INTRODUCTION

Turkey has a great potential for the natural sources as well as the natural stones. The natural stones such as marble and granite, which can directly be related to the construction sector, are industrially scaled as commercial materials both in Turkey and abroad.

The major problems of the marble and natural stone industry of Turkey have been presented and solutions have been suggested to overcome them. Also, the possibility of increasing the exportation of Turkish natural stones have been evaluated.

To achieve this purpose, a survey has been made in the Aegean region where the marble industry is dense, Ideas have been exchanged with the institutions and an extensive literature review have been carried out. All these studies have been put together and the state of the marble sector has been assessed.

Although the natural stones are present in all parts of Turkey, the most important production centers are, Marmara and Aegean Regions mainly Balıkesir, Afyon, Muğla, Aydın, and Denizli and İzmir provinces which are located in the Aegean Region, There are considerable opportunities for the production of marble as well as the export and marketing. The potential power of İzmir Harbor presently meets the exportation needs of both İzmir and its surrounding provinces. The İzmir harbor will also play an important role in the exportation of marble in the future on condition that its present problems are solved.

Turkey can compete with the leading countries in the marble sector in the world, from the international economies point of view, on condition that a new structure is created by providing marketing facilities and improving the quality of production and modern administrative methods are used

CHAPTER ONE

THE PRESENT SITUATION OF THE MARBLE SECTOR IN THE WORLD

1.1. NATURAL STONE RESERVES OF THE WORLD

The demand for marble increases continuosly in the world and the marble sector is becoming commercially one of the most attractive sector.

One of the main factors that make the developed countries economically powerful and dominant is the fact that they make best use of their natural resources. This was proved by the fact that the European Council countries which have big shares in the amount and value of the world marble trade. While the production of natural resources continue in many the resources that exist in these countries, some are having economic problems due to the reduced reserves and profit. To solve this problem, they import unprocessed block and slabs, process them and export to the third countries. [1]

1.1.1. THE CONTINENT OF ASIA

Russia

Russia has limestones and marbles in different color and patterns and its well known dark colored reddish granite coming from Urals- Siberia is commercially very important.

China

Although there is not definite information about the natural stone potential of it, China has limestones and magmatic rocks with different color and patterns. There is a great granite reserve in China.They mainly export granite to Japan and Taiwan.

Japan

Limestones and basic-magmatic stones, gabbros and diorite present in Japan. There is also granite production, but it is a hard stone to export.

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[1] Türkiye Vakıflar Bankası T.A.O,(July 2004).The Regulation of EconomicResearch and Legislation Regulation,Sector Analysis Researches Serial,No:31

Hong- Kong, North and South Korea and Cambodia

There are various kinds of limestones and dark colored magmatic rocks in these countries. Granite is produced in South Korea and exported to Japan and Taiwan.

India

They have limestones in different colors and patterns and the granites are very important because of their dark black. Gabro and diorite are also produced.

Pakistan

Onyx marbles are the most important marble type Pakistan .There are also limestones of different colors and patterns and magmatic rocks.

Iran

They have onyx marbles with original colors and patterns and red and yellow travertines. Besides , that there are also limestones in very different colors. There is a great demand in the international market for the Iranian black marble.

Saudi Arabia and Yemen

There are beige and grayish white limestones which can be used as building stones.

Syria

The beige limestones and the basic-magmatic rocks are used as building stones.

Azerbaijan and the Republics of Middle Asia

There are vast amount of granite in these countries, but they are not processed for the foreign market yet.

Turkey

Turkey has large reserves of limestones and crystalline limestones in different colors and patterns and magmatic rocks, such as granite, diorite, gabbro, diabase etc., and also travertines and onyx marbles.

1.1.2. THE CONTINENT OF EUROPE

Ukraine

Although the silica rich rocks are found widely in Ukraine, the decorative stone quarries haven’t been fully developed yet. For this reason they have no well-known stones, except Labrador, available in the international markets.

Greece

There are high quality marbles and serpentine and limestone in Greece. Especially the white marble of the Aegean Islands and the green Marble of the Kavala are very well known internationally.

Bulgaria

They have marble, limestone and granite reserves.

Czechoslovakia

They have marble, breccia and granite reserves.

Italy

Almost all kinds of stones are used as marbles in Italy. Especially the grayish white Carrara marble and the Sardinian granites are the most important ones and they have rich reserves. Besides, Italy is the biggest block marble importer in the world.

Germany

Germany has large colored marble and granite reserves.

France

The limestone and granite are present in important amount Diorite and some magmatic rocks are used as building stone in this country.

Sweden, Norway and Finland

Granites in various color and patterns, especially pinkish granites and syenites are very important in these countries. The black Labradors is an important magmatic rock type widely used as building stone. They also import magmatic rocks from other countries in huge quantities.

Switzerland and Austria

The beige and grayish limestones and serpentine are used as building stones in these countries.

Spain and Portugal

Crystalline limestones and granites are very important in these countries and they are used as building stones. The grayish white big crystallized marbles of Portugal and the light pink granites of Spain have very important places in the world market. Especially Spain is one of the most dominant importer of the building stones in the world. The natural stone reserve of Spain is 8,571,492 tonnes and there were 6775 marble workers were working at 645 marble companies by the end of 2004. [2]

[2] http://www.ifema.es/ferias/piedra/default_i.html

England

Although the stones of various colors and pattern are being used as building stones, especially the grey granites are the most important one.

Belgium

Grayish and blackish limestones are very important, building stones.

1.1.3 THE CONTINENT OF AFRICA

Egypt

Granite, syenite, gabbro-dyorites and some amphibolites are very important building stones and some high quality limestones have the characteristics of being used as building stones but their inefficient production is an obstacle for exportation.

Nigeria, Congo, Sudan, Republic of South Africa and Mozambique

Granite, synite and limestones are the main building stones. Congolese black marble (gabbro, diorite and amphibolites) and the South African blue granite are very important building stone types.

1.1.4. THE CONTINENT OF AMERICA

The United States of America

It is the country where marble is most used.There are the limestone, breccia, conglomera, granite, syanite, serpentine and diabase. There are also the white granite. United States of America is both the importer and the exporter of the magmatic stones.

Canada

There are huge granite and serpentine deposits in Canada. Grayish beige granites are very important a building stone. Recently the demand for the Canadian granite has increased.

Brazil

They have blue granites and onyx marbles. Brazil has taken its place among the exporting countries lately.

Argentina

The most important marble of Argentine is the light green onyx marble, bluish granite and the other marbles.

Mexico

There are limestone, onyx marble and the travertine deposit as building stone source in Mexico.

1.1.5. OCEANIA

Australia

Since Australia is a very large country, there is a great variety of rocks used as building stone,in this country.

New Zealand

There are limestone and granite deposits used as building stone, in this country.

Indonesia

There are beige limestones, granites and diorites on some islands.

1.2. NATURAL STONES PRODUCTION IN THE WORLD

The increased use of the marbles and the natural stones as construction and decoration materials, have given rise to the increased production of them.The increased production seen within the last ten years,has increased the earnings, production and operating technology .The stone is processed easily and economically and find new usage areas by the help of the developments in technology.

In recent years, the designers and architects started to prefer using natural stones more and this have resulted in an increase in the number of the consumers of these materials in the world.The decreasing market prices have also helped in increased consumption of these ecological and aesthetic materials. The specialists estimate that this development will continue in the future.

70 % of the world's natural stone is produced by China, Italy, Spain, Turkey, India, Brazil and Portugal. China, Turkey and Brazil are the first three countries which have increased their production amount, in recent years.

Although the world natural stone sector stood behind Turkey proportionally as far as the production rates concerned ,there have been an important sector wide increase thoughout the world.In general, the percentage of the increase in the world has been 25% between 2000 and 2003 and the production in 2003 was 75 million tons. (Figure1)

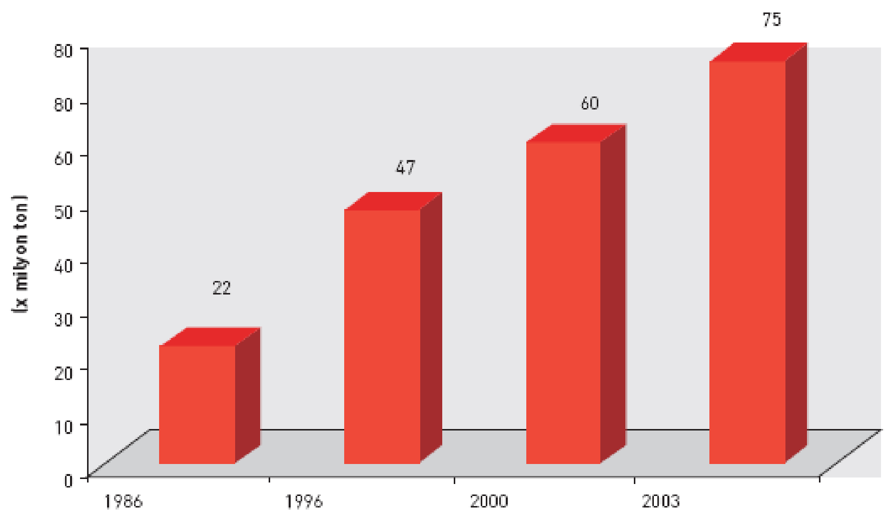
The most produced natural stones in the world are the carbonated stones. Travertine and marbles belong to this group and make up the 60% of the world production. The natural stone production of the world is shown in the Table 1. [3]

TABLE 1.The Natural Stone Production of the World (Montani 2004)

TYPE	MILLION TONS	PERCENTAGE (%)
Carbonated Stones (Marble ,Travertine)	42,5	56,7
Silica rich rocks(Granit,Bazalt)	28,5	38,0
The other Natural Stones	4	5,3
Total	75	100

The carbonated stones are the most produced stones in the world. Travertine and marble, which belong to this group, make up almost 60% of the world production.

Figure 1.World Natural Stone Production According To The Years (Tummer 2004)



As shown in Figure1, the world natural stone production has shown a big leap within the last twenty years and while it was 22 million ton in 1986, it has gone up to 75 million ton in 2003 by an increase of 3, 5 times.

[3] ÖZKAN,E.,(2002).A.K.Ü İscehisar M.Y.O page 10

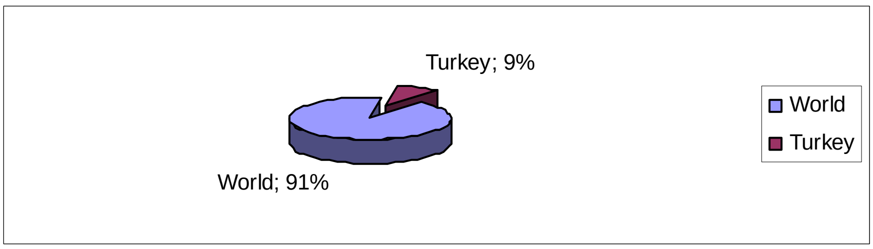
LIST OF THE FIRST TEN COUNTRIES IN THE PRODUCTION OF THE NATURAL STONES IN THE WORLD ARE GIVEN İN TABLE 2

TABLE 2.The Natural Stone Production Percentage of The Countries in The World

	COUNTRIES	SHARE (%)
1	CHINA	23,3
2	INDIA	11,3
3	ITALY	11,0
4	TURKEY	8,0
5	SPAIN	7,7
6	IRAN	6,5
7	BRASIL	4,3
8	PORTUGESE	3,0
9	AMERICA	3,0
10	GREECE	1,9
	SUB TOTAL	80
	OTHERS	20
	TOTAL	100

Figure 2. The Share of Turkey in Production of the Natural Stones in the World

Turkey meets 9% of the natural stones production of the world. (TÜMMER 2004)

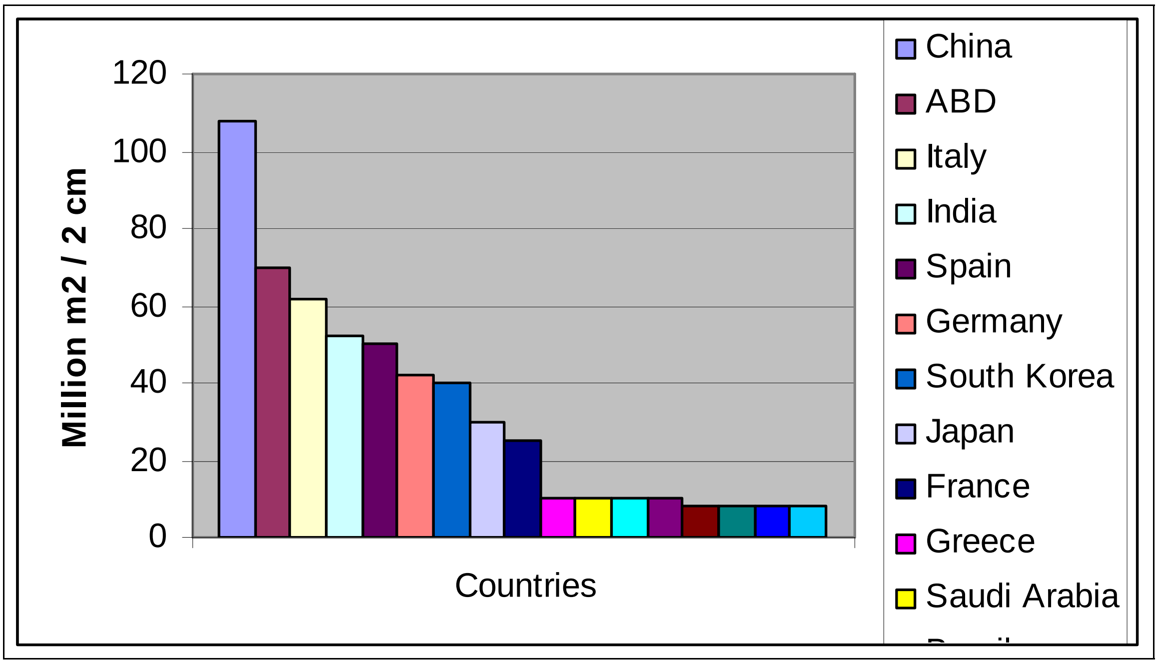


1.3. THE NATURAL STONE CONSUMPTION OF THE WORLD

The natural stone consumption of the countries are shown in Figure-3

The first seven countries consume the 52 % of the natural stone in the world. These countries in the order of consumption quantity are China, the USA, Italy, India, Spain, Germany and South Korea. Among these seven countries, the most important consumption increases occurred in China. The consumption went up to 106 million m² from 82 million m² in China, within the last two years. These figures suggest that the Chinese economy is growing fast together with the natural stone sector. USA and Spain, are experiencing similar increase in growth at a remarkable rate as well. Italy shows the signs of loosing its place among the other countries of the world from the view point of the natural stones consumption (Montani 2004) .

FIGURE 3.The consumption of natural stones in the world (Montani 2004)



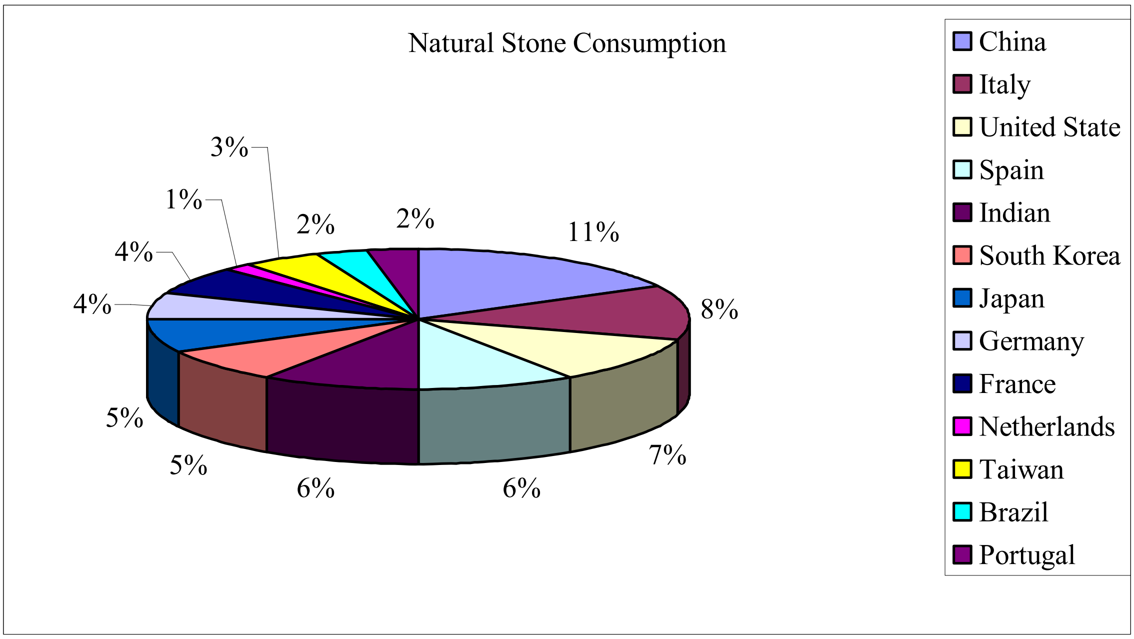
1.4. EUROPIAN UNION NATURAL STONE SECTOR

The natural stones industry which has been equipped with the modern technology within the framework of the developing needs, powerful competition and the increasing demand, has had a difficult year in the European Union countries in 2002.The general economical crisis and the decrease in the construction sector have caused a decrease in the consumption of natural stones.

1.4.1. THE ENORMITY OF THE MARKETS

As it is shown in the graph given a Figure 4, China has become the greatest natural stone consuming country with the share of 11% The countries that follow China and their shares are as follows: Italy : 8%; America 7 % and India and Pakistan 6%.[4]

Figure 4: The Natural Stone Consumption of various countries (Stone 2003)



Among the European Union countries, Italy has consumed 8.1 %, Spain 5.8% and Germany 4.4% of the world natural stones.

[4] CBI Center for the promotion of imports from developing countries www.cbi.nl/marketinginfo/cbi/?action=showdetails&id=33

1.5. THE IMPORT OF NATURAL STONES IN THE WORLD

Among the countries which use natural stones most, The USA, Japan, China and Italy share the first five places with Spain and this situation is also reflected in the natural stone imports figures given in

TABLE 3. The First Ten Countries That Import Natural Stones as Raw Blocks And Processed Stones In The World In 2002.

