PIPT

Benchmarking Report

Export Strategy Study for Egypt's Ceramic Tiles and Sanitary Ware Industry

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CONTENT TABLE

EGYPTIAN SUPPLY DIAGNOSIS	2
Egyptian Glazed Ceramic Tiles	2
Production Process Analysis	3
Key Observation Re Beneficiry Factories	4
Export Marketing Analyis	5
Egyptian Glazed Sanitary Ware	7
Production Process Analysis	8
Key Observation Re Beneficiry Factories	10
Export Marketing Analyisi	10
EGYPTIAN BENCHMARKING	12
Glazed Ceramic Tiles	12
Egyptian Glazed Ceramic Tiles	12
Quality/Price Benchmarking	12
Cost Structure for Red Body..Italy, China, Thai& Egypt	13
Thai Industry	16
Chinese Industry	20
Brazilian Industry	21
UAE Industry	25
Italian Industry	28
Turkish Industry	31
Spanish Industry	34
Ceramic Sanitary Ware	38
Egyptian Production Costs 2006	38
Turkish Industry	41
ROACA Spain	42
Chinese Industry	43
Thai Industry	48
Comparison of Sanitary Ware Production Costs	49
GLOBAL SUPPLY & DEMAND TRENDS	50
GLAZED CERAMIC TILES	50
WORLD CONSUMPTION	50
Top Importing Countries	51
Diagnostic of Egypt Current Exporting vs. Global Import Trends	54
Influencers for Current Choice of Export Markets	56
Export Performance of the Benchmarking Countries	59
Conclusion on Egypt's Global Prce Positioning	68
CERAMIC SANITARY WARE	69
WORLD CONSUMPTION	69
Top Importing Countries	74
Export Performance of the Benchmarking Countries	88
Developed Markets Summary of Demand Trends	
E.U. TRADE CHANNELS	89
Implications to the Egyptian Manufacturer	91
E.U. PRICE STRUCTURE	93
E.U. MARKET REQUIREMENTS Essential For B 2 B	95

1. EGYPTIAN SUPPLY DIAGNOSIS

A. *Egyptian Glazed Ceramic Tiles*

Beneficiary Companies Findings

Within this section we shall be covering three elements; an overview of the key players, a specific evaluation of the manufacturing process from the site visits and lastly a view on Export Marketing orientation & performance issues.

The Egyptian ceramic tile sector consists of 14 key players shown below with their production capacity, target clients and utilisation:

Company	Category of tile Production	Production Capacity (m sq. m.)	Production Utilisation (m sq. m.)
Manufacturer 1	Ceramic & Porcelain	65.7 17.5	85-90% 70%
Manufacturer 2	Ceramic & Porcelain	16.2 4.8	95% 95%
Manufacturer 3	Ceramic	17	100%
Manufacturer 4	Ceramic & Porcelain	16	N/A
Manufacturer 5	Ceramic	12	N/A
Manufacturer 6	Ceramic & Porcelain	12	91%
Manufacturer 7	Ceramic	11	N/A
Manufacturer 8	Ceramic	9.1	100%
Manufacturer 9	Ceramic	9	100%
Manufacturer 10	Ceramic	8.6	94%
Manufacturer 11	Ceramic	7	N/A
Manufacturer 12	Ceramic	3	N/A
Manufacturer 13	Ceramic	1.5	N/A
Manufacturer 14	Porcelain	1.5	N/A
Total Production		**212**	

* It is worth noting that 50% of the companies were interviewed. Expansion planed within these 9 companies will amount to over 31 m sq m increase of the whole industry's production capacity by 2007.

The total production capacity installed in Egypt is 212 M sq. m. per year distributed over 14 production units. We have studied 6 production units representing an installed production of 159 M sq. m. representing 75% of Egyptian production.

All of the companies visited are operating at, or very close to, their maximum capacity with the exception of one porcelain tile plant, which is operating at 75% of capacity, as it is currently in the early stages of developing its new markets.

Production Process Analysis

All the 6 companies visited by us show the state of the art in equipment and machinery.

- **Body Raw Materials**

In general the hard raw materials for body composition are sourced locally except for some Sodium Feldspar or Syenite Nepheline that are imported either from Italy or from Spain.
As far as the plastic raw materials e.g. ball clay are concerned, Aswan clay is mostly used.

- **Glaze Raw Materials**

Almost all of the raw materials for glaze preparation are imported from Spain and Italy plus some also from China.
Colours, Stains and Pigments are mostly imported from Spain or Italy.
This is quite unlike the situation in Thailand, which has a similar sized industry but which has a local manufacturer of glazes and colours, under a FDI by Ferro, which supplies the local ceramics industry. China has also developed its own glaze and colour companies.

- **Body Preparation**

The most typical technology used is the grinding of complete batch, either in intermittent or in continuous ball mills with water and chemicals added.
After the grinding operations, the slip is passed through a sieve and a magnet, and then stored in storage arks while still having a 35% water contents.
From these arks the slip is pumped to the spray dryer where the humidity is reduced to a level of 5-6% and the resultant powder is stored in metallic bins.

- **Glaze Preparation**

The most typical technology is the grinding of complete batch in intermittent ball mills where frits, and other glaze components are added.
For coloured glazes the pigments are usually mixed in at this stage.
After the required grinding time, glazes are tested and stored in tanks.

- **Forming and Drying**

The powder prepared in the spray dryer and stored in the metallic bins is then taken to the hydraulic presses where the different categories of tiles are formed, before being passed on to the dryers to be dried up to 0,5% moist contents.

- **Firing**

This is the final operation for the raw materials to react with each other and also to melt the glaze and the colours on the tile surface, giving them their final appearance.
This stage may be made immediately after glazing (double- firing), or it may be made only once after glazing (single firing).
In either case the firing operations are made on roller kilns with well determined and controlled temperature and firing cycles.

- **Glazing and Decoration**

Either before or after firing most of the tiles require glazing and decoration. Glazing is performed by glazing machines that create a glazed deposit on the surface of the tiles.
Decoration is provided by the glaze itself in the case of coloured glazes or by colour application through the so-called “serigraphic machines”.

- **Sorting and Packaging**

After firing the tiles are sent to the sorting lines and sorted into different groups according to factory parameters. After this the tiles are packed and shipped to final destination.

- **Labour skills**

We had very little time to appreciate labour skills in detail.
However, and based on international norms of FIRST CHOICE, we note that significant training of foremen/supervisors as well as the general work force is required in this area.

- **Shipping and Logistics**

All factories are able to ship according to requirements and don’t seem to experience any problems with logistics.

▼ KEY OBSERVATIONS RE BENEFICIARY FACTORIES

All factories visited have installed high quality equipment, most of it being modern and up to the latest trends in tile manufacturing.
However only one factory reaches the average international levels for FIRST CHOICE product.
The rest show a very low proportion of FIRST CHOICE, suggesting that although equipped with top-level machinery, a high amount of technical input is still required.
Such technological inputs are absolutely necessary at least at raw materials reception, control and at process control stages.
The reason behind the current competitiveness of these Egyptian factories on the world stage is due simply to low cost labour and cheap energy.
However with the arrival of new manufacturers, either internationally or in Egypt, with equally new machinery but lower staffing levels/better trained operatives and therefore higher quality/productivity, the Beneficiaries may experience profitability problems.
This issue of product quality needs to be addressed not only from an exporting perspective but also as a means of reducing wastage and therefore better controlling costs.

Export Marketing Analysis

Most of the interviewed ceramic tile companies focus on exporting to Arab countries and export 35-65% of their total production, with the exception of one company that exports ceramic tiles only in support of its sanitary ware exports.
However a number of manufacturers have recently shown interest in developing Eastern European countries.

Cyprus and Greece are important among the EU markets and two particular companies have shown interest in entering sophisticated EU markets, outside the DIY channel.
To date almost no companies have either been encouraged or attempted to approach the USA or Canada markets with ceramic tiles, though there was expressed interest entering these markets with porcelain tiles that could carry the high transport cost.

The main entry route into export markets is via agents, often operating through a sole agent per country. Commonly, these agents have their warehouses and sales network through retail stores or are wholesalers with their own showrooms.

It is unusual for companies to manufacture private label for a European brand, but some Beneficiaries have been approached by European DIY chains for white label or DIY label production. However not all companies were able to conclude an agreement due to capacity deficiencies, which triggered some expansion plans, or there are ongoing price/volume negotiations.
The area of construction buyers and tenders for construction materials in the Middle East is poorly exploited, despite huge construction projects within MENA.

PIPT Consultants found that most of the Beneficiaries are very reactive in their export pursuits.
Around 90% of all export contacts are made through an approach from the agent, either at a Tradeshow or the Buyer takes a pro-active role in contacting the manufacturer directly.

Few manufacturers have concentrated at the middle-upper segment of export markets; however among those that take this route, most are more selective in choosing their agents and supportive of their distributors by trying to maintain price levels and withstanding markets pressures on discounting.

PIPT Consultants have found that the level of export sophistication and planned export marketing strategies could be improved considerably and that the majority of Beneficiaries are merely content to make the sale, at almost any level of marginal profit. Therefore some companies put themselves in a dangerous position of a head to head competition with the Chinese.
These manufacturers do not feel that their reputation or corporate image would be affected by either their quality or pricing policy in their choice of export markets.
It is common within most industries, and particularly true within ceramic tiles that buyers associate low prices with poor quality; indeed the Consultant's interviews with international buyers confirmed this.
The Consultants also found that even after successful price/volume export negotiations, further discounts of up to 45% were offered suggesting the weak bargaining position of the manufacturers because of buyers' perceptions of Egypt's tiles as being poor quality/low price.

The Consultants were unable to find much evidence of new ceramic tile designs amongst the Beneficiaries.
The little that was seen of new wide international appeal designs were mostly bought "off the shelf" in Italy and Spain, with very little internally generated.

In the Consultant's view the traditional concentration on the domestic ceramic tile market, coupled with lack of new designs, probably partially explains Egypt's export concentration on the Middle East.

Seemingly in contrast the Consultants found that all the Beneficiaries have particularly well presented and good quality sales literature and catalogues.
Furthermore participation in international Trade Fairs, encouraged by donor/Government subsidies and technical trade organisation support is seen to be increasing.

B. Egyptian Glazed Sanitary Ware

Beneficiary Companies Findings

Within this section we shall be covering three elements; an overview of the key players, a specific evaluation of the manufacturing process and lastly a view on Export Marketing orientation and performance issues.

This Egyptian sector consists of 10 key players who are shown in the following table with their production capacity, target clients and utilisations:

Company	Category of Production	Production Capacity (pcs/year.)	Production Capacity (tons/year)	Production Utilisation
Manufacturer 1	Vitreous China	1,200,000	14,400	100
Manufacturer 2	Vitreous China Fine Fireclay	560,000 560,000	9,520 9,520	66 66
Manufacturer 3	Vitreous China	1,000,00	15,000	N/A
Manufacturer 4	Vitreous China	N/A	N/A	N/A
Manufacturer 5	Vitreous China	1,500,00	22,500	100
Manufacturer 6	Vitreous China	1,200,000	18,000	100
Manufacturer 7	Vitreous China	875,000	18,375	100
Manufacturer 8	Vitreous China	4,000,000	66,000	75-80
Manufacturer 9	Vitreous China	N/A	N/A	N/A
Manufacturer 10	Vitreous China	N/A	N/A	N/A
Total Production Capacity		***Estimated at 12,500,000***		

* It is worth noting that only the numbers for interviewed companies were attainable, as no secondary production capacity figures are available for each company in this sector

The sanitary ware sector is generally operating at or close to its full capacity with only one company having unused night-shift time available for extra production.

As with the ceramic tile sector, the Egyptian ceramic sanitary ware sector has continued to expand its production over the past five years. Most Egyptian sanitary ware companies are currently planning expansions, which indicates a strong market for their products and Management confidence in future market prospects.
We have studied 6 production units representing an installed production of 8.92 M sanitary ware pieces representing in excess of 71% of capacity.

Production Process Analysis

Out of the 6 companies visited by the Consultants only one uses state of the art equipment for casting and glazing. The remaining 5 use traditional casting and glazing techniques.

- **Body Raw Materials**

In general all the raw materials for body composition are imported except for some Silica sand and Sodium Feldspar that are sourced locally

- **Glaze Raw Materials**

Almost all of the raw materials for glaze preparation are imported from Spain, Italy as well as some from China.
Colours, Stains and Pigments are mostly imported from Spain or Italy with reference to improved supply quality coming from China.
This is quite unlike the situation in Thailand, which has a similar sized industry but which has a local manufacturer of glazes and colours, under a FDI by Ferro, which supplies the local ceramics industry. China has also developed its own glaze and colour companies.

- **Body Preparation**

The most typical technology used is the grinding of complete batch, either in intermittent or in continuous ball mills with water and chemicals added.
After the grinding operations, the slip is passed through a sieve and a magnet, and then stored in storage arks while still having a 35% water contents. From these arks the slip is pumped to the casting department.

- **Glaze Preparation**

The most typical technology is the grinding of complete batch in intermittent ball mills where frits, and other glaze components are added.
For coloured glazes the pigments are usually mixed in at this stage.
After the required grinding time, glazes are tested and stored in tanks.

- **Forming**

The slip, prepared and stored in the storage arks, is then taken to the casting department where it is used to form the different sanitary ware pieces.
There are 3 categories of casting based on the pressure used in each such operation:

- Normal pressure casting: the different categories of pieces are formed at normal atmospheric pressure either in individual or in bench plaster moulds. Bench casting means that each mould is connected with the next one for slip supply. This process usually allows 2 castings per shift.
- Low pressure casting: the different categories of pieces are formed in plaster moulds where a low pressure is applied in order to decrease the casting time. This process usually allows 3 castings per shift.
- High pressure casting where the different categories of pieces are formed in special resin moulds where a high pressure is applied in order to decrease the casting time. This process usually allows 30 castings per shift.

Furthermore the Consultants would like to underline that when passing from normal to low and high pressure the cast pieces have far fewer imperfections, are consistent in quality and with accurate dimensions.

In addition they also require less fettling and finishing, therefore less handling and subsequently less breakage.

- **Drying**

After fettling and finishing the sanitary ware pieces require a drying operation in order to reduce the moist contents down to 0.5%.

- **Glazing and Decoration**

Before firing pieces require glazing.
Glazing is performed by hand or by glazing machines (robots) that create a glaze deposit on the surface of the pieces.
Decoration is provided by the glaze itself in case of coloured glazes or by decal application and using one further firing operation.

- **Firing**

This operation is made after glazing on a single firing process.
In any case firing operations are made in tunnels or shuttle kilns, with well accurately controlled temperature and firing cycles.

- **Sorting and Re-firing**

After firing the sanitary ware pieces are sent to the sorting department where they are sorted in different groups according to the factory parameters.
Usually FIRST CHOICE pieces don't show any defects.
Some pieces showing minor defects within certain categories may be worth another re-firing operation. This will result in any minor defects being covered with glaze and the pieces go for another firing, (re-firing)
After this operation the sanitary ware pieces are sorted again.

- **Packaging**

After the sorting operations the pieces are packed and shipped to final destination.

- **Labour skills**

We had very little time to appreciate labour skills in detail.
However, and based on international norms of FIRST CHOICE, we note that significant training of foremen/supervisors as well as the general work force is required in this area.

- **Shipping and Logistics**

All factories are able to ship according to requirements and don't seem to experience any problems with logistics.

▼ KEY OBSERVATIONS RE BENEFICIARY FACTORIES

Only one of the visited factories has installed high quality equipment for casting and glazing (robot).
The advantages of high pressure casting have been already mentioned and should be addressed.
As far as glazing is concerned it's worth mentioning that glazing by hand has a an output of 100 pieces per shift while glazing by robot may produce 1.200 pieces per shift. Furthermore the robot glazing is more consistent in quality with a lower level of glaze wastage.
Without exception all factories are overstaffed primarily in the production area. The result is that a great deal of product handling is apparent with low or non-existing automation.
Most of the factories have a very low percentage of FIRST CHOICE after firing, which means an extra cost for re-firing operations.
Therefore a high amount of technological inputs are still required.
Such technological inputs are absolutely necessary at least at casting, glazing and process control stages.
The reason behind the current competitiveness of these Egyptian factories on the world stage is due simply to low cost labour and cheap energy.
However with the arrival of new manufacturers, either internationally or in Egypt, with equally new machinery but lower staffing levels/better trained operatives and therefore higher quality/productivity, the Beneficiaries may experience profitability problems.
This issue of product quality needs to be addressed not only from an exporting perspective but also as a means of reducing wastage and therefore better controlling costs.

Export Marketing Analysis

6 of the 10 Sanitary Ware manufacturers in Egypt were interviewed, 7 out of the 10 produce both Sanitary Ware and Glazed Ceramic Tiles and some Porcelain Tiles too.
4 out of the 6 interviewed companies manufactured both products ceramic tiles and sanitary ware and 2 produced sanitary ware only.
Over 50% of the sector's exports are through one manufacturer and over 75% by a further three.
Much of the exports are made through Joint Venture Companies with European Brand Manufacturers, semi Egyptian owned or fully European owned manufacturing facilities, hence a significant proportion are inter-company exports. These are generally good for the overall sector growth, but suggest that most Egyptian companies have problems in addressing sophisticated high competition export markets by themselves. Two wholly owned Egyptian companies are quite successful in maturing sophisticated European export markets under their own brands, one at similar export prices to Brazil's and the other at below Chinese prices.
Other Beneficiaries in this sector concentrate on exports to Arab, Middle East and African countries and have not yet attempted to export to more competitive or sophisticated destinations.

This sector is generally very varied in quality levels and export orientations; there are those who realize they cannot compromise quality for short term price gains and are relatively efficient in creating cost savings with that increases in productivity.
Other companies do not compromise on quality and are brand focused, with room for higher cost savings and higher production efficiencies and price their products accordingly. This allows them comfortable margins, a high quality offer and brand support.
A minority of the companies pursue a low price/low quality route offering their products at below Chinese prices and in large volume. These companies accept the minimum profit

margins per piece, are continuously expanding with high labour manual production floors, but are ill prepared for future threats of global competition offering higher quality but at equally low prices.

Agents, buying agents operating on behalf multiple chains or construction buyers are the conventional entry route into export markets. Half of the interviewed companies were manufacturing private European brands that accounted for 5-25% of their overall exports vs. 75-95% for their own private label.

The sanitary ware sector is in general much healthier than the ceramic tiles sector in terms of export market selection and export price range.

As was the case in the Ceramic Tile sector and since most companies produce both ceramic tiles and sanitary ware, promotional and export catalogues are of best international quality and likewise participation in international tradeshows is increasing in recent years due to government/donor programmes' funding and the support of tradeshow organizers.

Some of the main logistical challenges the producers stated they were facing are the high cost of packaging and Euro palettes that have to be used for shipment as well as a lack of payment guarantee mechanisms when dealing with some Eastern European buyers.

BENEFICIARY COMPANIES EXPORT MARKETING SUMMARY

The majority of the ceramic tiles and sanitary ware companies have a good calibre of manager heading their export operations, but there is an obvious lack of quality of support in their export marketing teams; i.e. the need to find suitable staff responsible for certain countries or regional business development and country specific export marketing planning and managing customer relationships.

2. EGYPTIAN BENCHMARKING

A. Egyptian Glazed Ceramic Tiles

Quality/Price Benchmarking

The following benchmarking on quality and price for the Egyptian ceramic tile industry is based on the Consultants qualitative analysis of the general impressions of buyers in different countries in Europe, USA, Caribbean, Africa and Middle East, face to face interviews with EU retail buyers and phone interviews[1] with Trade Buyers in Oman, Lebanon, Syria, UAE and Qatar.

Country	Quality Impression	Price Impression	Actual Price Range Euro/sq m
Italy	High	High	11.00 – 12.00
Spain	High	Medium	7.00 – 9.00
Brazil	High/Medium	Low	2.70 – 6.00
Thailand	High/Medium	Medium/Low	2.70 - 6.00
Turkey	Medium	Low	2.70 – 6.00
UAE	Medium	Medium	2.70 – 6.00
China	Low	Low	2.70 - 4.00
Egypt - general	**Low**	**Low**	**2.70 – 7.00**
Egypt – strong brand	**High**	**Medium/High**	**4.00 – 18.00**

This analysis indicates the strength of Italy/Spain at the top end of the market, especially the former, as well as quality/value positioning of Brazil, Thailand and Turkey.

<u>Cost Structure for Red Body: Italy, China, Thailand & Egypt</u>

The following historical cost structures of ceramic tile are shown below for comparison with the costs in Egypt. While exact cost structures are difficult and in some cases impossible to obtain from individual companies, especially if private and family-owned, due to perceived confidentiality reasons and market sensitivity, publicly quoted companies and trade organizations do give reasonable data on which to base comparisons of typical costs in the industry.

Egyptian Cost breakdown Ceramic v. Porcelain (large-scale)

Cost item	Ceramic Tiles %	Porcelain %
Raw Material	63	70
Wages and salaries	7	4
Energy (electr & gas)	8	6
Depreciation	6	4
Administration	7	5
Marketing	9	11
Total	**100**	**100**

The raw material cost of production for porcelain is higher due to the different materials in the body mix (kaolin, feldspar, plastic clay and silica sand). Energy costs are surprisingly lower in this example from Egypt, although the much higher firing temperatures for porcelain normally result in higher energy costs per unit (unless a much higher capacity kiln is installed to reduce unit costs).

[1] Appendix 2 phone interviews questionnaire

Double-Fired Products (€/sq m) – *Traditional, (mostly obsolete in most countries hence the data being 2000)*

Items	1998 €	1999 €	2000 €	Egypt €	1998 %	1999 %	2000 %	% Egypt
Body raw materials	0.17	0.20	**0.19**		4.04	4.66	**4.34**	
Glaze & colour raw materials	0.93	1.01	**0.97**		22.09	23.54	**22.14**	
Body & glaze raw materials	1.10	1.21	**1.16**	**0.64**	26.13	28.20	**26.48**	**42**
Electric energy	0.40	0.41	**0.45**		9.50	9.56	**10.27**	
Thermal energy	0.46	0.46	**0.60**		10.93	10.72	**13.70**	
Indirect salaries, gas, electricity, spare parts				**0.31**				**16**
Equipment spares, maintenance, consumables	0.44	0.45	**0.42**		10.45	10.49	**9.59**	
Indirect fixed costs, gas, electricity, depreciation				**0.37**				**19**
Packing material	0.20	0.21	**0.22**	**0.13**	4.75	4.90	**5.02**	**7**
Manufacturing staff	1.61	1.55	**1.53**	**0.08**	38.24	36.13	**34.94**	**4**
Total manufacturing costs	**4.21**	**4.29**	**4.38**	**1.53**	**100**	**100**	**100**	**100**
Marketing				**0.20**				
Management				**0.12**				
Interest costs				**0.14**				
Total Costs COST 2002				**1.99**				

The cost of production for single and double firing ceramic tiles are relatively similar in Egypt. From the above it can be clearly seen that the Egyptian producer has a huge cost advantage over the Italian company, which translates into significant marketing opportunities if real and perceived product quality is achieved.

PIPT's team of consultants became aware from the beginning that data given by the participating companies were doubtful in terms of its accuracy (exaggerated in some cases and too conservative in others), however these doubts were considered when it came to benchmarking for the puropse of making our recommendations.

