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SECTORAL RESEARCH AND INTELLIGENCE UNIT

RESEARCH TEAM : BUILDING MATERIALS

SECTORAL REPORT 1982

- The Greek Cement Industry

June 1982

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Sectoral Research and Intelligence Unit
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FOREWORD

This is the first Summary Report in English produced by the BUILDING MATERIALS RESEARCH TEAM of the IOBE's SECTORAL RESEARCH AND INTELLIGENCE UNIT (SRIU). The Sector investigated by this Report is the Greek Cement Industry, while an other Report dealing with Ready Midex Concrete is presently prepared. Topics covered by this Report include a general presentation of the evolution of Construction activity in Greece, and more detailed analysis of cement demand and Production, the industry's productive capacity and finally, certain issues associated with the distribution of production in the domestic as well as foreign markets.

Although the largest part of the Report aims at a detailed description of the prevailing situation (regarded as a prerequisite for all further sectoral analyses), a number of forecasts based on sectoral business sources has also been included in the Report. Such estimates and forecasts will be subject to regular reassessment and updating and inrevised information will be published in follow-up SRIU Sectoral Reports.

As indicated, this Report, being a Summary one, has been derived from a much more extended Greek original version in which comparative analyses of the sector's situation to that of respective sectors in other European (or, if relevant, non-European) countries have also been presented. Information on conditions for obtaining the original Greek Report is available from IOBE.

The SECTORAL RESEARCH AND INTELLIGENCE UNIT

This newly established research Department, which is directly related to the Industrial Research Dpt., was set up jointly by IOBE and the two major Greek industrial Development banks, both members of the Institute - The Hellenic Bank for Industrial Development (ETVA) and the National Investment Bank for Industrial Development (ETEVA/ NIBID).

The UNIT, which started operating at the beginning of 1980 is involved in continuous monitoring of developments in specific manufacturing sectors at a domestic as well as European Community level. To achieve this, the Unit has established contacts on an exchange of information basis with a large number of similar research centers and sectoral organizations both domestically and in other European countries. Besides, a large number of trade journals and periodicals is also being monitored.

The results of this continuous sectoral research operation are disseminated to all interested companies and organizations at home or abroad, through regularly published Sectoral Reports as well as through Occasional Sectoral Reports dealing with specific issues of sectoral interest.

The Unit is internally organized in Research Teams. In collaboration with the sponsoring development banks, a 3-year expansion plan has been formulated and the Unit, consisting of eight Teams covering most of greek manufacturing activities, is being scheduled to become fully operative by the end of 1982.

INSTITUTE OF ECONOMIC AND INDUSTRIAL RESEARCH

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1. CONSTRUCTION ACTIVITY IN GREECE

1.1. Evolution of Construction Activity, 1970-1980

According to provisional data for the year 1979, the Greek Construction Sector's share of the Gross Domestic Product, at constant prices, reached 7.46%. The corresponding figure for 1970 was 8.92%. The drop is attributed to the fact that in the period 1970-1979, the Construction Sector showed an Average Annual Growth (AAG) rate lower than that estimated for GDP as a whole and also lower than that for the Manufacturing sector (growth rates: Construction: 3.2%, Manufacturing 6.8%, Total GDP 5.3%).

Developments in total investment activity in the Construction Sector are mainly due to Gross Fixed Capital Formation in Housing, which, as it can be seen from the figures in Table 1, in 1979 accounted for 52.4% of total Gross Fixed Capital Formation in Construction.

In the 1970-1979 period, Housing showed the highest AAG of all types of Gross Fixed Capital Formation in Construction, namely 5.4%. In the same period, the AAG of Gross Fixed Capital Formation in "Other Buildings" was 4.2% and that for "Other Works" -1.0%.[1/]

In 1980, total Gross Fixed Capital Formation in Construction decreased by 16.2% relatively to 1979.

In 1979, 74.8% of the Gross Fixed Capital Formation in Construction was covered by private sector investors. Analytically, considering the various categories of construction, the situation was as follows:

Housing: 99% of total investment in Housing was undertaken by the private sector.

1/ "Other Buildings" and "Other Works" include industrial buildings, Schools, Hotels, etc and roads, ports, orchard development, land improvement etc., respectively.

TABLE 1

Gross Fixed Capital Formation in Construction

Constant prices 1970
Millions of drachmae

Year	Housing	Index 1970=100	Other Buildings	Index 1970=100	Others Works	Index 1970=100	Total Construction	Index 1970=100
1970	19,740	100.0	9,579	100.0	16,169	100.0	45,488	100.0
1971	23,641	119.8	10,504	109.7	19,424	120.1	53,569	117.8
1972	29,964	151.8	12,472	130.2	21,139	130.7	63,575	139.8
1973	30,576	154.9	13,951	145.6	20,426	126.3	64,953	142.8
1974	15,869	80.4	12,381	129.3	15,076	93.2	43,326	95.2
1975	20,476	103.7	10,170	106.2	16,010	99.0	46,656	102.6
1976	21,909	111.0	11,258	117.5	16,078	99.4	49,245	108.3
1977	26,428	133.9	12,205	127.4	15,886	98.2	54,519	119.9
1978	30,074	152.4	12,513	130.6	15,028	92.9	57,615	126.7
1979*	31,572	160.0	13,889	145.0	14,765	87.7	60,226	132.4
1980**	26,460	134.0	11,660	121.7	12,350	76.4	50,470	111.0

Average Annual Growth Rates (Compound)

	1970-1973	1973-1974	1974-1979	1970-1979
Housing	15.7%	- 48.1%	14.7%	5.4%
Other Buildings	13.4%	- 11.3%	2.3%	4.2%
Other Works	8.1%	- 26.2%	- 0.4%	- 1.0%
Total Construction	12.6%	- 33.3%	6.8%	3.2%

* Provisional

** Estimates

Source: National Accounts 1970-1979 and Provisional Accounts 1980

Other Buildings: 81.7% of total investment in "Other Buildings" was undertaken by the private sector.