COUNTRIES (x 1000 TON)

	RAW BLOCKS	PROCESSED STONES	TOTAL (X 1000 TON)
CHINA	2477	69	2546
ITALY	1976	194	2170
ABD	453	1630	2083
GERMANY	408	1463	1871
JAPAN	163	1592	1755
SOUTH KOREA	94	1447	1541
TAIWAN	1158	300	1458
SPAIN	822	151	973
BELGIUM	227	395	622
HOLLAND	124	494	618

1.6. THE EXPORT OF NATURAL STONES IN THE WORLD

In recent years, Turkey has left Belgium and Portugal behind in exporting of the natural stone and is fifth in the list after China Italy,Indian and Spain. (Yüzer ..)[5] The countries such as Turkey, Greece, Spain, Portugal, Brazil, Argentine, China, India, Taiwan, South Korea produce, process and export marbles.On the other hand Israel, Saudi Arabia, Morocco, France, Germany, Belgium, England, Finland, Japan, Australia and New Zeland import blocks besides their own production. Russia, Republics of Middle Asia, Nepal, Scandinavian and South African Countries export the natural stones as blocks. [6]

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[5] Yüzer,Doğan and Mutlu,C.Suat,(1989-2003).Türkiye Doğal Taş Sektörünün Gelişimi,(The Improvement of Turkish Natural Stones) ,

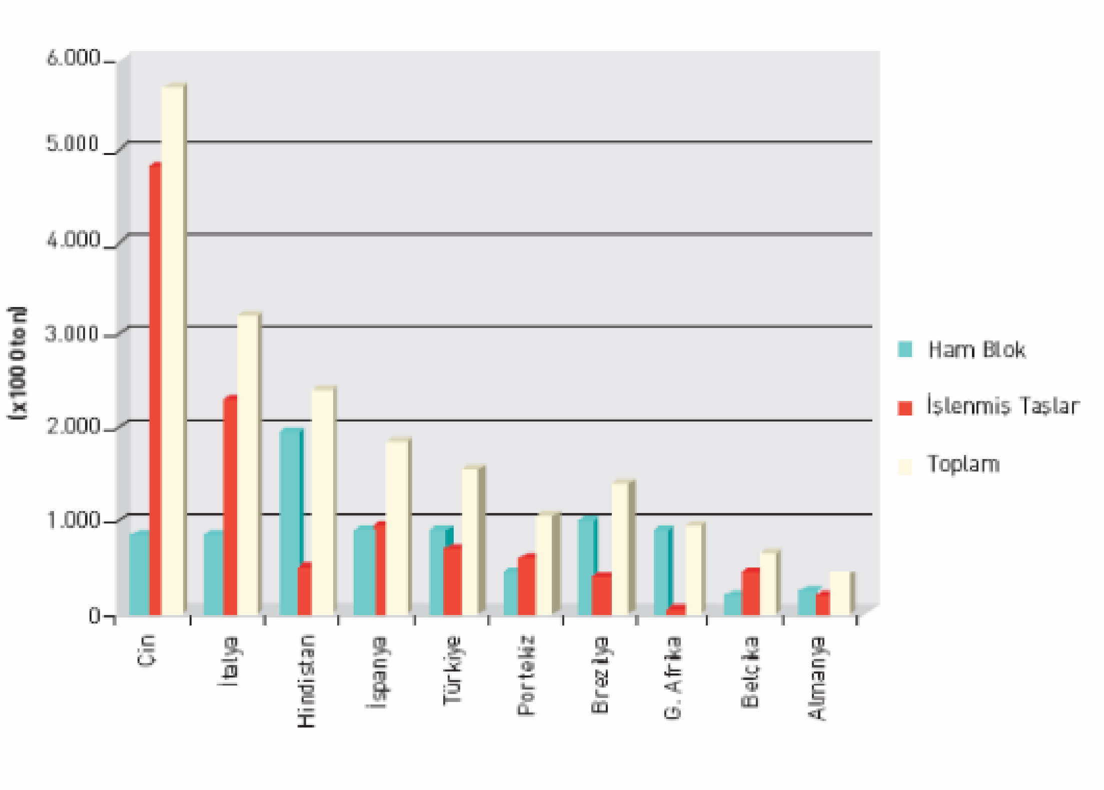
[6] Production of Marble-http://www.maden.org.tr/www/7.BYKP/ekutup96/o491/mermer

TABLE 4. The First Ten Countries As The Exporters Of Raw Blocks And Processed Stones In 2002, (Stone 2003)

COUNTRIES (x 1000 TON)

	RAW BLOCKS	PROCESSED STONES	TOTAL (x 1000 TON)
CHINA	856	4844	5700
ITALY	861	2330	3191
INDIA	1950	481	2431
SPAIN	886	947	1833
TURKEY	889	681	1570
PORTUGAL	450	604	1054
BRAZIL	1022	390	1412
S.AFRICA	905	31	936
BELGIUM	178	450	628
GERMANY	237	183	420

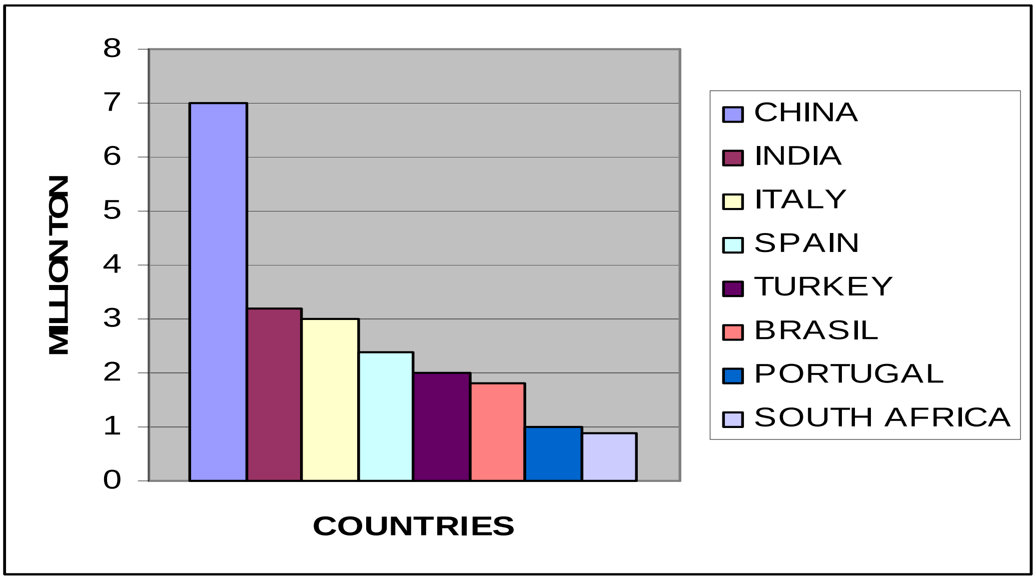
FIGURE 5. The Natural Stone Import



As shown in Figure 5, China is first in the line of importing the processed product in the natural stone sector. Italy follows this country, India takes the first place in raw blocks export. Turkey is among the first five in the export of natural stones in quantity.

The major natural stone exporting countries of the world are shown in figure 6.

Figure 6. The Main Exporting Countries of the Natural Stones in the World (Montani 2004)



Resource :Montani 2004

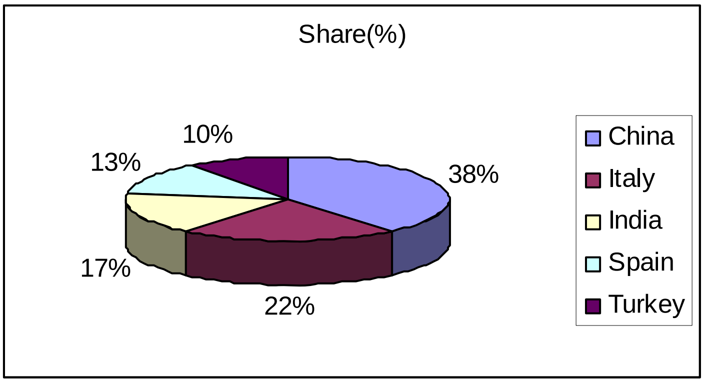
China, Italy, India, Spain and Turkey are the leading five countries in the world exporting natural stone in quantity, but Italy and Spain get the biggest share in value. China is the first in the line of countries which have increased their production most, Turkey is the second and Brazil is the third, within the last century.

Table 5. First Five Countries in Export Of Natural Stone In The World

	Country	Total (Ton)
1	China	5.700.000
2	Italy	3.191.000
3	India	2.431.000
4	Spain	1.843.000
5	Turkey	1.469.000

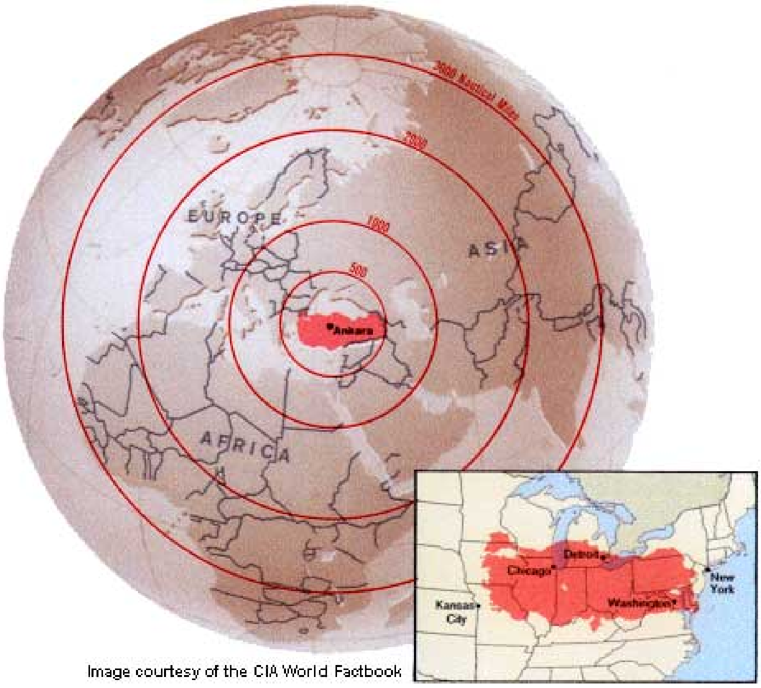
Resource: Türkiye Vakiflar Bankasi T.A.O,(July 2004).The Regulation of Economics Research and Legislation Regulation:Sector Analysis Researches No 31

Figure 7:The Share of top Five Countries Exporting Natural stones based on quantity (TUMMER 2004)



China (22.5%) was first in exporting of natural stones in 2002 and Italy (12.5%); India (9, 6%), Spain (7, 3 %) and Turkey (5.8%) followed the China in order.

PART2:THE PRESENT POSITION OF THE TURKISH NATURAL STONE AND MARBLE SECTOR



1.8. TURKISH MARBLE RESERVES

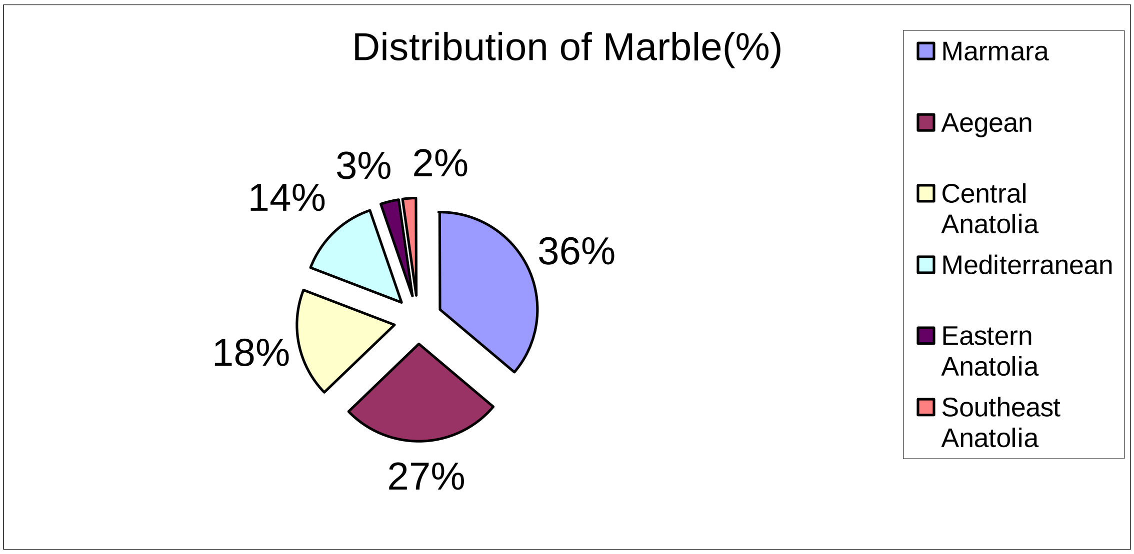
It is estimated that 33% of the world's total natural stone reserves exist in Turkey. Turkey whose total reserve is 13.9 billion tonnes (approximately 5.1 billion cubic meter) has 1.6 billion tonnes visible reserves and this quantity of reserve is estimated to meet the world's natural stone need for 80 years.There are various colored and patterned crystalline limestones, calcites and travertine formed limestones, conglomerate, breccia and, magmatic origin rocks (granite, syenite, diorite and serpentine) in Turkey. There are natural stone reserves which are up to the world standards in almost all of our geographical regions. This richness of the natural stone reserves is due to the fact that there are crystalline massifs in the geological structure of Turkey. The main natural stones areas are as follows:

- Marble beds in İzmir, Tire, Torbalı and Selçuk with the Menderes crystalline massif
- Afyon-İsçehisar, Eskişehir and Uşak Marble beds
- Yatağan and Kavaklıdere marble beds in Muğla

- Kırklareli gnays and granites, Dereköy and Kofçaz marbles beds in Istranca massifs in Trace
- Marble beds in Ezine ,Bayramiç, Edremit, Balıkesir, Manyas-Biga, Marmara Island and Bursa in Kaz Mountain Massif
- Yozgat, Kırşehir, Niğde and Kayseri marble beds within the Kırşehir (Central Anatolia) crystalline Massif.
- Çankırı , Çorum and Kastamonu marble beds within the in Ilgaz crystalline massif
- Marble bed of Artvin, Bitlis and Elazığ[7]

The total potential reserves (visible, probable, possible) of Turkey, according to the geological studies carried out by MTA, are 5,161,000 cubic meter. (MTA)

Figure8.Regional Distribution of Marble Reserves in Turkey [8]



[7] Yılmaz,H. and Safel,R.,(2004).Türkiye Vakiflar Bankasi T.A.O,Sectoral Analysis Study:Marble Sector,No:31

[8] Türkiye Vakiflar Bankasi T.A.O,(July 2004).The Regulation of Economics Research and Legislation Regulation:Sector Analysis Researches No 31

As shown in Figure 8, the Marmara Region is the first in the distribution of marbles with 34%, and Aegean Region follows it with 25% in Turkey. 90% of the marble quarries Turkey are in the Aegean and Marmara regions. There are 1000 quarries, 1500 factories and 7500 plants with 250 000 working population in this sector. This sector contributes 1.2 billion USD dollars to the economy.

Since Turkey forms a bridge between the continents due to its geographical position, it is certain that the natural stone sector will have an important place in the world market in the future.

1.9. THE PRODUCTION OF NATURAL STONES IN TURKEY

Turkish natural stone takes place at the front row of the internationally exported products which provides comperative advantage in the mining sector. There has been a considerable increase in the processed marble production in parallel to the increased investments and starting of integrated production of the firms. Turkey has become one of the leading countries applying the modern mining production methods and the latest processing techniques in the natural stone industry.

Although, Turkey has 1/3 of the world's natural stone reserves, the potential use of these reserves are not at the desired level. The natural stone production rate of Turkey shows a very rapid increase starting from the second half of the 1980s.As for the production of natural stone ,Turkey is one of the seven leading countries of the world applying the modern mining production methods and using the latest processing techniques. As a result, the natural stone production reached to 6 million tons in 2003.

While the natural stone production has increased by 8% from to, the annual natural stone production in Turkey has gone up to 35%. But, when we take the great capacity available in Turkey into conciderations Turkey is still far behind the place where she should be. [9]

Turkey produced the largest quantity of travertine in the world in 2003. But, Turkey is its own rival in this rector. As the travertine production increased, too much price reduction have caused

[9] Izmir Trade Chamber,(2002).The Potantial of The Marble Sector ,Izmir

losing of the markets which has been gained before. As a result of this, the profits of the companies have dropped dramatically in the recent years. The market prices of the big companies which invest in technology, human resources, quality and environment has came down as a result of such unfair competition.

Table 6.The Distribution of the Marble Quarries in Turkey (Gazi Üniversitesi,Gazi Eğitim Fakültesi Periodical ,Volume 23,No 3,2003)

PROVINCES	MARBLE QUARRIES (%)
Balıkesir	27,00
Afyon	23,60
Bilecik	11,14
Denizli	7,58
Bursa	6,92
Muğla	6,40
Eskişehir	4,03
Uşak	2,37
Kırklareli	1,90
Kırşehir	1,18

1.10. EXPORTING OF THE NATURAL STONES FROM TURKEY

The export potential of the sector has improved in parallel to the investment in recent years. Especially the export of the processed marble has increased rapidly. The export of marble, natural stones and its technologies makes up 60% of the total mining export of our country.

The exporting of the natural stone was first made at the beginning of 1980s.The natural stone enterprises has decided to expand to the foreign markets because of the economical crisis in Turkey. This increase in the foreign trade continued until 2004.

Turkey is an important country in the world natural stone market along with China, Spain, India and Italy. Turkey exports natural stones to 140 countries, This attracts the investor's attention to this market. The increase in demands in the world market and the fast pace of the export has played a very important role in this sense. The textile enterprises also had an influence on the increase of the investments in this area. due to the competition China created which forced some of the textile people to start businesses in this sector [10].