Single Red-Body Firing – Italy (€/sq m)

Items	1998	1999	2000	1998 %	1999 %	2000 %
Body raw materials	0.41	0.41	**0.40**	11.96	11.87	**11.30**
Glaze & colour raw materials	0.52	0.57	**0.56**	14.94	16.46	**15.64**
Electric energy	0.22	0.23	**0.25**	6.35	6.58	**6.95**
Thermal energy	0.32	0.32	**0.43**	9.28	9.32	**12.16**
Equipment spares, maintenance, consumables	0.47	0.48	**0.47**	13.69	13.95	**13.28**
Packing material	0.17	0.17	**0.18**	4.77	5.02	**5.00**
Manufacturing staff	1.35	1.28	**1.27**	39.01	36.80	**35.67**
Total manufacturing costs	**3.47**	**3.47**	**3.57**	**100**	**100**	**100**

It can be seen that the total manufacturing costs of red-body products are quite consistent year by year and in the Consultant's experience these costs *currently are quite similar.*

Comparison of Italian, Chinese & Egyptian Costs of Production (€/sq m)

Single-Fired Red-Body (€/sq m)

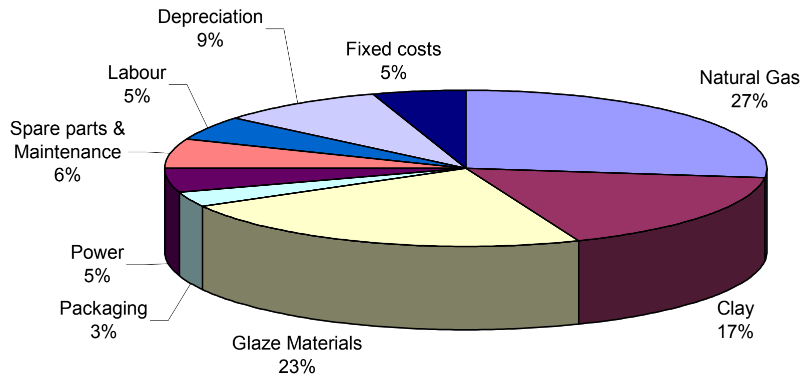
Items	Italy	%	China	%	Egypt Euro	Egypt 2006 %
Body raw materials	0.43	9.2	0.43	19.3		
Glaze & colour raw materials	0.58	12.4	0.40	17.9		
Body + glaze materials	**1.01**	**21.6**	**0.86**	**36.2**	**0.64**	**38.3**
Electric energy	0.33	7.1	0.30	13.5		
Thermal energy (Natural Gas, Coal gas)	0.46	9.8	0.25	11.2		
Equipment spares, maintenance, consumables	0.44	9.4	0.15	6,7		
Packing material	0.21	4.5	0.17	7.6	0.13	**7.8**
Manufacturing staff labour cost	1.37	29.3	0.13	5.8	0.08	**4.8**
Financial cost	0.27	5.8	0.20	8.9	0.14	**8.4**
Depreciation	0.59	12.6	0.20	8.9		
Indirect fixed costs, depreciation, gas, electricity					0.37	**22.1**
Indirect variable costs - salaries, gas, electricity					0.31	**18.6**
Total production costs	**4.68**	**100**	**2.23**	**100**	**1.67**	**100**
General Costs	0.29		0.20			
Administration labour cost	0.13		0.02		**0.12**	
Sales commissions	0.56		0.20			
Marketing/Advertising/Fairs	0.88		0.30		**0.20**	
Sales labour cost	0.32		0.15			
TOTAL COST	**6.86**		**3.10**		**1.99**	

Source: Published data plus authors' evaluation

The above comparison of costs for a single-fired red-body ceramic tile from plants in Italy and Shandong, China with that for a plant in Egypt clearly shows that the Egyptian costs are extremely competitive, even against China, which indicates that the current increased investment in the Egyptian ceramic tile industry is well-founded on a clear competitive cost advantage in both production costs and overall costs. In fact Egyptian cost advantages are in all elements of the cost analysis, raw materials, (although this could reflect quality), production and indirect costs.

Thai ceramic tile cost structure

The typical production cost structure of a ceramic tile plant in Thailand in September 2005 is shown in the chart below:



In 2005/06 the price of Natural Gas has risen by some 32%, which will increase the Natural Gas cost percentage to 30% of production costs in 2006. To compensate and to remain competitive the company is ***taking the following strategic actions***:

- Reduce the usage of expensive imported glaze materials from Spain and Italy (currently 30% of total glaze usage) by substituting with locally made Thai glazes and with Chinese glazes to 60% Thai, 30% and 10% Italy/Spain. This strategy of substitution of glaze source will reduce glaze costs from 23% to 18% of total production costs in 2006.
- Reduce power costs by investment in a sub-station, which will reduce power costs by 10% and reduce power from 5% to 4.5% of production costs in 2006.
- Invest in the recycling of waste heat to reduce the consumption of natural gas in the kilns by 10 – 12%. Modification of 20 kilns will be completed during 2006.

The Egyptian ceramic tile industry is facing very similar problems to the Thai industry with high-priced imported glazes on their production costs but unlike Thailand, the country does not have a readily available supply source for locally made glazes of good quality, therefore a strategy of substitution to locally-made Egyptian glazes is not currently possible.

For the short/medium-term development of the ceramic tile industry in Egypt, it is highly recommended that a strategy be initiated to develop quality glaze production facilities in the country, so that manufacturers of ceramic tile will then have the opportunity to reduce their glaze production costs. The volume of tile now produced in Egypt, which is very similar in size to Thailand means it already has the critical mass to support an independent glaze manufacturer, providing that the glaze is of the highest quality. Two Egyptian companies are already investing in glaze frit plants and further developments should be encouraged within the sector. The lack of adequate local glaze frit and colour manufacturing capacity in Egypt is a strategic weakness of the industry and FDI in this area should therefore be encouraged.

Thai Industry

The total production capacity of Thailand is very similar to that of Egypt and is currently 172 m sq m per year, compared to around 178 m sq m in Egypt. In 2001 the production capacities of both countries were also very similar, Thailand producing 56 m sq m and Egypt 50 m sq m, both countries having been successful in developing their ceramic tile industries

In terms of ceramic tile consumption Egypt consumed 66 m sq m of tile/year in 2003 against 97 m sq m for Thailand and this higher local demand, which includes the rural areas of Thailand, has led to a different development in the marketing strategy of some of the companies. Dynasty Ceramics, one of the major players is concentrating its marketing efforts on the local market with minimal exports, while all other companies are trying to increase their exports.

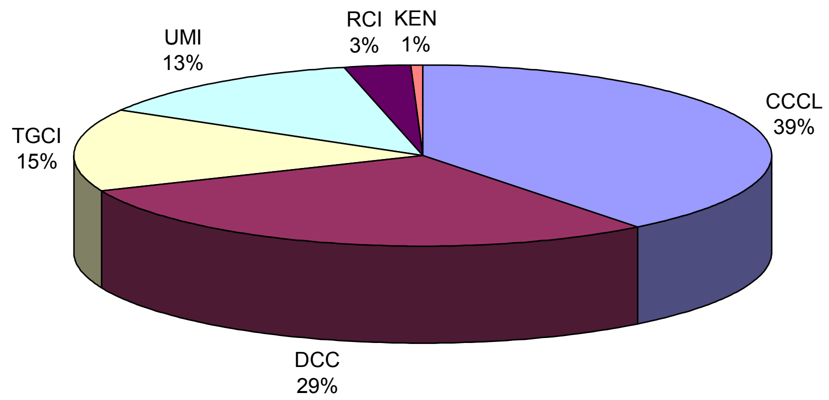
In Thailand five manufacturers dominate the ceramic tiles industry, namely Cementhai Ceramics (CCCL), Thai-German Ceramic Industry (TGCI), Union Mosiac (UMI), Royal Ceramic Industry (RCI) and Dynasty Ceramic (DCC).

Thailand Demand/Supply Balance 2004 – 2006 (m sq,m.)

Company	2004	2005	2006
Cementhai Ceramic Co	64.3	70.3	70.3
Dynasty Ceramic Co	37.8	39.6	51.6
Thai-German Ceramic Industry	26.4	26.4	26.4
Union Mosaic Industry	18.1	23.4	23,4
Royal Ceramic Industry	5.5	5.5	5.5
Kanzai Ceramics Industry	n.a	n.a	0.9
Total Capacity	152.1	165.2	178.1
% Growth in capacity		9%	8%
Overall country demand	120.0	132.0	145.2
% Growth in demand		10%	10%
Net export	20.0	21.0	22.1
% Growth in net exports		5%	5%
Operational rate of the industry	92%	93%	98%

The above chart shows clearly that growth in country demand is taking the extra capacity, which has been introduced but that growth in net exports is continuing to grow also, such that the industry is now operating virtually at full capacity. The expectation is that DCC will continue to add new capacity in the near future, which is expected to be directed towards additional exports now that the company has a firm and dominant position on the domestic market. DCC is already exporting to Canada under an OEM agreement for a Canadian brand and is investigating the West African market. Both of these areas are also targeted by some of the Egyptian manufacturers.

Market share 2006
The market shares for May 2006 of the five main manufacturers, plus one minor manufacturer of ceramic tile in Thailand are shown in the following chart:



Thai Ceramic Tile Profit Margins 2001-05

	2000	2001	2002	2003	2004	2005 (6m)
DCC						
Gross Margin %	16.0	24.4	29.4	32.7	35.8	**37.2**
Net profit margin %	8.1	11.0	16.2	15.9	18.1	**19.9**
Return on Equity %						**49.0**
TGCI						
Gross Margin %	5.1	18.4	25.0	27.5	14.1	13.7
Net profit margin %	-37.0	6.7	10.1	16.0	-4.8	-4.6
Return on Equity %						Nil
RCI						
Gross Margin %	18.6	20.9	25.1	29.0	32.9	32.2
Net profit margin %	-7.3	-8.1	70.1	17.5	12.9	9.3
Return on Equity %						27.0
UMI						
Gross Margin %	19.4	15.8	20.8	20.7	19.0	14.0
Net profit margin %	-16.4	-9.3	-1.4	48.8	4.6	2.3
Return on Equity %						15.0
CCCL						
Gross Margin %	25.8	28.0	31.8	32.0	33.8	31.4
Net profit margin %	0.4	4.3	9.4	12.4	13.1	15.9
Return on Equity						22.0

Source: Company data SET

The situation regarding the profit margins and Return on Equity by company is very mixed with some companies being highly profitable but other with low profitability and in one case, a loss. DCC, which has been concentrating almost exclusively on the local market (99% of sales) has shown improving gross and net profit margins year-by-year and the company has the highest net profit margin and highest Rate of Return on Equity of all the Thai companies.

It is clearly the most dynamic and expansion oriented company in Thailand and could be a ***future threat*** to the Egyptian industry in their export markets. In 2005 the company acquired the three main ceramic tile distributors in Thailand to further consolidate its hold on the local market with around 200 factory outlets, which has put increased pressure on the other Thai companies to export more of their production. TGCI, the weakest player, has resorted to heavy discounting to try to keep market share but this has been at the expense of profitability and the company has been loss-making for the past two years.

DCC is targeting the low-end of the market, while the other Thai producers are focused on the middle-market but this does indicate that the low-end of the market can also be very profitable, if the cost structure of manufacturing can be strictly controlled.

Gross & Net margin 2005

Thai Company	Gross margin % and trend 2004-05	Net margin % and trend 2004-05
CCCL	31.4 % (static)	15.9% (increasing)
DCC	37.1 % (increasing)	19.9% (increasing)
TG-CI	13.7% (decreasing)	-(4.9%) decreasing)
UMI	14.0% (increasing)	2.3% (decreasing)
RCI	32.2% (increasing)	9.3% (decreasing)

Of the five major Thai companies only two have shown an increase their net profit from 2004 to 2005, which shows the increasing competitiveness of the sector

A key characteristic of the industry in Thailand is that due to the advanced production facilities there is ***little difference in quality between the Thai companies***. Brands are not seen as a key factor in determining the buying decision but design is crucial in influencing mid-market buyers, followed by price. This does not apply to the lower end market in Thailand where pricing is the most vital factor.

Profitability by company varies widely in Thailand and depends on how well the producers can control costs. DCC has excellent cost control and is investing heavily in new modern plant and kilns to further reduce production costs and is the only manufacturer currently planning to increase its capacity in 2006. As the company is also now advertising export prices, an aggressive move into the export market cannot be ruled out. It is already exporting to Canada on an Original Equipment Manufacturer (OEM) basis with two special brands for this Category of supply.

DCC cost of sales in 2006 was US$ 1.61 per sq m, which ensures that it can be very competitive in both the local and export markets with an average quoted selling price of US$3.31.

In comparison, the cost of sales of most Egyptian manufacturers are much higher than this company's level (e.g. Euro 1.99 = US$ 2.52 per sq. m.).

In addition the stated profitability of some Egyptian companies was very low at around 5% Net Profit, which is far below the level of the best Thai companies of 16 -20%. (Note: net profit figures were not available from most Egyptian companies and some are clearly more profitable than others).

Typical FOB Thailand prices – May 2006

Dynasty Ceramic Company

Product	Size	Price/sq m FOB Thailand US$
Glazed floor tile	200 x 200 x 6.7 mm	3.00
Glazed floor tile - decorative	300 x 300 x 7.7 mm	3.00
Glazed floor tile - rustic	300 x 30 x 7.7 mm	3.25
Glazed floor tile - rustic	300 x 300 x 8.9 mm	4.00
Glazed floor tile	400 x 400 x 8.8 mm	3.75
Glazed wall tile	200 x 200 x 6.5 mm	3.00
Glazed wall tile	200 x 250 x 6.9 mm	3.00

RCI

Product	Size	Price/sq m FOB Thailand US$
Monoporosa ceramic wall tile	125 x 330 x 8.5 mm	White 4.50 Colour 5.00
Monoporosa ceramic wall tile	200 x 200 x 7.0 mm	3.75
Monoporosa ceramic wall tile	200 x 250 x 7.0 mm	3.75
Monoporosa ceramic wall tile	250 x 300 x 7.0 mm	4.75
Granito -polished	300 x 300 mm	11.00
Granito – unpolished	300 x 300 mm	6.00
Rock surface	300 x 3090 mm	6.00
Marble series polished	400 x 400 mm	13.25
Marble series – semi-polished	400 x 400 mm	13.25

A comparison of Thailand's and Egypt's ceramic tile sector

- Very similar production capacity of around 170 m sq.m. per year in 2005 in each country
- Very similar production technology with modern plants, which are being upgraded
- Thailand produces most of glaze materials locally, while Egypt still imports the majority of its requirements.
- Very similar export FOB prices starting from US$3.00 per sq.m for the low-end of the market but both with products for the medium-high end also at much higher prices where they compete with Italian prices.
- All companies in both Thailand and Egypt are seeking more exports, including the major Thai player DCC, which, to date, has solely concentrated on the local market (99% of its sales being local until now) but which is now exporting to Canada.
- Gross and Net Profitability in the efficient players in Thailand are higher than Egypt but in Thailand some companies only make small profits and one is loss-making.
- All major ceramic tile companies in Thailand are listed on the stock exchange with a diverse shareholder base, quite unlike Egypt, where the majority of Egyptian companies are family owned and have shown no interest in outside shareholders.
- In respect to FDI, US venture capital companies are currently known to be very interested in investing in the Thai ceramics industry, possibly currently targeting the weak players and also taking a keen interest in the strongest player. New FDI in the ceramic industry in Thailand is currently EUR 39 million annually. In comparison there is little FDI in the ceramic tile industry in Egypt. There appears to be no such interest by these foreign companies in investing the Egyptian ceramics industry to date but this may also be due to the fact that the majority of Egyptian tile companies do not want outside shareholders in their companies.

Chinese Industry

China is by far the world's largest ceramic tile producer and market, which is estimated at approximately 2.5 billion square metres in 2005 and it is also the largest producer country. It is very significant that the profiles of the purchasing models of the wealthiest Chinese customers indicate that there is already a 20-30 million square metre market segment, which is already accessible to Italian and other high-quality foreign products. This market segment is concentrated totally in the new high quality building in metropolitan areas. Despite attempts to reduce property speculation by the government, this volume of demand for high-priced quality products will certainly increase significantly over the next few years, due to the growth of the many provincial cities, over 100 cities having more than 1 million inhabitants and have rapidly expanding economies.

In spite of the rapid growth in demand for tiles and the fact that China's admission to the WTO is progressively reducing constraints, the flow of tile imports is still very limited, both directly to China and via Hong Kong. This is primarily a result of the distribution structure, where a key role is played by the wholesalers, who prefer to maintain close relations with Chinese producers and are capable of exploiting the excess supply of local ceramic tile producers through good management of warehousing facilities and by maintaining strict control over the retail distribution channels.

In the relationship between companies and distribution system there is a clear sub-division of corporate roles and missions. The manufacturer is responsible for minimizing costs, in many cases resorting to operating methods that would be socially unacceptable in advanced countries, whereas the distributor has the task of monitoring consumption as closely as possible.

Market segmentation

Of the 2.5 billion square metres of Chinese tile production 60% consists of low-quality products, mainly single-fired tile targeted at the local market. The mid-market segment accounts for 30% and has higher technical characteristics but aesthetic qualities that fall short of standards acceptable to international consumers. Only the remaining 10% of the market, around 250 million square metres, which includes a significant proportion of large-format porcelain tiles, satisfies the tastes of the most sophisticated and demanding Chinese and foreign consumers.

This market sub-division is important to an understanding how, even for Chinese products, there exists significant price segments, consisting of products with very different characteristics. A comparison of the main cost items faced by the Italian and Chinese industries shows that lower costs are typically associated with the well-known factors of very low salaries and energy costs. However these also make it more difficult to achieve consistency in production and to achieve a wide variety of aesthetic effects. Chinese producers wishing to meet international product standards will therefore find themselves facing higher production costs.

Like many ceramic tile producer countries, China's production is concentrated in clusters, the most important being Foshan (50-60% of production), followed by Zibo (20%) and the Yangste Delta clusters in Fujian, Sichuan and Chongqing provinces. These areas have different degrees of availability of raw material resources, energy and development, which are reflected in very different production costs and product quality.

Foshan, located in the central part of Pearl River Delta, Foshan is one of the most important Chinese ceramic production centres. With the total number of production lines exceeding 1,000, Foshan ceramics manufacturers now produce 1.2 billion square meters of tiles annually, against a capacity of 1.6 billion square meters.

In the past 10 years Foshan has accounted for 54 percent of China's production and ***25 percent of worldwide output of ceramic tiles.*** Foshan's annual output and capacity are expected to continue growing by up to 20 to 30 percent per annum in coming years.

Exports of tiles commenced only about 15 years ago and it first peaked in 1996-97 but slowed as suppliers turned to a booming domestic market. International business took off again in 2000 after suppliers made significant investment in machinery, quality control, cost control and management systems.

Foshan is now one of the world's top exporters of ceramic tiles. In 2003, exports from the city reached 55 percent of China's total outbound shipment of the product. Suppliers export to more than 130 countries and regions. Asia remains the largest market, although Europe and North America have registered the highest export growth in the past three years. As Foshan ceramic tile manufacturers improve designs and offer tiles that match the quality of those made in Italy and Spain, their exports to key Western markets will certainly continue growing rapidly for the foreseeable future because of their price competitiveness against most other producing areas.

About 10% of Chinese production is currently targeted at the international markets, a value which has increased significantly since 2001. Of the 250 million square metres exported in 2004m two-thirds consisted of single-fired ceramic tile and one-third porcelain. Until 2004 export prices fell but since then they have risen but remain significantly lower than those faced in developed countries. The markets of Asia, Middle East and Africa are currently the most important for China with 58%, 22% and 8% of sales volumes but some sales are now made in USA and EU.

The industry draws ample support from a network of literally thousands of service companies that provide colour glaze spraying, firing, moulding and product testing. Radiation testing is carried out by the Bureau of Quality and Technical Supervison in Foshan.

Most manufacturers have their own R&D teams. 70% of suppliers have three to five R&D engineers each and invest in excess of $1.5 m in mould and product development annually. These organisations usually collaborate with customers on npd and in the case of large producers, these may have 10+ engineers investing in excess of 10% of sales in R&D and international designs.

This increased volume of exports from China will undoubtedly impact at some stage on all the target exports markets of the Egyptian ceramic tile manufacturers and while the threat to their export markets at this point in time may seem distant, Egyptian manufacturers must plan their strategy now to meet this threat, especially as they are all currently investing heavily in new plants in Egypt (but not overseas) for increased exports from Egypt.

For instance, the Italian manufacturers are currently seriously examining strategies to adopt in order to enter the Chinese market, including whether to produce locally, as some of them have done already in the US market for many years. This market entry to China can be achieved in four different ways

- Green field investment with 100% foreign capital
- Green field investment as a joint-venture
- Acquisition of a local company
- Outsourcing contracts with local producers

RAK Ceramics of UAE, in addition to very rapid and continuous large-scale expansion at its home base in UAE with state-of-the-art facilities, has already invested in building one ceramic tile plant in China, in addition to establishing four other manufacturing plants in Bangladesh, Sudan, Iran and India). RAK's strategy is very clear – it wishes to be a global player by having both a very strong home manufacturing base (now with 10 plants in UAE) and subsidiary manufacturing plants in carefully selected countries.

One Turkish manufacturer of tiles has recently invested in a modern tile plant in Ireland – a rather unique case of a developing country investing in a manufacturing plant in the EU. Such companies may also consider China as a manufacturing base in the future.

Chinese Regulatory Environment / Roles and Responsibilities in ceramics production

As Guangdong has become a major global player in ceramics, the importance of consistent quality and performance has become central to the development of Guangdong's ceramics companies. With the increase in their quality over recent years has come an inevitable switch of manufacturing in ceramics from western countries to China. However, that growth has come at a price, which has been increased pollution. The government has realised the importance of balancing economic growth with environmental protection and encouraged the local enterprises to meet its sustainable growth objectives. The Environmental Protection Bureaux in both provincial and local levels are the key government departments in regulation and supervision of the environment.

To promote sustainable development and maximize use of resources, the local government is assisting in the consolidation of brands, services, technologies and manpower in the ceramics industry. In Foshan, a trade association that will regulate and coordinate members is in the pipeline, and a platform for trade exhibitions and a ceramics museum will also be established.

Workers' health is now another area of emphasis. The process of polishing porcelain ceramic products involves the use of heavy oil that pollutes the air and generates particles hazardous to workers. In Foshan, the local government plans to establish a "clean" production base in the Cancheng district that will comply with ISO 9000 and 14000 guidelines. Major Chinese manufacturers such as Eagle Brand, Guangdong Dongpeng and New Zhongyuan Enterprise have already introduced advanced equipment that reduces industrial waste and emissions.

These developments in China, which will lead to further improvements of quality, will assist their manufacturers to eventually become world-class players in the higher-value end of the market and not just in the low-end. It is therefore important for the Egyptian ceramic tile industry to follow the same path to improve environmental and health aspects in their operations to international standards. While some Egyptian companies are extremely good in environmental and health aspects, others are so far behind, that they would be closed down in Europe, North America or Asia. The implementation of good environmental and health standards does come at an initial financial cost but the rewards are quickly seen in better quality and performance when the higher standards are being met.

Brazilian Industry

With an estimated output of 612.4 million square metres in 2005 representing an 8.3% growth over 2004 and a domestic market in 2005 of 470.9 million square metres, Brazil is the 4th largest tile producer and the second largest tile consumer market after China.

Brazilian exports go to 139 countries and have grown 36.5% between 2003 and 2004. The domestic market in 2005 has also grown by 5% over 2004. Exports of tile in 2005 are estimated at US$375 million.

The Brazilian ceramic tile industry, consisting of 90 companies, has reached this position through steady, continuous and fast growth and at the present growth rates will soon reach annual production levels similar to those of Italy and Spain and is expected to become the No. 2 producer by 2006.

The main exporters of tile, Italy and Spain showed very little growth from 2003 to 2005 while Brazil, the 3rd largest exporter in 2004 had the second-fastest growth rate after China.
With a population of 180 million and a ceramic tile consumption of just 2.6 square metres per inhabitant, there is still the potential for huge growth.