Other Works: 83.4% of total investment in "Other Works" was undertaken by the public sector.

The preceeding analysis was in terms of values .Volume data are available only for Housing and Other Buildings and again only with respect to the private Sector (in thousands m^3). Table 2 below, shows the "legitimate" Private Building Activity, based on the building licences issued in the period in question, as well as on provisional data for the first quarter of 1981[1/].

According to Table 2, the legitimate Private Building Activity increased at a fast rate until 1973 (AAG 1970-1973:17.5%), decreased considerably during 1974 and subsequently started increasing steadily in the years 1975-1979.

In 1980 however, provisional data of the National Statistical Service of Greece suggest that building licenses for 71,065 thousands m^3 were issued, compared to 94,816 thousands m^3 for 1979, a decrease of approximatelly 25%. Furthermore, during the period January-November 1981, licenses were issued for 54,320 thousands m^3, compared to 66,721 thousands m^3 for the same 1980 period, a decrease of 18.6%.

1.2. Concluding Remarks

- In the period 1970-1980, the accumulated Construction GDP at constant prices reached 295,091 millions drachmae, or 7.8% of the total GDP. In 1980, construction accounted for 6.3% of GDP which was the lowest of the 1970-1980 period.

1/ A phenomenon whose statistical ascertainment would be extremely interesting and valuable but which is unfortunately impossible to measure is the "illegitimate" private building activity. According to existing information this is quite significant and to a certain extent, puts in dispute the observations and conclusions arrived at when taking into account solely data on building licenses.

TABLE 2

Legitimate Private Building Activity: New Buildings and Building extensions. Volume in thousands m³ based on Building Licences issued

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979*	1980*
Volume	50,942	55,494	76,911	86,828	47,218	58,437	63,488	77,227	89,956	94,816	71,065
Index	100	108.9	161.0	170.4	92.7	114.7	124.6	151.6	176.6	186.1	139.5

Average Annual Growth Rates (compound)

1970-1973: 19.5%

1974-1980: 7.1%

1970-1980: 3.4%

	Volume	
January-April 1981:	16,951	- 32.2%
January-April 1980:	15,003	
January-November 1981:	54,320	- 18.6%
January-November 1980:	66,721	

* Provisional Data

Source: National Statistical Service of Greece.

- The largest percentage of Gross Fixed Capital Formation in Construction concerns Housing.

- The Private Sectors participation in the entire Sector of Construction as well as in its various categories is considerable.

- It is obvious that developments in the Construction Sector affect significantly the building materials industries.

2. FACTORS AFFECTING CONSTRUCTION INVESTMENT ACTIVITY

2.1. The determinants of Demand according to the type of Construction.

(a) Housing

Main determining factors of the demand for Dwellings are the following:

The personal disposable income, the population growth and age distribution as well as the degree of urbanisation.

Other determing factors which should also be mentioned, are the following:

The price of dwellings (villas, appartments etc.), the availability of housing loans together with the terms offered, the existing surplus in dwellings and finally the availability of alternative investment opportunities.

(b) Other buildings

Demand for this category of Gross Fixed Capital Formation depends on forecasts for future needs for buildings for installing production equipment and machinery. The demand for industrial establishments ultimately depends on forecasts concerning overall industrial activity.

(c) Other Works

Demand mainly depends on the general Public Policy pursued and, more specifically, on the Public Investment Programs formulated by the Government and the other Corporations related to the public sector.

2.2. Impact on Building Materials Industries

The above factors determining demand for investment in various types of construction, also affect demand for building materials.

The Construction Sector absorbs 100% of the cement industry's production, the ceramic tile and sanitaryware industries and the roof tiles and brick industries as well as substantial share of the production of various other industries, such as 1/:

97% of pluster production
70% of Flat glass production
60% of wood production
40% of dyes production
30% of steel production
25% of plastics production
15% of cooper production
and 10% of aluminium production

Fluctuations of the determinants of demand for investment in construction, affect directly the demand for building materials and consequently the various building materials industries.

The impact however of increased building activity on the demand for a specific branch or category of building materials also depends on the following factors:

1/ Information derived from document COM 78/449 final, Commission of the European Communities, Bruxelles, 1978.

(a) The types of construction mainly influenced by increased building activity.

(b) The technological opportunities for substitution among building materials in the various types of construction.

(c) the geographical distribution of new construction activity.

(d) The construction cost which the investor is willing to accept.

The above mainly refer to new buildings and construction.

One should however also take into account the building materials market associated with repairs and maintenance.