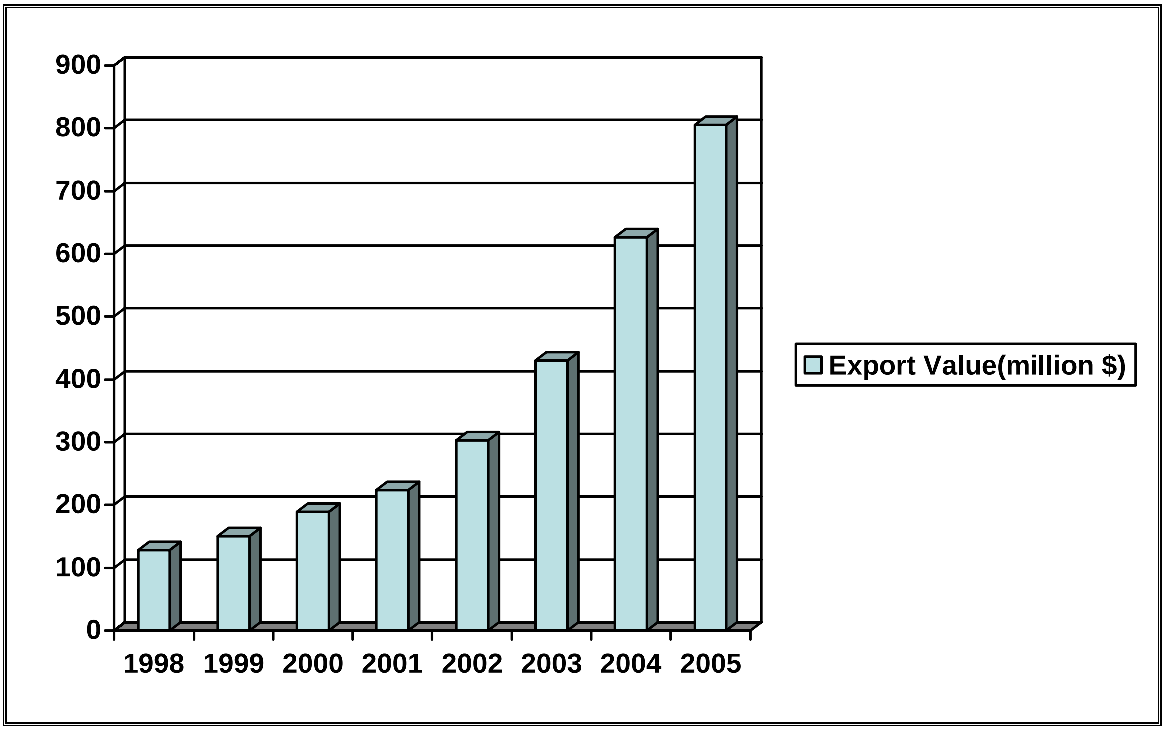
The natural stone export income of Turkey for the end of 2005 was 805, 6 million USA dollars. The raw block export of Turkey is 1/10 of its processed ones. The USA is the main importer of the processed marble with a total of 351.5 million dollar of the 805.6 million dollar total marble export of Turkey. China took the second place with 81.5 million dollars worth import of block marble. While the USA is the biggest importer of the processed marble from Turkey, China is the biggest importer of the block marble.[11] Turkey is one of the major exporter of travertine in the world. [12] (Bozkurt 2006)

Table 7. The natural Stone Export Figures and the Percentage change in relation to the previous year from 1998-2005 (Tummer 2005)

Years	Export(million$)	Change (%)
1998	128,5	-
1999	150,6	17,19
2000	188,7	25,29
2001	223,5	18,44
2002	302,6	35,39
2003	431	42,33
2004	626,1	45,26
2005	805,6	28,69

[10] http://www.kobifinans.com.tr/icerik.php?Article=9397&Where=sektor&Category=&Topic=9
[11] BOZKURT Abdullah,(2006).Turkish Stone World, ,page 4
[12] Metin Erlat Yiğit Marble Founder,www.kobifinans.com.tr

Figure 9. Turkish Natural Stone Export Value increase from 1998 to 2005 (Turkish Stone World, Feb. 2006)



The Important Target Markets of the Turkish Marble Export

Turkey exports stones to 140 countries. But 73% of our export is made to the following ten countries.:

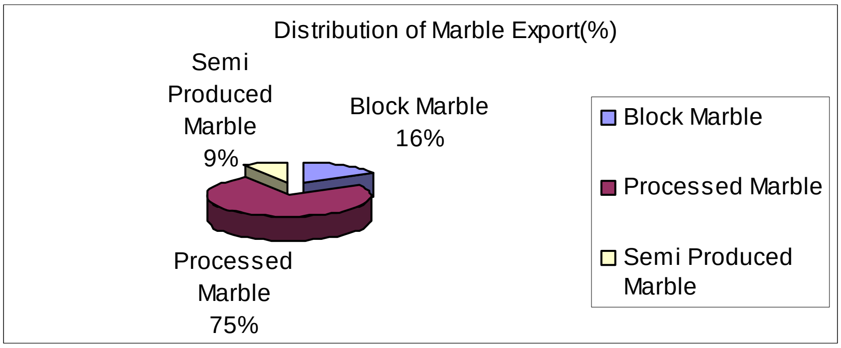
1. The USA
2. China
3. United Kingdom
4. Spain
5. Israel
6. Saudi Arabia
7. Italy
8. Greece
9. Netherlands
10. Germany [13]

[13] Marble 2005 periodical,p:4

The USA is the country to which most export was realized in 2004.China is the second and the United Kingdom is the third.The Aegean Free zone comes fourth and Spain follows it as the fifth. Although the export share of Turkey in the world trade is only around 4%, there has been a gradual increase in the processed marble export over the years. Thus, the fact that more added value came into Turkish economy which is accepted as a good improvement for Turkey.

If due importance given to the processed products which have higher added value, this will help Turkey to increase its share in the market, Another factor for increasing the share is the elimination of customs barriers.Turkey mostly exports travertine, beige marble and limestone. In the past,the travertines were believed to be existing only in Sivas and Denizli region but now new reserves have been found in Kütahya, Muğla, Afyon, Eskişehir and the South-East Anatolia. New quarries started operating in this area and travertines produced in these places are exported to the USA. Turkey is the second in travertine export after Italy. [14]

Figure 10. Distribution of The Marble Export In 2003 (Tummer 2004)

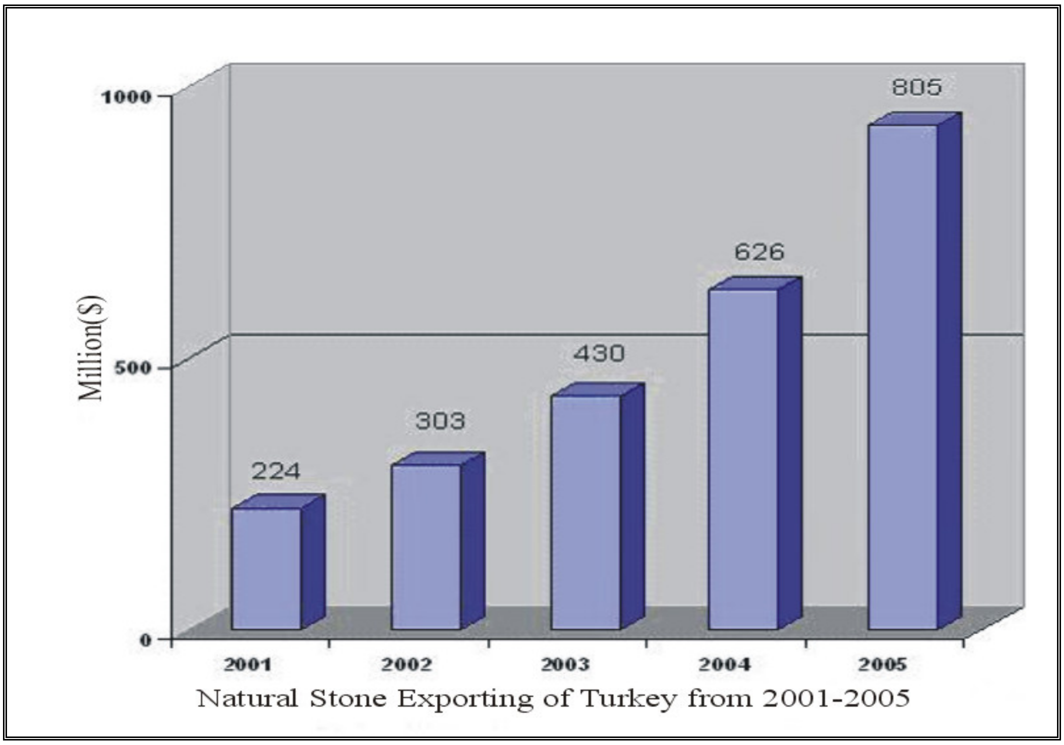


There is a rapid increase in the travertine production in parallel to the increase of export.

[14]Kahyaoğlu,Ali,Mermer Uretim ve Ihracatı Uzerine Bir Röportaj,

http:www.turkishtime.org/mayıs/80_tr_2.htm

FIGURE 11. The Amounts Of The Natural Stone Export Of Turkey In 2005



Resource :Tummer/http://www.tummer.org.tr/index.php?n=10,0,17

Table8:Countrywide Distribution Of The Exported Natural Stones Of Turkey In 2004-2005

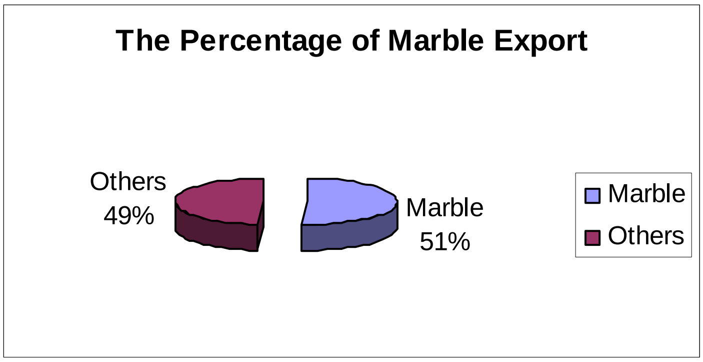
MINE	JANUARY-DECEMBER 2004	JANUARY-DECEMBER 2004	JANUARY-DECEMBER 2005	JANUARY-DECEMBER 2005	CHANGE %	CHANGE %
NATURAL STONE (RAW)	AMOUNT (KG)	VALUE (USA)	AMOUNT (KG)	VALUE (USA)	AMOUNT (KG)	VALUE (USA)
USA	406.821.396,56	227.316.984,56	556.184.298,10	321.563.916,23	36,71	41,46
CHINA	409.925.376,10	56.702.319,74	733.241.311,83	81.064.284,55	78,87	42,96
ENGLAND	48.929.045,35	36.559.405,15	63.838.757,03	44.090.035,76	30,47	20,60
SPAIN	120.986.104.76	31.168.105,54	141.749.579,71	40.512.677,08	17,16	29,98
SAUDİ ARABIA	87.630.096,52	16.805.565,66	103.039.930,15	22.535.746,84	17,59	34,10
ISRAEL	70.892.970,55	19.054.144,37	69.329.049,39	20.869.009,96	-2,21	9,52
GREECE	140.972.942,20	14.268.188,38	142.369.531,59	17.592.006,81	0,99	23,30
AEGEAN FREE	72.428.982,23	34.579.897,80	32.334.849,49	17.160.925,57	-55,36	-50,37

ZIONE						
CANADA	14.266.153,33	9.678.007,57	24.393.320,86	16.807.995,50	70,99	73,67
ITALY	82.355.690,62	14.412.897,03	92.654.546,55	15.427.914,33	12,51	7,04
NETHERLANDS	49.523.640,46	12.013.034,80	37.853.141,01	14.413.884,71	-23,57	19,99
SYRIE	397.995.609,27	10.246.586,80	415.749.752,97	13.405.584,19	4,46	30,83
GERMANY	124.611.330,30	11.834.065,49	99.803.342,86	12.268.906,70	-19,91	3,67
RUSSIA	17.135.639,49	8.661.938,05	15.662.461,33	9.872.911,86	-8,60	13,98
SOUTH AFRİCA	12.893.552,30	6.246.552,64	19.145.576,92	9.467.344,08	48,49	51,56
CYPRUS(Turkish)	22.994.689,36	4.231.158,48	33.615.313,89	8.517.728,04	46,19	101,31
IRAK	22.871.749,24	4.234.835,75	38.202.914,12	8.305.930,52	67,03	96,13
FRANCE	12.003.298,66	4.939.237,70	17.029.926,10	7.892.456,18	41,88	59,79
BELGIUM	21.483.314,64	5.873.418,08	33.870.799,17	7.741.019,68	57,66	31,80
INDIA	26.004.944,02	5.187.772,41	28.481.031,19	6.083.530,87	9,52	17,27
TAIWAN	58.936.480,52	7.082.284,40	38.463.755,84	5.671.395,68	-34,74	-19,92
AUSTRALIA	6.672.614.91	4.383.124,99	8.249.035,87	5.573.916,17	23,63	27,17
IRELAND	2.499.021,91	1.884.509,41	5.776.161,30	4.851.124,27	131,14	157,42
HONG KONG	27.763.164,95	3.832.228,79	31.530.729,69	4.807.667,95	13,57	25,45
UNITED ARAB EMIRATES	7.806.715,88	2.911.556,71	11.876.478,65	4.778.883,82	52,13	64,14

Resource: The Stone World, February 2006, Page 18, Istanbul Exporters Association

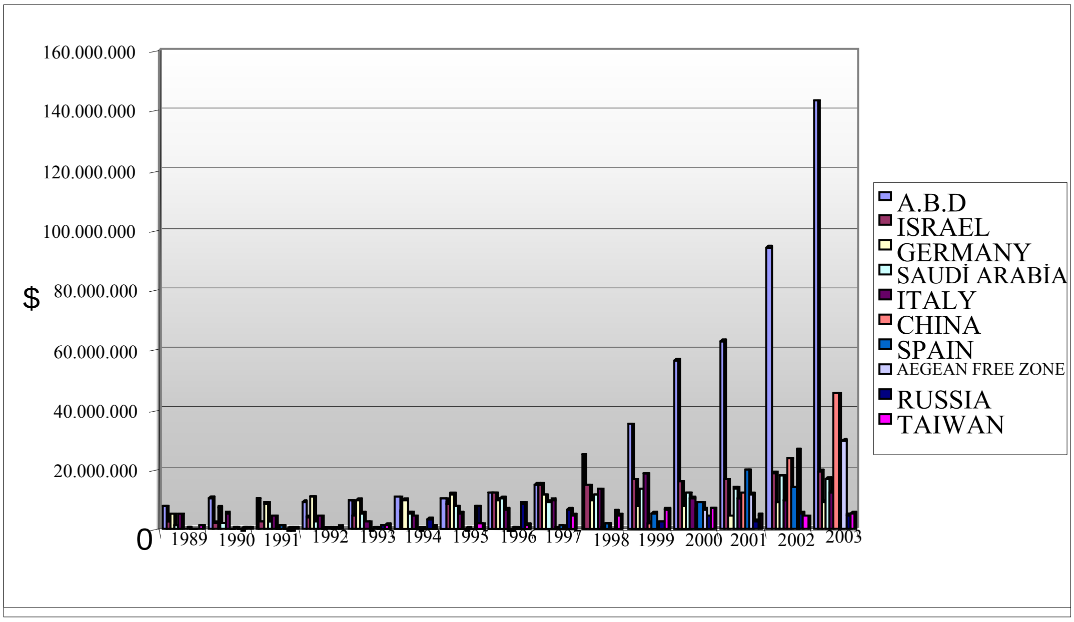
According to the data received from Istanbul Exporters Association, the USA was the first country where Turkey exported natural stones. 556.184 tonnes of marbles were exported to the USA in 2005 with an increase of 36.71 tonnes compared to the previous year. This amount is equal to 321.563.916 dollars in value which is a 41.46 % increase compared with the natural stone export value of the previous year. Chine followed the USA and 733,021 tonnes of marble were exported to this country with 81.064.184 dollars in value. Italy was tenth in list of the natural stone importing countries from Turkey with 15.427.000 dollars in value.

Figure 12. The Percentage of Marble Export of Turkey in 2004-2005(January-June Term)



Resource:Türkiye Vakıflar Bankası,T.A.O,Sektör Araştırması Serisi No:31,Mermer Sektörü,Temmuz 2004

Figure 13. Natural Stone exported leading ten countries from Turkey Between 1989 And 2003



- 30% of the total export was made to the USA between 1989 and 2003.
- Turkey started natural stone export to China in 1993. Since then, the trade relation has gradually increased with this country especially in raw blocks export and it was the second country where Turkey exported raw blocks in 2003.
- The Aegean Free Zone started to play an important role in natural stone export after 2000.

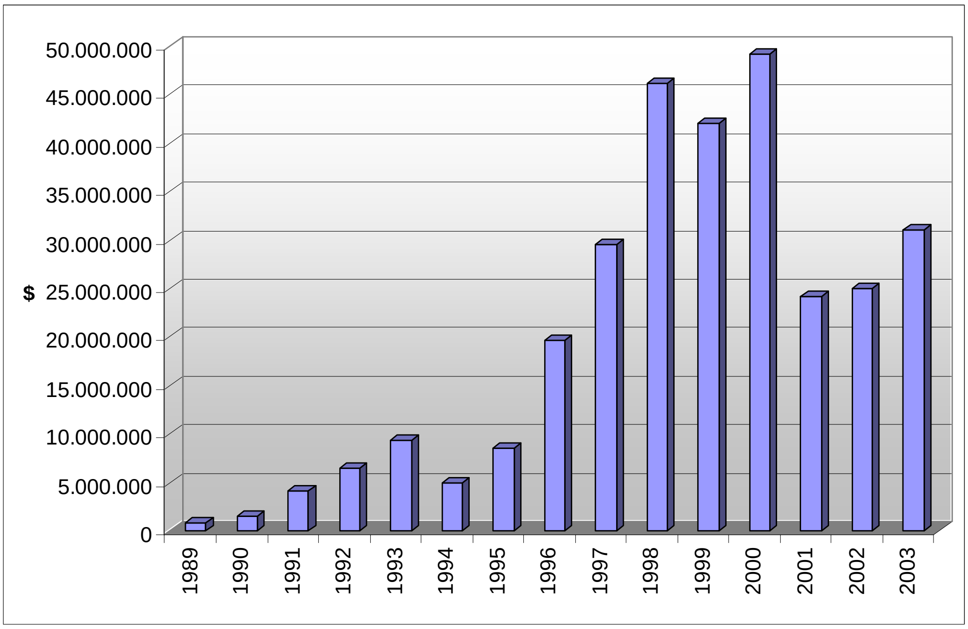
- The share of the natural stone export made to the first ten countries between 1989 and 2003 amounts to 70 % of the total natural stone export made in the same term.