Major destinations for Brazilian tiles export %	
USA	47.1
South America	16.1
Central America	16.6
Africa	8.3
Europe	6.8
Oceana	2.0
Middle East	1.9
Asia	1.1
East Europe	0.2

A very important characteristic of the Brazilian domestic market is that the ***import of ceramic tile is practically insignificant***, therefore despite the large consumer market, there is very little hope of any Egyptian company being able to export to Brazil, especially as the Brazilian FOB prices are approximately the same as the Egyptian prices at US$ 3.00/ square metre.

In addition at least one Brazilian company is now quoting prices as low as US$3.25 CIF West Africa for quality tiles, which means that it can be highly competitive against the Egyptian companies, which are now targeting the West African area as an export market.

One major Brazilian company now has a publicly stated strategy of expanding its exports to the Arab countries, which is seen to be an interesting area for future Brazilian market penetration. Previously the emphasis was only on the UAE market but Saudi Arabia, Iraq and Iran are now being targeted, all of which are the export markets of the Egyptian companies. Of the 22 countries in the League of Arab states, 11 imported Brazilian tiles in 2004 and this number increased in 2005. The Brazilian companies must therefore be treated as a future potential threat to the Egyptian export markets in the Middle East and a ***strategy should be developed to combat this threat*** before the Brazilian manufacturers establish a serious market presence.

Technical differences

The Brazilian ceramic tile industry can be subdivided into two large groups in terms of the production process: namely the wet and dry routes. In general the producers using the wet route are located in the State of Santa Caterina in the south, forming the Criiuma cluster and companies using the dry route are in the State of Sao Paulo in the south-east, forming the Santa Gertrudes cluster. Recently a third cluster of companies in the north-east is also developing to service the consumer market in that area.

Currently 57.6% of the Brazilian production is by the "***dry route***", which is, together with the domestic market, the major factor in the huge growth rates recorded in Brazil in the past 10 years. The dry route of processing raw materials was formerly associated with low quality products in Europe but due to the special characteristics of the Brazilian raw materials the tile manufacturers do succeed in producing good quality tiles by the dry route, which is ***30% less expensive*** in manufacturing costs than the wet route.

In comparison, all tile manufacturers in Egypt operate on the wet process, therefore the Brazilian dry process manufacturers have a significant competitive cost advantage.

Brazilian ceramic tile expansion

	1995	2005
Production (million sq m)	296	612.4
Exports (million sq m)	29.4	141.5
Brazilian domestic, market (million sq m)	261.6	470.9
Brazilian share of US market (%)	7.4	16.9

UAE Industry

RAK Ceramics of the UAE is the fastest growing ceramics company in the world, having only been established in 1991 with its first tile plant having a capacity of 19,000 sq m/day. Since then there has been an explosive and continuous growth in production capacity and sales.

Year	RAK Plant, UAE	Capacity sq m/day
1991	No.1	5,000, now 19,000
1995	No.2	14,500
1997	No.3	14,500
1998	No.4	20,000
1999	No.5	20,000
2000	No.6	20,000
2002	No.7	2,000
2002	No.8	30,000
2005	No.9	30,000
2006	No. 10	45,000
Total effective capacity RAK		**200,000**
Overseas plants		
2000	Bangladesh	10,000
2003	China	14,000
2004	Bangladesh expansion	10,000
2004	Sudan	10,000
2005	Iran	10,000
2006	India	20,000
Total capacity overseas		**74,000**

The company manufactures both ceramic tile based on local red clays and also porcelain tile based on imported kaolins, feldspar, white clays and quartz imported from UK, Spain, Germany and France.

It should be noted that the "gres porcelain" plant of RAK is the largest in the world and the company is strongly targeting this ***high-value market segment***.

In addition, RAK has just invested in a huge new ***dry-process*** tile plant with a capacity of 40,000 sq m per day of single-fired tiles. This dry-process plant, which is currently under construction, will result in energy savings of around 30%, so that the company can then target the low-end of the market and be profitable, as acceptable margins will then be possible. The new plant will therefore be a direct threat to Egyptian manufacturers, as their advantage of having low energy costs is eroded by the dry process technology.

Threat to Egyptian tile exporters

While most of the Egyptian companies are currently not worried about the competition from RAK, citing quality problems on some plants and the fact that RAK is targeting mainly the low-medium end of the market, the rapid expansion of RAK's production capacity is still continuing, with even more plans for expansion in 2006.

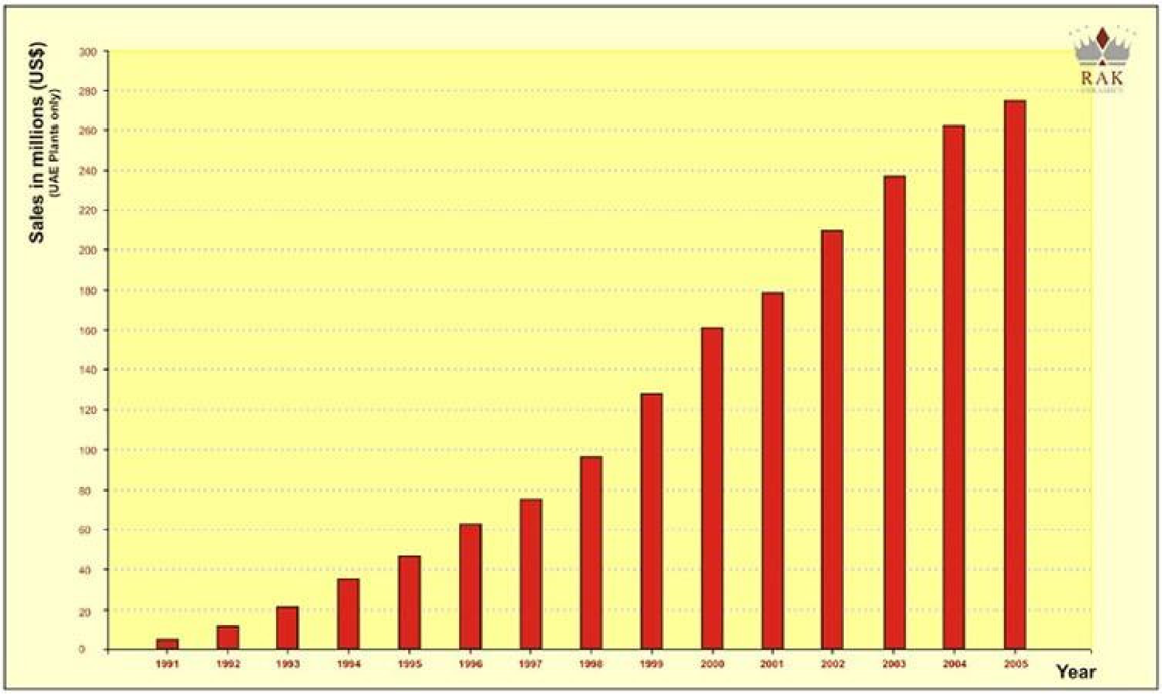
If there are current problems with quality on some of their plants, such as the one in Sudan, then this will be a temporary problem, as with a state-of-the-art plant, such problems with raw materials and glazes can be overcome quickly and the company clearly has the financial resources necessary for any changes.

The fact is that RAK is also now a major player in the production of porcelain tile, which is a high-value product targeting the top end of the market in the target countries of the Egyptian manufacturers. This means that the Egyptian manufacturers producing porcelain tile are now facing a very strong competitor. This could eventually lead to price reductions on these products.

In summary RAK is now a definite threat to the export markets of Egyptian tile manufacturers across the full range of tile; low-end, medium-end and top-end and their expansion of manufacturing facilities shows no sign of ending in the next few years.

To date, no Egyptian tile manufacturer has introduced the dry-process of manufacture, for which good quality, clean and uncontaminated raw materials are required. Investigations are therefore required to find potential suitable sources of raw materials for dry-processing clay preparation.

RAK's sales growth



Due to this rapid expansion of RAK, other regional players, such as Saudi Ceramics in Saudi Arabia, are also reacting already to combat this increased competition by modernizing and expanding their own production facilities. The threat to the Egyptian export market therefore is regional, not just from the RAK expansion programme.

Saudi Ceramic reaction to RAK

Saudi Ceramic Company increased net profit by 28% in 2005 over 2004 has a very strong domestic sales distribution with 26 showrooms in the country, plus a Dubai regional office. The company is strengthening its domestic presence by opening further retail outlets. The two ceramic tile plants are running at capacity and expansion projects in hand will double capacity by 2007. In 2005 the company increased tile production by 6.5 million sq.m. per year. An additional 7.0 million sq.m capacity will be added in 2006 and a second expansion will take place in 2007 to bring total production up to 30 million sq.m of ceramic tiles per year.

The company has also invested in a porcelain tile factory, which will be commissioned later in 2006 and this will strengthen the company's position at the high-end of the market.

The strategy of the company to fight increasing competition is:

- To strengthen its domestic presence by opening additional showrooms
- Investment in human resources, recruiting qualified Saudi nationals
- Introduction of new IT technology
- In the increasingly price-led market for its products SCC is gearing itself up to increase its competitive strengths and quality value of its products.
- A vision to be the leader not only in Saudi Arabia but a ***major regional player*** by using the comparative cost advantages of cheap energy and access to raw materials.
- The use of the new porcelain products to target new markets in shopping malls and the private sector for homes and villas.
- Investment of SR 1 billion in their 5-year strategic plan, SR 200 million being invested in 2006 alone.
- Strategy to sell in all markets; showrooms (25%), wholesalers (50%) and 10% direct to contractors.
- Although investing heavily in increasing its production capacity in the country, the establishment of plants outside the country has not been excluded from its strategy. SCC could therefore follow the lead of RAK in establishing future overseas plants.
- Strategy to increase exports to 20% by 2010 from the current 13.2% (to 35 countries)
- Strategy to produce quality products

These major expansion programmes of both RAK and SCC must be seen as a threat to the future export markets of the Egyptian tile companies, many of which already export to Saudi Arabia. Egyptian companies exporting to Saudi Arabia can expect to see their market share decline, in addition to increased pressure to lower prices.

Italian Industry

The total Italian production and sales volumes declined slightly in 2005. Production totalled 570 million sq m of tile, a reduction of 19.2 million, while sales amounted to 560.3 million sq m. In 2005 the industry was comprised of 225 companies, a reduction of 3 from 2004, continuing the trend of consolidation. The companies operated 317 factories and 697 kilns, which was 24 fewer than in 2004.

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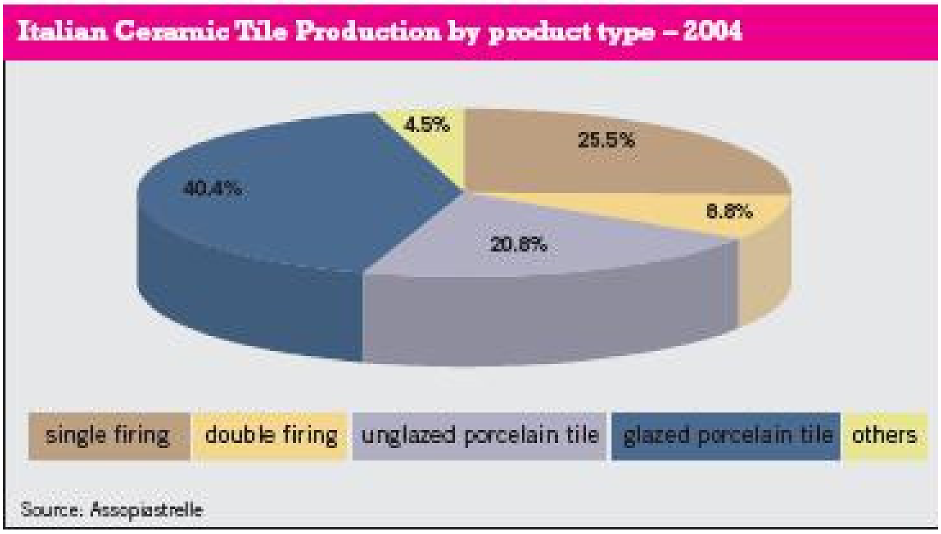
Italian tile market share of production by product type (2004 & 2005)

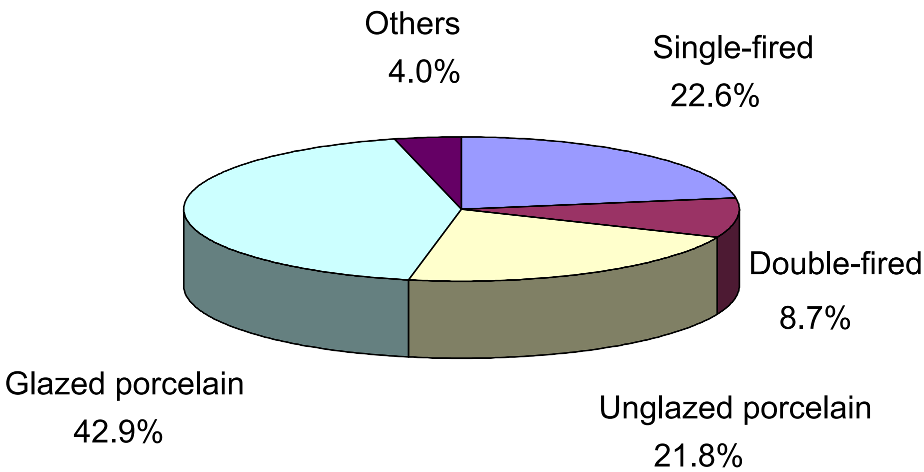
As the Italian ceramic tile industry is the world leader in terms of market share, tile design and innovation, all of which affect the world demand, it is very important for the Egyptian ceramic tile industry to take note of these changing worldwide trends, which are normally led by the Italian and Spanish industries.

One very significant strong trend over the past 5 years has been the increasing market share of production in both unglazed porcelain and glazed porcelain products at the expense of a reduced production in red-body ceramic tiles. Porcelain tiles now account for over 60% of Italian production. The shares of unglazed and glazed porcelain products of Italian production in 2004 were 20.4% and 40.4% respectively and manufacturers are still continuing to change their production technology away from ceramic tiles towards the higher value porcelain tiles, despite the necessity to import more basic raw materials.



In 2005 the proportion of porcelain tiles (glazed + unglazed) increased further to **64.7% of total Italian production**, while single fired bred body declined to 22.6%.

Italian Tile Production 2005 - by Type



It is anticipated that the proportion of porcelain tiles will continue to increase over the next few years, driven by increasing consumer demand for this type of tile. Egyptian tile companies will therefore have to consider how best to react to this trend by considering adding additional porcelain tile capacity their own expansion plans

Floor tile & Wall tile proportions

In the past 20 years there has been a significant shift in consumer preferences and use of tile, such that from 1985 to 2005 the proportion of floor tile has risen from 69.5% of the total Italian production to 82.18% in 2005, the proportion of wall tiles falling from 30.5% to 17.81%.

This continuing trend for a higher proportion of floor tile in the market has been a worldwide trend and therefore Egyptian manufacturers of ceramic tile must also arrange their future manufacturing strategy with this trend in mind, especially as the type of floor tile demanded by the world market is also changing rapidly.

Italian overseas production (2005)

In order to remain competitive worldwide the Italian industry has built up a significant presence overseas, whereby 9 Italian groups have established 18 companies with 30 factories, which manufactured over 100 million sq m of tiles in 2005.

Italian companies now produce in 10 different countries, including USA, Portugal, Spain, France, Germany, Sweden, Finland, Poland, Ukraine and Russia.

Product	Europe	%	USA	%	Total	%
Single-fired tile	30.5	39.7	9.9	41.2	40.5	40.0
Glazed porcelain tile	15.9	20.6	14.2	58.8	30.1	29.7
Unglazed porcelain tile	10.6	13.8	-		10.7	10.5
Double-fired tile	12.1	15.8	-	-	12.1	12.0
Other products	7.8	10.1	-	-	7.8	7.7
Total	77.0	100	24.1	100.0	101.2	100.0
Floor tile	51.8	67.3	24.1	100.0	75.9	75.0
Wall tile	25.2	32.7	-	-	25.3	25.0

Other countries are now following the Italian example in setting up overseas manufacturing operations, such as Pamesa in Spain, Eczacibasi-Vitra in Turkey and RAK of UAE.

While the average selling price per sq.m. of Italian tiles is around Euro 11.00 the average selling price of the overseas Italian plants is much lower, both in their domestic markets and in export prices, thereby improving the competitiveness of the Italian industry.

	Domestic sales			Export Sales		
Area	Volume sq. m.	Value Euro x 1000	Average selling price Euro/sq. m.	Volume sq. m.	Value Euro x 1000	Average selling price Euro/sq. m.
Europe	51.2	348,592	6.81	24.0	155,366	6.48
USA	23.9	194,621	8.15	-	-	-
Total	75.2	543,213	7.24	24.0	155,366	6.48

By this method the Italian industry controls 31% of the European market and 30% of the North American market.

To date, no Egyptian tile manufacturer has decided to expand its operations by establishing overseas manufacturing plants and all companies are determined to only expand within Egypt and export only from their plants within Egypt. This is based on the fact of their very low labour costs and very low energy costs.

These very positive cost factors would also be a huge incentive for any foreign tile manufacturer to establish a presence in Egypt but, to date this has not occurred and FDI has gone instead to other countries. The conclusion is that Egypt, despite its production cost advantages, is still not seen as an attractive FDI location for tile production.

Turkish Industry

Turkey now produces over 230 million sq. m. of tiles and is the 5th leading ceramic tile producer in the world, being the 3rd largest in Europe. Ceramic tile production constitutes 3.5% of world production and 11% of European production.

In respect to consumption Turkey is the 8th largest market in the world and 99% of the country's domestic consumption of 110 million sq. m. per year is met by local production.

The total capacity of the sector, which comprises 24 companies is 300 million sq. m. per year. The Kale, Toprak, Ege and Eczacibaşi companies are the leaders of the sector and are among the largest manufacturers in the world. Kale, for instance has a capacity of 60 million sq.m. under one roof.

The Turkish companies have technical superiority over many of their competitors, as most Turkish companies were established after 1990 and existing companies are continuously renewing their plant and equipment. In general the average capacity of Turkish companies of 10 million sq. m., are much larger than other countries, hence most of their unit costs of production are lower. However the manufacturers are increasingly concerned about high energy costs for gas and electricity.

The local raw materials in Turkey also give the industry an advantage, as they are large enough to satisfy the sector's demand and the quality of the raw materials is very high and meet international requirements. All Turkish companies have invested in their own raw material preparation plants and the fact that almost all of their raw materials are local is also a major factor in reducing production costs.

The Turkish ceramic industry has a good base of skilled manpower, which it is continuing to develop and the tile companies have the support of their own trade organization, SERKAP to develop exports. SERKAP became a member of the European Ceramic Tile Federation with effect from 2006 to promote the exports of Turkish tiles to the EU.

Exports are now sent to 70 countries and are able to compete with foreign manufacturers both in terms of volume of supply and quality of the products. Turkey is now the 3rd largest exporting country with exports of 60 million sq.m. An annual fair UNICERA is held in Istanbul to further promote the exports of the country.

The Turkish ceramic tile industry contained 24 main companies in 2005, which have increased their production from 226 million sq. m in 2000 to 310 million sq. m in 2005 (see chart below).

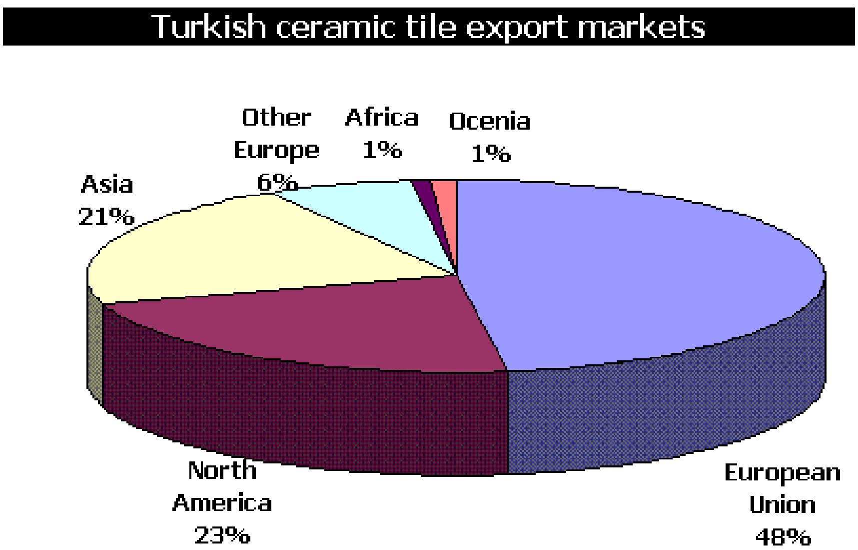
Ceramic Tile Industry Capasity							
	Firms	2000/m²	2001/m²	2002/m²	2003/m²	2004/m²	2005/m²
1	KALESERAMİK	57,500,000	60,000,000	60,000,000	62,000,000	62,000,000	62,000,000
2	TOPRAK	27,000,000	27,000,000	28,000,000	28,000,000	28,000,000	28,000,000
3	EGE SERAMIK	22,450,000	22,450,000	22,450,000	22,450,000	25,000,000	23,625,000
4	ECZACIBAŞI	15,000,000	15,750,000	16,000,000	16,000,000	21,000,000	21,500,000
5	KÜTAHYA	14,500,000	14,500,000	14,500,000	14,500,000	14,500,000	14,500,000
6	TAMSA	11,500,000	14,500,000	14,500,000	14,500,000	14,500,000	14,000,000
7	GRANİSER	4,200,000	5,500,000	9,700,000	9,700,000	14,500,000	23,000,000
8	SÖĞÜT	11,000,000	12,500,000	14,000,000	14,000,000	14,000,000	14,000,000
9	YURTBAY	7,200,000	12,500,000	13,250,000	13,250,000	13,250,000	15,700,000
10	SERAMİKSAN	5,500,000	5,500,000	8,500,000	9,500,000	11,500,000	17,000,000
11	HİTİT	9,000,000	9,000,000	9,000,000	9,000,000	9,000,000	9,000,000
12	ERCAN	5,300,000	5,300,000	5,300,000	5,300,000	8,500,000	9,400,000
13	UMPAŞ	8,000,000	8,000,000	8,000,000	8,000,000	8,000,000	8,500,000
14	TERMAL	7,000,000	7,800,000	7,800,000	7,800,000	7,800,000	20,000,000
15	EFES	4,000,000	4,000,000	4,000,000	4,000,000	4,000,000	4,000,000
16	AKGÜN	0	2,000,000	2,000,000	2,000,000	4,000,000	5,000,000
17	YÜKSEL	3,500,000	3,500,000	3,500,000	3,500,000	3,500,000	4,500,000
18	ANATOLIA	3,500,000	3,500,000	3,500,000	3,500,000	3,500,000	3,600,000
19	UŞAK	3,000,000	3,400,000	3,400,000	3,400,000	3,400,000	4,500,000
20	SERANİT	1,600,000	2,000,000	2,000,000	2,000,000	2,000,000	2,121,196
21	BOZÖYÜK	1,200,000	1,200,000	1,200,000	1,200,000	1,900,000	1,768,000
22	ALTIN ÇİNİ	1,500,000	1,500,000	1,500,000	1,500,000	1,500,000	1,400,000
23	PERA	1,500,000	1,500,000	1,500,000	1,500,000	1,500,000	1,500,000
24	GRANİST	1,500,000	1,500,000	1,500,000	1,500,000	1,500,000	1,500,000
	Total	**226,450,000**	**244,400,000**	**255,100,000**	**258,100,000**	**278,350,000**	**310,114,196**

Turkish Output in tonnage

('1000 tonnes)	1998	1999	2000	2001	2002	2003	2004
Wall & floor tiles	1700	1725	2296	2296	2150	2639	

(Million US $)	2002	2003	2004
Wall & floor tile exports	243.9	308.7	376.1

The main markets for Turkish tile exports in 2004 were UK (15%), USA (10%), Germany (10%), Israel (9%), Canada (8%), France (7%), Greece (5%), Saudi Arabia (3), Netherlands (2%), Finland (2%).



