster growing imports, as was shown by K. Christou and A. Sarris (1980).

Secondly, during the period 1971-76, Greek exports do not show the significant negative effect of the period 1963-70 as far as commodity composition is concerned. Change in exports due to commodity composition is just –0.46 percent and the change due to market distribution is –1.60 percent.

It should be mentioned at this point that the Association period of Greece with the EEC has been divided into two sub-periods (1963-70 and 1971-76) only for comparison with the Spanish performance during the pre and post Spanish trade agreement period with the EEC. It was interesting, however, that this division revealed an important result, namely, that between these periods Greece's exports have changed significantly as far as commodity composition is concerned.

For the total Association period, Greek exports performance is shown in table 3. During this period Greek exports (at 1970 prices) have more than quadrupled, from an average of $349.98 Mil. in 1963-64 to an average of $1,486.07 Mil. in 1975-76. The change in exports was due: (a) 67.32 percent to increase in OECD trade; (b) −22.57 percent to commodity composition; (c) 2.74 percent to market distribution; and (d) 52.61 percent to increased competitiveness. As expected, these results are close to an average of those given in tables 1 and 2.[9]

Tables 4 and 5 show the Spanish export performance in periods 1963-70 and 1971-76 respectively. During the period 1963-70, when Spain had no trade agreement with the EEC (table 4), its exports grew much faster compared both with the OECD countries and Greece. Only 57.53 percent of the increase in its exports was due to increase in OECD trade. The commodity composition effect was negative (−18.85 percent), although not as significant as in the Greek case (−41.02 percent). The market distribution effect was positive (2.74 percent) and the residual due to increased competitiveness was 58.57 percent of the change in its exports.

During the second period (1971-76), when Spain signed a trade agreement with the EEC, its exports grew slightly faster than the OECD countries. Its commodity composition effect (table 5) was 0.86 percent and the change due to market distribution was −1.39 percent. The residual attributed to increased competitiveness was 8.18 percent.

Comparing the Spanish export performance between the two periods, and with the export performance of Greece, it can be seen that:

(1) Spanish exports grew much faster relative to the standard (OECD) and Greek exports during the first period (1963-70), and much slower than Greek exports after Spain signed the trade agreement with the EEC (1971-76).

(2) Both Greece and Spain changed between periods their export commodity composition, while their market distribution remained unchanged.

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9. The CMS approach was also aplied to other time periods as well as to other commodity aggregations. In general, the results were not different from the ones reported. Similar results were also obtained when SITC sections including only agricultural products were used. These SITC sections are 0, 1, part of 2, and 4. The use of undeflated data seems to slightly increase changes due to increase in OECD trade and commodity composition, and to decrease slightly changes due to market concentration and increased competitiveness.

(3) The residual attributed to increased competitiveness decreased significantly between periods for Spain (from 58.57 percent to 8.18 percent), while it increased slightly in the case of Greece (from 46.74 to 50.64 percent).

7. Concluding Remarks on the CMS Analysis

The division of the study period (1963-76) into two sub-periods as far as Greek exports are concerned was unnecessary (see section 6) except for comparison with Spanish exports during these periods. Hence, conclusions on the Greek export performance are derived by analyzing the results of the table 3, corresponding to the period 1963-76.

The negative effect of the commodity composition in the change of Greek exports is due to concentration in relatively slowly increasing (in world trade) export commodities, namely food and live animals (SITC 0) and textiles (included in SITC 6). Greek exports of textiles have grown so fast (substituting to some extent European textiles), that the European Communities negotiated a self-limitation accord for imports of textiles from Greece. According to the Commission of the EEC, Greek exports of textiles to the EEC have surpassed the agreed limits and subsequently the Commission decided, in July 1978, to apply quotas on textiles imported from Greece to those EEC countries "that have experienced significant trade disruption from Greek textile imports" (see European Community, Oct. 1978).

The exports of textiles, as well as agricultural products considered from Greece's point of view indicates the risk involved in an export expansion policy concentrating in commodities with slowly increasing demand.Moreover, Greece's specialization in certain agricultural product, textile, and foot-wear industries is an ideal example of a country facing the risk of experiencing immiserizing growth due to potential deterioration in the terms of trade in the commodities in which it specializes (Bhagwati, 1958).