Turkey which imported natural stone cutting machines and equipments initially from Italy has become a country exporting natural stones such as marble, travertine, granite exporting marble cutting and processing machines and technologies to other countries,even to Italy besides ,in recent years.

1.11. THE IMPORT OF THE NATURAL STONES TO TURKEY

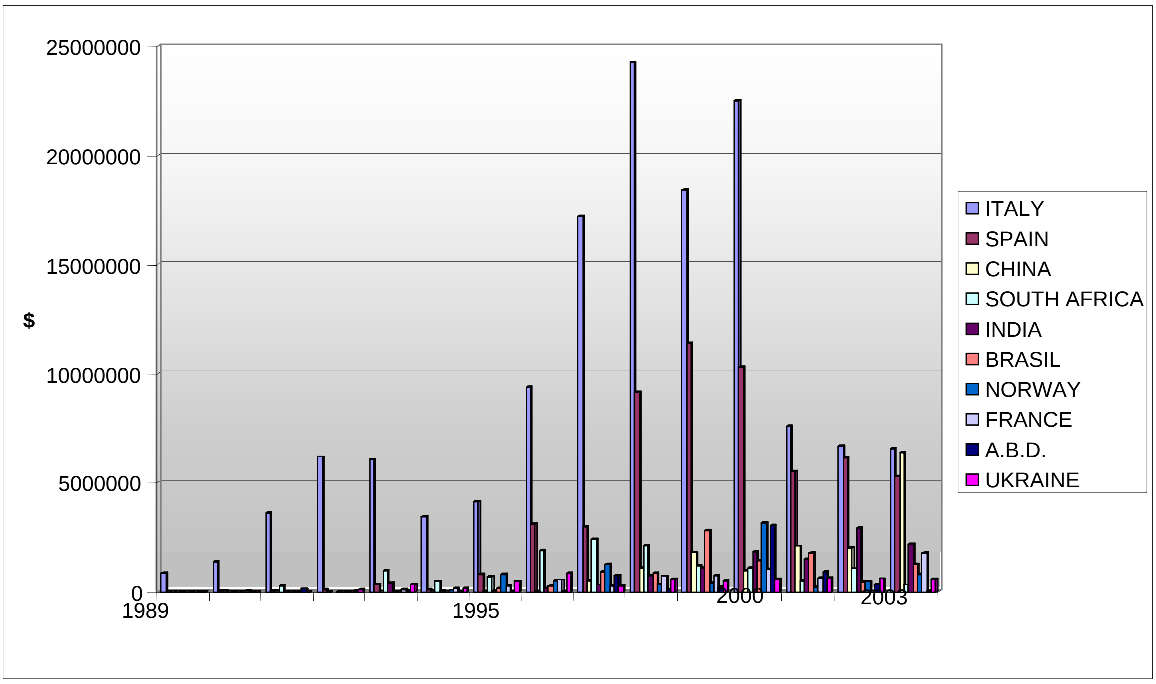
Most of the stones imported to Turkey are colored, hard granite and silica bearing rocks.The total import value of stones imported to Turkey was 10 million dollars between 1989 and 1995, but after this year ,it has showed an increase and came close to 50 million dollars in 2000. It stayed at 25-30 million dollars in the following years. While some of the hard stones imported as raw blocks and slabs have been used for the domestic consumption, some others are processed and exported to foreign countries. Italy and Spain were the countries from which import of stone have been made for many years, but, after 2003. China left these countries far behind.

Figure 14.The Value of Natural Stones Imported to Turkey Between 1989 And 2003



- A major percentage of the natural stones imported are processed and exported again.
- The highest level of import of the natural stones which were exported again after being processed was reached in 2000 although it gradually increased starting from 1993, then, showed a decrease in 2001 and ,it started to increase in 2002 and 2003 again.

Figure 15. Natural stone imported leading ten countries to Turkey Between 1989 And 2003



- 50 % of the total Turkish import made from Italy between 1989 and 2003.
- The import of natural stones which showed a stable level between 1996 and 2000 has gone down to 1995 level recently.
- Although there is a decrease of the imports made from Italy and Spain in recent years, there has been an appreciable increase in the import of natural stones from China in the same period.

PART 3: STATE OF THE MARBLE SECTOR IN THE AEGEAN REGION

1.12. AEGEAN MARBLE RESERVES

The Marble sector has shown great development after 1980s. Within this term, investments in the marble sector has increased incredibly and the equipments producing large dimensions of blocks and slabs heve been started to be used. This dynamism in the sector reflected to the marble export, too, and the total income coming from export went up to the third in line.

The Aegean Region has very rich marble reserves. Approximately 70% of the total marble reserves of Turkey are in this region. Our country is known to have a total of 5 billion cubic meter marble reserves. Approximately 3.5 billion cubic meter of this reserve exists in the Aegean region. The marble quarries are located especially in Balıkesir, Afyon, Denizli and Muğla provinces.

Denizli, Muğla and Afyon take the first places as in the number of the marble quarries and the marble production according to the 2000 data, Denizli is first with 134.974 cubic meter of production. Muğla is second with 129.578 cubic meters and Afyon is third with 50.815 cubic meters. [15]

Table9: The Most Important Five Provinces in Marble Reserves of Turkey

PROVİNCES	Reserve(m3)(Million)	Total share (%)
Balıkesir	1,850	35,8
Denizli	652	12,6
Afyon	629	12,2
Tokat	410	7,9
Çanakkale	252	4,9
TOTAL	3,793	73,4

Resource: Marble difference among the mines, Marble Periodical, İzmir Trade Chamber, 2002

[15] www.egebirlik.org.tr

Table 9 shows that 2 out of five major marble producing provinces are in the Aegean Region and their total share is 24,8% among all five provinces.

Table 10.The Workable Marble Reserves of Aegean and Marmara Region

REGION	PROVINCES	WORKABLE RESERVE (x1000m³)
MARMARA	Balıkesir	1.300.000
	Bursa	135.000
	Kırklareli	33.500
AEGEAN	Afyon	135.000
	Aydın	9.000
	İzmir	1.500
	Muğla	181.000
	Kütahya	200.000
	Uşak	500.000

[4] İMMİB, "Türkiye Endüstriyel Mineraller Envanteri", Aralık, 1999

There are more than 800 marble factories and a large number of marble plants in Turkey.

The distribution of the companies which have got marble licenses according to the regions are as follows:

Aegean Region	%32
Marmara Region	%26
Central Anatolia Region	%22
Mediterranean Region	%9
Eastern Anatolia Region	%3
South Eastern Anatolia Region	%1

According to the Directorate General of Mining, the Aegean region takes the first place in the list of the marble production licenses.

1.12. AEGEAN MARBLE PRODUCTION

Table 11. Marble Production Amount The Provinces In The Aegean Region In 2002

PROVINCES	MARBLE(m^3)
Aydın	17,288
Denizli	134,974
İzmir	14,637
Afyon	50,915
Manisa	7,450
Muğla	129,578
Uşak	13,660
Total	443,066

Resource: Kartal, g, Marble Trade of Turkey, 2000 and www.egebirlik.org.tr

1.13. AEGEAN MARBLE EXPORT

Half of the Turkish marble export is made from the Aegean region. Aegean region meets 51% of the Turkish export by itself.[16]

Table 12. The Amount and Value of The Block Marble Export made by the companies of the Aegean Mining Exporters Association to the European Union between 1/11/2004 and 31/12/2004

COUNTRY	AMOUNT (kg)	Total($)
Greece	1.961.238,000	91.999,1600
Spain	586.545,000	86.040,9900
Italy	351.720,000	57.639,1900
France	22.150,000	2.308,8700
United Kingdom	22.950,000	2.271,9500
Holland	26.560,000	2.116,9900
Grand Total	2.971.163,000	242.377,1500

Resource:www.egebirlik.org.tr

[16] Alimoğlu,İ.,(2004).Head of Aegean Mining Exporters Association

Table 13.The Amount and value Processed Marble Export made by the companies of the Aegean Mining Exporters Association to the European Union between 1/11 /2004 and 31/12/2004

COUNTRY	AMOUNT (kg)	Value ($)
United Kingdom	2.533.249,570	2.169.659,7040
Spain	5.285.654,580	1.532.848,9187
Nederlands	1.137.837,679	601.424,2050
France	461.992,000	273.025,9198
Denmark	288.662,000	253.856,2100
Belgium	383.330,000	208.943,9600
Ireland	185.851,000	178.614,9800
Germany	181.861,000	158.345,5299
Italy	256.355,000	128.943,0100
Greece	73.869,600	60.642,6800
Portugal	72.712,000	24.285,1899
Sweden	20.957,000	21.785,5400
Finland	22.360,000	17.081,3100
Litvania	21.149,000	8.566,5100
Poland	22.278,000	6.347,9800
Grand Total	10.948.118,429	5.644.371,6473

Resource: www.egebirlik.org.tr

Table 14. The Marble Slab Export Of The Companies of The Aegean Exporters Association to the Europian Countries Between 1/11/2004 and 31/12/2004

COUNTRY	AMOUNT (kg)	Total($)
Spain	709.607,000	162.822,0800
Greece	586.989,000	149.763,8500
Italy	927.860,000	131.202,9700
France	58.915,800	31.821,5400
Litvania	530,000	532,5400
Grand Total	2.283.901,800	476.142,9800

Resource:www.egebirlik.org.tr

1.14., Denizli, Muğla, Uşak, İzmir, Aydın and MARBLE IN THE WESTERN ANATOLIA

Marble business goes back to 700 B.C. in western Anatolia and there are numereous ancient buildings construted using marbles from Rome, Byzantine and the Ottoman periods descended to the present day. There are a large number of ancient marble quarries in AfyonBalıkesir provinces. The fact that 90% of the presently working marble quarries are in the Aegean and Marmara regions. The transport facilities such as İzmir Harbor and the existence of various marbles rich in color and pattern in these region, are the main factors for the rapid development of marble potential of the Aegean region.

Half of the marble export of Turkey is made from the Aegean region. Denizli is first in marble production. In marble reserves, Denizli, Muğla and Afyon are the first three provinces in order. According to 2000 data, Denizli produced 134.974 cubic meter marble and was first in Turkey. The second was Muğla with 129.578 and Afyon was fifth with 50.815 cubic meters. Aegean region meets the 51 % of the marble export of Turkey by itself. [17]

[17] www.egebirlik.org.tr

1.14.1. AFYON

MARBLE

There were 335 marble companies in Afyon in 2005. The presence of rich and high quality marble has resulted in rapid development of this sector. [18]

The marble known as Afyon White both in our country and in the world is taken out and processed in Iscehisar. 1/3 of the block marble production of Turkey is made in Iscehisar.[19]The properties of the Iscehisar marbles are an follows.

1) AFYON WHITE;

Descriptions there are yellow veins in some parts of the very white marble.

Hardness is 3, density is 2.75 g/cm^3, and porosity is 0.2%

Reserve: 2 500 000 cubic meters

Iscehisar Area

2) AFYON TIGER SKIN;

Description light grey and different shades of grey, knotty and has breccia structure.

Hardness is 4, density is 2.73 g/cm^3, and porosity is 0.2 %

Reserve:3 600 000 cubic meters [20]

The Iscehisar marble bed start from 1 km southeast of the town and is found on round shaped two lenses. One of these lenses is situated in the Dangıçtepe and the other is in the Bacakale area. The marble bed is 500 m wide, 1300 m long and 100 m thick in Dangıçtepe and 1000 m wide, 4500 m long and 260 m thick in Bacakale.

The marble beds of this town have a wavy structure, so in some places the thickness reaches to more than1000 m. The transport to and from the quarries is easy, so they can be operated both in winter and summer with no obstructions. It can easily be understood from the antique pieces of arts that the operation of the marble quarries in Iscehisar goes back to 2000 years before,the present day.

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[18] Turkish Marble And Natural Stones Symposium Papers Book (2006),sa:86

[19] Afyonkarahisar Trade and Industry Chamber,2005

[20] Maden Teknik ve Arama Genel Müdürlügü,Afyon İli Maden ve Enerji Kaynakları Raporu

FOLLOWING ARE MARBLES TYPES ARE QUARRIED IN ISCEHISAR:

• ISCEHISAR CREAM - (AFYON WHITE)

• ISCEHISAR HONEY

• ISCEHİSAR WHITE-(AFYON CREAM)

• ISCEHİSAR SWEET- LIGHT YELLOW (AFYON SWEET)

• ISCEHISAR ROSE

• ISCEHISAR VIOLET

• ISCEHISAR BLACK

• TIGER SKIN

• DIRTY YELLOW-(AFYON YELLOW)

• PIGEON BREAST THAT CONSISTS OF MIXED COLORS

• OTHER VARIOUS COLORS

Apart from these the following types are also taken out from some other mines in veins: violet, grayish white, Afyon honey, crocus sweet, Afyon crackle, lined sweet and Afyon travertine.

In recent years, the marble sector has given emphasis to exporting. The export situation of the last few years is as follows(Table 15)

Table 15. The Export Situation Of The Marble Sector Of The Aegean Region

Total Export	188.700.000 $	223.530.000 $
Aegean Region marble export	123.898.000$	158.454.000 $
Afyon marble export	37.420.000 $	40.659.000 $
Country export rate of Afyon	% 19	% 18.20
Region export rate of Afyon	% 30.20	% 25.65

Resource:http://www.merfes.com

Afyon White, mostly known as “Afyon Stone” in the literature, is famous with its high durability and water resistant. Due to these two characteristics of it, there are 370 marble factories and plants in Afyon and they give work to more than 10.000 employees. But, the fact that as the reserves of Afyon White is decreasing with time and the interest to travertine is increasing and as a result of these exporting of Afyon marble is decreasing and, Afyon is affected negatively.

According to the records of Afyon Trade and Industry Chamber, the total export made for the end of 2004 is worth 100 million dollars.

1.19.2. AYDIN

Marble production has been carried out in this region since the ancient times. The marble operations are being made in Samsun Mountain Monastery area which is situated in the south of Kuşadası and Tasesiği area situated in north of the Afrodisias Ruins near Karacasu.

MARBLE

- Karacasu-Geyre-Ardıçlı Area

Quality: Medium

Reserve: 2 500 000 cubic meter possible reserve is being quarried by private sector.

Karacasu-Tepecik Area

Quality: Medium

Reserve: 9.000.000 cubic meters geological reserve has been quarried by private sector until 1993

- Karacasu-Yazır-Hangediği Area

Quality: Medium

Reserve: 3 600 000 cubic meter possible reserve has been quarried in previous years.

- Karacasu-Nargedik-Düğünyurdu Area

Quality: Medium, Good

Reserve: 15 000 000 cubic meters geological reserve. There are large reserves still being quarried in the area. [21]

1.19.3 DENİZLİ

There are the richest travertine reserves of Turkey in Karacasu, Kocabaş and Sarayköy within the borders of Denizli province. These Travertines are known as Denizli travertines and are very well known in the world. There are a large number of quarries which had been operated in the antique ages around Pamukkale, Yeniceköy and Kocabaş .

MARBLE

- Tavas-Vakıfköy-Çamova Tepe Area

Quality: Medium

Reserve:72 000 000 cubic meters

TRAVERTINE

- Kocabaş Köyü Area

Quality: Medium

[21] Directorate of Mining Technical Research Aydın Mining and Energy Report

Reserve:25 000 000 cubic meters (geological reserve)

Kocabaş-Etence Tepe Area

Quality: Low

Reserve:7 500 000 cubic meters (workable reserve)

- Kocatepe-Acadere-Zeytinlieğrek Area

Quality: Medium

Reserve:10 000 000 cubic meters workable reserve.[22]

Denizli is the second province in line after Balikesir in respect of the total visible marble reserves of Turkey.But it is third after Balikesir and Afyon in total marble reserves of Turkey.

The marble factories in Denizli gave rise to a new industry by processing the marbles from the neighboring provinces apart from the marbles of its own. The biggest marble producing companies of Turkey, which is the seventh in line in the world, are situated in Denizli. One of the most important marble reserves of the provinces is located in Ballik Bogazi, Kaklık Region, Honaz, and Denizli.

There are 52 travertine quarries in Denizli, which have rich reserves and approximately 350 thousand m3 travertine blocks are produced from these quarries yearly. Denizli province has the maximum travertine reserves in Turkey.

There are 90 factories in Denizli and 75 of them have been processing travertines and others both travertines and marbles.

The Total export value of natural stones and marbles of Denizli was 120 million dollars as for the 2004 and in that year 18% of the Turkish marble export was made from this area. [23]

Travertines have been produced at 43 quarries in Denizli.. In 52 quarries situated in six places in Denizli, the annual production of the marketable block marble is 340 000 m^2 and most of this

[22]Directorate of Mining Technical Research Denizli Mining and Energy Report

[23] Denizli Mermerciler Derneği,2005

production is made from Ballik area. There are 25 large-capacity factories in Denizli,which process and export the beige marble (Yeşilova), Burdur, white and lilac marbles (Salkım, Kavaklıdere)Muğla, besides the travertine and white colored marbles of Denizli [24]

In the study carried out by the mining Research Institute(MTA) ,it the travertine reserve is estimated to the 25 million cubic meters in Kocabas; 7.5 million cubic meters in Etence Hill and 10 million cubic meters in Acardere and Zeytinlieğrek, in Denizli.[25]

1.14.4 USAK

Uşak Yellow, Uşak White and Uşak Green trade named marbles in Uşak.

These marble beds are located at the following locations.

- Karahallı, Duraklı village

Usak Green Marble

Description ; It is formed by calcite, biotite, quart and plagioclase microlites.