Currently in 2006 the Turkish companies are still losing competitiveness against their international rivals due to the sharp increase in production costs over the past few years. According to the Turkish Ceramics Federation ***energy costs in Turkey are amongst the highest in the world***. In addition the industry is facing higher labour costs and rising transport and raw materials costs. These increases in production costs have contributed to the reduction in exports in 2005 according to the Federation.

Year	Exports million sq.m.
2003	83.6
2004	94.1
2005	88.4

Egyptian export opportunity
This situation of increased production costs in Turkey and consequent increased average selling prices of tiles is obviously of very significant importance to the Egyptian ceramic tile industry. Both the Turkish and Egyptian manufacturers are generally in the same market segments, where price is a crucial marketing tool.

With very low natural gas prices Egypt is therefore well placed strategically to be even more competitive against the Turkish exporters in the low-medium sector of the market, especially in UK, USA, Canada and Germany, where the large DIY groups are very price conscious and have no brand loyalty or country-of-origin preference (except that based on price and reliable delivery capability).

In 2005 North America was the most important export market for Turkey (USA 13%, Canada 10%), followed by Israel (12%), UK (11%) and Germany (8%) and with the exception of Israel all of these markets are extremely important target markets for the Egyptian tile manufacturers.

Spanish Industry

The Spanish ceramic tile industry is one of the two global leaders for the production and export of quality tile, now on a par with Italy for volumes produced but with much lower average selling prices than the Italian industry (only US$ 7 – 8 against US$ 11 – 12 per sq m for the Italian industry).

As with Italy, Spain is aggressively trying to maintain market share worldwide, against the increasing global competition and a worldwide overcapacity in ceramic tile production, which continues to increase, driving down prices in the low and medium segments of the market.

Spanish tile industry growth 1997 – 2005

	1997	1998	1999	2000	2001	2002	2003	2004	2005
Production (mil sq m)	485	564	602	621	638	646	620	635	
Value (mil Euro)	2530	2695	2881	3301	3472	3596	3496	3628	
Export (mil Euro)	1288	1493	1578	1872	1988	2059	1939	1977	2040
% Export (sq m)	50.9	51.5	49.8	52.5	52.5	52.5	50.8	49.2	
Export to Italy (mil sq m	5.1	5.1	5.3	6.1	6.7	6.1	6.2	7.5	
Export to Italy (mil Euro)	44.9	45.9	51.4	59.2	62.3	60.5	58.1	68.2	72.8
% Italy consumption m sq m	2.9	2.8	2.8	3.1	3.5	3.4	3.8	4.7	

The above table shows just how successful the Spanish tile industry in initially rapidly expanding production and then in maintaining this higher level of production and exports, despite a massive increase in worldwide capacity during this period.

With some product ranges of the Spanish industry still at the price levels of the Egyptian, Thai and Brazilian prices, they remain a formidable competitor to the Egyptian industry in world markets. However, like the Italian industry manufacturers in Spain are increasingly targeting the more profitable high-priced, high quality segment of the market.

However, unlike in Italy, where there has been a massive transformation in the industry from pure ceramic tiles to the porcelain tiles, the majority of the Spanish industry has remained with the red-clay based ceramic tiles, hence the much lower average sales price per square metre of the Spanish tile industry (although high on world comparison).

Spanish Tile Exports – Top 10 Destinations 2005

Destination	Jan-Nov 2004 Euro million	Jan-Nov 2005 Euro million	% Change 05/04
France	186.3	197.7	6.1
USA	193.7	196.5	1.4
UK	181.7	163.7	-9.9
Portugal	101.9	100.9	-1.0
Germany	83.7	83.9	0.2
Saudi Arabia	91.2	81.4	-10.7
Italy	64.1	68.5	6.9
Russia	55.5	66.2	19.2
Greece	58.0	64.1	10.5
Romania	44.2	58.0	31.2

Source: ASCER

The present forecasts for export growth are for ***moderate future growth*** from Spain. Discussions have been made in Spain on future strategy of establishing overseas manufacturing plants. This would then follow the similar strategy of the Italian industry, which has produced 100 million sq m per year of ceramic tiles in overseas plants in 2005, amounting to 20% of total Italian-controlled production.

However one barrier to expansion into overseas production units for Spanish companies is the much smaller size of the average Spanish company, which results in less financial resources being available. Whereas Italian companies merged to become fewer in number but financially stronger, the Spanish government tried to protect the ceramic companies, which slowed restructuring. In addition there is an unwillingness of Spanish ceramic tile personnel to move overseas due to the high living standards of the ceramic cluster area. In comparison the successful Spanish glaze, frit and colour companies have succeeded in establishing plants overseas.

Spanish Exports by Geographical Area (Euro millions)

	Jan-Nov 2004	Jan-Nov 2005	% change 05/04	% Share of Total
Europe	1,110	1,173	5.7	66
EU-25	889	908	2.2	51
EU-15	804	819	1.9	46
EU-12 Eurozone	609	641	5.4	36
EU- new members	85	89	4.9	5
Eastern Europe	189	226	19.5	13
Middle East	205	201	-1.7	11
North America	245	242	-0.9	13
USA	194	196	1.4	11
Central & S America	81	84	4.8	5
Far East & S Asia	52	51	-2.1	3
Africa	105	105	0.5	6
Oceana	28	22	-22.1	1
World Total	**1,831**	**1,885**	**2.9**	**100**

Spanish exports only increased slightly in 2005 with Eastern Europe showing significant growth, albeit from a low base. Expectations for growth in Spanish exports in 2006 are similar to 2005.

An interesting development in Europe is that KEBO, a Bemelux ceramic and porcelain tile distributor; the largest in the Netherlands for the DIY market, has taken shareholdings in two Spanish porcelain tile manufacturers.

Frits, glazes and ceramic colours – a strategic advantage for Spain

A significant cost advantage and strategic advantage of the Spanish ceramic tile industry is the large production capacity of frits, glazes and colours of the country. This is very similar to the situation in Italy also. In Spain approximately 3,600 workers are employed in this industry and produce approximately 70% of EU production volume of frits, finished glazes and colours, amounting to 1.0 – 1.25 million tonnes per year.

Sales volume was EUR 900 million in 2004, of which EUR 360 million was for the domestic ceramic market (tiles, sanitary ware & others). Exports of these important materials are therefore of significant quantities and value and what is of particular interest is that the majority of the frits, glazes and colours are being sold to the direct competitors of the Spanish tile manufacturers.

As Egypt has no independent local glaze frit and colour manufacturer, the ceramic sanitary ware and tile companies are dependent on imported glazes from Spain, Italy, Germany and UK.

Egypt is the ***second-largest importer of Spanish*** *glazes*, amounting to Euro 49.8 million Euro in 2005, an increase of 4.07% over 2004 due to the increase in the ceramic tile and sanitary ware capacity in the country. Egypt also imports glazes, frits and colours from Italy, UK and Germany.

Exports of Spanish frit, glaze and colour companies

Country	2004 (Euro m)	2005 (Euro m)	% variation
Italy	58.0	57.8	-0.33
Egypt	**47.9**	**49.8**	**+4.07**
Portugal	27.5	25.3	-7.86
Morocco	22.5	23.2	+2.95
Germany	22.2	22.6	+1.81
Russia	16.4	22.2	+35.39
Poland	23.6	22.0	-6.70
UAE	14.4	18.2	+26.56
Algeria	18.2	17.9	-1.61
Indonesia	22.7	16.6	-27.10

Source: ANFFECC

The frit, glaze and colour producers of Spain, such as Coloronda and Bonet and also the international groups manufacturing in Spain, such as Colorobbia of Italy, Johnson Mathey of UK and Ferro of the USA, have focused on globalizing their operations to offer the best service to the ceramics industries in all parts of the world.

Colorobbia has manufacturing operations in Italy, Spain, Brazil, Portugal, Turkey, Peru, Mexico, USA, Taiwan, Thailand, Indonesia and China, for instance but ***none, to date, in the Middle East***. A similar picture occurs with both Johnson Mathey and Ferro who also have no manufacturing operations in the Middle East.

The Spanish Glaze Association (Anffecc) members had a turnover of Euro 912 million in 2005, a 2.6% increase over 2004. A similar growth is expected in 2006. Exports amount to 58.4% of turnover in 2005. Higher production costs due to increase raw material (+12%) and natural gas costs (+ 60%) plus increased competition from China, India and Vietnam means that profit margins are under pressure despite raising product prices between 5% and 20% in 2006.

These increased cost factors in Europe will encourage further overseas manufacture of glazes and colours in low-cost countries with ceramic clusters, which have cheaper natural gas and lower electrical energy costs.

This leadership role within Europe called for various actions on a regional, national and European level on sustainable development strategies for this important sector of the ceramics industry. A dedicated association for this sector, the Spanish Association of Glaze and Colour Suppliers (ANFFECC) has assisted at European level concerning health and safety matters for frits and colours, especially in respect to European Directive 96161 ICE on Integrated Pollution Prevention and Control and other successive regulations.

In comparison to this situation in Spain (and Italy) the Egyptian glaze frit and colour industry currently barely exists, which is a huge disadvantage, in terms of production costs, for the Egyptian industry, as all of these important raw materials for quality production have to be imported in Euros.

A ***strategic development of this sub-sector*** could therefore be achieved by the establishment of a Joint Venture of one or more Egyptian companies with a major Spanish (or Italian) producer of glaze frits, finished glazes and colours. This is a highly technical sector, where know-how is vital to produce high quality glazes and frits on a consistent basis and a joint-venture arrangement, or alternatively a direct investment by a European company in an Egyptian production unit would seem to be the best options for a rapid development of an independent glaze and colour producer in Egypt. Spanish glaze and colour manufacturers have already invested in overseas plants and therefore they could be approached for possible FDI in Egypt also.

B. *Ceramic Sanitary Ware*

Cost Structure for: Italy, China, Egyptian & general developed and developing countries cost breakdown

Egyptian Production Costs 2006

Although no Beneficiary company was prepared to give precise production costs in actual terms, typical current costs by percent were provided by five different companies.

Production Cost Item	Company A	Company B	Company C	Company D	Company E
Fuel	15				
Energy	7				
Fuel & Energy		10	10	11	14
Labour	25	10	30	22	13
Material	25	50	30	40	23
Depreciation	12		7	13	14
Fixed Overheads	15			14	16
Depreciation & Fixed Overheads	27	30	23		20
TOTAL	**100**	**100**	**100**	**100**	100
Cost per piece LE	**75**	**100**	**40**	**55**	35

There are considerable differences in cost structure between the various Egyptian companies, which are explained by different production capacities and types of kiln technology.

PIPT's team of consultants became aware from the beginning that data given by the participating companies were doubtful in terms of its accuracy (exaggerated in some cases and too conservative in others), however these doubts were considered when it came to benchmarking for the puropse of making our recommendations.

Productivity of Egyptian sanitary ware companies

Egyptian Company	Productivity (pieces/production person/year)
A	1,902
B	4,000
C	1,600
D	1,647
E	2,400
F	1,500
G	1,263
Average	2,044

The above productivity is low by international standards, one Chinese factory having a productivity of 5,830 pieces of production per person per year. The large difference in productivity is the almost total reliance on manual systems by the Egyptian industry, due to low labour costs and low energy costs, whereas even in China more automated plants are being installed.

Profitability of Egyptian sanitary ware companies

Although precise figures on profitability were not disclosed by any of the companies, a target margin of 25% was quoted as being the objective by some of those interviewed. One public tiles and sanitary ware company reported a net margin down 5.9% to 13.6% in 2005.

Comparison of Sanitary ware production costs – by system

Cost Item	Manual %	Semi-automatic %	Automatic %
Raw materials	24.3	29.0	34.8
Thermal energy	4.7	5.3	3.5
Electrical Energy	1.1	1.8	2.7
Labour	63.0	54.8	44.1
Spare Parts	2.0	3.2	7.8
Packing	4.9	5.9	7.1
Total Unit Price	**100.0**	**100.0**	**100.0**
Average Production costs comparison	**100.0**	**83.7**	**69.9**
Average first-fire recovery 1st Grade	**60-65%**	**75-80%**	**+90%**

The above comparison of the general level of production costs of sanitary ware across the three main options show that in most countries significant production cost savings can be made by moving from manual to semi-automatic and finally automatic systems.

However in Egypt the situation is distorted due to the extremely low labour costs in the country, such that all sanitary ware manufacturers have decided to maintain manual systems of bench casting and battery casting even in all of their new planned expansion programmes.

Manual casting systems all have the inherent weakness of greater handling losses and lower overall recovery of FIRST CHOICE products after firing, due to defects during manual production.
This results in a greater percentage of re-firings and consequent increase in energy costs and labour costs per unit. While in most countries this is, in itself, a major incentive to improve the production technology to more automated systems, this has also not happened in Egypt. One major reason for this is that sub-standard second-grade and third-grade products can easily be sold on the local domestic market, whereas in many other countries consumers are not willing to buy products of this quality.
The key issue is that once Trade Liberalisation occurs with a commensurate opening up of the local market, Egyptians will be able to buy far higher quality sanitary ware products to the detriment of the beneficiaries.

The combined effects of very low labour costs, cheap energy (with less incentive to save on energy consumption) and a market willing to take second-grade products means that there is heavy resistance to the introduction of better technology into the Egyptian sanitary ware industry. There is a perception that the investment in such equipment is not worthwhile. This perception is only likely to change if labour and energy costs increase significantly, or the market situation changes, whereby consumers refuse to buy sub-standard products. A further development may eventually be cheap imports of first-grade sanitary ware from China, which could destroy the local market for second-grade products.

Proportion of production costs by size of sanitary ware plant

Cost Item	Small-Medium Plant < 500,000 pc/year	Medium-Large Plant > 500,000 pc/year
Plaster for Moulds	0.3	0.4
Raw materials body	11.5	9.1
Raw materials glaze	1.6	1.1
Labour	40.5	28.2
Thermal energy	3.9	2.8
Electric energy	1.1	1.0
Spare parts	1.4	1.6
Packing	2.1	1.7
Total Production Costs	62.4	45.9
Total Overhead, Financial & Marketing Costs	37.6	54.1
Total Costs	**100.0**	**100.0**

Source: Italy 2004

This chart further reinforces the cost savings associated with the move towards the greater use of technology and economies of scale.
Labour savings of twelve percentage points can be achieved within the context of an overall cost reduction of 16.5 points.

Investment costs in buildings by type of sanitary ware plant

	Manual plant			Mechanised plant			Automatic plant		
Production Phase	Sq m	Time hrs	Shifts	Sq m	Time hrs	Shifts	Sq m	Time Hrs	Shifts
Raw Material	1,000			1,000			1,000		
Preparation	350		1	350		1	350		1
Moulds	500		1	500		2			
Casting	4,000	4	1	1,400	4	2	200	0.3	3
Drying	600	40	1	300	20	2	150	6	3
Inspection	300		1	150		2	50		3
Glazing	350		1	175		2	80		3
Drying	500	6	1	500	6	2		0.5	3
Firing	1,000	20	3	1,000	16	3	500	11	3
Total	8,600	70		5.375	46		2,830	17.8	

Investment costs in land and buildings for automated plants are much less than for manual plants and this can be one important factor in reducing the total investment costs of any new project. This factor obviously improves the viability of the more automated plants in many parts of the world but is of less importance in Egypt because land and building costs are relatively low.

Turkish Industry

Turkey is now one of the leading sanitary ware producers in the world due to growing investments in modern technology, increased capacity and an emphasis on quality products.

The Turkish sanitary ware sector contains 9 large and about 35 small-scale companies. The leading players in the sector are Eczacibaşi (VITRA) and Serel Seramik, which are among the largest manufacturers in the world. Eczacibaşi has a capacity of 5.2 million pieces per year and is the largest plant in the world, carrying out integrated manufacturing systems to produce high quality products with a world wide following.

The production capacity of the sector has risen in the long term from just 200,000 pieces in 1960 to 21 million pieces in 2005, doubling in size in the last five years to become the second-largest sanitary ware producer in Europe with an 18% share of the European market.

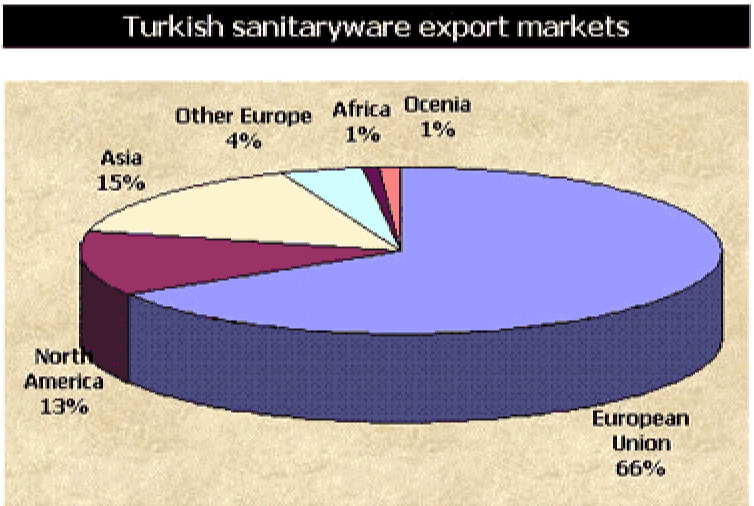
Sanitary ware production capacity (11 largest companies only)

Sanitary Ware Industry Capasity							
	Firms	2000(pieces)	2001(pieces)	2002(pieces)	2003(pieces)	2004(pieces)	2005(pieces)
1	ECZACIBAŞI	3,400,000	3,400,000	3,400,000	3,700,000	4,000,000	6,200,000
2	SEREL	1,800,000	1,800,000	1,800,000	1,800,000	2,100,000	1,350,000
3	EGE	550,000	630,000	630,000	650,000	1,000,000	1,400,000
4	KALEVİT	600,000	600,000	600,000	800,000	800,000	1,600,000
5	ÇENESİZLER	660,000	660,000	660,000	900,000	1,400,000	2,100,000
6	İDESER					1,000,000	800,000
7	ÇANAKÇILAR	550,000	700,000	700,000	750,000	850,000	1,200,000
8	TOPRAK	930,000	930,000	930,000	930,000	930,000	740,000
9	KÜTAHYA	700,000	700,000	700,000	700,000	700,000	700,000
10	DOĞVİT				325,000	325,000	1,200,000
11	DURAVİT	120,000	240,000	240,000	240,000	240,000	200,000
Total		9,310,000	9,660,000	9,660,000	10,795,000	13,345,000	17,490,000

In terms of consumption, Turkey is the 6th major market in Europe and of the domestic demand of about 6.3 million pieces, 99% is satisfied by local production.
In a field where competition is very strong Turkey is the third major exporting country in Europe with 4.3 million pieces exported.

The largest export markets for Turkish sanitary ware are UK, USA, Germany, Spain, France and Italy.

These exports are led by continuous investment in new technology and in designs made especially for specific export markets.
This is a key learning for the Beneficiaries as designs in UK and USA, for instance are totally different.



Turkish sanitary ware output in tonnes

('1000 tonnes)	1998	1999	2000	2001	2002	2003	2004
Sanitary ware	120	125	133	125	127	142	

Million US $	2002	2003	2004
Sanitary ware exports	95.3	122.3	161.7

The main export markets for Turkish sanitary ware are UK (24%), Germany (14%), USA (12%), France (5%), Bulgaria (4), Spain (4), Israel (3), Netherlands (3) and Ireland (2%).

It is interesting to note that one of the interviewed companies in Egypt stated that their production cost is 40% lower than the average Turkish cost for the same quality.
If this is the case then it could be a function of the recent increases in energy prices in Turkey.

ROCA Spain

Roca acquired Malaysia's largest sanitary ware manufacturer, Johnson Suisse (Malyasia) Sdn Bhd for RM 100 million in June 2006 and will invest at least the same amount, or more in the next five years to broaden its product range and upgrade the factory. Roca has already invested in four sanitary ware factories in China but this is its first investment in SE Asia. The production capacity of the Malaysian plant, currently 800,000 pc/year, will be increased by 30% with immediate effect from July 2006.

In addition to the Malaysian plant, Roca has also acquired the Zapresic, the leading sanitary ware manufacturer of Croatia.

The strategy of Roca is to progressively reduce its manufacturing capacity in Spain, while increasing its capacity overseas in low-cost labour countries, from which it exports products back to Europe.

Chinese Industry

Over 225 million units of sanitary ware were sold in 2004 with a total value of US$7 billion. China and USA accounted for 41% of the total volume, followed by Brazil, India, Russia, Germany and UK, which represented a further 30%.

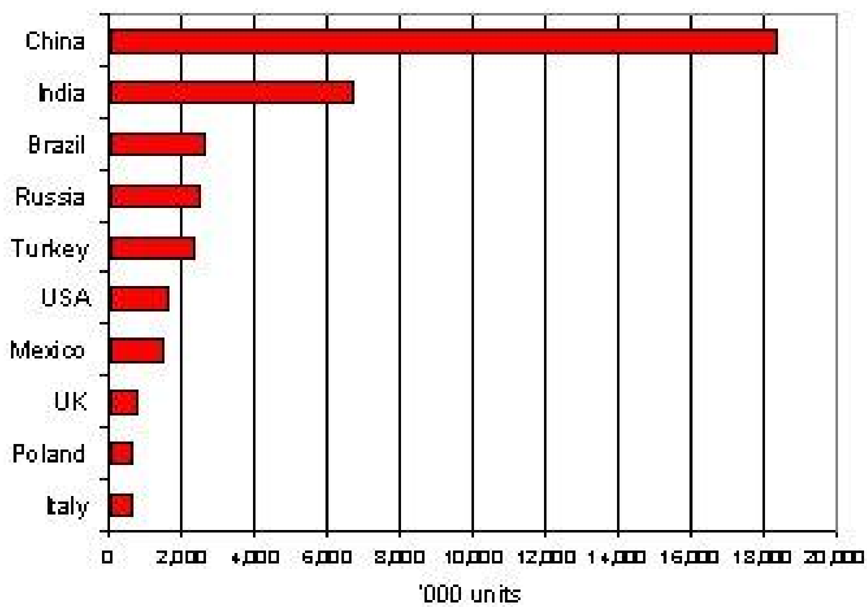
The Chaozhou area is China's largest producer of ceramic sanitary ware with over 400 manufacturers, accounting for half the country's supplier base. The annual capacity is 30 million units per year and accounts for more than half of zChina's exports. Most of the companies are small with only about 10 companies having a capacity in excess of 5 million units per year.

Wash basins and toilet sets make up 90% of Chaozhou's ceramic production, decorative wash basins and two-piece toilets being the main products. In the past two years decorative wash basins have grown in popularity, which now account for 50% of production. Two-piece models make up 80% of the toilet sets produced and 90% of exports to mainly Middle East, US and Europe (which absorbs 30% of Chaozhou's exports).

Coal Gas is the main fuel accounting for ***up to 40% of total expenses***. A switch to natural gas is now underway to reduce production costs.

In an increasingly competitive environment ceramic sanitary ware manufacturers are seeking the opportunities for growth in the emerging markets, in addition to the well-established markets. The recent massive growth in the Chinese sanitary ware industry is expected to continue as shown by the chart below.

Figure 1. Accumulative growth ceramic sanitaryware market, volume '000 units, 2003-2008



The 38 million sales growth in units up to 2008 is predominantly a result of increasing sales in China, which accounts for 48% of the increase. Growth of over 2 million units is also shown in Brazil, Russia and Turkey.