2.3. Prospects for Building-Construction Activity

In 1980, Gross Fixed Capital Formation in Housing decreased by 16.2%, relatively to 1979, contrary to 1978 and 1979 when it increased by 13.8% and 5% respectively. In the same year, investment in "Other Works" decreased by 16.4%.

This decline in Building Activity is mainly due to the greatly increased construction cost for housing construction, the limited funds available for housing loans, loans towards building companies, as well as the unfavourable climate created in the Salonica and N. Greece in general area by the earthquakes of 1978.

Quite independently from any short-term consequences of the various Public Policy measures and policies, it is forecast that building activity will eventually regain its upward trend, mainly affected by long-term determining factors.

This forecast is based on the following considerations:

- The anticipated increase in the National Income.
- The persisting shortage in dwellings.
- The lack of alternatives outlets for investing savings, which makes investment in buildings, one of the most profitable investment of private savings.
- Various others sociological factors.

3. COMPARATIVE ANALYSIS OF THE GREEK CONSTRUCTION SECTOR WITH RESPECT TO THE OTHER EEC COUNTRIES

According to the figures of Table 3 Construction sector constitutes a major part of total GDP in all EEC countries. The Sector's contribution to the Greek GDP is very close to the corresponding contribution of the sector in other EEC countries.

Furthermore, figures in Table 4 suggest that at Community level, the largest share of Gross Fixed Capital Formation in construction, is associated with investment in "Other Buildings", with "Dwellings" ranking second. The Greek percentage contribution of "Dwellings" in the construction sector's GFCF is not excessively large as it is commonly thought, but, on the contrary, it lies very near to the corresponding percentage contribution of "Dwellings" in the other EEC countries. This is not the case, however, with the percentage contribution of "other works", which appears disproportionally large in Greece and reveals the relatively large effort by public sector investors to cover defficiencies in infrastructure.

TABLE 3

Contribution of the Construction Sector and Manufacturing Industry to Total G.D.P.. Percentage of Economically Active Population employed in the construction sector.

	DENMARK 1970-74	W.GERMANY 1970-78	FRANCE 1970-77	ITALY 1970-78	LUXEMB. 1970-77	BELGIUM 1970-78	U.KINGDOM 1970-76	IRELAND	NETHERLANDS 1970-74	GREECE 1970-78
% Contribution of the construction sector to G.D.P.	9.3	7.7	6.8	7.3	8.3	7.3	6.5	..	7.1	7.2
% Contribution of Manufacturing to G.D.P.	19.6	39.9	29.3	29.7	38.2	28.0	26.5	..	28.8	18.1
AVERAGE ANNUAL GROWTH RATES (%)										
G.D.P.	4.40	7.3	4.2	- 3.7	6.0	6.5	8.2	..	17.7	- 0.2
Construction	- 0.99	5.6	1.4	- 6.9	7.7	5.9	10.4	..	15.5	- 2.4
Manufacturing	5.2	6.7	4.7	- 3.2	3.8	6.5	6.0	..	18.0	1.5
% of Economically Active Persons Employed in the construction sector	(1978) 8.0	(1978) 7.2	(1978) 8.3	(1978) 9.3	(1970) 9.1	(1978) 7.3	(1977) 6.3	(1977) 7.5	(1971) 10.9	(1971) 7.9

Source: Original Greek Report on the Cement Industry (SRIU, 1982), Yearbook of Labour Statistics 1977-1979 (ILO).

* At constant 1970 prices and current exchange rates, except for U. Kingdom and the Netherlands where current prices are used and Belgium where 1975 prices are used.

TABLE 4

Gross Fixed Capital Formation in EEC - countries

Million ECUs
Current exchange rates,
1970 prices, except for Belgium
U. Kingdom and the Netherlands
where 1975 prices are used.

	DENMARK		W. GERMANY		FRANCE		ITALY		LUXEMBOURG	
	1970-78	%	1970-76	%	1970-77	%	1970-78	%	1970-77	%
Gross Fixed Capital Formation	38,848	100	382,177.8	100	307,035.6	100	154,467	100	2,634.2	100
Gross Fixed Capital Formation in Machinery and Equipment	13,615.9	35	152,966.1	40.0	132,758.5	43.2	65,412	42.3	2,687[2]	102
Gross Fixed Capital Formation in Construction	25,222.9	65	234,308	61.3	174,277	56.8	89,055	57.7	..	..
Contribution of Various Categories of Construction to the Gross Fixed Capital Formation in the Construction Sector										
Dwellings	12,831.6	50.9	104,981.7	44.8	90,118.4	51.7	41,209	46.3	590.8	22
Other Buildings	8,464.2	33.6	129,326.2	55.2	84,158.8	48.3	47,846[1]	53.7	1,009.5[2]	37.6
Other Works*	3,927.1	15.5							1,086.7[3]	40.4

Source: Original Greek Report on Cement Industry (SRIU, 1982).

(continued)

* These include: 1. Other construction except land improvement.
2. Land improvement and plantation and orchard development.

1. Also includes other construction except land improvement
2. Also includes land improvement and plantation and orchard development.
3. Includes Equipment and Machinery.

All footnotes in the last page of the Table (p. 11).