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TABLE 1

GREEK EXPORT PERFORMANCE (1963-70)
(VALUES IN $ MIL. 1970 PRICES)

	OECD EXPORTS 63-64 (1)	OECD EXPORTS 69-70 (2)	GREEK EXPORTS 63-64 (3)	GREEK EXPORTS 69-70 (4)	(2)/(1)-1 (5)	(5)*(3) (6)	(r)*(3) (7)	$\sum r_{ij} V_{ij}$ (8)
MARKET REPORT								
1	33748.9	62138.1	122.79	276.73	0.841	103.29	85.47	74.19
2	24729.7	40208.5	50.00	66.98	0.625	31.29	34.80	12.36
3	21544.4	44395.4	63.54	67.78	1.060	67.39	44.23	29.77
4	3867.6	7147.1	71.40	99.72	0.847	60.54	49.70	10.32
5	35762.1	49050.5	41.53	96.86	0.371	15.43	28.91	11.14
6	119653.0	202939.7	349.28	608.08	0.696	277.97	243.12	137.80
COMMODITY REPORT								
1	13843.8	17310.0	85.70	140.43	0.250	21.45	59.65	14.21
2	2205.2	3056.6	143.75	115.58	0.386	55.50	100.06	64.26
3	10786.8	14933.7	80.04	102.38	0.384	30.77	55.71	30.16
4	857.5	1040.2	2.33	7.99	0.213	0.49	1.62	0.35
5	10034.0	18161.9	5.77	39.26	0.810	4.67	4.01	5.29
6	27541.4	46770.2	21.06	166.72	0.698	14.70	14.65	15.55
7	37984.5	73450.8	5.71	8.06	0.936	5.35	3.97	4.07
8	9859.2	18561.0	4.08	21.48	0.882	3.60	2.84	3.34
9	6540.2	9564.9	0.81	6.15	0.462	0.37	0.56	0.52
10	119653.0	202939.7	349.28	608.08	0.696	136.94	243.12	137.80

ANALYSIS			
AVER TOT EXPORTS, LATE PERIOD.	608.08		
AVER TOT EXPORTS, EARLY PERIOD.	349.28		
CHANGE IN EXPORTS	258.80	100.00	PCT
1. DUE TO INCREASE IN OECD TRADE.	243.12	93.94	
2. DUE TO COMMODITY COMPOSITION.	−106.18	−41.02	
3. DUE TO MARKET DISTRIBUTION.	0.85	0.33	
4. DUE TO INCREASED COMPETITIVENESS	120.99	46.75	

TABLE 2

GREEK EXPORT PERFORMANCE (1971-76)
(VALUES IN $ MIL., 1970 PRICES)

	OECD 71-72 (1)	EXPORTS 75-76 (2)	GREEK 71-72 (3)	EXPORTS 75-76 (4)	(2)/(1)-1 (5)	(5)*(3) (6)	(r)*(3) (7)	$\sum r_{ij} V_{ij}$ (8)
MARKET REPORT								
1	77751.1	109764.8	351.35	663.68	0.411	144.66	190.08	132.59
2	49881.1	66340.0	77.90	153.72	0.329	25.70	42.14	6.93
3	57136.2	80280.6	90.69	117.27	0.405	36.73	49.06	39.33
4	9213.3	18230.4	96.58	173.28	0.978	94.52	52.25	68.92
5	53797.5	107210.2	107.69	378.10	0.992	106.92	58.26	128.20
6	247779.5	381826.3	724.23	1486.07	0.540	408.56	391.80	375.98
COMMODITY REPORT								
1	21720.5	39328.8	181.82	332.58	0.810	147.39	98.36	134.88
2	3822.9	4300.5	115.76	123.66	0.124	14.46	62.63	22.23
3	16515.6	28817.6	117.07	132.91	0.744	87.20	63.33	69.69
4	1366.1	2022.3	8.78	19.37	0.480	4.21	4.75	4.61
5	21950.4	34788.7	52.98	80.37	0.584	30.98	28.66	34.21
6	54330.7	75660.2	184.02	448.31	0.392	72.24	99.55	73.82
7	93559.5	138638.8	15.21	65.90	0.481	7.33	8.23	8.91
8	23278.7	30318.9	40.37	158.25	0.302	12.21	21.84	11.87
9	11234.8	27949.9	8.19	124.68	1.487	12.19	4.43	15.73
10	247779.5	381826.3	724.23	1486.07	0.540	388.25	391.80	375.98