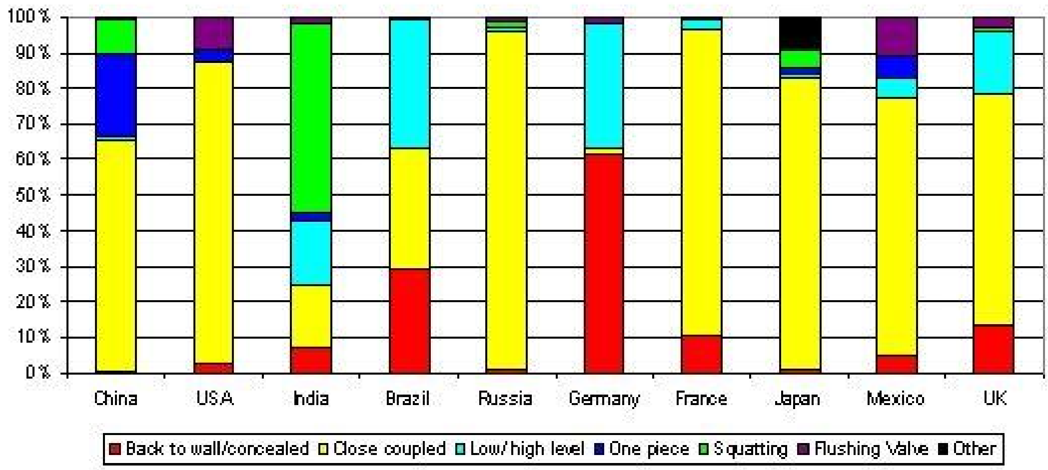
Chinese Product Segmentation

The product segmentation in sanitary ware varies considerable by country with China having quite a different product profile than other major countries.

Basins
The total ceramic basin market was around 60.1 million units (US$1.56 billion) in 2004, China and India dominating by volume but USA has the largest market share by value (18%).

WCs
The ceramic WC market was 73.8 million units in 2004 and the diagram below shows the types of WC products in China, compared with 9 other major countries. Close-coupled WCs in the 10 top markets held 59% of world volume of sales in 2004, with China being the largest market with 13.5 million units, followed by the USA with 8.7 million units.

Figure 2. Top 10 WC markets by type, volume %, 2004



The Chinese market has around 65% close-coupled WCs, followed by 24% one-piece WCs, which is a far higher proportion of this type of product than in all other countries. In the rural areas squatting pans are still popular and account for 10% of the Chinese market.

Egyptian manufacturers must therefore carefully consider this WC market segmentation when considering new export markets and design their new export products according to their specific target markets.

Cisterns
The total cistern market was 61 million units (US$ 1.7 billion) in 2004, the majority of cisterns being ceramic (71%) with plastic being the second most popular material. China, USA and Russia dominate the total ceramic cistern market.

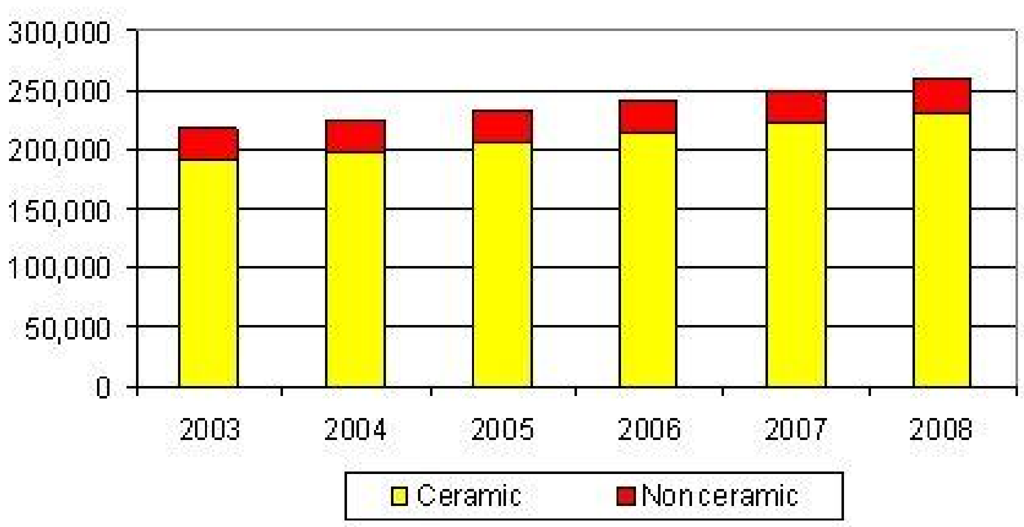
Pedestals
The total world pedestal market was 17.5 million units (US$ 261 million) in 2004, china accounting for the largest share by volume at 26.4% of total pedestal sales. Russia is the second largest market with 12.7%.

Bidets
The total world bidet market was 3.3 million units (US$ 199.2 million) in 2004 but sales of bidets in China and the rest of Asia are very small. Italy accounts for 56% of the volume, followed by Spain with 19%.

China's sanitary ware industry is closely linked to world growth and this is expected to be at a steady annual rate of 3.2 % until 2008 (across 23 major countries). Two-thirds of the total growth is expected to come from China, India, Brazil, Russia and Turkey. Common features of

China and these other growth countries are low manufacturing selling prices, a fragmented supply structure and a greater need for refurbishment.

Figure 1: World trends of ceramic versus non-ceramic sanitaryware, volume ('000 units) 2003-2008



Production Cost Analysis – Chinese sanitary ware factory – at 1.0 million pieces/year

Cost Item	Unit	Unit Price RMB	Quantity/ year	Value/year RMB	%
Clay	Ton	585	14,304	8,367,840	10.0
Glaze	Ton	3063	1,353	4,144,239	4.9
Electricity	Unit	0.718	7,956,000	5,712,408	6.8
Nat Gas (prod)	Cu m	1.59	2,880,000	4,579,200	5.5
Nat Gas (kilns)	Cu m	1.59	2,362,320	3,756,089	4.5
Water	Ton	1.8	720,000	1,296,000	1.5
Moulds	Pc	3.02	1,000,000	3,020,000	3.6
Consumable, Maintenance				4,080,000	4.9
Accessories	Pc	45	333,333	14,999,985	17.9
Toilet seat	Pc	42	333,333	13,999,986	16.7
Packing	set	34	333,333	11,333,322	13.5
Labour Cost		17820	482	8,589,240	10.2
Total Production Cost				**83,878,309**	**100**
Total admin				**10,201,985**	
Production cost $@8.30				10.1	

Source: sanitary ware plant - Beijing

With labour costs at 10.2% and energy input costs at 18.3%, China is competing effectively with Egypt in the proportion of its allocated total costs in these two areas.
However where China does significantly outscore most other countries is in their material costs which operate at half or as little as a third of that of its competitors.

Production Cost Analysis – Chinese sanitary ware factory – at 2.07 million pieces per year

Cost Item	Value/month RMB	%
Clay	1,014,399	8.3
Glaze	502,389	4.1
Electricity	975,874	8.0
Nat Gas (prod)	782,283	6.5
Nat Gas (kilns)	641,668	5.3
Water	221,401	1.8
Moulds	515,919	4.2
Consumable, Maintenance	697,003	5.7
Accessories	1,770,750	14.6
Toilet seat	1,652,700	13.5
Packing	1,936,117	15.9
Labour Cost	1,467,334	12.1
Total Production Cost	12,177,837	100.0
Total admin	1,076,713	
Production cost $@8.30	8.50	

Source: sanitary ware plant – Beijing area
Note: Toilet seats and accessories are included as production costs, as these are included in all the sets sold

For Chinese sanitary ware manufacturers contract work on an OEM basis is the mainstay of their business and will remain so for many years. China's sanitary ware exports are currently 70% OEM contracts, as suppliers there have yet to build a strong reputation for branded ceramic sanitary ware and consequently are less confident about exporting such designs to markets where brand recall is crucial.

The smaller manufacturers conduct 80 -90 % of their business on an OEM basis. Some mid-size companies, such as Chongqing Swell Ceramic Industry sell 60% of their current output of 3 million pieces per year on an OEM basis (60% USA, 35% EU and Eastern Europe). Milim G&G Ceramics exports 75% of their output of 2 million pieces per year, mainly on OEM basis to USA.

Chinese companies attribute their strength as OEM providers to two key factors. The first is their ability to offer ceramic sanitary ware at prices as much as 50% lower than most competitors elsewhere. Abundant supplies of local raw materials at low prices have contributed to the low production costs. The second key factor which attracts international corporations to the OEM services is the strong supplier capability with the 700 plus manufacturers having a production capacity of over 100 million pieces per year. Many Chinese manufacturers have vastly improved their quality to international standards.

Own-brand production is mainly targeted at the Asian price-conscious markets instead of the traditional markets of Europe and USA, where the multi-national brands are particularly strong but some Chinese companies, such as KWM now allocates 40% of output to own-brand products exported mainly to Europe and intends to develop its brand by attending many more trade shows and appointing more agents overseas. Eagle Brand Holdings was similarly developing its sanitary ware brand but has recently sold this operation to Roca.

FDI in the Chinese sanitary ware industry is very strong and is increasing. The global players, such as American Standard, Inax, Toto, Roca, Duravit, Kohler and HCG have been established in China for some years. American Standard has established 6 factories in six different cities, while Toto has established 8 factories or branches and Roca 4 factories. Duravit has a Joint-Venture with Chongqing Swell, which manufactures products with the Duravit designs and brand for the domestic market. RAK of UAE has also recently invested in a Chinese sanitary ware plant, as part of its worldwide expansion programme.

Most multi-national companies set up their Chinese facilities either independently or with a minority local partner. Only a few factories are 50:50 joint-ventures. The few joint ventures that exist are under the control of their foreign partner (ie American Standard owns 54% of its Chinese company).

Thailand Industry

The Thai sanitary ware industry consists of eight companies, which are mostly medium and high quality manufacturers. The total capacity of these manufacturers is 13.5 million pieces per year (160,000 tonnes). Kohler with 6 manufacturing plants produces 54,000 tonnes per year. Siam Sanitary ware produces approximately 45,000 tonnes (3 million pieces/year). Star is planning to increase its capacity from 9,230 tonnes/year to 12,230 tonnes in 2006 (1.5 million pieces), while Nahm produces 600,000 pieces/year (approx 9,000 tonnes).

Siam Sanitary ware has temporarily suspended its plan to add another 700,000 units capacity in 2006, although its plant is working at full capacity. Their immediate aim is a squeeze another 100,000 units from the existing plant by further improvements. Likewise American Standard, which is also operating at full capacity is not planning to add capacity in Thailand for the next few years but is investing B20m to reduce production costs. At the same time it is switching some orders from Thailand to its Chinese and Indonesian plants to relieve the pressure on its Thai operations.

The three largest manufacturers, Kohler (Thailand) Plc, Siam Sanitary ware Co (in JV with Toto, Japan) and American Standard Thailand Plc have a total market share of 75% of the domestic market. The other 5 manufacturers, including Nahm Sanitary Ware (UMI-Laufen) and Star have a total market share of 25%. The Star share is 7-8% of the total market, similar to Nahm.

Imported products can be divided into two groups; premium products from Europe (Germany, Italy, USA) for high-end customers and low-priced products from China and Taiwan for low-end customers. The imported products from China are considered by local manufacturers not to be competing for the same market, as the local producers, as all have higher quality products than the Chinese. However Chinese imports have increased dramatically in recent years, one factor being the Free Trade Area between China and Thailand, which has resulted in import tariffs on Chinese sanitary ware being reduced from 30% to 20% from 1st July 2005 and which will reduce to zero by 2010.

Since the economic crises of 1997, which adversely affected the property market and domestic sales, sanitary ware companies have increased exports. Previously only selling 30% of production in the export market, Star, for instance, now exports 80% of production to 20 countries but mainly to UK, USA and Japan, the three top export markets for Thailand. Products are sold to distributors either under the Star brand or are unbranded. OEM manufacture is also undertaken for Japanese and US manufacturers and accounts for 30% of production, 70% being under the Star brand.

Raw materials
Generally all body and glazes materials and also the colours are purchased from domestic suppliers. Good quality kaolin is available from a number of suppliers in Raning and Ball clay is available from a number of suppliers from Lampang, hence the competition also holds down prices of raw materials. FDI has had an impact in Thailand. Ferro, for instance, has invested in a local manufacturing plant for glazes and colour in Thailand, which supplies both the sanitary ware and tile sectors. This gives an advantage to Thai producers over Egyptian manufactures, who import their glaze materials at much higher costs.

Profitability
Star had a net profit of 37.74 million Baht on revenue of 271.46 million in 2004 (13.9%) and for Q1 2005 a net profit of 15.91 million Baht on revenue of 82.02 million (19.4 %)

American Standard Sanitary Ware (Thailand) has had a net profit margin of 9.22% and 10.91% in recent years (2001 -03), with a return on equity varying from 12.45% to 13.38% (2003).

Comparison of profitability with Egyptian companies is difficult, as no exact profitability figures for sanitary ware were provided by the companies. However one company stated that its target margin was 25%, which if achieved would place it ahead of the Thai companies.

To summarise cost comparisons for Sanitary Ware production internationally, PIPT has used its experience and contacts to obtain data from a key developing country manufacturers:

Comparison of Sanitary Ware Production Costs

Country	Market Segment	Cost/tonne US$	Weight/piece Kg	Cost/Piece US$
Thailand	High-end	1,000 – 1,500	15	15.00 – 22.50
	Low-end	400 – 800	14	5.60 – 11.20
	Average	1,200	14.5	17.40
India	High-end	800 – 1,000	15	12.00 – 15.00
	Medium-end	500 -700	14	7.00 – 9.80
	Low-end	300 -400	14	4.20 – 5.60
	Average	900	14	12.60
Malaysia		1,400	15	21.00
Vietnam		1,000	15	15.00
Sri Lanka		1,100	14	15.40
Bangladesh		1,500	14	21.00
China	High-end	567 – 667	15	8.50 – 10.00
	Low-end	434 – 567	15	6.50 – 8.50
EU	High-end	1,334 – 2,000	15	20.00 – 30.00
Egypt	High-end	667 – 1,000	15	10.00 – 15.00
	Medium-end	400	16.5	6.60
	Low-end	574	12	6.90

Source: Asian Ceramics & author's elaboration
Note:" Bangladesh factory is state-owned and has very high overheads

The above comparison of costs shows that Egypt is very well positioned with lower production costs than modern Chinese factories and other Asian competitors. As the advantages of very low labour costs and particularly low energy costs will continue to give the Egyptian industry a significant strategic advantage for some years, the sector is in a very good position for continued rapid expansion.

3. GLOBAL SUPPLY & DEMAND TRENDS OF GLAZED CERAMIC TILES

Accuracy of Data

It is worth noting that total export values and volume data for Egypt were sourced from CAPMAS and are not compatible with actual reported ex factory prices.

However quoted export prices have been found to be reasonably accurate against information collected from data Beneficiary company interviews and visits.

Trade Map data regarding the benchmarking and key demand countries has been checked for its reliability.
***Attached Appendix 1 Capmas and Trade Map raw data*

WORLD CONSUMTION

Total world consumption in 2004 was 6,919 m square metres, see chart below, and according to recently released statistics, again grew rapidly to 7.4 billion square metres in 2005, an increase of 7.8%, comparable to growth shown in 2004.
The most dynamic areas for growth in 2005, which have growth rates of 9 – 10%, include China, Latin America, Eastern Europe and North America. The Middle East had a 3.8% growth rate in 2005, while Western Europe has continued at a slow and steady 1-2%, as per the last few years.

Growth in global ceramic tile consumption is expected to fall off slightly in 2006 and then further still next year as a result of marginal declines in virtually every region worldwide.

Total world consumption and forecasts for 2006/07

	2004 m sq m	Variation %				
		2003	2004	2005	2006	2007
Total World	6919	4.5	7.4	7.8	7.1	6.5
Italy	192	0.6	2.3	0.5	0.7	0.8
West Europe	567	1.4	1.6	1.7	1.8	2.1
East & Central Europe	488	6.2	10.9	9.0	8.6	8.7
North America	327	8.6	10.3	8.9	5.8	4.8
Middle East & North Africa	265	5.2	4.6	3.8	4.4	4.0
Latin America	333	7.0	6.4	9.8	8.4	7.7
Asia & Sub-Sahara Africa	377	2.8	7.1	7.2	7.1	7.1
Australia	41	4.5	9.3	-3.7	1.1	0.9
Sub-total	**2398**	**4.7**	**6.5**	**6.3**	**5.8**	**5.7**
China	2402	4.7	8.4	8.8	8.1	6.8
Brazil	449	-7.6	6.4	6.0	5.9	5.1
Spain	363	1.6	8.7	4.5	2.0	0.3
Others	1116	11.5	8.1	12.1	10.7	10.6
Sub-total	**4329**					

Source: Assopiastrelle

From the above it is very apparent that the two major European producing countries, Italy and Spain are forecast to remain at a low growth consumption rate, while the rest of the western Europe is showing the classic symptoms of a mature market performance with slower increases.

However without doubt the key drivers of growth will continue to be the CEE and its relative proximity to Egypt could certainly its role as a ***strategic target market for Egyptian producers.***

Demand Forecast for Central and Eastern Europe to 2007

	2002	2003	2004	2005	2006	2007
GDP +/- %	3.6	5.4	6.2	4.8	4.8	4.7
Tile consumption m sq. m.	414	440	488	532	578	628
Yr. on yr. % increase	9.6	6.2	10.9	9.0	8.6	8.7

Tile consumption in Central and Eastern Europe is expected to continue growing at slightly below the 9.0% growth achieved in 2005; there does not seem to be a direct correlation between year on year growth in GDP and tile consumption but further econometric modelling work examining key variables could be undertaken as a separate exercise for the Beneficiaries/IMC.

Tile consumption forecast 2007 by country – E. Europe

Country – E, Europe	2004 consumption m square m.	2007 consumption m square m.
Poland	85	104
Hungary	25	28
Czech Republic	25	> 30
Russia	108	> 160
Others	245	
Total	**488**	

Spanish exports to Eastern Europe at 55 million sq. m. in 2005 are expected to grow by 3% per year to 58.5 million sq. m. in 2007, with strong growth in Russia and Romania. However, Italian exports to Russia declined slightly in 2005 from 5.0 million sq. m in 2004 to 4.9 million sq. m in 2005 and the Czech market with 5.0 million sq. m. in 2005, is also proving difficult for the Italian companies due to their high prices.
Nevertheless the key growth drivers are Poland and Russia due to their infrastructural changes.

Top importing countries, highest import growth countries

The 10 largest importing countries of glazed ceramic tiles totalled, $4862.47 million, 59.4 % of the world's $8.2 billion total imports in 2004.

The world's imports grew by ***$677.7***m between 2003-2004, with the 10 biggest importers contributing ***$577.26***m, 85% of that growth, putting them on every export country's target market list.

Table 1: Glazed ceramic tiles Top 10 world's importing countries (in terms of value)

Importing Country	$ Imports in 04	% of world's imports in 04	Growth of imports between 03-04
The world	**8.19 billion**	**100**	**9%**
United States	1.83 billion	22.4	15%
France	875.08 million	10.7	18%
Germany	564.50 million	6.9	4%
United Kingdom	543.80 million	6.6	12%
Australia	214.51 million	2.6	7%
Greece	205.19 million	2.5	19%
Canada	172.22 million	2.1	12%
Belgium	161.55 million	2.0	20%
Switzerland	153.12 million	1.9	15%
Austria	142.50 million	1.7	10%
Total top 10	**4862.47 million**	**59.4**	**Average 6.8%**

The MENA countries have a relatively small proportion of the world's total imports accounting for marginally over four percent of world imports, as can be seen in the chart below.

Against a world import growth of 9%, and the top ten largest markets growing by 6.8%, the MENA Region has declined by 12%.

Two very different trends emerge with the richer MENA countries' import markets decreasing, Saudi Arabia, UAE, Kuwait and Qatar; and the less rich MENA countries growing, Oman, Jordan, Iraq and Syria.

This is partially due to the development of local production, RAK in the UAE and less infrastructural investments and developments due to political unrest, but also offering opportunities for Egyptian manufacturers for the sale of low and medium priced products in the Region.

Table 2: Middle East & North Africa (MENA) imports of Glazed ceramic tiles 2004 (in terms of value)

Rank amongst all world's importing countries	Country	2004 in $value	% of world's imports in 04	% growth 03-04
12	Saudi Arabia	117.35 million	1.4	-44
34	UAE	44.83 million	0.5	-39
37	Pakistan	34.42 million	0.4	24
38	Oman	33.41 million	0.4	41
39	Morocco	32.59 million	0.4	8
48	Jordan	28.04 million	0.3	47
52	Kuwait	23.55 million	0.3	-45
55	Algeria	21.63 million	0.3	21
72	Libya	14.78 million	0.2	-22
73	Qatar	14.78 million	0.2	-44
75	Iraq	13.85 million	0.2	51
77	Nigeria	12.4 million	0.2	-20
94	Lebanon	7.7 million	0.1	-63
95	Syria	7.1 million	0.1	74
111	Iran	4.2 million		-10
114	Tunisia	3.6 million		12
116	Uzbekistan	3.4 million		-49
150	Sudan	1.0 million		-92
169	Afghanistan	0.5 million		-82

TOTAL		**419.13 million**	**4.6%**	**Aver. -12%**

In the chart below we can identify the leading fast growing import countries, most of which are in Europe and relatively adjacent to Egypt.

Egypt's relatively modest size/value of exports makes many of these growth countries attractive export destinations that Egyptian companies can aim to develop and increase market share in as these countries are:

- A relatively big import market size
- Geographically close.

Table 3: Other countries that have shown high growth rates in imports between 2003-2004 (in terms of value)

Rank amongst all importing countries	Country	2004 $Value	% of world's imports in 04	% growth 03-04
19	Italy	93.07 million	1.1	35
23	Sweden	78.50 million	1.0	24
26	Norway	65.71 million	0.8	23
29	South Africa	59.05 million	0.7	55
30	Czech Republic	57.15 million	0.7	23
31	Cyprus	52.66 million	0.6	26
32	Finland	51.89 million	0.6	32
36	Chile	42.25 million	0.5	33
42	Bulgaria	31.71 million	0.4	52
44	Taiwan	30.93 million	0.4	53
49	Bosnia & Herzegovina	27.17 million	0.3	21
53	Indonesia	22.11 million	0.3	90
54	Senegal	21.86 million	0.3	42
56	Turkey	21.36 million	0.3	156
59	Ghana	19.55 million	0.2	35
60	Lithuania	18.83 million	0.2	29
61	Malaysia	18.81 million	0.2	41

Diagnostic of Egypt's current exporting vs. global import trends

Countries	Year 2005	Year 2004	Egyptian exports value growth between 04-05 in %	The Importing country's overall $value growth of imports 04 in %
	% of Egypt's total exports $value	% of Egypt's total exports $value		
LIBYA	29	8	403.1	-22
SAUDI ARABIA	15	16	25.8	-44
SYRIA	7	5	90.4	74
SUDAN	6	4	80.8	-92
LEBANON	5	3	100.8	-63
JORDAN	5	6	0.8	47
GREECE	5	6	10.4	19
CYPRUS	3	2	48	26
UKRAINE	2	1	129.4	-29
IRELAND	2	30	-91.5	20
KENYA	2	1	76.2	36
UAE	1	3	-29.4	-39
ALBANIA	1	1	11.4	8
IRAQ	1	0	435.7	51
Total	**85%**	**86%**	**Aver. 92.3%**	**Aver. -0.6 %**

Table 4: EGYPTIAN VALUE EXPORTS OF GLAZED CERAMIC TILES

The figures above demonstrate the relatively inconsistent pattern of Egypt's key export destinations.