Table 4 (Continued)

	BELGIUM		U. KINGDOM		IRELAND		NETHERLANDS		GREECE		Average EEC[6] values
	1970-78	%	1970-78	%	1970-76	%	1970-78	%	1970-78	%	
Gross Fixed Capital Formation	97,761.5	100	357,887.2	100	6,254.5	100	128,247.9	100	20,260.8	100	100
Gross Fixed Capital Formation in Machinery and Equipment	32,610	33.4	154,960	43.3	2,872.5	45.9	52,073.9	40.6	7,297.2	36.	41.0%
Gross Fixed Capital Formation in Construction	65,151.6	66.6	205,055.1	57.3	3,311.2	52.9	75,931.1	59.2	12,963.4	64	59.0%
Contribution of Various Categories of Construction to the Gross Fixed Capital Formation in the Constructions Sector											
Dwellings	28,137.6	43.2	71,892.4	35.1	1,329.9	40.2	33,036.3	43.5	5,884.8	45.4	43.9
Other Buildings	36,014	56.8	122,270.6[4]	59.6	1,069.5	32.3	27,580.8	36.3	2,832.3	21.8	51.4
Other Works*			10,892.1[5]	5.3	911.7	27.5	15,314.1	20.2	4,246.3	32.8	10.0

Source: Original Greek Report.

* These include: 1. Other construction except land improvement.
2. Land improvement and plantation and orchard development.

4. Also includes other construction except land improvement.
5. Also includes land improvement and plantation and orchard development.
6. Includes "statistical discripancies". The exact content of the average values is indicated in the original Greek Report.

4. THE GREEK CEMENT INDUSTRY

4.1. Introduction

The main uses of cement are the production of concrete, precast structural parts and, in combination with asbestos, the manufacture of asbestos-cement products.

There are considerable differences, internationally, in the per capita cement consumption and it has been observed that, despite its low price, cement faces serious competition from various other building materials, such as steel, aluminium, plastics, etc.

According to CEMBUREAU data, building construction accounts for more than 60% of total cement consumption in the EEC countries.

In Greece, it is estimated that the structure of cement consumption, with respect to the various categories of construction and sectors involved, is similar to the corresponding structure in Italy and France. More specifically, about 80% of total cement consumption is absorbed by private sector building construction, whereas the remaining 20% is absorbed by public utility construction and works.

4.2. The Domestic Market - General

There are 8 cement works in Greece belonging to 4 companies. A 5th company was recently added to the existing producers' group, but has not yet started production.

Cement produced in Greece can be distinguished into various types or categories: Ordinary (Portland type), which is the most widely used, white, semi-white, high-resistance, etc.

4.3. Domestic Cement production and consumption

According to the figures in Table 5, cement production in 1970 was 4,896 thousand tons, whereas in 1980 it reached 12,680 thousand tons, showing an increase of 159%.

Respectively, cement consumprion in 1970 was 4,556 thousand tons and in 1980 it reached6,818 thousand tons, an increase of about 80%. Domestic market needs are fully met by domestic production while imports are minimal.

It is obvious that domestic consumption of cement is directly linked to building activity, as well as to the Gross Fixed Capital Formation in Construction.

It is also worth noting that despite the sudden drop of the domestic cement consumption observed in 1974, due to the depression in building activity, production as such did not decrease.On the contrary, it continued its upward trend, since the decreased domestic demand compelled the cement industry to intensify its activities abroad which, anyway, constituted an important part of its commercial policy. This provided an outlet for the largest part of the created production surplus and eventually made Greece the third largest cement exporter in the world.

4.4. Prospects for cement external demand

The development prospects for the Greek cement production depend directly on the home market development as well as on that of foreign markets. Cement exports prospects depend on many factors, most important of which are the demand and supply relation in the various foreign markets. Demand for example in the Middle East countries appears to increase steadily, whereas it significantly decreased in the North African countries, West Africa and the Western Hemisphere countries. Accute competition is

TABLE 5

Domestic cement production and consumption per-capita cement consumption in Greece

Year	Production (in thousand tons)	Index 1970=100	Consumption (in thousand tons)	Index 1970=100	Per capita consumption (Kg)	Index (1970=100)
1970	4,986	100.0	4,556	100.0	513	100.0
1971	5,549	113.3	4,875	107.0	545	106.2
1972	6,342	129.5	5,546	121.7	620	120.9
1973	6,493	132.6	6,103	134.0	684	133.3
1974	7,024	143.5	4,973	109.1	550	107.2
1975	7,939	162.1	4,862	106.7	532	103.7
1976	8,745	178.6	5,333	117.0	592	115.4
1977	10,590	216.3	6,003	131.7	635	123.8
1978	11,469	234.2	6,557	143.9	677	132.0
1979	12,098	247.1	7,170	157.4	759	148.0
1980	12,680	259.0	6.818	149.6	708	138.0

Source: Association of Greek Cement Industries.

anticipated in the immediate future and the maintenance of the production cost at internationally competitive levels will constitute a determining factor for Greek exports in the future.

4.5. Export activity of the Greek cement industry

4.5.1. Cement exports

As mentioned earlier, the decreased domestic demand in 1974, compelled the domestic industry to intensify its activities abroad and consequently Greece became the third largest cement exporter in the world, after Spain and Japan.

According to figures presented in Table 6, exports in 1970 accounted for only 7% of the domestic cement production. In 1980 the corresponding share reached 46.3%. It is worth noting that in the 1974-1980 period 59.3% of the domestic production was absorbed by the domestic market and the remaining 40.7% was directed to foreign markets.