ANALYSIS			
AVER TOT EXPORTS, LATE PERIOD.	1486.07		
AVER TOT EXPORTS, EARLY PERIOD.	724.23		
CHANGE IN EXPORTS	761.84	100.00	PCT
1. DUE TO INCREASE IN OECD TRADE.	391.80	51.42	
2. DUE TO COMMODITY COMPOSITION.	−3.55	−0.46	
3. DUE TO MARKET DISTRIBUTION.	−12.26	−1.60	
4. DUE TO INCREASED COMPETITIVENESS	385.85	50.64	

TABLE 3

GREEK EXPORT PERFORMANCE (1963-76)
(VALUES IN $ MIL., 1970 PRICES)

	OECD EXPORTS 63-64 (1)	75-76 (2)	GREEK EXPORTS 63-64 (3)	75-76 (4)	(2)/(1)-1 (5)	(5)*(3) (6)	(r)*(3) (7)	$\sum r_{ij} V_{ij}$ (8)
MARKET EXPORT								
1	33748.9	109764.8	122.79	663.68	2.252	276.58	269.06	219.14
2	24729.7	66340.0	50.00	153.72	1.682	84.13	109.55	34.76
3	21544.4	80280.6	63.54	117.27	2.726	173.23	139.23	60.07
4	3867.6	18230.4	71.40	173.28	3.713	265.17	156.46	110.42
5	35762.1	107210.2	41.53	378.10	1.997	82.98	91.01	114.28
6	119653.0	381826.3	349.28	1486.07	2.191	882.12	765.32	538.69
COMMODITY REPORT								
1	13843.8	39328.8	85.70	332.58	1.840	157.76	187.78	132.79
2	2205.2	4300.5	143.75	123.66	0.950	136.58	314.98	165.66
3	10786.8	28817.6	80.04	132.91	1.671	133.79	175.38	158.74
4	857.5	2022.3	2.33	19.37	1.358	3.17	5.11	2.74
5	10034.0	34788.7	5.77	80.37	2.467	14.24	12.65	15.55
6	27541.4	75660.2	21.06	448.31	1.747	36.79	46.14	39.16
7	37984.5	138638.8	5.71	65.90	2.649	15.14	12.52	13.38
8	9859.2	30318.9	4.08	158.25	2.075	8.47	8.94	7.91
9	6540.2	27949.9	0.81	124.68	3.273	2.67	1.78	2.71
10	119653.0	381826.3	349.28	1486.07	2.191	508.65	765.32	538.69

ANALYSIS			
AVER TOT EXPORTS, LATE PERIOD.	1486.07		
AVER TOT EXPORTS, EARLY PERIOD.	349.28		
CHANGE IN EXPORTS	1136.79	100.00	PCT
1. DUE TO INCREASE IN OECD TRADE.	765.32	67.32	
2. DUE TO COMMODITY COMPOSITION.	−256.67	−22.57	
3. DUE TO MARKET DISTRIBUTION.	30.03	2.64	
4. DUE TO INCREASED COMPETITIVENESS	598.09	52.61	

TABLE 4

SPANISH EXPORT PERFORMANCE (1963-70)
(VALUES IN $ MIL., 1970 PRICES)