Table 5: EGYPTIAN VOLUME EXPORTS OF GLAZED CERAMIC TILES

Countries	2005 % of Egypt's total exports volume	2004 % of Egypt's total exports volume	Egyptian exports volume %growth between 04-05
LIBYA	30	8	428
SAUDI A.	9	8	37
SYRIA	10	6	114
SUDAN	5	4	66
LEBANON	6	4	106
JORDAN	6	8	-3
GREECE	7	5	70
CYPRUS	4	3	64
UKRAINE	1	1	56
IRELAEND	2	33	-91
KENYA	1	1	27
UAE	2	2	4
ALBANIA	1	2	23
IRAQ	1	0	362
Total	**79%**	**86%**	**Aver. 90%**

Table 6: Export Concentration

2004			2005		
Export Destinations	Volume share of total Exports	% Value share of total Exports	Export Destinations	% Volume share of total Exports	% Value share of total Exports
Top 2	41%	46%	Top 2	39%	45%
top 5	62%	65%	top 5	60%	63%
top 10	82%	83%	top 10	80%	80%

As can be seen from the above chart, Egypt's export concentration on top export destinations is declining, suggesting a tendency to develop exports over more markets with lower quantities.
This is very much in line with feedback from Beneficiary interviews, where the manufacturers aims were to open new markets rather than growing share in existing ones.

It is recommended that companies focus their export efforts and resources in maturing and growing more competitive in specific higher-potential export markets aiming at greater volume and value share of these markets. Keeping in mind that export share to one importing country from the overall company's exports should not be too high and rather to distribute risk over a number of promising markets.

Table 7: Comparison between Volume and Value growth between 04-05 Explaining Egypt's up or down movement in the product value ladder

Countries	Egyptian exports value growth between 04-05 in %	Egyptian exports volume growth between 04-05 in %	Pricing adaptation	$Value per sqm 04	$Value per sqm 05
LIBYA	403.1	428	lower prices	4.0	3.8
SAUDI A.	25.8	37	lower prices	7.6	7.0
SYRIA	90.4	114	lower prices	3.2	2.9
SUDAN	80.8	66	higher prices	4.0	4.4
LEBANON	100.8	106	lower prices	3.5	3.4
JORDAN	0.8	-3	higher prices	3.3	3.5
GREECE	10.4	70	lower prices	4.6	3.0
CYPRUS	48	64	lower prices	3.2	2.9
UKRANIA	129.4	56	higher prices	4.0	5.9
IRELAEND	-91.5	-91	lower prices	3.8	3.6
KENYA	76.2	27	higher prices	4.0	5.5
UAE	-29.4	4	lower prices	5.4	3.7
ALBANIA	11.4	23	lower prices	3.5	3.1
IRAQ	435.7	362	higher prices	3.5	4.0

World prices are decreasing as world production (supply) outgrows the world's consumption (demand).
In parallel material costs, labour and energy costs are increasing. Only products that managed to remain very competitive in the markets they operate in were able to maintain price levels, or in some cases even increase prices, despite world trends that are squeezing margins.

Where Egypt's value growth has exceeded volume growth percentage in a country, it indicates that the product is becoming stronger, more able to command a price premium and therefore more appreciated in those markets.

Where volume growth exceeds value growth percentage in a country, it indicates that the product is becoming weaker, having to compete on a price platform with unit price decreasing.

The latter scenario has been the case in almost all of Egypt's export destinations.
Egypt's export destinations, mostly Arab countries, have seen a decline in their overall imports, because of their unwillingness to absorb ceramic tiles over recent years with, by definition, Egypt commanding an increased market share.
However as far as Egyptian manufacturers are concerned, this has been at the cost of continuous pressure on price, resulting in margin declines.
The result is that Egypt's exports are currently directed at declining markets, at decreased prices with a lower margin return.

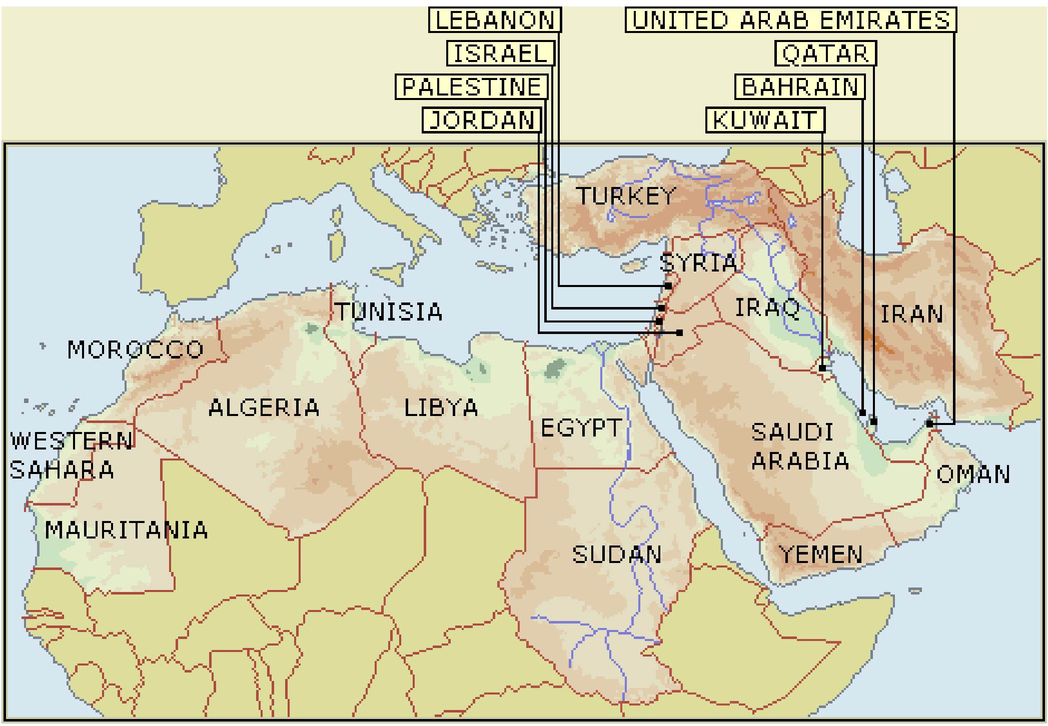
A revision of target markets is therefore advised, concentrating on higher potential export destinations.

Influencers for current Choice of Export Markets

In 2004 Egypt's exports totalled $26.65 million at 6.53 million sq. m, in 2005 exports grew to total $34.38 million at 8.85 million sq. m.
Egypt's exports are concentrated in one geographical area, namely North Africa and the Middle East and slightly extending to the European Mediterranean countries and more proximate East European countries

This geographical spread of exports might imply that the individual Egyptian companies are trying to:

- Deal with familiar and safe markets in terms of language, structure and, most importantly, design.
- Avoid cultural barriers
- Deal with countries relatively close to Egypt and avoid difficult-to-ship orders and their inherent high costs
- Lack of demand side research information
- Not fully developed international communication skills
- Rely on Regional contacts to open markets rather than proactively develop challenging markets further a field.



Egypt's export prices to most export destinations have decreased from over the past few years indicating that most Egyptian companies' export strategies evolve primarily around price considerations. This is even true in countries where Egypt has long established trade relationships, with exporters not being prepared to move up the value ladder and concentrating on price.

Failure to maintain share in promising growth markets, indicates poor competitiveness of Egyptian companies with buyers having an inferior perception of the Egyptian product quality. Since Egyptian products have put themselves in a spot where their Unique Selling Proposition is ***PRICE***, it makes them replaceable by cheaper alternatives or products that are perceived as higher quality product at somewhat higher prices.

In overall terms Egypt's average export price per sq. m fell from $4.1 in 2004 to $3.9 in 2005.

In contrast and as can be seen from the tables below, eight of ***Brazil's*** top ten export destinations are growth markets for imports and Brazilian exports are growing there at a higher rate, indicating Brazil's strategy is to grow stronger in existing markets and aggressively outperforming competition.
Furthermore Brazil's average value per square metre is highest in its major export destinations.

The same trend can be seen in ***Turkey*** where seven of its key export destinations are showing growth in imports and as in the case of Brazil, their exports are growing there at a higher rate.

Thailand has a similar sized overall industry to Egypt, but is exporting double Egypt's rate, with seven of its top ten export destinations showing significant increases and where Thai exports are gaining market share by outperforming competition.

Similar choice of export destinations and a strategic focus on maintaining and growing market share in existing markets can be seen from ***Italy's*** and ***China's*** export trends, though less for ***UAE's*** trends (a new export country that is still working on it's export markets' formula).

This is a strong proof that Egypt should revise its choice of export destinations and balance it quest to enter new markets with the importance of growing stronger and more competitive in existing markets.

As can be seen from Table 7, to increase growth or maintain market share in countries with overall declining imports, to retaliate the Egyptian companies had to decrease export prices (e.g. in Saudi Arabia, Lebanon, UAE).

Continuing to exist in weakening markets threatens even lower future returns and squeeze on prices on the long-term.
Egyptian companies need to make top importing and highly growing export markets their main export markets and shift less promising countries down their export destinations list.

Export performance of the Benchmarking Countries

Table 9: BRAZIL'S Exports of Glazed Ceramic Tiles

Countries	Quantity (1000 units)	Value (U.S$ 000)	$Value per sq. m 04	% of Brazil's total exports		Between 03-04 Export growth to country in value (%)	Import country's overall growth of imports 04
				Quantity	Value		
USA	35621.4	147406	4.1	38	45	32	15
Canada	4668.6	18949	4.1	5	6	15	12
South Africa	6079.7	17874	2.9	7	5	31	55
TOP 3	***46369.7***	***184229***	***3.97***	***50%***	***56%***		
Chile	6229.9	17360	2.8	7	5	51	33
Argentina	3912.6	11322	2.9	4	3	322	259
United Kingdom	2100.1	10197	4.9	2	3	80	12
Paraguay	3503.6	8896	2.5	4	3	18	N/A
Costa Rica	3134.1	7844	2.5	3	2	20	17
Jamaica	2171.6	6426	3	2	2	15	28
Dominican Republic	2348.8	6182	2.6	3	2	163	N/A
TOP 10	**69770.4**	**246274**	***3.97***	**75%**	**75%**		
Trinidad and Tobago	1677.1	4661	2.8	2	1	20	-45
Australia	1104.7	4408	4	1	1	-16	7
Guatemala	1656.3	4398	2.7	2	1	59	25
Greece	1206.8	4141	3.4	1	1	24	19
Uruguay	1407.2	4030	2.9	2	1	53	46
Honduras	1075.9	3064	2.8	1	1	80	9
Mexico	981.7	3016	3.1	1	1	-2	-20
UAE	774.1	2857	3.7	1	1	454	-39
Total	***89538***	***307424***	***3.43***	***86%***	***84%***		

In 2004 Brazilian exports totalled $327.57 million and 92.64 million sq.m. Average export price of Brazilian glazed ceramic tiles in 2004 was $3.53 vs. $4.1 average Egyptian export price for the same year.

Its market share and penetration of the following markets has increased considerably: USA, Chile, UK, Trinidad & Togo, Guatemala, Honduras and UAE.

Brazil's export concentration is mainly in North America, with other export destinations primarily in neighbouring countries.

It is worth noting that Brazil's export destinations for Ceramic Tiles are the same export destinations for Sanitary Ware, indicating a joint penetration and promotional policy.

Table 10: **TURKEY'S Exports of Glazed Ceramic Tiles**

Countries	Quantity (1000 units)	Value (U.S$ 000)	$Value per sq. m 04	% of Turkey's total exports		Between 03-04 Export growth to country in value (%)	Import country's overall growth of imports 04
				Quantity	Value		
UK	10674.35	58126	5.5	14	15	54	12
USA	10867.67	44481	4.1	14	12	22	15
Germany	6313.53	39073	6.2	8	10	-1	4
TOP 3	**27855.55**	**141680**	***5.0***	**36%**	**37%**		
Israel	9320.145	33724	3.6	12	9	13	13
Canada	7195.588	29011	4.0	9	8	33	12
France	5043.264	25897	5.1	6	7	31	18
Greece	4398.389	20601	4.7	6	5	26	19
Saudi Arab.	3373.59	12346	3.7	4	3	-21	-44
Netherlands	1484.932	8677	5.8	2	2	23	-1
Finland	1001.466	7845	7.8	1	2	43	32
TOP 10	**58671.46**	**279781**	***4.8***	**76%**	**73%**		
Russian F.	1136.916	7558	6.7	1	2	0	11
Ukraine	1875.707	7151	3.8	2	2	5	-29
Belgium	1081.849	6318	5.8	1	2	10	20
Azerbaijan	1285.316	6293	4.9	2	2	26	98
Italy	1226.633	6106	5.0	2	2	19	35

In 2004 Turkish exports totalled $376.6 million at 78.32 million sq. m. Average export price of Turkish glazed ceramic tiles in 2004 was $4.81 vs. $4.1 average Egyptian export price for the same year.

Turkey has witnessed a significant growth of exports to countries with increasing imports. Its market share and penetration of the following markets has increased considerably: UK, USA, Canada, France and Greece.

It is worth noting that the biggest importing countries in the world are all Turkey's biggest export destinations. Turkey seems to have taken higher interest in penetrating the Scandinavian countries with 20% plus export growth between 2003-2004.

Aggressive exports to the UAE at the low-mid end of the market at $4.5/sqm despite generally falling imports, but at the other end of the spectrum, high value exports to Ireland and Russian Federation at $6.9 and $6.7 sq. m.

As was the case in Brazil, Turkey’s $ value is highest in its most important export markets; $5.0 in the Top 3 and $4.4 in the next 7.

Table 11: THAILAND'S Exports of Glazed Ceramic Tiles

Countries	Quantity (1000 units)	Value (U.S$ 000)	$Value per sq. m 04	% of Thailand's total exports		Between 03-04 Export growth to country in value (%)	Import country's overall growth of imports 04
				Quantity	Value		
USA	7217	41656	5.8	N/A	48	33	15
Australia	3130	13574	4.3	N/A	16	26	7
UK	361	4515	12.5	N/A	5	18	12
TOP 3	***10708***	***59745***	***5.6***		***69***		
Canada	1382	4206	3.0	N/A	5	198	12
Germany	217	3969	18.3	N/A	5	31	4
Korea	912	3482	3.8	N/A	4	-2	5
Malaysia	1343	2890	2.2	N/A	3	8	41
Taiwan	252	1491	5.9	N/A	2	71	53
New Zealand	194	1057	5.5	N/A	1	42	22
Cambodia	718	1046	1.5	N/A	1	10	24
TOP 10	***15726***	***77886***	***5.0***		***90***		
Mauritius	266	1036	3.9	N/A	1	-18	3
Sri Lanka	273	971	3.6	N/A	1	21	28
Japan	96	952	9.9	N/A	1	147	18
India	242	844	3.5	N/A	1	47	-11
France	103	801	7.8	N/A	1	521	18
Indonesia	139	733	5.3	N/A	1	130	90
Total	**16845**	**83223**	***4.9***		**96**		

Thailand's overall production of ceramic tiles is similar to Egypt's, although it has five companies versus 19 in Egypt. Nevertheless Thailand's exports value is more than double Egypt’s at $87 million versus Egypt's at $34 million in 2004.

78% of Thailand's total export value is via exports to 5 of their Top 6 importing countries in 2004. Thailand's export growth to these countries is higher than their overall growth of imports from 2003 to 2004, which indicates a higher market share for the Thai product.

On Thailand's export list are also countries with above average growth rates in the past years like Taiwan, Sri Lanka, Indonesia and Malaysia. It is most likely that proximity and import growth of these countries are the main reasons for the Thai export.

Thailand, being a relatively new exporter, has an unusual pricing strategy, where as can be seen from the table above, it exports at $18.3 to Germany, $12.5 to the UK and $9.9 to Japan and thereby pricing its products to these countries at highest possible market prices and comparable quality. Concurrently it prices its products as low as $1.5 to Cambodia and moves from the low end offering in some markets, to the mid-low, mid-high and high ends of markets.
However in overall terms Thailand’s highest prices are in its Top 3 destinations at $5.6 falling off to $3.6 in its next 7.

Thailand's exports are heavily concentrated in the world's top importing countries: USA, UK, Canada, Australia and Germany, with almost half its export value in the US market.

Table 12: UAE'S Exports of Glazed Ceramic Tiles

Countries	Quantity (1000 units)	Value (U.S$ 000)	$Value per sq. m 04	% of UAE's total exports		Between 03-04 Export growth to country in value (%)	Import country's overall growth of imports 04
				Quantity	Value		
Oman	3958	21954	5.5	N/A	23	67	41
Belgium	1348	9213	6.8	N/A	10	46	20
Germany	1246	8464	6.8	N/A	9	-10	4
TOP 3	***6552***	***39631***	***6.0***		***42***		
France	790	7181	9.1	N/A	7	95	18
Bahrain	1423	5890	4.1	N/A	6	3	0
Jordan	998	5687	5.7	N/A	6	22	47
Australia	1385	5575	4.0	N/A	6	2	7
Greece	1096	5381	4.9	N/A	6	-17	19
Pakistan	666	2749	4.1	N/A	3	0	24
India	431	2151	5.0	N/A	2	139	-11
TOP 10	***13341***	***74245***	***5.6***		***78***		
Syria	876	1986	2.3	N/A	2	100	74
USA	175	1454	8.3	N/A	2	-15	15
Switzerland	151	1299	8.6	N/A	1	33	15
Korea	146	1287	8.8	N/A	1	-10	5
Qatar	389	1231	3.2	N/A	1	-77	-44
New Zealand	141.225	1125	8.0	N/A	1	84	22
Sri Lanka	275	1029	3.7	N/A	1	28	28
Total	***15219.2***	***82627***	***5.4***		***86***		

UAE average export price is $5.82. From the variance of its export destination, it is obvious that proximity, cultural resemblance do not play a big role in the choice of export markets. It mainly exports to markets that are relatively big and with high import growth.

UAE's total export value is $96.6 million. The 8 top countries it exports too account for 72% of its overall exports. It exports at higher prices to higher income nations and seems to target the mid-higher end of markets, except in Syria, Qatar and Sri Lanka.

Table 13: ITALY'S Exports of Glazed Ceramic Tiles

Countries	Quantity (1000 units)	Value (U.S$ 000)	$Value per sq. m 04	% of Italy's total exports		Between 03-04 Export growth to country in value (%)	Import country's overall growth of imports 04
				Quantity	Value		
USA	64124	715989	11.2	23	23	26	15
France	42101	478503	11.4	15	16	15	18
Germany	34026	378065	11.1	12	12	7	4
TOP 3	***140251***	***1572557***	***11.2***	***50***	***51***		
Greece	12541	117527	9.4	5	4	18	19
UK	7388	111634	15.1	3	4	11	12
Switzerland	7352	107659	14.6	3	3	19	15
Canada	9061	91578	10.1	3	3	38	12
Austria	7456	82486	11.1	3	3	11	10
Belgium	5170	62658	12.1	2	2	17	20
Australia	4679	53953	11.5	2	2	14	7
TOP 10	***193898***	***2200052***	***11.3***	***71***	***72***		
Saudi Arabia	6174	52603	8.5	2	2	33	-44
Hungary	7073	52178	7.4	3	2	-9	17
Russian Federation	2505	50420	20.1	1	2	27	11
Netherlands	3699	48203	13.0	1	2	11	-1
Croatia	5046	46988	9.3	2	2	14	20
Spain	1872.208	43663	23.3	1	1	18	6
Poland	3745.525	35554	9.5	1	1	-22	2
Sweden	2652.242	35381	13.3	1	1	15	24
Norway	2046.742	28257	13.8	1	1	22	23
Denmark	2299.325	26499	11.5	1	1	23	2
Japan	1842.867	25767	14.0	1	1	22	18
Total	***231011***	***2619798***	***11.3***	***85***	***87***		

Italy's exports in 2004 totalled $3.01 billion and 277.56 million sq. m in volume terms volume with an average export price is $11.09.
Unusually amongst major ceramic tile exporters, Italy has a very high but totally flat price profile with the Top 3 export destinations averaging $11.2 and both the Top 10 and Top 21 also at $11.3 per square metre.

There are naturally differences in export value prices but these are a function of the Italians targeting the top end segments of smaller importing countries with their higher quality products.
As Italy's value-volume ratio is mostly 1:1, this supports this premise, indicating a pricing that is closely related to the quantity exported.

The world's major importing countries are also Italy's top export destinations. Where the United States' over all imports grew by 15% from 2003-2004, Italy's exports to the USA grew by 26%, indicating a market share increase and the same trends can be seen in both Germany and Japan.
On the contrary Italy's share of the French and Belgian markets has decreased, primarily as a result of substitution and a movement in favour of less expensive products.

During the course of the Beneficiary company interviews and factory visits, one or two companies mentioned that they regarded themselves to be in direct competition with the Italians in this market.

All benchmarking and market analyses indicate that this is not the case at the quality, price and positioning levels and likewise at the buyers' perception of Italian versus Egyptian product positioning level.
It is worth pointing out that at this stage Italy should be viewed as the best practice benchmarking country and Egyptian manufacturers should aspire to achieving the price/quality/ perception norms.

Table 14: CHINA'S Exports of Glazed Ceramic Tiles

Countries	Quantity (1000 units)	Value (U.S$ 000)	$Value per sq.m 2004	% of China's total exports		Between 03-04 Export growth to country in value (%)	Import country's overall growth of imports 04
				Quantity	Value		
Hong Kong	26500	70411	2.7	17	17	21	15
Saudi Arabia	21541	42533	2.0	14	11	5	-44
Korea	14549	37727	2.6	10	9	12	5
TOP 3	***62590***	***150671***	***2.4***	***41***	***37***		
Japan	3881	30108	7.8	3	7	28	18
USA	8082	24956	3.1	5	6	1	15
Singapore	8751	23611	2.7	6	6	41	-13
UAE	6073	12971	2.1	4	3	22	-39
Australia	3055	12090	4.0	2	3	6	7
Kuwait	5430	11246	2.1	4	3	35	-45
India	4216	11165	2.6	3	3	54	-11
TOP 10	***102078***	***276818***	***2.7***	***68***	***68***		
Pakistan	4120	10116	2.5	3	3	38	24
Philippines	3273	7377	2.3	2	2	64	-31
Russian F.	1920	6362	3.3	1	2	20	11
Malaysia	2638	6327	2.4	2	2	66	41
Nigeria	3503	6247	1.8	2	2	56	-20
Indonesia	1625	6043	3.7	1	1	57	90
Total	***119157***	***319290***	***2.7***	***79***	***80***		

China's total exports in 2004 were $ 404m and 152m square metres with an average export price of $2.66.

Like Egypt, China shows aggressive market share growth at the lower end of the market, especially among countries that are generally importing less.
In some cases such as in Saudi Arabia and the UAE, the middle market segment is being covered by local product and imports are catering for the top and bottom ends.

For the time being China, like Egypt, has more of a presence in countries that are more culturally and geographically closer.

It is worth noting that in Japan, a market of interest to many Egyptian companies, China exports at prices that are similar to Spain and, as can be seen in the table, China's market share of the Japanese import market is growing fast.

In general China's prices are the lowest in the world at $2.66 versus $4.1 on average in Egypt.

China is making it clear that its target is the price conscious segment, namely the low end of the market.
China has a price edge gained from economies of scale and the ability to (potentially) finance export sales price from local sales, hence Egypt cannot and will not be able to

compete head to head at these export prices and therefore needs to move away from price competition to competing on (perceived) value through quality.

China's does not have high export concentration and its sales are spread across a range of markets but not in the key high import ones.