These developments had a favourable influence on the country's Trade Balance, since the influx of foreign exchange from cement exports rose from U.S.$ 756,000 in 1964 to U.S.$ 249,000,000 in 1980.

The Greek cement industries made enormous efforts to exploit opportunities offered by foreign markets. These efforts aimed at increasing the productive capacity, reducing production cost, creating new port facilities and improving the existing port installations for cement loading. They also aimed to the construction of cement distribution terminals in foreign ports and the organization of new networks for the transportation and distribution of cement.

TABLE 6

Production and exports of the Greek cement industry, 1970-80

Year	Production (in thousand tons)	Index 1970=100	Exports (in thousand tons)	Index 1970=100
1970	4,896	100.0	342	100.0
1971	5,549	113.3	675	197.4
1972	6,342	129.5	803	234.8
1973	6,493	132.6	376*	109.9
1974	7,024	143.5	2,042	597.1
1975	7,939	162.1	3,056	893.6
1976	8,745	178.6	3,405	995.6
1977	10,590	216.3	4,502	1,316.4
1978	11,469	234.2	4,934	1,442.7
1979	12,098	247.1	4,900	1,432.7
1980	12,680	259.0	5,876	1,718.1

* An "export ban" was imposed on cement exports in 1973, to cover increased domestic demand.

Source: Association of the Greek Cement Industries.

Other factors contributing to the increase of exports were the favourable geographic location of Greece, the friendly relations with the Arab world and the presence of Greek construction companies in the countries where the exports were directed.

4.5.2. Analysis of Greek cement exports according to destination

An analysis of Greek Portland cement exports according to the countries of destination in the period 1977-1980 is presented in Table 7 –[1/].

From the figures of Table 7 it can be seen that although concentration of exports on a relatively small number of foreign markets has been a factor characterizing the export activity of the Greek cement industry for a number of years,this dependence became recently even stronger. In 1980, one country (Saudi Arabia) absorbed by itself 45.5% of the total exports of Greek Portland cement. Exports to Nigeria, Libya, Algeria and the countries of the Persian-Arab Gulf were accordingly reduced.

4.5.3. Exports of European Cement Industries and Comparison with Greek exports

The European cement industries' exports in the period 1975-1980 are shown in Table 8 (data include EEC-countries and Spain). Cement production of the above countries as well as the percentage of the domestic production exported are also shown. From the figures of Table 8 it can be seen that in the period 1975-1980 Greece exported 41.8% of its domestic cement production, whereas Spain in the same period exported 26.4%.Greek production accounts for 7.8% of total EEC cement production and Greek exports account for 43.2% of the total EEC cement exports to third countries (countries outside EEC).

1/ In the period 1977-1980, Greek Portland type cement exports reached 20,043 thousand tons out of a total 20,211 thousand tons.

TABLE 7

Exports of Greek Porland type cement in the period 1977-1980

tons

Country of Destination	1977	1978	1979	1980	Percentage Distribution 1977 %		Percentage Distribution 1980 %
Saudi Arabia	1,045,356	1,933,007	2,259,989	2,656,430	23.5		45.5
Nigeria	876,688	492,775	581,021	420,919	19.7		7.2
Libya	793,805	393,691	405,066	362,833	17.9		6.2
Persian-Arab Golf countries	604,427	952,437	138,860	15,250	13.6	85.8	0,3
Algeria	495,175	402,100	272,591	189,149	11.1		3.2
Iraq	265,550	6,000	101,705	497,078	6.0		8.5
Red sea countries	204,780	416,330	573,339	351,755	4.6		6.0
Egypt	55,160	81,350	293,583	828,709	1.2		14.2
Iran	26,745	-	-	-	0.6		-
Lebanon	25,955	34,363	880	2,570	0.6		0.1
Yemen	24,960	9,600	111,729	385,559	0.6		6.6
Guinla	9,650	-	-	-	0.2		-
Muscat	6,710	-	-	-	0.2		-
Sudan	5,200	930	-	5,500	0.1		0.1
Cyprus	1,750	-	-	-	0.06		-
Tranzit	422	1,181	-	-	0.04		-
Tunisia	-	95,260	70,740	52,935	-		1.0
Jordan	-	1,550	14,966	7,450	-		0.1
Kuwait	-	-	2,000	12,900	-		0.2
Oman	-	35,030	11,250	-	-		-
Syria	-	-	3,800	11,632	-		0.2
U.S.A.	-	14,000	9,870	-	-		-
Emirates	-	15,900	-	7,522	-		0.1
Jugoslavia	-	12,950	17,796	25,260	-		0.5
Total	4,442,333	4,898,404	4,869,185	5,833,451	100.0		100.0

Source: Association of Greek Cement Industries.

TABLE 8

EEC Countries' production, exports and share of production exported, 1975-1980.