Hardness is 4, density is 2.75g/cm3 and porosity is 0.280%.

Reserve: 600.000 cubic meters (geological reserve) at Hacı Hüseyinler

- Village, UŞAK

Yellow Marble

Description ; It is a recrystallized limestone formed by calcite crystals.

Hardness is 3-4, density is 2.73g/cm3 and porosity is 0.387%.

Reserve: 600.000 cubic meters(geological reserve).

- Haci Huseyin Village

Usak White Marble

Description ; White colored recrystallized limestone.

Hardness is 3-4, density is 2.74 g/cm3 and

Porosity is 0.109%.

Reserve: 400.000 cubic meters (geological reserve).

- Akhisar-Efkafteke Village

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[24] Denizli Mermerciler Derneği,2005

[25] Referans Gazetesi,28\12\2005

Aegean Brown Marble

Description ; Dark Brown and red Limonite and calcite fillings can be seen in the cracks

Hardness is 3-4, density is 274 g/cm3 and

Porosity is 0.182%.

Reserve: 25.000 cubic meters (geological reserve). [26]

1.14.5 MUGLA

Mugla has an important place within the marble industry of Turkey. It is claimed that the marble quarries of the area have been operating since the antique ages. Some of the blocks produced in Roman times were used in the antique cities in the Aegean region and some others were exported to Rome, North Africa, Greece and the Aegean Islands via the sea.

Mugla is important for Turkey due to its marble reserves. The marble reserves of Muğla are located around Milas, Eskihisar, Yatağan and Kavaklıdere towns. The marble block production of the region is rather high. [27]

10 million cubic meter of new marble reserves have been found in Muğla, in Akbuk, which is situated between Milas and Didim. [28]

There has been an incredible increase in the number of marble quarries working marble in the area, in recent years. A major part of the marble production of Turkey is made from 58 large-capacity factories in Kavaklıdere, Yatağan, Milas and Mugla. Mugla is also the biggest producer of block marble with 72 active marble quarries.

The marble produced in Muğla region is exported largely because its color and quality is up to the standards of the world market. The potential marble reserve of the city is 540 million tonnes..

[26] Maden ve Teknik Arama Müdürlüğü,Uşak İli maden ve Enerji Kaynakları Raporu
[27] Yüzer ve Erdoğan ,(1996);170
[28]http://www.byegm.gov.tr/yayinlarimiz/ANADOLUNIVERSITESI/149/AND27.htm

460 000 tonnes of marble production was made in 2002 and 342 000 tonnes of it were exported.(MTA)

Location of the different marble deposits within the Muğla Province

Central Town : Marble, onyx

Köyceğiz : Marble , travertine,

Yatağan : Marble

Bodrum : Marble

Kavaklıdere : Marble, Onyx

Milas : Marble, Onyx

Ula-Marmaris : Marble

Dalaman : Marble

Ortaca : Marble

Fethiye : Marble,

<u>MARBLE</u>

- Milas-Kozağaç and Güney Area

Quality : Carbonate origin.

Reserve : -

- Kalınağıl Village

Aegean Burgundy

Description : Red with schistone structure

State : Being quarried

- Kavaklıdere-Salkım, Başalan

'Kavaklidere Marbles'

Description : good-moderate

State : Being quarried

Besides, Demirci Green and Honey Onyx are other well known marbles present in the area.[29]

There are 181 million cubic meters of workable the marble reserves exist in the Muğla region.The marble reserves in Muğla are situated mostly around the Milas, Yatağan and Kavaklıdere towns. The types of marbles are Muğla White, Muğla Sweet, Aegean Burgundy, Milas Lilac, Milas Pearl and Milas Lemon. The export value of the marbles as for the end of 2004 is 200$ million dollars. [30]

1.14.6. MANISA

There are working marble quarries in Akhisar and Demirci in Manisa. There is the biggest onyx reserve of Turkey in Demirci .Also known as the Demirci Onyx.[31]

MARBLE

- Demirci-Borlu, Saraycık Village

Demirci Onix Marble

Description : Yellow- light green and brown in some places, made up of aragonite crystals.

Hardness 3, Density 2.76 g/cm^3 and porosity is 0.265 %

Reserve: 1 000 000 cubic meters(geological reserve)

- Gördes-Çomaklı Dağ, Kovancılı Areas

State : The deposit is being quarried by Sümerbank and some private companies.[32]

[29] Directorate of Mining Technical Research Muğla Mining and Energy Report
[30] Muğla Marble Association
[31] Yüzer Ve Erdoğan,(1996);164
[32] Directorate of Mining Technical Research Manisa Mining and Energy Report

1.14.7 IZMIR

There are beige limestone deposit in Karaburun, marble beds in Selçuk, Efes, Belevi (Torbalı) areas, Onyx deposit in Torbalı and granite deposit near Bergama and most of these deposits are being worked.

The main worked natural stone deposits in and around İzmir are Bergama grey granite, İzmir-Aliağa Basalt, Teos light and Teos green

MARBLE

- Tire-Ayaklıkırı Area

Description : Medium, dark grey and smoky white

State : 10 857 000 tones

- Tire-Göllüce Area

Description : Medium, Big crystalline smoky white

State : 945 000 tones

- Torbalı-Tulum Area

Description : Medium, Big crystalline smoky white

State : 4 560 675 tones

- Selçuk-Belevi (Intepe) Area

Description : Medium, Smoky grey and white

State : 11 550 000 tones

- Selçuk-Belevi Area

Description : Medium, Smoky grey and white

State : An antique quarry operated in the past

- Izmir-Urla Area

Quality : Medium

State : Working[33]

[33] http://www.mta.gov.tr/madenler/Izmir.DOC

CHAPTER II

THE PROBLEMS OF THE MARBLE SECTOR AND SUGGESTED SOLUTIONS

2.1.LEGISLATION AND THE NEW MINING LAW

The marble sector is a rather expensive investment sector. Having one law-one authority will lessen the bureaucracy and improve the investment atmosphere in the country and this in turn will directly the increase the investments, in this sector. The problems experienced by the legal legislations have always been obstructions for the development of the sector. By taking marble out of the responsibility of Natural Stones Regulations and transfering it into the responsibility of Mining Law, has been one of the most important dynamics action in the marble sector in recent years. On June 5th, 2004, the new Mining Law became operative, Even though, this law is not one law one authority,it has still increased the mining activities despite the prohibitions stated by 14 ministries, 14 laws and as many regulations as these. An important step was taken in eliminating the lack of the legal arrangements that hinder the development of natural stone sector by the publishing of the Mining Law No 3213 and The Law No 5177 regarding the changes in the Mining Law and some other Laws in ''the Resmi Gazete'' on June 5th 2004. It is aimed to lessen the legal and bureaucratic obstructions and to encourage the mining sector by increasing the license and investment guarantees and so, to improve the income share of the sector by the mentioned law which covers lots of detailed arrangements regarding mainly the mining activities. [34] There is an important amount of tax load on the marble sector. Income taxes on one side and mining funds on the other and also the government share impedes the development of the sector.

2.2. INCENTIVES SHOULD BE INCREASED

One of the other important problems mentioned by the marble producers is the lack of the investment incentives. The marble and natural stone sector, which has proved itself by increasing the employment, providing net currency input in to the economy and creating added value, needs a mechanism of encouragement in order to reach its 2006 export target which is 1 billion dollars. Structural incentives should be applicable for the long term investments and the periodical

[34] Türkiye Vakıflar Bankası,(2004).T.A.O.,Economic Research and Legistlation Regulations

incentives should be applicable continuously in order to make them permanent. Within this context, especially the investment reduction and the incentive premiums show importance in setting up of the inflation indexed investment incentives and for the producers who are to struggle with high inflation rates will are more fruitful results.

The most important of the incentives demanded by the sector authorities are as follows:

- A low tariff in the electricity bill
- Petrol incentive
- Infrastructure support
- Investment reduction
- Reduction in the corporation tax
- Support of the industrial plants
- Freight Support[35]

2.3. NOT GIVING TO RESEARCH AND DEVELOPMENT STUDIES

Although the Re - De studies are very important in decreasing the risks the sector carries , these studies are often not carried out adequately. For this reason, precautions which will direct the private sector to research and development should be taken. There is a great need for the Re-De which will create a great advantage from the quarrying technology to final production

2.4. THE PROBLEM OF MARKETING AND PUBLICITY

It is necessary to have a systematic and organized marketing activity both nationally and internationally. Since the publicity of the natural stones and marbles are very important in the phase marketing, these two factors should work in coordination with one another. It is necessary to take marketing concept within an expansive framework and determine strategies suitable to the changes by following both for the present and the future markets. Studies to improve the variety and the quality of the products and the processed products capacity for the aim of increasing the market share should be realized. Marketing strategies should be formed and active distribution channels

[35] Türkiye Vakıflar Bankası.T.AO.,Economic Research and Legistlation Regulations,July,2004

should be set up. Both private sector and the government should work in coordination with one another to achieve this aim.

The problems faced in marketing :

- Lacking of a unique brand name of Turkish marbles in the market and lack of promotion activities.
- Not having a “Price Standard” because of the lack of coordination between production firms and marketing companies.
- Lack of desired level of organisation which is a must for a strong marketing
- Inadequacy of quality control, packing, standardization, timing and advertisement.

2.5. TRAINING PROBLEM

Use of modern technology and improving the existing technologies will create new opportunities which will contribute to the advancement of the sector. It is important to have well trained personnel who will adapt and be able to use they modern technologies. Due to the lack of qualified personnel, the marble factories are not operated at their full capacities. Marble quarryingindustry is a very risky sector. The owner of marble quarry can very easily go bankrupt if the people working in the quarry are not expert in their job. For example, the role of qualified personnel is very important in packing of the homogeneious colors, smooth the cutting of the block surfaces, having less loss in production and reducing the loss rates. Vocational schools having The Marbling Programmes have been opened the meet the increasing demand for the tuamed? technicians to use the modern equipment. Afyon Kocatepe University and Dokuz Eylul University are the only to which have they marble technican training programmes.

The most important shortage in the marble sector is to find a well qualified labor force. All the non-governmental organizations doing business in this sector should work in coordination with the Universities and the KOSGEB, Chambers and Associations to train the workers in-service training projects.

2.6. LACK OF MODERN TECHNOLOGY

The companies, which make use of the modern technologies, have been transfering these from other countries, mainly from Italy. But, it is viewed that companies running this business are getting technologically more national in this area and thought there is an urgent need for the support and incentives for the development. The research and development activities should be encouraged and the mechanisms of converting science and technology into economic and public benefit should rapidly be brought into life, in this sector.

2.7. THE PROBLEMS OF CAPITAL AND FINANCE

Mining is an area where not many banks give loans. Capitals are put together as a result of the individual efforts and work. Because marble quarrying is a very expensive sector, the financial support in this area is a very important factor for both the present and new investments. Regarding the financial problems,long term loans at low interest should be provided and supports should be given to risk capital and factoring.

2.8. THE SECTORAL ORGANIZATION PROBLEM

The companies carrying out business in the sector should be organized by having a better communication among themselves. Thus, the marble enterprises will be able to publicize themselves in the foreign countries, in a shorter time at low cost. Organising the companies in this sector under a sole authority. It will develop a unique market price at a desired level.

2.9. IRREGULARITY OF THE PRICING POLICY

There are very big differences between the prices of the presently applied pricing policy. The same quality goods are sold at different prices. This causes cutting in the prices especially in the foreign markets and the forces the Turkish companies to find a new market by just cutting the selling prices.

2.10. POWER OF COMPETITION

Turkey has a high competition power within its natural stone sector. It seems very important for the sector to have short, medium and long term strategical plans and put them into practice by developing them as a “Natural Stone Policy” for the aim of integration with production and quality improvements and the industry. Especially the improvement of the quarrying operation methods increases the chance of competition. All kinds of researche, in this area should be supported by the government.

2.11. COST OF RAW MATERIAL

Since the quarries are not well developed as the factories, the supply of the raw materials to the factories are inadequate. Turkey is rich in marble reserves but this wealth are not used efficiently. Opening up a quarriy is a very costly business and not all the enterprises have their own quarries. The existing the problems in energy, transport, water and the infrastructure cause big difficulties.

2.12. TRANSPORT PROBLEM

The fact that the marble quarries are far from the city or exporting centers create transport problems, and increase the cost. The construction and the maintenance of the roads connecting the quarry to the main roads are very expensive. Most of the marble export is made by sea. For this reason, countries which export marbles should have high capacity harbors. [36] The biggest problem is that the domestic transport which is much more expensive than the export transport. Because most of the quarries are located on the mountains, the transportation of the products from these mountains to the nearest harbor for export purposes takes time and increases the cost. The transportation companies which have great capacities demand high prices and so this effects the cost of the products.[37]

2.13. PROBLEM OF STANDARDIZATION

Having a standard in the color, pattern, quality and the price of the products is very important for the continuity of the export. Some of the factors causing non-standardization are;.

- The production of materials with different stones unsuitable to the sample .
- The necessary color and pattern selection of the product can not be made during and after the production process

[36] Bilgin,Çakır,a.g.e.s.103
[37] Metin Erlat,www.kobifinans.com.tr

- The cutting machines are old and not maintained well, the adjustments are not good enough and also there is lack of qualified personnel to procesies the marble after cutting. Size mistakes occur due to these inefficiencies.

2.14. UNDERMINED MARBLE RESERVES

There is no definite marble reserve list for our country. There is a need to have an inventory showing the color, pattern and geomechanic characteristics of the marbles existing in the country. The marble reserves of each province should be determined with accuracy.

2.15. PROBLEM FACED DURING THE EXPORTATION.

The marble companies should set an export policy which shows a gradual increase. The basic responsibility for this, belongs to the marble companies but the governmental support is also necessary.The following problems should be solved in order to increase the exportation:

- Publicity
- Product and production planning
- Quality Control
- Packing and casing
- Transport
- Pricing
- Delivering the ordered products on time.
- Sectoral organization

2.16. COMMUNICATION PROBLEM

The publicity of the marbles should be made especially in the international fairs in addition to panels, congress and seminars. Fairs should be held and the improvements in the foreign countries should closely be followed. Turkish marbles and the natural stones should be publicized under one name by opening up sales representation offices abroad where marble trade is active and abroad concept should be created by having a good communication network.

CHAPTER III

SURVEY FOR INCREASING THE EXPORT POSSIBILITIES OF THE MARBLE COMPANIES OPERATING IN THE AEGEAN REGION

In this section,an evaluation of a survey prepared and carried out with the marble producers and the marketers who export or aimed to export natural store and marble is made.

3.1. AIMS OF THE STUDY

One of the aims of this study is to carry out research to determine the exportation problems of the marble sector. The other aim is to study the weak and the powerful sides of the marble sector in details and try to find solutions to the problems. In general the problems of natural stone sector was studied in details in the previous section. In this section, the problems related to exportation have been investigated with a more real approach using up-to-date data.

3.2. THE CONTENT OF THE STUDY

In this study marble producers and operators and the exporters producers and operators of the Aegean Region are taken into consideration. The study is limited to the provinces in the Aegean Region and the companies who are have taken part in the survey are in Afyon, Denizli, Muğla, Aydın, Uşak, Manisa and İzmir, provinces.

3.3.The Importance Of The Study

- The importance of this study can be grouped under the following points.
- Assessing the position of the natural stone and marble sector which is gradually becoming a growing industry in the world and identifiying the short coming of it. Then the marble companies and the government may take measures to improve the exportation by taking the necessary measures.
- Turkey may improve its export in this sector by learning more about their rivals positions and policies in the natural stone sector and by developing her strategies against them.
- Turkey should increase its share in the international markets by making studies to solve the exportation the problems and by forming a conscious policy in order to solve them.

3.4. THE SURVEY ABOUT THE EXPORT OPPORTUNITIES OF THE MARBLE COMPANIES OPERATING IN THE AEGEAN REGION

In this part the answers given to the questionnaire containing 46 questions are evaluated. The SPSS 11.0 (Statistical Programming for Social Scientist) was used for processing the survey data. The answers are given as frequency and percentages.

1. The List Of The Companies Who Participated In The Survey

The names of the companies which participated in the survey are given in table 1.

Table 1-The Names of the marble and Natural Stone companies.

Alimoğlu Marble

Alpay Marble Ltd.Şirketi

Aydın Marble San.Ltd

Alacakaya Marble

Alyonos Marble

Batı Ege

Bahçeci Marble

Başaranlar

Baştürk Marble

Baykarcılar Marble

Bozkır Travert

Bıçakcılar Marble

Çelikkol Marble

Dervişoğlu Marble

Dimer

Ege Özmersan

Emmioğlu Marble

Eminoğlu Marble

Ege Doğaltaş Ve Traverten

Efeler Marble

Fatih Marble

Ferma Madencilik

Gerçek Marble

Gürel Marble

Graniter

HP Marble

Hürok Marble

İntest Doğaltaş

İnmertaş

İş-Mer

İlk Adım Marble

İzko

Kaptaş A.Ş

Kayapınar Marble

Karakayalar

Karat Marble

Kafkas Marble

Konmer San Tic

Lütfü Tavancı

Nurmar Madenci

Olympos Marble

Oğuz Marble

Özçelikler

Portsan Marble

Rentaş Marble

Remar&Müsevitoğlu

Seher Tas

Turkuaz Traverten

Tramertaş

1.2. The Distribution of the authorities who answered the survey form

Table 2 Authorities contributed to the survey

TITLE	TOTAL NUMBER
Owner of the firm	21
General manager and the administrator	16
Architect	2
Export and marketing Officer	6
Engineer	6
Production officer	1
TOTAL	53

1.3. The type of the companies participated in the survey

Table 3-The type of the company

Type of the company	Frequency	Percentage (%)
Producer	3	5,7
Producer and Exporter	43	81,1
Exporter	2	3,8
TOTAL	48	90,6

As can it be seen from the table 3, 43 companies deal with both production and export, 3 of them deal with only production and only 2 companies export natural stone and marble.

1.4. “How long has your firm been operating?”

Table 4 Operation frequency and percantager of the forms contributed to the survey.

Operation Duration	Frequency	Percentage (%)
Less than a year	3	5,7
Between 1-5 years	18	34
Between 6-10 years	10	18,9
More than 10 years	18	34
TOTAL	49	92,5

34 % of the companies have been operating between 1-5 years, 18,9 % of them between 6-10 years and 5,7 % of them have been in the sector less than a year.