Table 15: EGYPT'S Exports of Glazed Ceramic Tiles

Countries	$Value per sq. m 04	% of Egypt's total exports		Between 03-04 Export growth to country in value (%)	Egypt's exports growth between 04-05	Import country's overall growth of imports 04
		Quantity	Value			
LIBYA	4	38	29	new market	403.1	-22
SAUDI ARABIA	7.6	5	15	0	25.8	-44
SYRIA	3.2	7	7	87	90.4	74
TOP 3		***50***	***51***			
SUDAN	4	7	5	0	80.8	-92
LEBANON	3.5	4	3	0	100.8	-63
JORDAN	3.3	2	3	46	0.8	47
GREECE	4.6	4	3	1	10.4	19
CYPRUS	3.2	3	2	162	48	26
UKRANIA	4	2	2	N/A	129.4	-29
IRELAND	3.8	3	2	109	-91.5	20
TOP 10		***75***	***71***			
KENYA	4	2	1	33	76.2	36
UAE	5.4	2	1	N/A	-29.4	-39
ALBANIA	3.5	1	1	7	11.4	8
IRAQ	3.5	2	1	new market	435.7	51
Total		***82***	***75***			

Between 2003 and 2004 Egypt's value exports grew by 5% but surged by 29% from 2004-2005.

Egypt's export prices operate in a relatively tight band between $3.2 and $5.4 across most export destinations, with only Saudi Arabia at a considerably higher, $7.6 per square metre price.

In 2004 Egypt penetrated the Libyan and Iraqi markets with undoubted success, accounting for almost one third of the country's exports.

The lack of a consistent pattern of export development is typified by the Ireland situation where after building up sales significantly, both volume and value declined dramatically between 2004/5 by over 90% even at highly competitive prices, $3.8.
In the case of the UAE, Egypt's exports have declined in a falling market, due to a large extent by the increased local production from RAK.
However both Brazil and Turkey have seen their exports to the UAE increase by over 400% and 100% respectively at highly competitive $3.7, $4.5 versus $5.4 for Egypt.
This suggests that either Egyptian prices were uncompetitive or that their products were poorly targeted.

Egyptian exports are concentrated in the Libyan market. Though the market has been importing less between 2003/04, economical growth and general development are expected.

Tables 16: Export concentration in the benchmarking countries

BRAZIL			
	Top importing countries from Brazil	Value % share of Brazil's total exports	Accumulated Export shares
1	USA	45	
2	Canada	6	51
3	South Africa	5	56
4	Chile	5	61
5	Argentina	3	64
6	UK	3	67
7	Paraguay	3	70
8	Costa Rica	2	72
9	Jamaica	2	74
10	Dominican Republic	2	76

TURKEY			
	Top importing countries from Turkey	Value % share of Turkey's total exports	Accumulated Export shares
1	UK	15	
2	USA	12	27
3	Germany	10	37
4	Israel	9	46
5	Canada	8	54
6	France	7	61
7	Greece	5	66
8	Saudi Arabia	3	69
9	Netherlands	2	71
10	Finland	2	73

THAILAND			
	Top importing countries from Thailand	Value % share of Thailand's total exports	Accumulated Export shares
1	USA	48	
2	Australia	16	64
3	UK	5	69
4	Canada	5	74
5	Germany	5	79
6	Korea, Rep. of Korea	4	83
7	Malaysia	3	86
8	Taiwan	2	88
9	New Zealand	1	89
10	Cambodia	1	90

UAE			
	Top importing countries from UAE	Value % share of UAE's total exports	Accumulated Export shares
1	Oman	23	
2	Belgium	10	33
3	Germany	9	42
4	France	7	49
5	Bahrain	6	55
6	Jordan	6	61
7	Australia	6	67
8	Greece	6	73
9	Pakistan	3	76
10	India	2	78

ITALY			
	Top importing countries from Italy	Value % share of Italy's total exports	Accumulated Export shares
1	USA	23	
2	France	16	39
3	Germany	12	51
4	Greece	4	55
5	UK	4	59
6	Switzerland	3	62
7	Canada	3	65
8	Austria	3	68
9	Belgium	2	70
10	Australia	2	72

CHINA			
	Top importing countries from China	Value % share of China's total exports	Accumulated Export shares
1	Hong Kong	17	
2	Saudi Arabia	11	28
3	Korea, Rep. of Korea	9	37
4	Japan	7	44
5	USA	6	50
6	Singapore	6	56
7	UAE	3	59
8	Australia	3	62
9	Kuwait	3	65
10	India	3	68

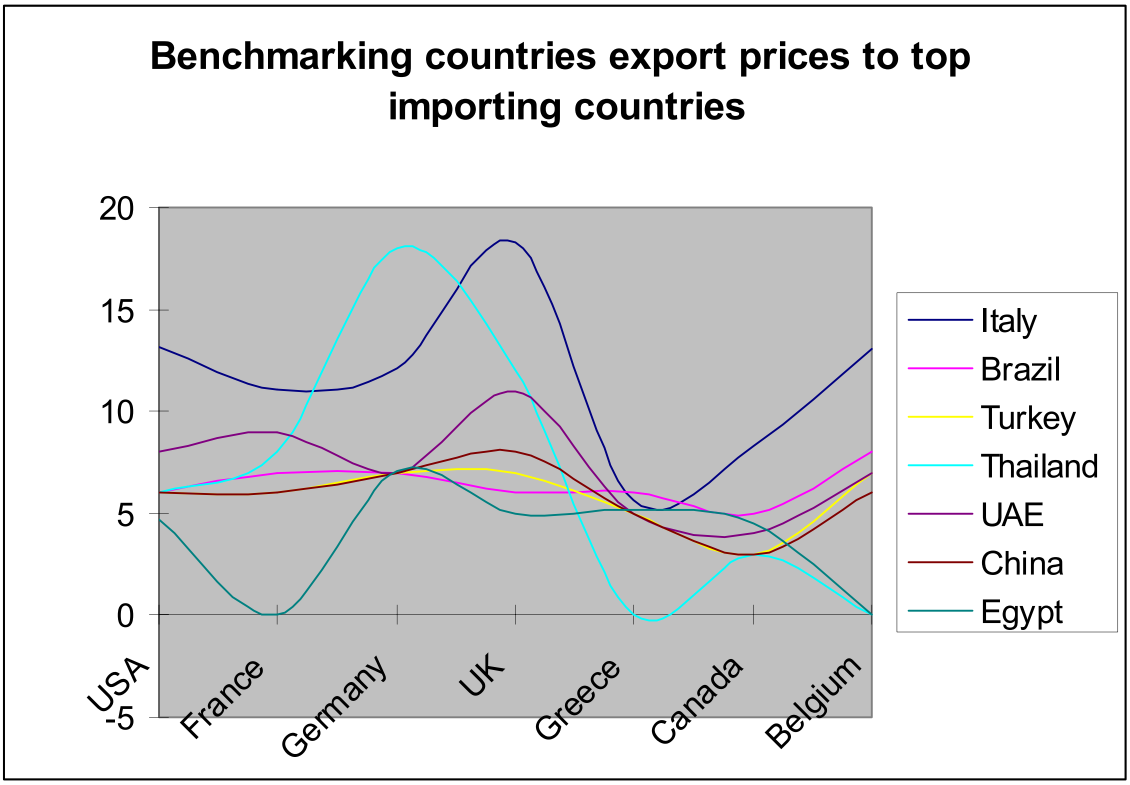
EGYPT			
	Top importing countries from Egypt	Value % share of Egypt's total exports	Accumulated Export shares
1	LIBYA	29	
2	SAUDI ARABIA	15	44
3	SYRIA	7	51
4	SUDAN	6	57
5	LEBANON	5	62
6	JORDAN	5	67
7	GREECE	5	70
8	CYPRUS	3	72
9	UKRANIA	2	74
10	IRELAEND	2	76

These charts indicate the relative importance of specific destination markets for the key benchmarking countries.
Brazil and Thailand's exports are highly geared to the USA, 45%, which can be viewed as a particularly high-risk strategy.

Egypt is almost 30% dependent on the Libyan market, a country that does not feature in any benchmark countries exports. Libya is possible a country on its way to becoming an open market and highly receptive to imports, but for the time being this is a relatively high risk and short term strategy.

Egyptian companies desperately need to address bigger and generally growing importing countries and to upgrade product quality, work on changing the improving perception of Egyptian quality in order to gain a high bargaining power and decrease price compromise whenever the competition gets tougher; especially as world production is growing at a higher rate than consumption, hence some market players are inevitably going to go out of the market.

Conclusion on Egypt's Global Price Positioning of Glazed Ceramic Tiles:



- World's production is growing at a higher rate to global consumption growth
- Egypt price movement: $4.1 sq. m in 04 - $3.9 sq. m in 05
- Egyptian companies clearly prefer to export geographically and culturally proximate countries, even if these markets are not the optimum markets
- C.a. 50% of exports are made in declining markets, and with high concentration in Libya and Saudi Arabia
- Unlike its peers, Egypt is not present in top importing countries (except for in Greece)
- Brazil, Turkey and Thailand's share of the top importing countries is growing at the expense of weaker imports.
- Italy, with a strong country of origin BRAND, keeps an average of 45-60% share of total imports of the top importing countries and steadily serves the high-end segment of most markets.
- China maintains its price edge by serving the low-end of its export markets (except for Japan). For now, European countries are not in its 10 top export markets, but its existing exports in Europe are at prices similar to Turkey's
- The UAE successful in the French, Belgian, Omani and Indian markets at an average of $5.5/sqm, but struggling to maintain market share in its other top export markets

4. GLOBAL SUPPLY & DEMAND TRENDS OF CERAMIC SANITARY WARE

To summarise the current Egyptian sanitary ware industry situation, the country has a number of labour/energy cost and proximity to market advantages as well as experience of exporting. However the low usage of fast firing kilns and LPC casting machines, overstaffing and high rejection rates results in low productivity and medium to low quality output.
So in spite of strong international demand, Egypt's sanitary ware Beneficiaries may find themselves having to compete more strongly to maintain their control of the domestic market because of trade liberalisation and new entrants on the production scene, for example India, and therefore need to be considerably more focused in export marketing terms.

WORLD CONSUMPTION

In terms of market size potential, the leading importers are:

Table 1: Ceramic Sanitary Ware Top 10 world's importing countries (in terms of value)

Country	2004 $Value	% of world's imports in 04	% growth 03-04
World Total	***3.12 billion***		***18***
USA	720.4 million	23	25
United Kingdom	280.7 million	9	39
Germany	204 million	7	7
Spain	200.1 million	6	19
France	184.4 million	6	15
Canada	111.5 million	4	10
Italy	73.4 million	2	17
Belgium	66.5 million	2	39
Denmark	65.8 million	2	5
Japan	57.7 million	2	20

The 10 most importing countries of Ceramic Sanitary Wares totalled 63% i.e. $1.96.2 of world's total imports of $3.12 billion in 2004.

The world's imports grew by ***$467.5 million*** between 2003-2004, the 10 most importing countries alone contributed with ***$342.2 million*** of that growth, which puts them on every export country's target market's list.

Moving to a more local level of demand within the Middle East:

Table 2: Middle East & North Africa (MENA) imports of ceramic sanitary ware 2004 (in terms of value)

Rank amongst all world's importing countries	Country	2004 in $value	% growth 03-04
25	UAE	26.7 million	-4
29	Saudi Arabia	23.0 million	-22
35	Kuwait	12.1 million	-5
42	Oman	10.2 million	-7
50	Bahrain	7.6 million	3
51	Algeria	7.2 million	87
54	Nigeria	6.8 million	183
58	Jordan	5.7 million	32
60	Tunisia	5.6 million	16
63	Morocco	5.5 million	31
65	Qatar	5.3 million	-75
68	Libya	5.0 million	-10
69	Iraq	5.0 million	-2
71	Lebanon	4.6 million	-19
82	Afghanistan	3.3 million	
92	Yemen	2.4 million	
98	Pakistan	1.9 million	75
99	Iran	1.7 million	478
105	Syria	1.5 million	18
132	Sudan	0.7 million	-62

The biggest 4 importing MENA countries have witnessed a drop in imports of ceramic sanitary ware. Several North African countries though have booming imports like: Algeria, Nigeria and Morocco. Non-Arab Middle Eastern countries like Iran and Pakistan are equally growing, with Iran's imports leaping to fivefold its size from 2003-2004.

Table 3: Other countries that have shown high growth rates in imports between 2003-2004 (in terms of value)

Rank amongst all importing countries	Country	2004 In $value	% growth 03-04
11	Russian Federation	55.5 million	29
14	Greece	46.3 million	30
20	Poland	32.9 million	44
22	Sweden	27.8 million	20
23	Ukraine	27.7 million	30
24	Taiwan	27.7 million	30
28	Hungary	23.2 million	49
30	New Zealand	20.7 million	33
32	Mexico	13.2 million	25
33	Slovakia	12.9 million	45
39	Slovenia	10.7 million	27
40	Luxembourg	10.4 million	25
41	Lithuania	10.3 million	41
43	Kazakhstan	10.1 million	35
44	Cyprus	9.3 million	29
45	South Africa	8.5 million	67
47	Venezuela	8.1 million	151
49	Chile	7.9 million	53
51	Algeria	7.1 million	87
53	Romania	6.9 million	29
54	Nigeria	6.8 million	183
58	Jordan	5.7 million	32
59	Belarus	5.6 million	56
62	Bulgaria	5.5 million	63
63	Morocco	5.5 million	31

Given that Egypt's exports in 2005 were $34.38 million.
Export concentration in any of these markets can be worthwhile, especially to:

- Countries with relatively bigger import market size
- The richer selection of those or those countries with "getting-richer" segments (e.g. Poland, Russian Federation).
- Geographically more proximate ones
- Where t here is potential demand for middle priced products

Shaded in ▭ are promising countries on Egypt's top export destinations' list.
Shaded in ▭ are countries with weakening imports and that are on Egypt's top export destinations' list.

Diagnostic of Egypt's current exporting vs. global import trends

Table 4: Egyptian Ceramic Sanitary Ware Export value changes from 04-05

2005				2004			
Countries	**Export price/ unit**	**% value share of Egypt's overall exports**	**% volume share of Egypt's overall exports**	**Countries**	**Export price/ unit**	**% value share of Egypt's overall exports**	**% volume share of Egypt's overall exports**
Total	**12.7**			**Total**	**12.7**		
UK	13.0	36	35	UK	12.8	50	49
ITALY	14.6	11	10	Portugal	14.5	12	10
Portugal	13.0	9	9	POLAND	18.6	6	4
IRELEND	18.7	7	5	IRELEND	16.8	5	4
S. AFRICA	12.3	5	5	ITALY	13.6	3	3
GERMANY	11.8	4	4	S. AFRICA	10.9	3	3
LIBYA	9.9	3	3	BELGUIM	10.4	2	3
FINLAND	19.0	3	2	GERMANY	10.4	2	3
POLAND	17.6	2	2	GREECE	14.4	1	1
BELGUIM	13.6	2	2	MOROCCO	16.5	1	1
Top 10 sub-total	***15.6***	***81%***	***76%***	***Top 10 sub-total***	***15.2***	***86%***	***82%***
SYRIA	19.4	2	1	LEBANON	10.2	1	2
ALGERIA	7.8	2	3	LIBYA	5.1	1	3
LEBANON	11.5	1	2	SYRIA	8.7	1	2
CYPRUS	11.6	1	1	QATAR	41.6	1	0
GREECE	12.6	1	1	SPAIN	13.4	1	1
MOROCC O	15.6	1	1	SENEGAL	9.0	1	1
KUWAIT	7.0	1	1	KUWAIT	14.7	1	1
JORDAN	9.4	1	1	ALBANIA	28.1	1	0
KENYA	5.0	1	2	CYPRUS	21.5	1	0
SAUDI-ARABIA	10.8	0	1	SAUDI ARABIA	12.5	1	0
		92%	**90%**			**96%**	**92%**

Egypt's exports of sanitary ware are primarily in the world's largest importing countries, concentrated among growth markets.
This is a healthy sign for this sector's export orientation.

However Egyptian export value fell by 22% between 2004/2005 partially because of EGP and US$ currency fluctuations; last year the EGP strengthened against the US$ and since prices are mostly quoted in $ and cost incurred in EGP, margins were eroded.
Manufacturers' attempts to increase $ prices to absorb currency differences caused buyers to look elsewhere for imports and due to the low level of branding in this sector, product substitution occurred.

In total Egypt's prices remained constant but value exports declined by 22% last year, but in 2006 there is evidence of an improvement.

Summary table of price/value changes

	% change in value of import from 04-05	$ Price movement from 04-05	Price in 2004
total	***-22***	***constant***	***12.7***
UK	-44	0.2	12.8
Portugal	-39	-1.5	14.5
Italy	150	1	13.6
Ireland	-	1.9	16.8
S. Africa	30	1.4	10.9
Germany	20	0.2	10.4
Libya	75	4.9	5.1
Poland	-70	-1.0	18.6
Belgium	-38	3.2	10.4
Greece	-40	-1.8	14.4

Export concentration decreased from 2004-2005 with a loss of share in most lead markets. Over the last two years the top 10 export destinations made up between three quarters and 82% of all exports and likewise the pattern of exports was fairly similar with 2/3 countries accounting for half of Egypt's exports and the next eighteen markets averaging no more than 1 or 2 percentage points each.

This export distribution pattern was confirmed during the Beneficiary interviews and factory visits where it was noted that most companies were exporting to over 50 destinations.

This suggests that the sanitary ware Beneficiary companies invest a great deal of human and financial resource in penetrating numerous new markets but the issue is whether these countries have the size, the growth potential, the growth economies, or the import need to justify these investments?

With exception of the UK and France, none of the benchmarking countries export to Egypt's major destination markets; instead they concentrate on the larger and growing markets of the USA, Canada, Japan, Spain and Denmark, countries that are not on Egypt's export lists.

Entry into these markets is an important strategic step for Egyptian manufacturers, concentrating their limited and precious resources on markets with high unit prices, with demand for high quality products and strong economies.

Therefore a longer term strategy is needed to concentrate in three areas:

- In existing Egypt destination markets, e.g. Greece, Poland, Cyprus and South Africa, all above average growth importing countries with higher prices, where share growth should be developed
- Secondly to research, investigate and develop new, large, import growing, above average price and as yet untapped markets such as The Russian Federation, Sweden, Ukraine, Hungary, Taiwan and New Zealand for the long term.
- Lastly to investigate the potential of those countries with generally higher per capita income such as Sweden and Taiwan, with sanitary ware segments targeted at the new wealth consumers.

The Benchmarking Countries Export Performance

Table 5: BRAZIL'S Exports of Ceramic Sanitary Ware
***1.8*million pieces at $76.4 million**

Countries	Value (US$ 1000)	volume 1000 pcs	Unit value (US$/ unit)	% of Brazil's total exports		Between 03-04 Export growth to country in value (%)	Import country's overall %growth of imports 04
				Value	volume		
USA	58,606	3184	18.4	77	68	83	25
Spain	7,747	556	13.9	10	12	80	19
Bolivia	1,666	155	10.7	2	3	20	6
TOP 3	***68,019***	***3894***	***14.4***	**89%**	**83%**		
Canada	1,569	67	23.5	2	1	41	10
Argentina	1,539	248	6.2	2	5	58	38
Paraguay	1,479	163	9.1	2	3	2	-
UK	912	98	9.3	1	2	29	29
Chile	820	64	12.9	1	1	6	53
Uruguay	241	21	11.3	0	0	36	43
Mexico	204	6	32.1	0	0	-3	25
TOP 10	***6,764***	***667***	***34.8***	**9%**	**14%**		
Total top 10	***74,783***	***4561***	***24.6***	***98%***	***97%***		

Between 2003 and 2004 Brazil exports grew by 71%.
Brazil's exports are mainly to countries with growing imports and it is increasing its market share in most of them. Brazilian exports are concentrated in the Americas and Central America.

Brazilian exports are highly concentrated so that the top two export destinations account for 80% of volume and close to 90% of value, explained in particular by high unit prices to the USA.
Mexico and South Africa buy from Brazil at highest price levels.

Brazil is heavily dependant on its exports to the USA and growing stronger in this number one market, which could be a serious challenge for Egyptian exporters looking to this market.

Brazils export concentration in the top 5 export destinations is increasing and its market there is increasing as Brazil's export growth is accelerating at a higher rate that these importing countries general import growth. On te other hand its market share in the second top 5 export destinations is decreasing.

Table 6: TURKEY'S Exports of Ceramic Sanitary Ware
7.6 million pieces at $161.8 million

Countries	Value (US$ 1000)	volume 1000 pcs	Unit value (US$/ unit)	% of Turkey's total exports		Between 03-04 Export growth to country in value (%)	Import country's overall %growth of imports 04
				Quantity	Value		
UK	39,296	1,748	22.5	24	23	43	39
Germany	22,307	857	26.0	14	11	12	7
UAE	19,585	1,249	15.7	12	16	34	25
TOP 3	***81,188***	***3,854***	***21.4***	***50%***	***51%***		
France	8,664	409	21.2	5	5	34	15
Bulgaria	6,979	290	24.0	4	4	-15	63
Spain	6,886	334	20.6	4	4	0	19
Israel	5,262	342	15.4	3	4	31	17
Italy	4,715	258	18.3	3	3	26	17
Free Zones	4,557	152	29.9	3	2	20	-
Ireland	3,496	163	21.4	2	2	73	17
TOP 10	***40,559***	***1,949***	***21.6***	***25%***	***26%***		
Total top 10	***121,747***	***5,803***	***21.5***	***75%***	***76%***		

Turkey's exports value grew by 31% from 2003-2004. Half of Turkey's exports are to the UK, Germany and the USA in both volume and value terms and Turkey is increasing market share in these markets. The top ten export destinations contribute 75% of its exports.

Turkey's has a healthy proportional concentration in export destinations, with a balance of security and risk distribution in place. The close proximity of Bulgaria and Azerbaijan lend themselves to ease of export and these two countries are almost totally dependant on Turkey for their sanitary ware imports, nevertheless Turkey is exporting less to Bulgaria a high growth market.

Except for to Bulgaria and Spain, Turkey is growing market share in its top export destinations with an average price of $21.5 per piece.

Table 7: Thailand's Exports of Ceramic Sanitary Ware
N/A million pieces at $97.8 million

Quantity	Value	volume 1000 pcs	Unit value (US$/ unit)	% of Thailand's total exports		Between 03-04 Export growth to country in value (%)	Import country's overall %growth of imports 04
				Value	Quantity		
USA	32,275	956	34	33	-	21	25
UK	14,093	660	21	14	-	41	39
Japan	12,104	458	26	12	-	-4	20
TOP 3	***58,472***	***2,074***	***27***	***59%***	**-**		
Hong Kong	8,000	321	25	8	-	1	16
Canada	7,970	238	33	8	-	11	10
Taiwan	4,934	284	17	5	-	-3	30
Rep. of Korea	3,727	123	30	4	-	-7	10
China	2,653	-	-	3	-	-48	5
Sweden	1,841	72	25	2	-	-21	20
Australia	1,056	39	27	1	-	18	19
TOP 10	***30,181***	***1,077***	***23***	***31%***			
Total top 10	***88,653***	***3,151***	***25***	***90%***	**-**		

Thailand's exports grew by 8% from 2003 to 2004. The actual export volume of Thailand in not available, but with an average of $25 per piece and a $97.8 million of value export sales, the export volumes is assumed to be 3.9 million pieces.

Thailand's export distributions suggest a healthy concentration and therefore a healthy balance between risk and security in the most important export markets. All export destinations are countries that are importing more and have a big import market, therefore a healthy choice of target markets and a mix between distant but un-ignorable markets and more proximate and promising markets.

Thailand though shows decline in market share in its most its export destinations as its overall growth is below these markets growth of demand for imported sanitary ware.