Country	Production (thousand tons)	%	Exports (thousand tons)	%	% domestic production directed to foreign markets
Belgium	44,913	(5.6)	11,156	(18.4)	24.8%
Luxembourg	4,128	(0.5)	2,406	(4.0)	58.3%
Danmark	13,037	(1.6)	1,177	(1.9)	9.0%
France	184,597	(22.9)	16,112	(26.5)	8.7%
W. Germany	199,513	(24.7)	12,709	(20.9)	6.4%
Ireland	10,473	(1.3)	594	(1.0)	5.4%
Italy	229,598	(28.5)	6,347	(10.4)	2.8%
Netherlands	22,486	(2.8)	1,880	(3.1)	8.4%
U. Kingdom	97,706	(12.1)	8,386	(13.8)	8.6%
EEC Total	806,451	(100)	60,767	(100)	7.5%
Greece	62,820	(7.8)	26,241	(43.2)	41.8%
$\frac{\text{Greece}}{\text{EEC}} \times 100$	7.8%		43.2%		
Spain	170,795	(21.2)	45,010	(74.1)	26.4%
$\frac{\text{Spain}}{\text{EEC}} \times 100$	21.2%		74.1%		

Source: Original Report on the Greek Cement Industry (SRIU, 1982).

The corresponding figures for the Spanish sector are 21.2% and 74.1%.

4.5.4. Summary

i. Since 1974 the Greek cement industry has began an intensive exporting activity which resulted in making Greece the third largest exporter of cement worldwide.

ii. Compared to the other EEC countries and Spain, Greece supplied foreign markets with the largest part of its domestic production.

iii. Greek cement exports account for 43.2% of the total EEC cement exports.

iv. In 1980, Greek cement exports were heavily concentrated in just one country, Saudi Arabia.

4.6 Investment activity in the Greek cement industry

Total investment by Greek cement companies reached in 1980 Drs. 4,470 million. These investment aimed at expanding productive capacity[1/] and distribution facilities, improving of productivity of the existing plants and the installation of energy saving systems. Total productive capacity of the Greek cement industry in 1981 reached 15,475 thousand tons and by 1984 is expected to rise further to 17,175 thousand tons. (see Table 9).

4.7 Indicative examination of some foreign cement markets

An indicative examination of some major foreign cement markets is presented in this section. They are selected because they absorb a large part of the Greek cement industry's exports (eg. Saudi Arabia,Egypt).

4.7.1. Egypt

In 1980, cement imports in Egypt from countries members of the CEMBUREU, reached 2,003 thousand tons. The greatest part came from Spain (approximately 58%) with Greece ranking second. The competition between the Greek and the Spanish cement industries is very keen.

1/ In 1983, the new cement works of the "Heracles" cement company of an annual capacity of 1,500 thousand tons, are expected to start production in Milaki of Euboea.

TABLE 9

Projected productive capacity of the Greek cement industry, 1981-1984

(In thousand tons)

	1981	1982	1983	1984
GCC				
Pireaus Works	1,150	1,150	1,150	1,150
Volos Works	4,600	4,600	4,700	4,700
Milaki Works	-	-	1,500	1,600
	5,750	5,750	7,350	7,450
TITAN				
Patras Works	1,350[1]	1,350	1,350	1,350
Kamari Works	2,200	2,200	2,200	2,200
Elefsis Works	1,075	1,075	1,075	1,075
Salonica Works	1,200	1,200	1,200	1,200
	5,825	5,825	5,825	5,825
HALKIS				
Halkis Works	3,100[1]	3,100	3,100	3,100
	3,100	3,100	3,100	3,100
HALYPS				
Aspropyrgos Works	800[1]	800	800	800
	800	800	800	800
TOTAL	15,475	15,475	17,075	17,175

1 Expected Productive capacity by the end of 1981.

Egypt presently undergoes a reconstruction phase and cement demand is substantial. It is noted that although domestic competition is gradually intensified and there are projects for the establishment of new units and the increase in productivity of the existing ones,problems and delays will inevitably be encountered in the construction and the organization of these units.

4.7.2. Saudi Arabia

In the period 1977-1980, total Greek exports of Portland type cement to Saudi Arabia reached approximately 7,900 thousand tons.

Cement production in Saudi Arabia in the period 1975-1979 doubled and cement imports almost trebled.

In 1980, S.Arabia imports from countries-members of Cembureau reached approximately 6.6 million tons. Almost 55% came from Spain and 40% from Greece. Competition between the Greek and Spanish cement industries is quite intense. Finally, construction of new cement production units and extension of existing ones is underway.

It is forecast that by the end of 1985 domestic cement production in S.Arabia, will be able to cover a substantial part of the domestic market needs.

5 - GREEK CEMENT PRODUCING COMPANIES

5.1. Introduction

There are presently eight Cement production works belonging to four companies.

These companies are:

(i) "HERACLES" General Cement Company, S.A. (GCC)
(ii) "TITAN" Cement Company, S.A.

(iii) "HALKIS" Cement Company, S.A.

(iv) "HALYPS" Cement Company, S.A.

To the existing four companies a fifth one was recently added, namely the "CRETE CEMENT INDUSTRY", S.A., established in Crete.

The number of cement producing plants and their geographic distribution are shown in Table 10 and the adjacent Map.