1.5. "How many people are working in the company?"

Table 5: Number of the Employees working in the company.

Number of the Employees	Frequency	Percentage (%)
Between 10 and 49	18	34
Between 50 and 99	17	32,1
Between 100 and 499	12	22,6
500 and over	2	3,8
TOTAL	49	92,5

The number of the employees are between 10 and 49 in 34% of the companies, between 50 and 99 in 32.1%, between 100 and 499 in 22.6% and 500 and above employees in 3,8% of the companies who contributed to the survey.

1.6. The distribution of the employees working in these companies, according to their educational status is shown in table 6.

Table 6: Educational Backgrounds of the Employees

Educational Background	Average
Technical personnel	4,48
Engineers	3,11
Administrators	4,95

The average number of the technical personnel in these companies is 4.48; engineers are 3.11 and administrators are 4.95.

The trustability of the measure through which the ideas related to the educational backgrounds of the employess are taken is achieved as 62.63% (The trustability has been measured by Cronbach Alphe method(0,6263)).

1.7. Given to “Do you organize in service trainings for your personnel?" The Frequency and the percentage of the answers are shown below in table 7 and the to” How often do you organize service training?” is shown in table 8.

Table 7: in service Training

In service Training	Frequency	Percentage (%)
No	18	34
Yes	31	58,5
TOTAL	49	92,5

58% of the companies arrange in service trainings but 34% of them don’t.

1.8. “How often are the in service training programs organized?"

Table 8. Frequency of the in-service Training

Frequency of the in-service Training	Frequency	Percentage (%)
Once in every month	7	13,2
Once in two months	4	7,5
Once a year	10	18,9
Once in five years	0	0
Seldom	9	17
Total	30	56,6

While 18.9% of the companies arrange in service programs once a year, 17% of them seldom, 13% of them once a month and 7.5% once in two months.

The trustability of the measure through which the ideas related to countries that companies export is achieved as 80,62%(The trustability has been measured by Cronbach Alphe method 0,8062)).

1.9. Frequency and the percentage of the answers given to the question “Which countries do you do export to?"

Table 9:Exporting countries

EXPORTING COUNTRIES	FREQUENCY	PERCENTAGE (%)
USA	38	71,7
CHINA	15	28,3
ENGLAND	24	45,3
SPAIN	25	47,2
SAUDI ARABIA	14	26,4
ISRAEL	24	45,3
GREECE	13	24,5
AEGEAN FREE ZONE	6	11,3
CANADA	18	34
ITALY	16	30,2
NETHERLANDS	17	32,1
UNITED ARAB EMIRATES	8	15,1
RUSSIA	12	22,6
REPUCLIC OF SOUTH AFRICA	8	15,1
IRAQ	9	17
FRANCE	6	11,3
BELGIUM	11	20,8

INDIA	12	22,6
AUSTRALIA	4	7,5
IRELAND	2	3,8
SYRIA	11	20,8
JAPAN	9	17
GERMANY	5	9,4
BRASIL	1	1,9
OTHER	6	13,3

- 71.7% of the countries export natural stones and marble to the USA.
- 28.3% of the countries export natural Stones and marble to CHINA.
- 45.3% of the countries export to England but 43.3% of the comparies who contributed survey doesn't export natural stones and marble to abroad.
- Most of the companies who contributed to the survey don't export natural stones and marble to Greece.
- Only 11.3% of the companies export to the Aegean Free Zone.
- None of the companies export to KKTC, Taiwan and Hong Kong.

1.10. "Have you got any marble quarries suitable for block production? And if you have , how many?" The answers to this question are given below.

Tablo10: The ownership of the marble quarries

The marble quarry ownership	Frequency	Percentage (%)
No	9	17
Yes	40	75,5

75.5% of the companies own their own marble quarries.

Descriptive Statistics

	Mean	Std. Deviation
If the answer is yes	3.19	3.73

1.11. “In which cities do you have marble quarries?” The answer to this question and their frequency and percentage is shown below.

DENIZLI	Frequency	Percentage (%)
There isn’t	31	58,5
There is	18	34

18 of the companies don’t have a marble quarry in Denizli.

AFYON	Frequency	Percentage (%)
There isn’t	35	71,4
There is	14	28,6

14 of the companies have a marble quarry in Afyon.

AYDIN	Frequency	Percentage (%)
There isn’t	43	87,8
There is	6	12,2

6 of the companies have marble quarries in Aydın.

MUĞLA	Frequency	Percentage (%)
There isn’t	35	71,3
There is	14	34,7

14 of the companies have marble quarries in Muğla.

IZMIR	Frequency	Percentage (%)
There is	46	93,9
There isn’t	3	6,1

MANISA	Frequency	Percentage (%)
There isn’t	47	95,9
There is	2	4,1

USAK	Frequency	Percentage (%)
There isn’t	44	89,8
There is	5	10,2

OTHER	Frequency	Percentage (%)
There isn’t	38	77,6
There is	11	22,4

11 companies don’t have marble quarries in the provances other than the ones in the Aegean Region.

Other provances	Number
ANTALYA	3
BILECIK	2
ESKISEHIR	1
NEVSEHIR	1
ELAZIG	2
AKSEHIR	1
KUTAHYA	1

The trustability of the measure through which the ideas related to cities that marble quarries have been is achieved as 68,62%(The trustability has been measured by Cronbach Alphe method 0,6867)).

1.12. “Which products do you export?” The answers and their frequency and percentage are given below.

Tablo12: Exported product groups

Product group	Frequency	Percentage (%)
Block marble	27	50,9
Processed marble	38	71,7
Patinated products	29	54,7
Other	13	24,5

71.7% of the companies export processed marbles.

The trustability of the measure through which the ideas related to products that companies export is achieved as 67,59%%(The trustability has been measured by Cronbach Alphe method 0,67,59)).

1.13. “What kind of quarry types do you have?”Their frequency and percentage of the answers are given below.

Type of quarry	Frequency	Percentage (%)
Marble	30	61,2
Limestone	9	18,4
Travertine	29	59,2
Onyx	2	4,1
Granite	7	14,3

61.2% of the quarries are marble quarry and Travertine follows it by 59.2 %.

The trustability of the measure through which the ideas related to the distribution of mining /quarry types is achieved as 61,19%%(The trustability has been measured by Cronbach Alphe method 0,6119)).

1.14. "Have you got a direct marketing or publicity office or depot outside Turkey?" The frequency and percentages of the answers given to this question are mentioned below.

Having an Office abroad

Office	Frequency	Percentage (%)
No	33	62,3
Yes	16	30,2

30.2% of the companies claimed that they have offices abroad.

The Distribution of the offices/depots

Countries	Frequency	Percentage (%)
USA	14	26,4
NETHERLANDS	2	3,8
ITALY	1	1,9
CHINA	1	1,9
ENGLAND	1	1,9
SPAIN	1	1,9
GERMANY	1	1,9
AUSTRALIA	1	1,9
BRASIL	1	1,9
IRAQ	1	1,9

The USA takes the first place with 26.4%.

The trustability of the measure through which the ideas related to the distribution of the offices/ depots abroad is achieved as 71,29%%(The trustability has been measured by Cronbach Alphe method 0,7129)).

1.15. “Do you have a unit which does the quality control of your products in your firm? Which criteria do you take into consideration?” The frequency and percentages of the answers given to this question are as follows.

The presence of Quality Control Department

Department	Frequency	Percentage (%)
No	15	28,3
Yes	34	64,2

34 of the companies who contributed to the survey stated that they had have Quality Control Departments.

Table 15: The criteria used in quality assessment by the companies.

Quality Criteria	Frequency	Percentage (%)
Size	34	69,4
Color-Pattern	33	67,3
Packing	20	40,8
Filling Quality	29	59,2
Square Quality	29	59,2

While 34 companies stated that they give importance to the size, 33 of them emphasized the color and pattern quality; 20 companies emphasized the durability of the packing system and 29 companies suggested both filling and set-square quality, are important.

The trustability of the measure through which the ideas related to the quality techniques the companies took into consideration is achieved as 89,53%%(The trustability has been measured by Cronbach Alphe method 0,8953)).

1.16. “Which promotion techniques given below do you make use of for the countries you export to?” The answers, frequency and the percentage of the answeres given to this question are listed below.

Table 16:The Promotion exercises carried out by the companies.

A) EUROPIAN UNION (ITALY,SPAIN)

	FREQUENCY	PERCENTAGE (%)
Change in the product price according to the order amount	25	47,2
Sending samples	37	69,8
Providing customers services	21	39,6
Sending catalogue and brochures	27	50,9
Show warrantee	14	26,4
Publicizing through TV or media	6	11,3
Participating in the national and international fairs	23	43,4
Others	2	3,8

69.8% of the companies have preferred sending samples to the European Union countries; 50.9% of them found sending brochures and catalogue are more useful and 47.2% of them have preferred changing the product prices according to the order amount.

B) NORTH AMERICA(THE USA,CANADA)

	FREQUENCY	PERCENTAGE (%)
Change in the product price according to the order amount	26	49,1
Sending samples	33	62,3
Providing customers services	21	39,6
Sending catalogue and brochures	26	49,1
Show warrantee	12	22,6
Publicizing through TV or media	5	9,4
Participating in national and international fairs	24	45,3
Others	6	11,3

62.3% of the companies sent samples to the North American countries; 49.1% preferred sending brochures and catalogues and also changed the product prices according to the product amount and 45.3% are participating in the national and international fairs.

C) SOUTH AMERICA(BRASIL)

	FREQUENCY	PERCENTAGE (%)
Change in the product price according to the order amount	7	13,2
Sending samples	14	26,4
Providing customer services	8	15,1
Sending catalogue and brochures	14	26,4
Show warrantee	6	11,3
Publicizing through TV or media	2	3,8
Participating in national and international fairs	10	18,9
Others	6	11,3

26.4% of the companies preferred sending brochures and samples to South America and 18.9% are participating the national and international fairs.

D) ASIA(IRAQ,SAUDİ ARABIA)

	FREQUENCY	PERCENTAGE (%)
Change in the product price according to the order amount	11	20,8
Sending samples	14	26,4
Providing customers services	11	20,8
Sending catalogue and brochures	13	24,5
Show warrantee	4	7,5
Publicizing through TV or media	6	11,3
Participating in national and international fairs	7	13,2
Others	2	5,7

26.4% of the companies are sending samples to the Asian countries, 24.5% of them are sending brochures and catalogues, 20.8% of them are offering customer services and make changes in the product price according to the product amount

E) SOUTH EAST(INDIA)

	FREQUENCY	PERCENTAGE (%)
Change in the product price according to the order amount	8	20,8
Sending samples	10	18,9
Providing customers services	9	17
Sending catalogue and brochures	4	7,5
Show warrantee	2	3,8
Publicizing through TV or media	2	7,5
Participating in national and international fairs	6	11,3
Others	7	13,2

20.8% of the companies exporting to the South Eastern countries are changing the product price according to the order amount and 18.9% are sending samples.

F) EAST ASIA(JAPAN)

	FREQUENCY	PERCENTAGE (%)
Change in the product price according to the order amount	11	20,8
Sending samples	11	20,8
Providing customers services	15	28,3
Sending catalogue and brochures	6	11,3
Show warrantee	3	5,7
Publicizing through TV or media	7	13,2
Participating in national and international fairs	4	7,5
Others	0	0

28.3% of the companies are offering customer services; 20.8% of them are both changing the product price according to the order amount and sending samples. None of the companies have taken part in the international fairs held in china.

G) AUSTRALIA

	FREQUENCY	PERCENTAGE (%)
Change in the product price according to the order amount	9	17
Sending samples	6	11,3
Providing customer services	11	20,8
Sending catalogue and brochures	5	9,4
Show warrantee	3	5,7
Publicizing through TV or media	7	13,2
Participating in national and international fairs	0	0
Others	0	0

20.8% of the companies are offering customer services and 17% are changing the product prices.

The trustability of the measure through which the ideas related to the promotion techniques carried out by the companies is achieved as 95,76%%(The trustability has been measured by Cronbach Alphe method 0,9576)).

1.17. “How do you follow the developments in the marble sector?”

The frequency and percentage of the answers given to question are as follows:

Table 17: The way how the developments in the marble sector is followed.

	FREQUENCY	PERCENTAGE (%)
Through verbal or written media	28	52,8
By observing the other firms	21	39,6
By participating in the national and international fairs	41	77,4
By following domestic and foreign publications	29	54,7
Through internet	38	71,7
By participating in the informative meetings	17	32,1
We are not following anything	4	7,5

41 of the companies mentioned that they were taking part in the national and international fairs, 38 of them answered that they were following the developments through internet and 4 companies stated that they were not following any developments.

The trustability of the measure through which the ideas related to the way how the developments in the marble sector are followed is achieved as 85,47%%(The trustability has been measured by Cronbach Alphe method 0,8547)).

1.18. “How do you determine the quality levels of your products?” The frequency and the percentage of the answers give to this question is as follows.

Table 18:Determining the quality level of the products.

Method of Quality Control	FREQUENCY	PERCENTAGE (%)
Through the quality control department	25	51
Our own experience	32	65,3
There is no quality control	1	2
Other	1	2

32 companies stated that they determine the quality of their products by their own experience and 25 companies do it through their quality control departments.

The trustability of the measure through which the ideas related to the determination of the quality level of the products is achieved as 98,19%%(The trustability has been measured by Cronbach Alphe method 0,9819)).

1.19. “What is the change in the production of the raw marble/block in the last five years?” The frequency and the percentage of the answers given to this question are listed below.

Table 19: The change in the amount of the raw marble block production

The change in the amount of the raw marble block production	FREQUENCY	PERCENTAGE (%)
Increased once	15	28,3
Increased twice	21	39,6
Did not change	8	15,1
Decreased once	3	5,7
Decreased twice	2	3,8

21 of the companies stated that the raw marble production increased once and more and 15 stated that increased twice, within the last five years.

What is the change in the production of the processed marble in the last five years?” The frequency and the percentage of the answeres given to this question are listed below.

The change in the processed marble production	FREQUENCY	PERCENTAGE (%)
Increased once	15	28,3
Increased twice	23	43,4
Did not change	8	15,1
Decreased once	1	1,9
Decreased twice	2	3,8

23 firms stated that the increase in the processed marble production occurred once and 15 stated that the change occurred twice, within the last five years.

The change in the revenue of the company.

The Change In The Revenue of The Company	Frequency	Percentage (%)
Increased once	17	32,1
Increased twice	18	34
Did not change	10	18,9
Decreased once	2	3,8
Decreased twice	2	3,8

18 firms stated that their revenue doubled up and 10 firms declared that there was no change in their revenue.

1.20. “Is the company’s is income within the limitations of your targets?” The answers to the question are as follows.

Table 20: Comparison of The Company Income With Its Targets

Comparison of The Company Income With Its Targets	Frequency	Percentage (%)
No	26	49,1
Yes	23	43,4

The order of importance	1.	2.	3.	4.	5.
Why the company incomes don't agree with the targets.					
There are lots of rivals and there is unfair competition	10	2	1	4	3
The products which are up to the desired quality and price can not be presented	2				1
There is lack of publicity and effort that help increase the sales	3	1	4	3	1
Can not provide quality standards		1		3	
Not being strong enough in the marketing activities	2	2	24		1
Taxes and the funds are very high	2	9	4	1	2
Law and legislation force the product capacity	1	3	2	1	
The cost of power is high	1	5	7	4	
Labor expenses are high	4	3	4	4	5
Lack of qualified personnel	1	1	2	3	3
Being dependent on foreign countries for the supply of hard material					1
Other					

The ones who said no, were asked the reason for it?Number 1 is chosen as the most important reason.

10 of the companies suggested having a large number of rivals and unfair competition as the first important reason; whereas 3 companies indicated it as the 3rd and 5th important reason. 2 companies said "The products up to the desired quality and price cannot be presented" as the 2nd important reason and the other companies did not indicate any important reason. 9 companies suggested "taxes and funds are very important" as the 2nd important reason but only one company found this as the fourth important point:

The trustability of the measure through which the ideas related to why the company incomes do not agree wits targets is achieved as 57,11%%(The trustability has been measured by Cronbach Alphe method 0,5711))

1.21. “What are the problems you face with while you are exporting?” The companies answered to this question by giving answers in the order of importance from 1 to 5. Number 1 is the most important point.

ORDER OF IMPORTANCE	1.	2.	3.	4.	5.
The problems faced in exporting					
Problems related to marketing	10	4	3	4	8
Financial problems	5	5	1	1	2
The problem of complying with quality standards			1		1
Problems related to the regulation	3	2	4	4	9
Lack of marketing personnel who knows a foreign language		1	3	3	1
Customs problems		1			2
Transportation problems	2	1	3	12	2
Inadequacy of technology	2		1		1
Lack of raw material supply		1	3		
Inadequacy of the harbor services	1	2	3		
Cutting of the prices due to unfair competition	14		7	7	4
High cost of power	9	14	10	4	5
High cost of labor	1	12	6	8	2
Not being able to provide color and pattern homogeneity	1		3	1	2

14 companies saw “Cutting of the prices due to unfair competition” as a number one problem. 9 companies stated that high cost of power is the 1st important problem but 14 companies saw it as the

2nd important problem. The problems caused by the regulation were found as the 5th important problem by 9 companies.

The trustability of the measure through which the ideas related to the problems faced with in export is achieved as 87,31%%(The trustability has been measured by Cronbach Alphe method 0,8731)).

1.22. Please list the main expense items in the order of importance

Degree Of Importance of the Main Expenses	1.	2.	3.	4.	5.
Main expenses					
Energy(petrol, power)expense	30	8	6	2	1
Labor expense	10	21	8	4	3
Transport expense	4	11	19	5	3
Taxes and funds	3	6	5	18	10
Royalty and rent expenses	1	1	1	1	3
Consumables	1	2	6	12	15

30 of the companies put energy expense as the number 1 important expense. 21 companies found Labor expenses as the 2nd important expense. 9 companies found transport expenses as the 3rd important expense.18 of them stated taxes and funds as the 4th important expense and 15 companies found consumables as the 5th important expense.