	OECD EXPORTS		SPANISH EXPORTS					
	63-64	69-70	63-64	69-70	(2)/(1)-1	(5)*(3)	(r)*(3)	$\sum r_{ij} V_{ij}$
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
MARKET REPORT								
1	33748.9	62138.1	379.28	740.74	0.841	319.04	264.00	257.22
2	24729.7	40208.5	265.07	420.74	0.625	165.91	184.51	82.13
3	21544.4	44395.4	121.39	364.62	1.060	128.75	84.49	80.30
4	3867.6	7147.1	25.32	68.29	0.847	21.47	17.62	12.46
5	35762.1	49050.5	194.59	583.65	0.371	72.30	135.45	61.83
6	119653.0	202939.7	985.67	2178.06	0.696	707.49	686.09	493.96
COMMODITY REPORT								
1	13843.8	17310.0	406.11	565.95	0.250	101.68	282.68	149.88
2	2205.2	3056.6	48.94	74.19	0.386	18.89	34.06	15.75
3	10786.8	14933.7	83.89	90.32	0.384	32.25	58.39	35.21
4	857.5	1040.2	62.07	106.36	0.213	13.22	43.20	21.06
5	10034.0	18161.9	53.25	118.45	0.810	43.13	37.06	44.35
6	27541.4	46770.2	119.76	381.66	0.698	83.61	83.36	91.81
7	37984.5	73540.8	84.11	405.02	0.936	78.73	58.55	62.68
8	9859.2	18561.0	73.20	302.50	0.882	64.61	50.95	53.35
9	6540.2	9564.9	54.31	133.57	0.462	25.11	37.80	19.83
10	119653.0	202939.7	985.67	2178.06	0.696	461.27	686.09	493.96

ANALYSIS			
AVER TOT EXPORTS, LATE PERIOD.	2178.06		
AVER TOT EXPORTS, EARLY PERIOD.	985.67		
CHANGE IN EXPORTS	1192.38	100.00	PCT
1. DUE TO INCREASE IN OECD TRADE.	686.09	57.53	
2. DUE TO COMMODITY COMPOSITION	−224.82	−18.85	
3. DUE TO MARKET DISTRIBUTION.	32.68	2.74	
4. DUE TO INCREASED COMPETITIVENESS	698.42	58.57	

TABLE 5

SPANISH EXPORT PERFORMANCE (1971-76)
(VALUE IN $ MIL., 1970 PRICES)

	OECD EXPORTS		SPANISH EXPORTS					
	71-72	75-76	71-72	75-76	(2)/(1)-1	(5)*(3)	(r)*(3)	$\sum r_{ij} V_{ij}$
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
MARKET EXPORT								
1	77751.1	109764.8	1153.33	1867.53	0.411	474.87	623.94	488.04
2	49881.1	66340.0	606.54	901.37	0.329	200.13	328.13	173.34
3	57136.2	80280.6	602.05	681.20	0.405	243.87	325.70	252.34
4	9213.3	18230.4	88.14	184.72	0.978	86.26	47.68	93.97
5	53797.5	107210.2	734.40	1415.17	0.992	729.15	397.30	705.04
6	247779.5	381826.3	3184.48	5050.02	0.540	1734.31	1722.78	1712.75
COMMODITY REPORT								
1	21720.5	39328.8	695.40	871.23	0.810	563.74	376.20	486.40
2	3822.9	4300.5	109.93	163.43	0.124	13.73	59.47	16.71
3	16515.6	28817.6	100.22	157.00	0.744	74.65	54.21	63.80
4	1366.1	2022.3	125.30	92.14	0.480	60.19	67.79	58.93
5	21950.4	34788.7	147.97	289.01	0.584	86.54	80.05	85.80
6	54330.7	75660.2	662.79	1299.05	0.392	260.20	358.56	287.60
7	93559.5	138638.8	682.89	1268.04	0.481	329.03	369.44	399.63
8	23278.7	30318.9	532.43	726.67	0.302	161.02	288.04	120.66
9	11234.8	2794.9	127.51	183.41	1.487	189.70	68.98	193.19
10	247779.5	381826.3	3184.48	505.02	0.540	1738.85	1722.78	1712.75

ANAL			
AVER	PORTS, LATE PERIOD.	505.02	
AVER.	IRTS, EARLY PERIOD.	3184.48	
CHANGE	PORTS	1865.53	100.00 PCT
1. DUE TO INCREASE IN OECD TRADE		1722.78	92.34
2. DUE TO COMMODITY COMPOSITION		16.07	0.86
3. DUE TO MARKET DISTRIBUTION		−26.09	−1.39
4. DUE TO INCREASED COMPETITIVENESS		152.77	8.18