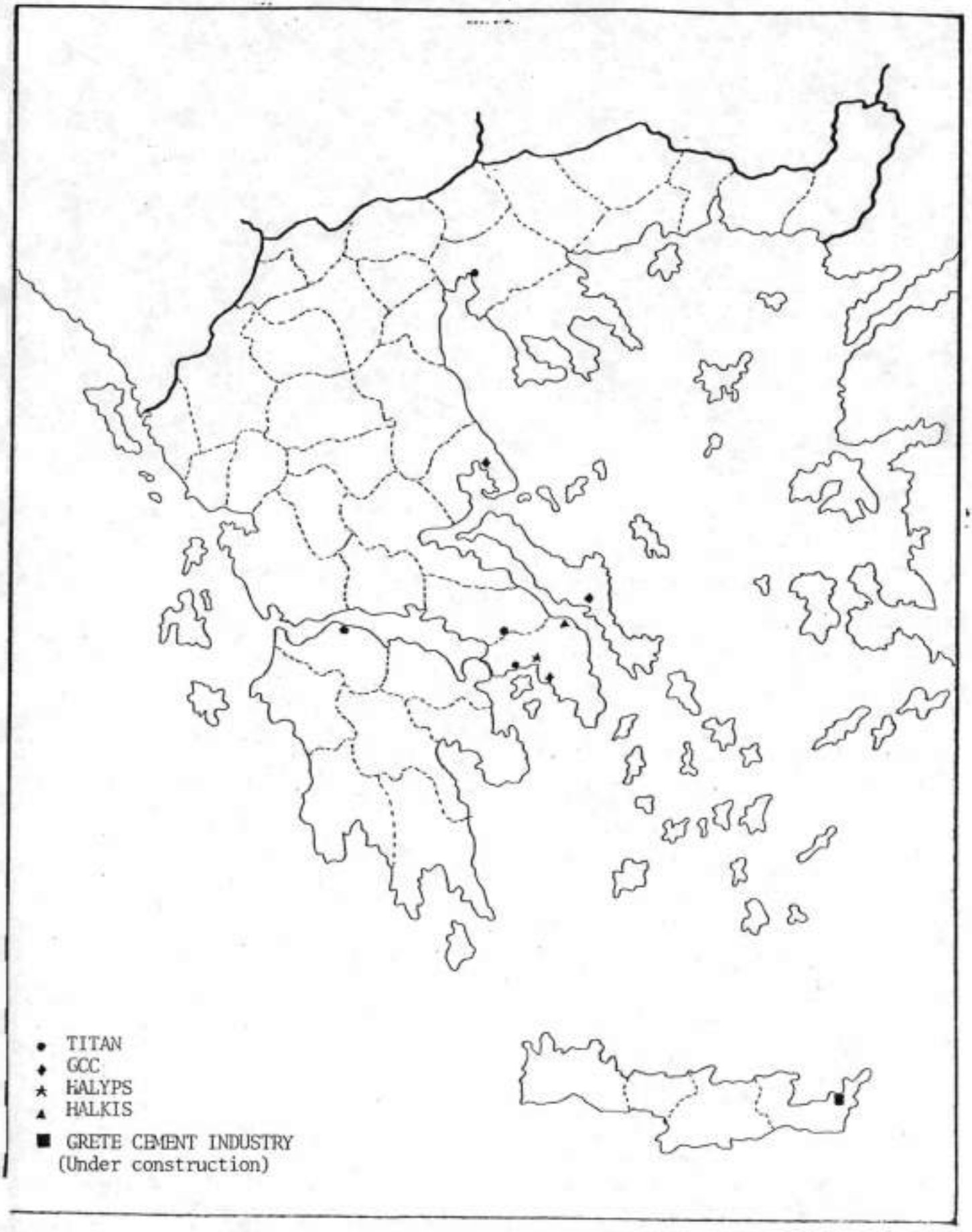
TABLE 10

CEMENT PRODUCTION UNITS BY COMPANY

WORKS/ LOCATION*	COMPANIES			
	GCC	TITAN	HALKIS	HALYPS
Patras		1		
Elefsis		1		
Asprosyrgos				1
Pireaus (HERAKLES)	1			
Halkis			1	
Kamari		1		
Volos (OLYMPOS)	1			
Salonica		1		

* All plants operate on a 24-hours basis.

REGIONAL LOCATION OF GREEK CEMENT PRODUCING PLANTS



5.2. Companies' particulars - Market shares

As can be seen by the figures in Table 11, in the period 1974-1980, GCC accounted for 38.5% of the sector's total production, TITAN for 39.6%, HALKIS for 18.4% and, finally, HALYPS for 3.5%.

Furthermore in the same period, GCC's participation in total domestic deliveries was 40.5%, TITAN's was 40.8%, HALKIS' was 15.0% and HALYPS' 3.7%. Finally considering exports in the same period, GCC's share was 36.0%, TITAN's 37.8%, HALKIS' 23.0% and HALYPS' 3.2%.

It should also be mentioned that in the above period about 62% of GCC's production was absorbed by the domestic market. The corresponding percentages for the other companies were: TITAN 61%, HALKIS 48%, HALYPS 63%.