The trustability of the measure through which the ideas related to the degree of main expense items is achieved as 77,39%%(The trustability has been measured by Cronbach Alphe method 0,7739)).

1.23. “Are you running any Research and Development studies”? The answers are assessed as the frequency and percentage.

Re-de studies	Frequency	Percentage (%)
No	28	52,8
Yes	21	39,6

52.8% of the companies carry Research and development studies.

1.24. “What are your strong and weak sides compared with your rivals?”

Strong sides	Frequency
Marketing policy	28
Sales policy	36
Capital and finance policy	26
Pricing policy	35
Customer relations network	36
Closeness to the raw material	32
Production policy	41
The position of qualified personnel	29
The trade attraction of the marble types	43

28 of the companies claimed that they are more powerful in the marketing policy and 41 companies claimed that their production policy is stronger than the others.

The trustability of the measure through which the ideas related to the companies’strong and weak sides compared with their rivals is achieved as 67,19%%(The trustability has been measured by Cronbach Alphe method 0,6719))

1.25. “Does your company do foreign market research? If yes, how do you do it?”

Do you Carry out foreign market research	Frequency	Percentage (%)
No	14	26,6
Yes	35	66

66% of the companies carry foreign market research.

The way the foreign market research is carried out	Frequency	Percentage (%)
Through intermediate institutions	20	37,7
By visiting the market in person	24	45,3
Through trade and industry chambers	7	13,2
Through foreign research institutions	5	9,4
Other	7	13,2

45.3% of the companies carry out the market research by visiting the foreign market personelly. Only 9.4% use foreign research institution in the market research.

The trustability of the measure through which the ideas related to the way the foreign market research is carried out is achieved as 87,16%%(The trustability has been measured by Cronbach Alphe method 0,8716))

1.26. “Please state the names of three countries where your company export in the order of export volume. “

The countries exported to	Frequency
The USA	36
JAPAN	16
ENGLAND	11
SPAIN	8
SAUDIA ARABIA	1
ISRAEL	5
GREECE	5
AEGEAN FREE ZONE	1
CANADA	9
ITALY	10

NETHERLANDS	6
UNITED ARAB EMIRATES	2
RUSSIA	2
SOUTH AFRICAN REPUBLIC	3
KKTC	3
IRAQ	1
FRANCE	3
BELGIUM	1
AUSTRALIA	1
IRELAND	3
SYRIA	1
JAPAN	2
GERMANY	1
OTHER	4
BRASIL	2

36 of the countries are exporting to the USA; 16 of them to China; 11 of them to England and 10 of them to Italy.

1.27. “What are the sales rates of the products in the domestic and foreign markets?”

	Average
The rate of domestic market sales	29,02
The rate of foreign market sales	72,67

72.67% of the companies export marbles to the foreign markets.

The trustability of the measure through which the ideas related to the rate of domestic and foreign market salesis achieved as 67,20%%(The trustability has been measured by Cronbach Alphe method 0,6720)).

1.28. “How did the cancellation of the tax refund and the other incentive affect you?”

Cancellation of the tax refund on the Export	Frequency	Percentage (%)
Effected too much	9	17
Effected much	19	35,8
Effected a little	9	17
Effected very little	4	7,5
Did not effect	8	15,1

28 companies claimed that the cancellation of the tax refunds and other incentives affected their export much and 13 of them claimed that it affected a little.

1.29. “Are you making use of the export loans?”

Using The Export Loans	Frequency	Percentage (%)
No	29	54,7
Yes	20	37,7

29 f the companies are not taking advantage of the export credits.

1.30. What kinds of precautions should be taken to expand your export?” The participants are asked to give their answers to this question in order of importance,1-5.

Degree Of Importance	1.	2.	3.	4.	5.
The measures to improve the export					
Incentives should continue	24	2	9	1	4
The export loans should increase	1	23	3	2	4
The foreign market should be followed closely	3	5	7	5	3
Loan interests should drop		1	11	9	10
The formalities related to export should be lessened	3	4	6	16	7
There should be an easier transportation	1	6	4	2	3
The energy expenses should be subsidized by	16	6	7	9	7

the government to a certain extend			
Other	1	1	2

24 companies mentioned “incentives should continue” as the 1st importance; 23 companies mentioned “The export loan should increase” as the 2nd importance; 11 companies mentioned “Loan interests should drop” as the third importance and 16 companies mentioned” The formalities related to export should be lessened” as the third important measures.

The trustability of the measure through which the ideas related to the measurements/precautions to improve the export is achieved as 87,10%(The trustability has been measured by Cronbach Alphe method 0,8710)).

1.31. “Will the mining law solve the bureaucratic formalities and the nerve-racking problems?"

Can the new mining law solve the bureaucratic formalities.

The ideas on the mining law	Frequency
I fully agree	2
I agree	13
I don’t know	12
I don’t agree	11
I don’t agree at all	11

22 companies did not think that the new law would solve the bureaucratic formalities but 15 companies thought it would.

1.32. “Do you think the exporters’ unions are working well enough to improve the export?”

Is the work of the exporter unions adequate	Frequency	Percentage (%)
No	22	41,5
Yes	27	50,9

27 companies think they work adequately, and 22 of them think that they are not working adequately.

The reasons why they think they don’t work adequately are:

There is a belief that the union people are working for their own profit

The executers don’t spare enough time

There is not enough coordination and cooperation

They don’t have enough knowledge about the trade

Turkish stones are not publicized well

1.33. “How much do you agree with the ideas for increasing of export possibilities? “

Most of the companies agree definitely with the idea of “some marble producers give harm to the quality image of Turkish Stones by dropping the prices in the foreign market.” Again most of them don’t agree at all with the idea of “The lack of quality in production is much more important than the marketing problem in the development of marble export in Turkey“.

The trustability of the measures through which the ideas related to natural Stone and marble export are taken achieved 63.27 %(The trustability has been measured by Cronbach Alphe method (0.6327)).

1.34. “Which country will be your strongest rival in the next 5 years?”

The strongest rivals of the companies within the next 5 years.

Rivals	Frequency	Percentage (%)
China	31	58,5
Italy	15	28,3
Spain	3	5,7

58.5% of the companies see China as their main rival and 28.3% of them see Italy.

1.35. “Have you participated in the Marmomarc Marble and Natural Stone Technologies Fair held in Verona,2005 Italy? “

Participation in Verona Fair	Frequency	Percentage (%)
No	30	56,6
Yes	19	35,9

The question “How much did you like it? was asked to the 19 companies participated in the 2005 Verona fair.

Answers	Frequency	Percentage (%)
I liked it very much	4	7,5
I liked it	13	24,5
I don’t know	2	3,8

1.36. “Did you participate in the Izmir International Marble Fair-2005 All of the companies participated in the Izmir International Marble Fair 2005.

How much they liked it	Frequency	Percentage (%)
I liked it very much	9	17
I liked it	31	58,5
I don’t know	2	3,8
I didn’t like it	5	9,4
I didn’t like it at all	2	3,8

40 companies declared that they liked it and 7 companies stated that they didn’t like it.

1.37. “Did you participate in the Natural Stone Fair in İstanbul - 2005 and how much did you like it?” The answers are;

Participating in the Natural Stone Fair in Istanbul (2005)	Frequency	Percentage (%)
No	28	52,8
Yes	21	39,6

The 21 companies who stated that they liked it participated in the 2005 Istanbul fair.

How much they liked it	Frequency	Percentage (%)
I liked it very much	2	3,8
I liked it	11	20,8
I don’t know	2	3,8
I didn’t like it	6	11,3

14 companies liked it; 6 did not like it and 2 were not able to decide.

1.38. “Did you participate in America Orlando Fair (2005) and how much did you like it? “.

Participation in America Orlando Fair(2005)	Frequency	Percentage (%)
No	36	67,9
Yes	13	24,5

Only 13 companies participated in America Orlando Fair 2005.

How much they liked it	Frequency	Percentage (%)
I liked it very much	1	1,9
I liked it	11	20,8
I don’t know	1	1,9

1.39. “Did you participate in Germany Nurnberg Fair (2005) and how much did you like it? “.

Participation in Germany Nurnberg Fair	Frequency	Percentage (%)
No	40	75,5
Yes	9	17

How much they liked it	Frequency	Percentage (%)
I liked it	4	7,5
I don’t know	2	3,8
I didn’t like it	1	1,9
I didn’t liked it at all	2	3,8

4 companies like it; 3 companies did not like it.

The trustability of the measure through which the ideas related to the participation in fair (Verona,Izmir,USA,Germany,)in 2005 is achieved as 67,80%(The trustability has been measured by Cronbach Alphe method 0, 6780))

1.40. The Relation between the sales rates of the companies in the foreign markets and their foreign market research has been examined with chi square method but no meaningful statistical relation was found.

	Foreign Market Research Does not	Foreign Market Research Does
The sales rate in the foreign markets		
Between %1 and %19	3	2
Between %20 and %39	0	2
Between %40 and %59	1	5
Between %60 and %79	0	7
Between %80 and %100	10	18

18 of the companies carry out foreign market research and their sales rate is between 80% and 100%; and the sales rate of the companies who do not carry out foreign market research is between 1% and 19%.

The trustability of the measure through which the ideas related to the comparison between foreign market rates and foreign market researches have been examined is achived as 88,02%(The trustability has been measured by Cronbach Alphe method 0, 0,8802))

1.41. The relation between the sales rates of the companies in foreign markets and their benefication from the export loans has been examined with chi square method but no meaningful statistical relation was found.

	Doesn't benefit from export loans	Benefits from export loans
The sales rate in the foreign markets		
Between %1 and %19	5	0
Between %20 and %39	2	0
Between %40 and %59	5	1
Between %60 and %79	3	4
Between %80 and %100	13	15

The sales rate of the 15 companies who benefit from the export loans is between 80% and 100%;and the sales rate of the companies who don't benefit from the export loans is between 1% and 19%.

The trustability of the measure through which the ideas related to the comparison between foreign market rates and export credits have been examined is achived as 59,19%(The trustability has been measured by Cronbach Alphe method 0,5919))

1.42. The relation between benefiting from export loans and the company revenue has been examined with chi square method but no meaningful statistical relation was found.

The change in the company revenue	Went up once	Went up twices	Did not change	Went down once	Went down twices
Not benefited from the export loans	12	6	8	1	2
Benefited from the export loans	5	12	2	1	0

The revenue of the 12 companies which benefited from export credits went up twice; revenue of the other 12 which did not benefit from export loans went down onces as much.

The trustability of the measure through which the ideas related to the comparison between the company revenue and export credits have been examined is achived as 61,19%(The trustability has been measured by Cronbach Alphe method 0,6119))

1.43. The relation between the change in the company revenue and the quality control unit has been examined with chi square method and no meaningful statistical relation was found.

Change in the company revenue	Went up onces	Went up twices	Did not change	Went down onces	Went down twices
There is no quality control unit	5		2	1	1
There is a quality control unit	12		16	1	1

The revenue of the 12 companies who declared that they had a quality control unit went up once as much in the last 5 years but revenue of only 5 companies who did not have any quality control units went up onces as much.

The trustability of the measure through which the ideas related to the comparison between the company revenue and the presence of quality control unit has been examined is achived as 57,19%(The trustability has been measured by Cronbach Alphe method 0,5719))

1.44. The relation between the presence of a quality control unit and the sales rate in the foreign market has been examined with chi square method and a statistically meaningful relation was found.

The sales rate in the foreign market	%1-%19	%20 - %39	%40 - %59	%60-%79	%80-%100
There is no quality control unit	5	1	3	1	5
There is a quality control unit	1	1	4	6	22

The sales rate in the foreign market of the 22 companies which declared that they have quality control units was between 80% and 100% and the same rate of the 5 companies which did not have any quality control unit is between 1% and 19%.

The trustability of the measure through which the ideas related to the comparison between the foreign sales rate and the presence of quality control unit has been examined is achived as 65,02%(The trustability has been measured by Cronbach Alphe method 0,6502))

1.45. The relation between the canceling of tax refunds and the incentive and the sales rate in the foreign markets were investigated and the results are shown below.

	The sales rate in foreign countries				
The effect of the cancellation of tax refunds and incentives	10-%19	20-%39	40-%59	60-%79	80% - %100
Effected too much	2			1	6
Effected a lot	2	1	5	2	9
Effected a little		1			8
Effected a very little	1			1	2
Did not effect at all	1		2	3	2

The trustability of the measure through which the ideas related to the comparison between the foreign sales rate and canceling the tax refunds have been examined is achived as 49,02%(The trustability has been measured by Cronbach Alphe method 0,4902))

1.46. The relations between the powerful sides of the companies compared with their rivals and the sales rates in the foreign markets were examined and the results have been given below.

	SALES RATE IN THE FOREIGN MARKET				
	10- %19	20-%39	40-%59	60-%79	%80 %100
The stronger sides compared with the rivals					
Marketing policy	2	1	3		20
Sales policy	4	2	5	5	20
Capital and finance structure	3	1	4	4	14
Pricing policy	5	2	5	6	17
Customer relations web		1	5	5	21
Closeness to raw material	5	1	6	6	14
Production policy	5	2	7	7	20
Qualified personnel	4	1	4	5	15
Trade attraction of marble types	4	2	7	6	24

The sales rate of the 20 companies who claim that their marketing and sales policy is strong is between 80% and 100%;the sales of the 24 companies which claim that the trade attraction of the marbles they produces is high in the same scale.

The trustability of the measure through which the ideas related to the comparison between the powerful side of companies and the sales rate in foreign market have been examined is achived as 69,12%(The trustability has been measured by Cronbach Alphe method 0,6912))

1.47. The relation between the sales rates in the foreign markets and the participation in the international fairs is shown below

.

	Participation in the international fairs	Participates in the international fairs
Foreign sales rate	Does not	Does
Between %1 and %19	4	1
Between %20 and %39	1	1
Between %40 and %59	3	3
Between %60 and %79	5	2
Between %80 and %100	11	17

The sales of the 17 companies which participates in the international fairs is between 80% and 100%.The sales of the 4, which do not participate in the international fairs, is between 1% and 19%.

The trustability of the measure through which the ideas related to the comparison between the participation in the international fairs and the sales rate in foreign market have been examined is achived as 68,15%(The trustability has been measured by Cronbach Alphe method 0,6815))

1.48. When we study the relation between the main expenses with the companies whose incomes are not within the limitations of the targeted income, we see the following results.

- 16 companies see the power expenses as the number 1 main expenses .
- 11 companies see the labor expenses as the number 2 main expenses.
- 8 companies see transport expenses as the number 3 main expenses .

8 companies see the taxes and funds as the main expenses in number 4 and also 5 companies see the same expenses as number 4.

The trustability of the measure through which the ideas related to the comparison between the main expenses and the companies incomeshave been examined is achived as 55,34%(The trustability has been measured by Cronbach Alphe method 0,5534))

1.49. The relation between the sales rate in the foreign markets and the way of sector developments in the marble sector was examined and the following results were obtained.

	THE SALES RATE IN THE FOREIGN MARKET				
The way the sector developments followed	Between 1% and 19%	Between 20% and 39%	Between 40% and 59%	Between 60% and 79%	Between 80% and 100%
Through verbal and written media	3	2	5	3	15
By watching the other companies	2	1	3	4	11
By participating in the national and international fairs	3	2	7	6	23
By following domestic and foreign publication	3	2	6	3	15
Through internet	4	2	6	5	21
By joining the meetings	2	1	3	1	10

The sales rates of the 15 companies which state that they follow the developments through verbal and written media, 23 companies which participate in national and international fairs, 21 companies follow the developments through internet and 10 companies which join the meetings are between 80% and 100%.

The trustability of the measure through which the ideas related to the comparison between Foreign market sales and the way of following the developments been examined is achived as 60,24%(The trustability has been measured by Cronbach Alphe method 0,6024))

1.50. “What are the most important expenses which have to be faced by the companies whose income are suitable with their targets?” The answers to this question were studied with the chi square method.

14 companies whose income are suitable with the targets see energy expense as the first important expense;10 companies see labor expense as the 2nd important expense;11 companies see transport export as the 3rd important expense;8 companies see both taxes and funds and the consumables as the 4th and the 5th important expense**.**

1.51. The relation between the companies which carry out market research and the companies which claim that their marketing policy is stronger than their rivals was examined by using the chi square method and it is found out that 22 companies which carry out market research had strong marketing policy.

3.5.CONCLUSION AND RECOMMENDATIONS

The use of natural stones and marbles shows a rapid increase in the world.

Since most of the developed countries don’t have sufficient amount of natural stone reserves, they import their needs from abroad. So, the countries which have natural stone reserves export these and grow gradually in this sector. Although Turkey has a potential power to complete in the foreign markets by having high quality marbles in various color and sizes and having very rich natural stones reserves, She can not make use of these reserves at the desired level. If Turkey shows a gradual increase in the export of processed marble, this will bring higher added value compared with the export of blocks, which will be a very pleasing and positive improvement for the future.

The companies should give importance to their international marketing policies in order to survive in the global market.

The following additional conclusions have been reached about the survey carried out with 49 different sized companies on the status of the natural stone trade.

- Almost half of the companies follow the domestic and the foreign market regularly. They also follow the improvements by participating in the national and international fairs and through internet.
- When we study the weaker and the stronger sides of the companies compared with their rivals, a great majority of the companies see "the charm of the marble" and "the production policy" as their stronger points and "capital and financial policy" as their weaker points.

- Most of the companies think that in order to increase the sales rates in the foreign markets one should do market research in the foreign markets and visit these markets personelly.

- 49 companies which took part in the survey emphasize that

a) the export loans should increase

b) the incentives should also increase and continue to be given

c) loan interests should drop

d) the energy expenses should be subsidized by the government to certain extend.

- 49 of the companies which took part in the survey export natural stones mainly to the USA, England and China

- Price cutting due to unfair competition and the energy costs are the main problems the companies are faced with in exportation of the natural stones.

- 34 of the companies which took part in the survey have the quality control departments and prefer controlling their products quality by using their own experienced personnel.

- Most of the companies stated that the income of the company is not suitable with their target and showed the following factors as the main reasons:

a) They are weak in the marketing activities

b) They have numereous of rival

c) There is an unfair competition

- The companies which joined the survey preferred the following promotion techniques:

  a) Before exporting natural stones to the USA and the European Countries they prefer sending samples
  b) Before exporting natural stones to South America and Asian countries they prefer sending samples, catalogues and brochures
  c) While exporting to China and Australia they prefer providing customer services.

- The companies preferred participating in the İzmir Marble Fair, and among the international fairs, they preferred taking part in Verona and Orlando, marble fairs.

- Majority of the enterprises (71.1 %) export processed marble.

In conclusion, the natural stone enterprises should form their own marketing policies in order to improve their businesses in the future. They should attend the international fairs as a part of their promotion policies and visiting the foreign market personely is an important factor in increasing their export potential. The enterprises should form export departments and employ experts in these departments. They can only stay in the foreign market by producing high quality products from their raw material resources. The small and medium sized enterprises can survive by working on different product groups and by uniting their export powers.

The following recommendations regarding the Turkish natural stones and marble can be made in the light of the above mentioned conclusions.

- The share from the natural stone pie of the world and the competition power in this field can be increased by becoming specialized in it and by improving the labor and administration quality.

- Turkey has the 1/3 of the world's marble reserves. That means there is no problem of supply of raw materials. By taking this as an advantage, strategies should be developed to become a world leader in this field in exporting of the natural stones in the future.

- The natural stone companies should do some studies regarding the quality and standardization and make documentation about them.

3.5.1.Determination of The Advantage

The following situations are good opportunities for the development of the natural stone sector:

- There are about 1000 quarries, 1500 small, medium and large scaled natural stone processing factories and 7500 plants in the natural stone sector in Turkey. This potential is an important opportunity
- There are 250.000 people working in the natural stone sector. The investments, training personnel in this sector, will help to have an advantage in the international markets.
- The number of the countries which use natural material is gradually increasing in the world. Since the natural materials are healthy and are preferred as building materials , this increase their usage areas.
- 1/3 of the world marble reserves exist in Turkey. This raw material resources is an important opportunity for beciming a leading country ıf it is used efficiently.
- The companies' having their own raw material resources
- Most of the companies export to America in the first place. Mostly travertine is exported.

3.5.2. The Determination of The Disadvantage

Because there are a large of companies in the natural stone market, there is a big competition in the market. The high competition results in cutting of the prices in the trade.

- The cost of high capacity and advanced technology plant is very high.
- It is very difficult for the medium and small sized companies to compete with the big sized companies. Because the big sized companies deal with a large product group, they are naturally preferred more.

- The infrastructure problem is another threats of this sector. The government should be support the sector by providing energy and transportation facilities. In almost all of the foreign countries, the governments support the infrastructure investments.
- Low currency exchange rate, is another threat for export in the natural stone sector .
- Turkish enterprises use more expensive energy compared with the same sector in the other countries. This also effects the cost of the product.
- Most of the companies are small or medium sized.
- Most of the companies give much importance to their production department.
- Big sized companies don't pay much attention to their Re-De departments.
- There is an inadequacy in the variety of the products.
- Most of the companies give importance to travertines.
- The enterprises give importance in cutting the cost and don't care much about which country they will export to and which delivery channel they will use.
- The companies do not have all agreed pricing policy,this creates a handicap for reaching a desired profit level.

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APPENDICES

APPENDIX A:STUDY QUESTIONNARIES(ENGLISH VERSION)

Dear Participant,

The following is a survey form I have prepared for the purpose of development of export possibilities of the marble enterprises operating in the Aegean region for my Business Administration Post Graduate Studies in İzmir University of Economics. The data derived from this survey will definitely and wholly be used for academic purposes. The individual answers of the companies are very important but the total results derived from sampling are important ,too. The survey data may be sent by e-mail upon request.

The success of the survey depends on your cooperation. Thank you for your contribution to the survey in advance.

Best regards

Ceyda ATAY

1. name of the company (.................................)

(This information will be used for not taking more than one survey from the same company)

2. Name, surname and the title of the authority who fills out the form(……………………....)

3. Which one of the following is your company dealing with?

○ Producer ○Producer and exporter ○ Exporter

4. How long has your firm been operating?

○Less than a year ○ Between 1 and 5 years

○ Between 6 and 10 years ○ More than 10 years

5. The Number of the employees in your company?

○ Between 10 and 49 ○ Between 50 and 99

○ 100 Between 499 ○ 500 and more

6. The distribution of the employees working in your companies, according to their educational status?

○ Technical personnel (.......) ○ Engineers (.........)

○ Administrators ....)

7. Do you organize in service trainings for your personnel?

○ No ○ Yes

If your answer is yes how often do you organize these?

○ Once a month ○ Once in two months

○ Once a year ○Once in Five years ○ Other(........)

8. How long have you been carrying out marble business?

○Less than a year ○ Between 1 and 5 years

○ Between 5 and 10 years ○ More than 10 years

9. Please check the countries you export naturel stone to?

COUNTRIES	
USA	
CHINA	
ENGLAND	
SPAIN	
SAUDİ ARABIA	
ISRAEL	
GREECE	
AEGEAN FREE ZONE	
CANADA	
ITALY	
NEDERLANDS	
UNITED ARAB EMIRATES	
RUSYA	
REPUBLIC OF SOUTH AFRICA	
KKTC	
IRAK	
FRANCE	
BELGIUM	
INDIA	
TAIWAN	
AUSTRALIA	
IRELAND	

HONG KONG	
SYRIA	

10. Have you got any marble quarries where you produce blocks?

○Yes ○No

If yes , how many?(.............)

11. Who owns the lisence of year quarry?

○Belong to my company ○Operated on Royalty

What is the royalty percentage of your company?(...........)%

12. Have you got block marble factory?

○○Yes ○No

13. In which provances do you have marble mines?

○Denizli ○ Afyon ○Aydın ○ Muğla ○ İzmir ○Other(.....)

14. Which products do you export?

○Block marble

○ Processed marble(Slabs, Tiles etc)

○Used up products

○Other(..........)

15. What kind of natural stone types do you have?

○Marble ○ Limestone ○ Travertine

○ Onyx ○ Granite and other hard stones

16. How many machinery have you got in total?

○Tire Wheel (..............................)

○Conveyor scoop (...............................)

○Drill (..............................)

17. What is the machine pact number in your company?

○The number of quad (...............)

○The number of Es.T (...............)

18. What kind of marbles do you export most?

○............

○............

○............

19. Have you got a direct marketing or publicity office or depot outside Turkey?

○Yes ○No

If the answer is yes in which countries do you have these offices or depots?

○...........

○...........

○...........

20. How many different kinds of the stones do you export ?

....

21. Do you have a unit which does the quality control of your products in your firm?

○Yes ○No

If yes, which criteria do you take into consideration?

....

22. Which promotion techniques given below do you make use of for the countries you export to?

THE METHODS	EUROPIAN UNION(Italy, Spain etc))	NORTH AMERICA (Canada, USA etc)	SOUTH AMERICA (Mexico, Brazil etc)	ASIA (Iraq Saudi Arabia etc)	SOUTHEAST(India , Pakistan etc)	EASTASIA(China , Japan etc	AUSTRALIA
Change in the product prices according to the amount							
Sending samples							
Providing customer services							
Sending Brochures and Catalogs of the product							
Providing warrantee							
Publicizing Through television							
Participation to national and international fairs/ having stands							
Other(.................)							

23.How do you follow the developments in the marble sector?

○ Through written and verbal media

○By watching the other companies

○By participating in the national and international fairs

○By watching the national and international broadcasts

○ Through internet

○By joining the meeting related to the subject

○Do not follow

24. How do you determine the quality level of your products?

○Through the quality control department

○By using our own experienced

○There is no quality control

○Other(.................................)

25.

- The change in the production of the raw marble/block in the last five years

○went up once ○ went up twice ○ Did not change ○ went down once

○ went down twice

- The change in the production of the processed marble in the last five years

○went up once ○ went up twice ○ Did not change ○ went down once

○ went down twice

- Change in the revenue of the company

○went up once ○ went up twice ○ Did not change ○ went down once

○ went down twice

25. Is the company income within the limitations of your target?

○Yes ○No

If the answer is no list the reasons in the order of importance from 1 to 5 . (1 is the most important)

○ There are lots of rivals and there is unfair competition

○ The products which are up to the desired quality and price can not be presented

○ There is lack of publicity and effort that help increase the sales

○ Can not provide quality standards

○ Not being strange enough in the marketing activities

○ Taxes and the funds are very high

○ Law and legislation force the product capacity

○ The cost of power is high

○ Labor expenses are high

○ Lack of qualified personnel

○ Being dependent on foreign countries for the supply of hard material

○ Other (.....................................)

26. What are the problems you face with while you are exporting? Put them in the order of importance from 1 to 5 . (1 is the most important)

○ Problems related to marketing

○ Financial problems

○ Lack of row material supply

○Problems related with legislations

○ Lack of marketing personnel who knows a foreign language

○ Customs problems

○ Transportation problems

○ Inadequacy of technology

○ The problem of complying with quality standards

○ Inadequacy of the harbor services

○ Decrease of the prices due to unfair competition

○ High cost of power

○ High cost of labor

○ Not being able to provide color and pattern homogeneity

27. Please list the main expense items in the order of importance? (1 is the most important)

○Energy

○ Labor

○Transport expenses

○Taxes and funds

○Royalty and rent expenses

○Consumable expenses

28. Do you do Re-DE studies in your company?

○Yes ○No

29. What are your strongest and the weakest sides compared with your rivals?

	STRONG SIDES	WEAK SIDES
Marketing Policy	( )	( )
Sales Policy	( )	( )
Capital and Finance Structure	( )	( )
Pricing Policy	( )	( )
Customer relations and its network	( )	( )

Closeness to raw material	( )	( )
Production policy	( )	( )
The position of qualified personnel	( )	( )
The trade attraction of the products	( )	( )

30. Does your company do foreign market research?

○Yes ○No

If yes, how do you do it?

○Through the intermediate institutions

○By visiting the foreign market

○Through the trade and industry chambers

○Through foreign research companies

○Other(..........)

31. Please evaluate three countries you export to according to the export volume

○.. %(   )

○.. %(   )

○ .... %(   )

32. Please state the sales rates of your products

○Domestic market....................................%(   )

○Foreign market   ....%(   )

33. How did the cancellation of tax refunds and the incentives effect your export?

○It effected very much   ○ It effected much   ○ It effected a little

○ It effected very little   ○Did not effect at all

34. Are you making use of the export loans?

○Yes   ○No

35. What kinds of precautions should be taken to expand your export?

(Put them in the order of importance and write 1 for the most important.)

○The incentives should continue,

○The export loan should increase

○Foreign market should be followed closely

○Loan interests should drop

○The formalities related to export should be lessened

○There should be easier transport

○The energy expenses should be subsidized by the government to a certain extend.

○Other (..)

36. Do you think the Mining Law No:3212 which became operative after being published in the official gazette on June 5th 2004 and the Mining Law No:5177 which is related to the changes

in some laws is a solution for the lessening of the bureaucratic formalities and the license problems.

○I definitely agree ○ I agree ○ I don’t know

○ I don’t agree ○ I definitely don’t agree

37. Do you think the exporters’ unions are working well enough?

○Yes ○No

(If no, why not?..........................)

38. Please evaluate if the following are important in trying to increase the export possibilities of your company.

	I definitely agree	I agree	I don’t know	I don’t agree	I definitely don’t agree
The most important way for Turkey to find new and the potential markets is that exporters should participate in the international fairs.					
The improvement in the construction company caused an increase in the export of marbles.					
From taking the marbles from the mines to process and the logistical works, there must be a coordination with total quality management.					
It is necessary to do market analysis and present the products according to the demands of the market					
In Turkey, there is a lack of quality in the products more than the problem of market.					
Since the export of marble in very heavy packages, the loading may not be realized					

in time.					
The distance between block production place and the enterprise is important.					
The distance between the factory where processing is made and the harbor is important.					
Some marble exporter give harm to the sector by cutting price in foreign markets.					
When Turkey joins the European Union, there will be an increase in the marble export.					
Marble is preferred more than granite in the natural stone market of the world.					
The main factors that increase the use of natural stones in the world are wealth, culture and population.					
The companies should open showrooms, offices or depots abroad in order to publicize marbles and the delivery should be made in					

time.					
A marble unit price should be determined in order to prevent unfair competition and there must be an auto control between the companies.					
Turkey has been a technology exporting country rather than importing it.					
There must be a short, medium and long term “natural stone and marble policy”..					
The integrated work of the industry sector and the marble sector will help improve the possibilities of export.					
Universities should provide for the intermediate and technical staff of the sector.					
In the export of natural stones, the importance should be given to the processed products whose					

added value is high.					

39. Did you participate in the Marmomacc Marble and Natural Stones Technologies Fair held in Verone in Italy?

○Yes ○No

If yes, How much were you pleased with the interest shown towards the Turkish marble sector?

○ I liked it very much ○ I liked it ○ I don't know

○ I didn't like it ○ I didn't like it at all

40. Did you participate in İzmir International Marble fair?

○Yes ○No

If yes, How much were you pleased with the interest shown towards the Turkish marble sector?

○ I liked it very much ○ I liked it ○ I don't know

○ I didn't like it ○ I didn't like it at all

41. Did you participate in İstanbul International Natural Stone fair ?

○Yes ○No

If yes, How much were you pleased with the interest shown towards the Turkish marble sector?

○ I liked it very much ○ I liked it ○ I don't know

○ I didn't like it ○ I didn't like it at all

42. Did you participate in Orlando fair in America?

○Yes ○No

If yes, How much were you pleased with the interest shown towards the Turkish marble sector?

○ I liked it very much ○ I liked it ○ I don't know

○ I didn’t like it ○ I didn’t like it at all

43. Did you participate in Nurnberg fair in Germany?

○Yes ○No

If yes, How much were you pleased with the interest shown towards the Turkish marble sector?

○ I liked it very much ○ I liked it ○ I don’t know

○ I didn’t like it ○ I didn’t like it at all

THE SECTORAL ANALYSIS OF THE MARBLE INDUSTRY AS AN

EMERGING MARKET:THE AEGEAN REGION

A THESIS SUBMITTED TO

THE GRADUATE SCHOOL OF SOCIAL SCIENCES

OF

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By

Ceyda ATAY

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF ART

IN

BUSINESS ADMINISTRATION

AUGUST 2006

ABSTRACT

THE SECTORAL ANALYSIS OF THE MARBLE INDUSTRY AS AN EMERGING MARKET:THE AEGEAN REGION

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MBA,Departmnet of Business Administration

Supervisor:Prof .Dr.Erhan Ada

Agust 2006,124.pages

This thesis analyzes the natural stone sector which has become a very important sector within the last ten years or so in Turkey, state of the creating an economic potential as added value, employment, exportation and investment.

In this study , the present and the future state of the marble and natural stones sector has been taken into consideration and the possibilities of increasing the exportation of the natural stones of the companies of the Aegean region from the information derived from the survey, are presented.

This research consists of three chapters. In the first part, the present situation of the marble sector in the world has been studied in detail and the position of the target markets, their production amounts, and exportation and importation data of have been presented. The state of the Turkish marble industry, its progressing process and foreign trade, its present position of it in the world trade and its compatativeness are studied. In addition to this, the general structure of the marble sector in the Aegean region has been explained and the

information are given on the reserves, production and the trade of the marbles and natural stone of the Aegean Region have been studied and their details are presented.

The second chapter gives information on the problems of the marble sector and the suggested solutions to overcome these problem.

In the third chapter the results of the survey carried out for enhancing the exportation capacity of the marble companies in the Aegean region given , At the end of the third chapter, the situation analysis of the natural stones and marble sector in Turkey is presented. (The Swot Analysis)

ÖZET

T ÜRKİYE VE EGE BÖLGESİNDE MERMER SEKTÖRÜNÜN DURUMU,

EGE BÖLGESİNDE FAALİYET YAPAN MERMER FİRMALARININ İHRACATLARINI

GELİŞTİRMESİNE YÖNELİK ANKET UYGULAMA TEKNİĞİ

Atay,Ceyda

İşletme Yüksek Lisans Progrmı,İşletme Yönetim Bölümü

Tez Yöneticisi:Prof.Dr.Erhan ADA

Ağustos 2006,124 sayfa

Bu çalışmada, son on yılda ülkemizde yarattığı istihdam, katma değer, ihracat ve yatırım ile önemli bir ekonomik potansiyel yaratarak önemli bir sektör haline gelen doğaltaş sektörünün analizi yapılmıştır.

Bu çalışmamızda Mermer ve Doğal Taş sektörünün mevcut ve geleceektekidurumu dikkate alınmış ve yapılan anket uygulaması sonunda elde edilen bulgular ışığında Ege Bölgesinde faaliyet gösteren Mermer Firmalarının doğal taş ihracatlarını arttırma olanaklarının araştırılması hedef olarak alınmıştır.

Çalışmamız üç bölümden oluşmaktadır. Birinci bölümde, dünya'da mermercilik sektörünün mevcut durumu incelenerek başlıca hedef pazarlarının durumu,üretim miktarları,ihracat ve ithalat verileri gösterilmiştir.Türkiye'de mermercilik sektörünün durumu,gelişim süreci,dış ticareti,dünyada ticaretindeki mevcut yeri ve rekabet olanakları incelenmiştir.Bunlara ilave olarak, Ege bölgesi mermercilik sektörünün genel yapısı ön plana alınmış, Ege bölgesindeki illerin mermer ve doğal taş rezervleri ,üretimi ve ticareti irdelenerek spesifik bulgular incelenmiştir.

İkinci bölümde Türkiye mermer sektörünün sorunları ve bu sorunların çözümü için yapılan önerileri içermektedir.

Üçüncü bölümde, Ege bölgesinde faaliyet yapan mermer firmalarının ihracatlarını geliştirmesine yönelik anket uygulamasının sonuçları verilmiştir ve uygulama sonucu elde edilen sonuçlar değerlendirilmiştir. Üçüncü bölümün son kısmında ise Türkiye doğal taş ve mermer sektörünün durum analizi (Swot Analizi) yapılmıştır.

Tezin son kısmında ; bu araştırma esnasında başvurulan kaynakların listesi yeralmaktadır.

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