TABLE 11

Production-Domestic deliveries-Exports in the period 1974-1980

Production

(tons)

Cement companies	1974	1975	1976	1977	1978	1979	1980	1974-1980	%
GCC	2,761,423	2,992,530	3,097,760	4,305,340	4,476,120	4,783,190	4,778,706	27,195,069	38.5
TITAN	2,828,782	3,086,641	3,701,246	4,051,614	4,336,465	4,630,683	5,304,922	27,940,353	39.6
HALKIS	1,078,851	1,474,306	1,604,647	1,860,665	2,308,087	2,378,985	2,269,048	12,974,689	18.4
HALYPS	354,758	386,203	341,620	372,876	348,650	305,565	327,485	2,437,157	3.5
TOTAL	7,023,814	7,939,780	8,745,273	10,590,495	11,469,322	12,098,423	12,680,161	70,547,268	100.0

Domestic Deliveries

Cement companies	1974	1975	1976	1977	1978	1979	1980	1974-1980	%
GCC	2,053,446	2,013,896	2,074,971	2,490,070	2,573,324	2,904,991	2,786,823	16,897,521	40.5
TITAN	2,030,444	1,923,943	2,320,475	2,453,630	2,649,061	2,866,769	2,768,280	17,012,602	40.8
HALKIS	589,241	626,871	744,406	847,528	1,133,423	1,220,714	1,116,502	6,278,685	15.0
HALYPS	299,702	298,178	193,377	211,861	200,990	177,354	146,267	1,527,729	3.7
TOTAL	4,972,833	4,862,888	5,333,229	6,003,089	6,556,798	7,169,828	6,817,872	41,716,537	100.0

Exports

Cement companies	1974	1975	1976	1977	1978	1979	1980[1]	1974-1980	%
GCC	702,787	1,000,446	1,010,556	1,815,166	1,905,216	1,875,126	2,035,000	10,344,297	36.0
TITAN	807,730	1,146,581	1,372,305	1,568,226	1,685,442	1,729,531	2,556,000	10,865,815	37.8
HALKIS	477,010	823,960	871,010	958,806	1,197,445	1,166,528	1,103,000	6,597,759	23.0
HALYPS	54,270	88,240	151,485	159,780	145,733	128,345	182,000	909,853	3.2
TOTAL	2,041,797	3,059,227	3,405,356	4,501,978	4,933,836	4,899,530	5,876,000	28,717,724	100.0

(1) Data for 1980 were taken from the companies' accounts. Source: Association of Greek Cement Industry

5.3. Productive capacity utilization rate

The sector's productive capacity is utilised to a quite high degree. As can be seen from the figures of Table 12, it is estimated that in the period 1970-1980 the average capacity utilisation rate reached 88%.

5.4. Prospects for domestic consumption, exports and capacity utilisation rate of the Greek Cement Industry

Domestic market: Domestic consumption of cement for 1981, is estimated at approximately 5% lower than that of 1980.
For the period 1982-84 an annual growth rate of 3% is anticipated, compared to 5.4% recorded in the period 1974-1980

(See also estimates in Table 13)

Foreign market: Deliveries by the Greek cement Industry are expected to show an annual growth rate of about 10%, compared to the 1974-1980 rate of 19.3%. Competition in some of the importing countries is expected to grow, especially after 1985.

The rate of capacity utilisation in the period 1981-1984 is expected to average at about 88%.

(See also Table 13)

TABLE 12

Productive capacity of the cement industry sector, Production and capacity utilisation rate for the years 1970-1980.

(In thousand tons)

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
Productive capacity (1)	5,500	6,850	6,850	8,500	8,500	9,150	11,000	11,300	11,800	12,700	14,175
Actual production	4,896	5,549	6,342	6,493	7,024	7,939	8,745	10,590	11,469	12,098	12,680
Capacity utilisation rate	89%	81%	93%	76%	83%	87%	80%	94%	97%	95%	89%

(1) Productive capacity in cement, based on the ratio cement/clinker 0.87:1 (This ratio in 1980 became 0.80:1).

Source: Association of Greek Cement Industry.

TABLE 13

Domestic consumption, exports, productive capacity and rate of capacity utilisation of Greek cement industry for the period 1982-1984

(In thousand tons)

	1981	1982	1983	1984
Domestic Sales	6,477	6,671	6,871	7,077
Foreign Sales	6,464	7,110	7,821	8,603
Total Sales	12,941	13,781	14,692	15,680
Productive Capacity	15,475	15,475	17,075	17,175
Capacity utilisation rate	84%	89%	86%	91%

Source: SRIU estimates.

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SECTORAL REPORTS BY THE SECTORAL RESEARCH AND INTELLIGENCE UNIT

1. FOOD AND BEVERAGES : SECTORAL REPORT 1981*. Canned Fruits and Vegetables, Frozen Vegetables, Beer (April 1981).
2. PACKAGING MATERIALS : SECTORAL REPORT 1981*. Glass Containers, Metal Cans, Corrugated fibreboard cases. (April 1981).
3. FOOD AND BEVERAGES : Summary of 1981 Sectoral Report (November 1981)
4. PACKAGING MATERIALS : Summary of 1981 Sectoral Report (November 1981)
5. FOOD AND BEVERAGES : SUPPLEMENT TO 1981 SECTORAL REPORT+ (January 1982)
6. PACKAGING MATERIALS : SUPPLEMENT TO 1981 SECTORAL REPORT+ (January 1982)
7. BUILDING MATERIALS : Cement Industry-SECTORAL REPORT 1982* (January 1982)
8. PACKAGING MATERIALS : SECTORAL REPORT 1982: Aseptic Packaging+ (June 1982)
9. BUILDING MATERIALS : Summary Sectoral Report 1982 - The Greek Cement Industry.

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- FOOD AND BEVERAGES : SECTORAL REPORT 1982: Dairy Products, Soft Drinks, Fruit Juices.
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* Original Report in Greek - Summary Report in English also available.

\+ In Greek only.

July 1982