Thailand has been very successful in entering Ireland with a growth of exports between 03-04 of 65%. Ireland's growth of imports grew in the same period by 19%, suggesting an increasing market share of Thai sanitary ware of Ireland's import market. In 2004 it exported around 1 million units for an average price of $23/unit.

Table 8: UAE's Exports of Ceramic Sanitary Ware
N/A million pieces at $40.2 million

Quantity	Value	volume 1000 pcs	Unit value (US$/ unit)	% of Thailand's total exports		Between 03-04 Export growth to country in value (%)	Import country's overall %growth of imports 04
				Value	Quantity		
UK	13345	477.7	28	33	-	61	39
USA	9345	482.3	19	23	-	-24	25
Oman	6974	266.7	26	17	-	-13	-7
TOP 3	***29664***	***1227***	***24***	***74%***	**-**		
Bahrain	1780	119.1	15	4	-	15	3
Belgium	1426	60.1	24	4	-	7822	39
Qatar	845	107.9	8	2	-	-94	-75
Jordan	732	33.7	22	2	-	26	32
Australia	713	21.3	33	2	-	170	19
South Africa	587	N/A	N/A	1	-	310	67
Greece	500	30.2	17	1	-	1	30
TOP 10	***6583***	***372***	***17***	***16%***	**-**		
Total top 10	***36247***	***1599***	***21***	***90%***	**-**		

The UAE's exports plummeted by 21% between 03-04.
The UAE has a highly diverse pricing policy despite that the numbers mainly reflect one company's performance, namely RAK; ranging from an export unit value of $8 to Qatar and the UK at $28.

Over half of UAE's exports are dedicated to the UK and the USA markets at $33 and $23 per unit respectively.

The UAE has been losing market share in the USA market between 03 and 04 with a surge in exports to Belgium at above USA export prices and a doubling of exports to the UK in the same period. 2004 witnessed the entry of the UAE in the Irish market at an average price of $23.

In regards to export concentration and healthiness of choice of export destinations, the UAE seems to be at a stage of opening markets rather than concentration of increasing market share in existing ones, this could be explained by RAK's extensive production expansions that require a larger base of countries willing to import and absorb quantities being produced. The improvement of choice of export destinations and market share improvement plans are expected to be RAK's main concern in the near future and to be pursued as aggressively as current production expansions.

Table 9: Italy's Exports of Ceramic Sanitary Ware
5.5 million pieces at $289.7 million

Quantity	Value	volume 1000 pcs	Unit value (US$/ unit)	% of Thailand's total exports		Between 03-04 Export growth to country in value (%)	Import country's overall %growth of imports 04
				Value	Quantity		
Spain	45,817	1,294	35	16	24	19	19
UK	23,474	334	70	8	6	19	39
Ireland	23,158	653	35	8	12	172	17
TOP 3	***92,449***	***2,281***	***47***	***32%***	***42%***		
Russian Federation	14,587	146	100	5	3	31	29
Germany	14,104	278	51	5	5	-5	7
Greece	11,994	255	47	4	5	15	30
France	11,007	210	53	4	4	3	15
USA	10,546	108	97	4	2	55	25
Switzerland	10,425	82	128	4	1	14	18
Netherlands	8,478	118	72	3	2	44	1
TOP 10	***81,141***	***1,196***	***78***	***28%***	***22%***		
Total top 10	***173,590***	***3,477***	***63***	***60%***	***64%***		

Italian products are supported by a strong country of origin brand "made in Italy" that stands for highest quality and the products are in themselves a design trendsetters for the world. Italian sanitary where is not a price sensitive product, but rather a luxury product addressing top earning segments in every market Italy exports to. There is a strong correlation between Italian prices and market's purchasing power in the upper market segment.

Italy's top export destinations are simultaneously the world's top importing countries. Increase or decrease of market share is usually correlated with export destinations bettering or worsening economic situations. With increase of market share in Ireland, while Ireland's economy was prospering and a decrease in market share in Germany in 2004, where the economic indicators were negative.

DEMAND

<u>Accuracy of data:</u>

It is worth noting that published export data for the benchmarking countries were mainly sourced from the country's Trade MAP data bank, these numbers are official data exchanged and used in various sector studies.

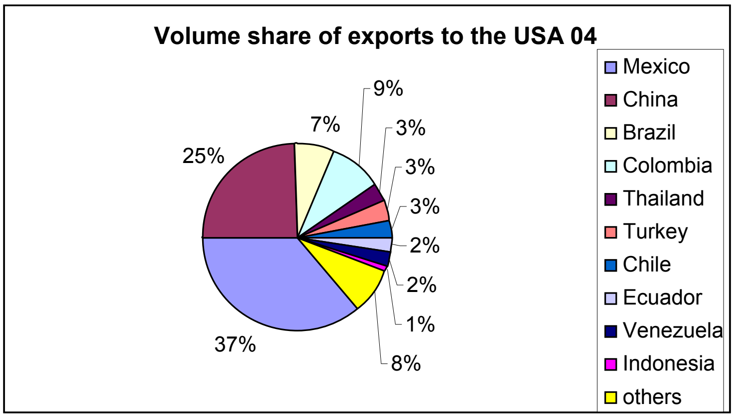
Discrepancy has been found between -for example- what the Brazilian companies reported to be their exports to the USA and what the USA reported as their imports from Brazil, on the other hand Thailand's figures were reported quite accurately, and Turkey's exports were a bit underestimated from the Turkish side but do not lie far off the real figures. This suggests that some countries tend to undervalue their exports to evade or increase internal tariffs.

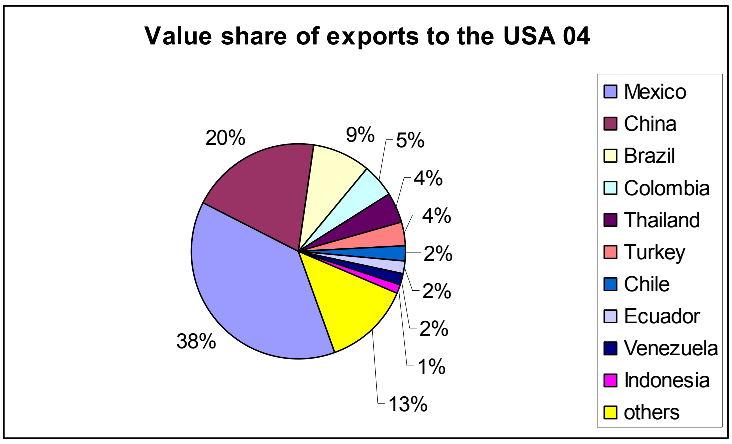
Despite some imprecision of information, general trends, market and competition indications can be concluded and relied on for the strategy making.

Mainly the more developed countries, which are the top importing countries have published the most reliable figures as opposed to the less developed exporting countries.

Table 10: USA's imports of Ceramic Sanitary Ware 04
31.2 billion pcs at $2 billion

Exporters	2004		
	Value (US$ thousand)	Quantity (1000 pcs)	Unit value (US$/unit)
Mexico	274,540	11,186	**25**
China	142,653	7,637	**19**
Brazil	64,399	2,308	**28**
Colombia	36,532	2,776	**13**
Thailand	32,275	956	**34**
Turkey	25,408	1,034	**25**
Chile	16,156	943	**17**
Ecuador	14,477	752	**19**
Venezuela	12,169	690	**18**
Indonesia	10,058	370	**27**

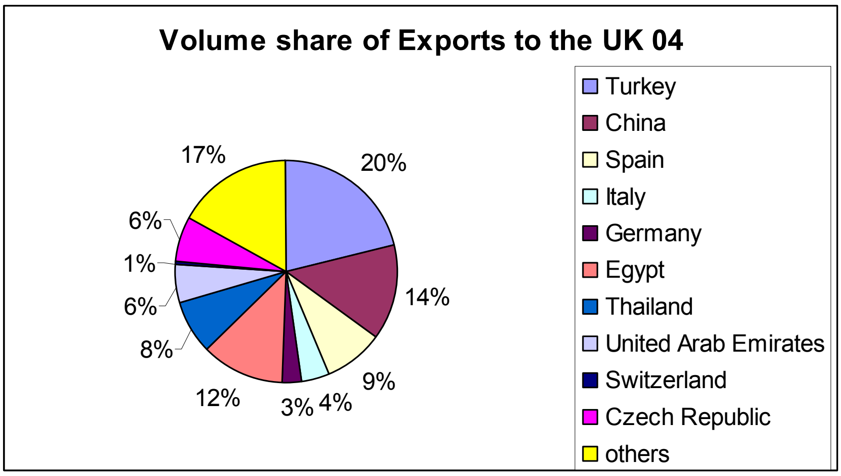


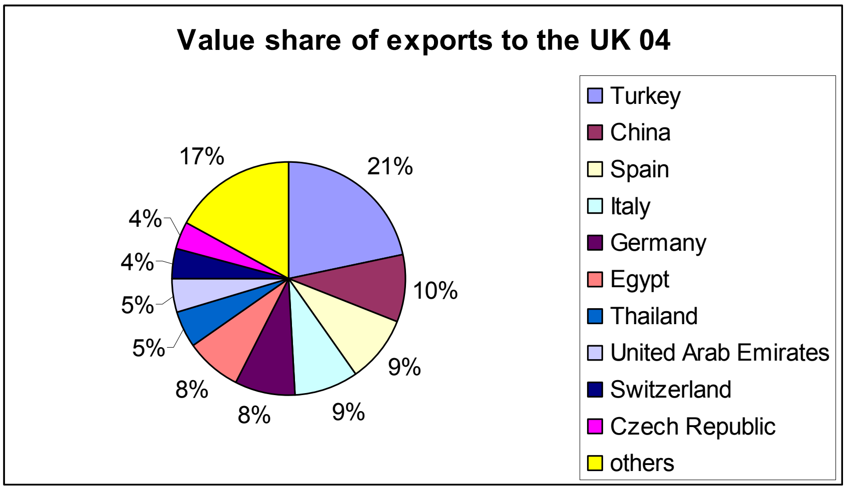


Mexico and Turkey compete at the middle segment of the American market, with the prevalence of the Mexican exports at $25/unit respectively. China is the main player at the lower segment in competition with several South American countries. Brazil and Thailand address the upper-middle and upper segments at above $27. In General it can be concluded the US market is highly competitive and despite being the biggest market and imports at relatively low prices at all segments, therefore more geographically proximate countries with lower transportation cost find it the market worthwhile.

Table 10A: UK's imports of Ceramic Sanitary Ware 04
8.55 million pcs at $280.7 million

Exporters	2004		
	Value (US$ thousand)	Quantity (1000 pcs)	Value (US$ thousand)
Turkey	60,669	1,820	**33**
China	26,850	1,174	**23**
Spain	25,587	733	**35**
Italy	24,859	340	**73**
Germany	23,735	251	**94**
Egypt	22,001	1,023	**22**
Thailand	14,093	650	**22**
United Arab Emirates	13,345	470	**28**
Switzerland	11,446	62	**184**
Czech Republic	10,935	550	**20**
France	10,826	230	**47**

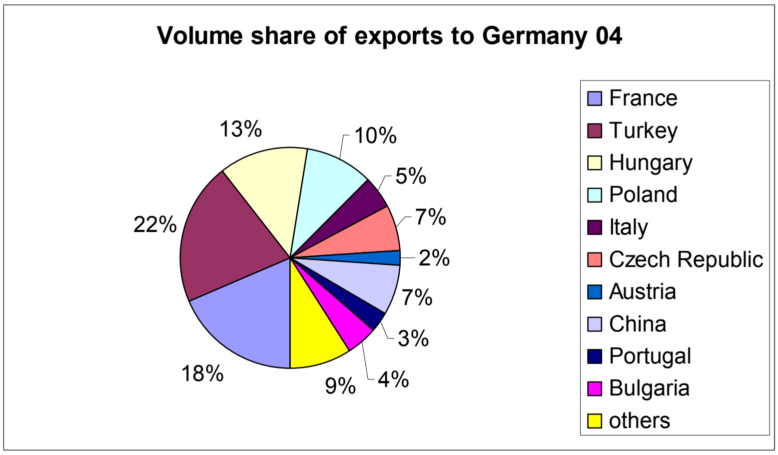


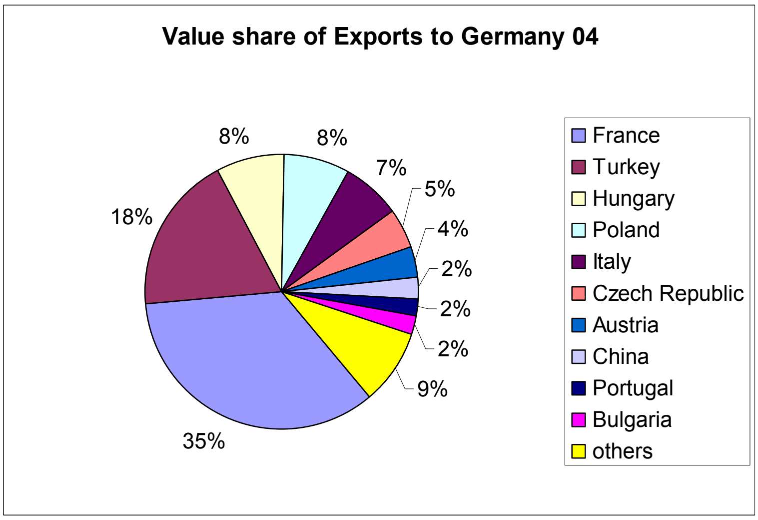


Where value share is below volume share, this indicates the exporting country is exporting at below average import prices into the destination country.
Egypt is in competition with China, Thailand and the Czech Republic in the UK supplying the lower end of the market.

Table 10B: Germany's imports of Ceramic Sanitary Ware 04
5.8 mil pcs at $211 million

Exporters	2004		
	Value (US$ thousand)	Quantity (sqm 000)	Unit value (US$/ pcs)
France	73,552	1077	**68**
Turkey	38,877	1223	**32**
Hungary	17,174	763	**22**
Poland	16,483	588	**28**
Italy	14,699	266	**55**
Czech Rep.	9,542	386	**25**
Austria	7,999	133	**60**
China	5,180	418	**12**
Portugal	4,323	191	**23**
Bulgaria	4,217	261	**16**

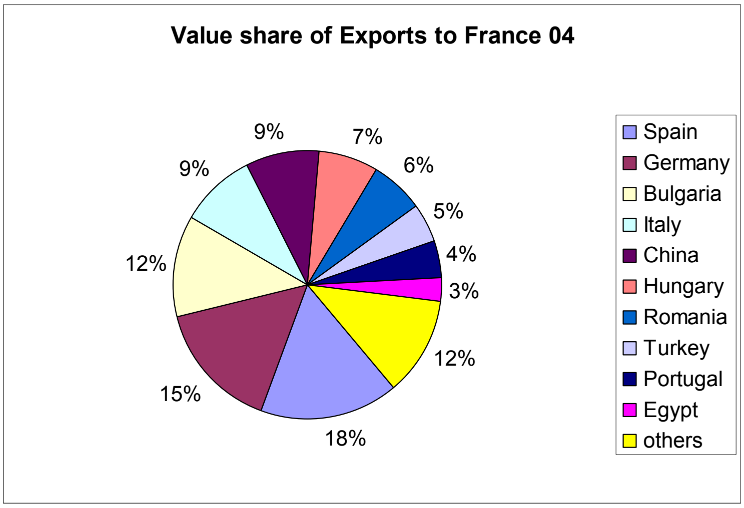


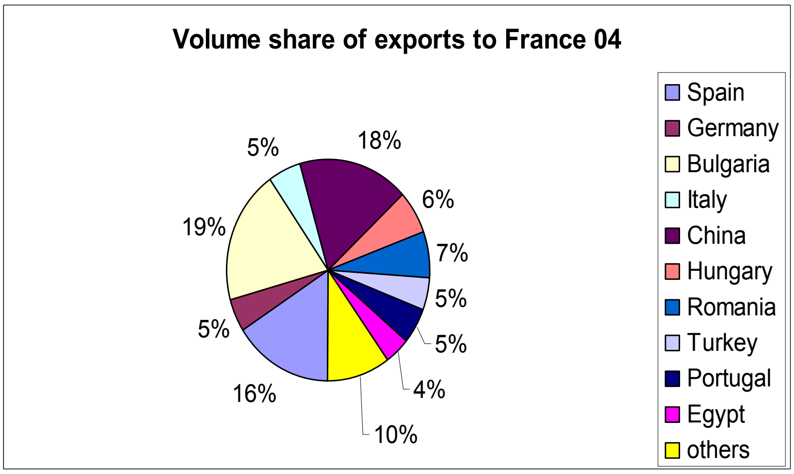


France is the main exporter to Germany with highest export prices, mainly targeting the upper segment with Italy and Austria targeting the same segment at lower price levels. Turkey has strong trading ties with the Germany due to a big Turkish population that facilitate trade. Turkey supplies the middle segment that is also addressed by the Czech and Polish product at prices ranging from $25-$32. Hungarian and Portuguese products have together 16% of the market and address the low end of the market. China and Bulgaria compete with cheapest prices with $12 and $16 respectively.

Table 10C: France's imports of Ceramic Sanitary Ware 04
6.3 million pcs at $184.4 million

Exporters	2004		
	Value (US$ thousand)	quantity (000pcs)	Unit value (US$/pcs)
Spain	30858	997	**31**
Germany	28492	306	**93**
Bulgaria	22523	1245	**18**
Italy	17112	330	**52**
China	16517	1118	**15**
Hungary	13223	396	**33**
Romania	11617	420	**28**
Turkey	8909	294	**30**
Portugal	8278	340	**24**
Egypt	5046	237	**21**

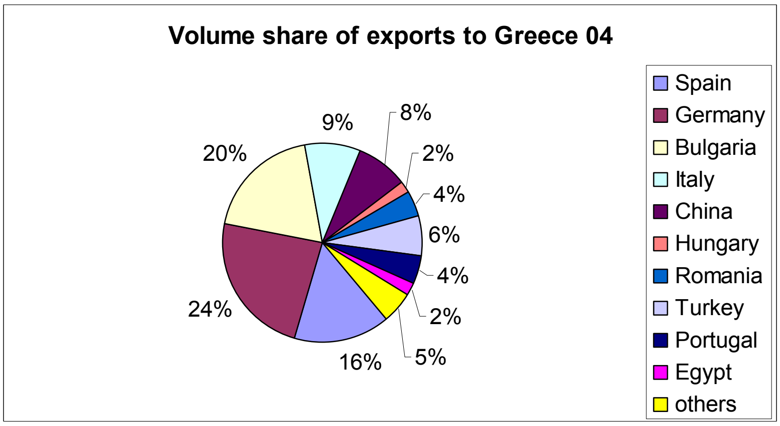


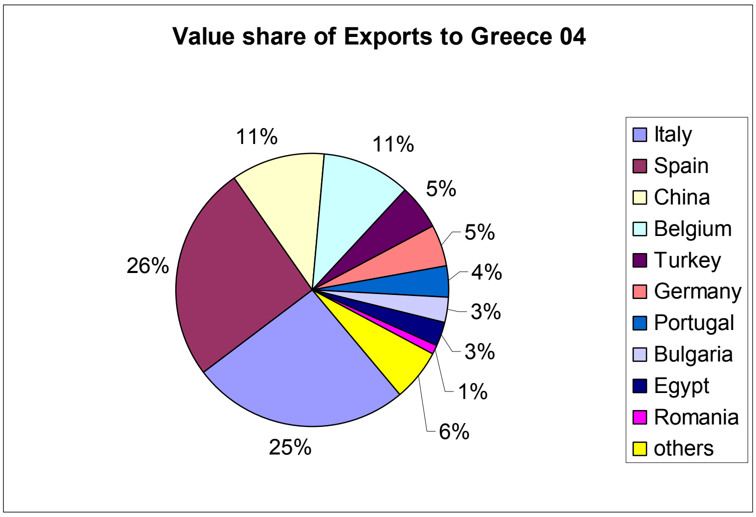


Germany has 15% value share of the market but 5% volume share as it exports at highest prices to the French market at an average of $93/unit. On the contrary, China that has 9% value share of the market with mass quantities addressing the lower end of the market with 18% volume share at an average of $15/unit. Egypt competes with Portugal and Bulgaria for the upper-low segment of the market. Egypt's volume share of the market is 3%.

Table 10D: Greece's imports of Ceramic Sanitary Ware 04
***1.9* million pcs at $46.3 million**

Exporters	2004		
	Value (US$ thousand)	**quantity (000pcs)**	**Unit value (US$/pcs)**
Italy	11984	221	**54**
Spain	11932	335	**36**
China	5216	274	**19**
Belgium	4904	131	**38**
Turkey	2407	119	**20**
Germany	2334	28	**84**
Portugal	1734	61	**29**
Bulgaria	1368	92	**15**
Egypt	1280	62	**21**
Romania	612	32	**19**

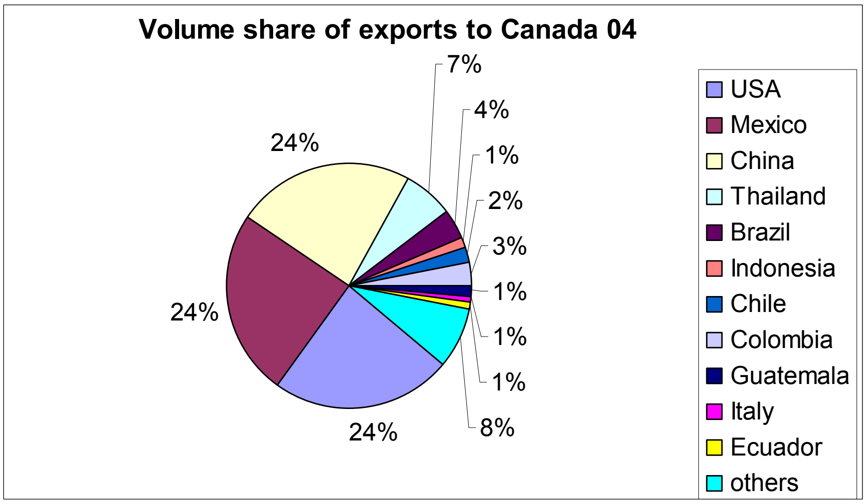


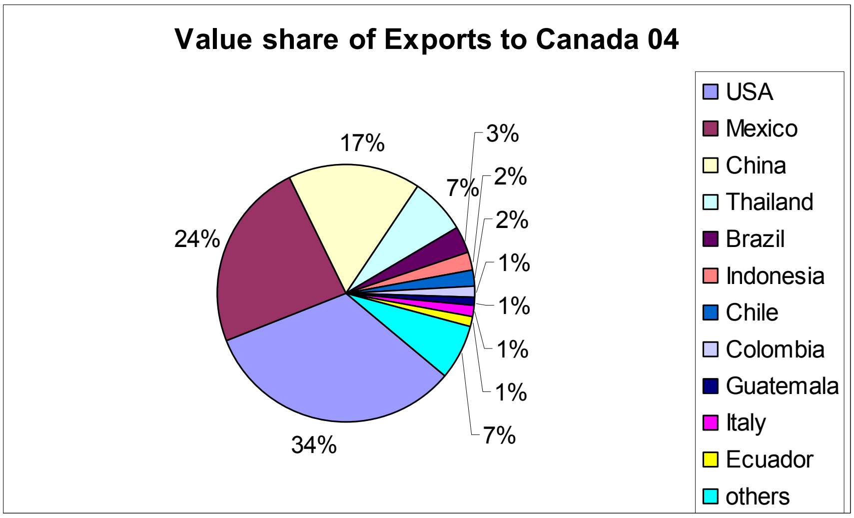


Italy, Spain and Belgium together cover about 62% of value of the market of imported products in Greece at above average prices at $54, $36 and $38 respectively. Germany is addressing the richest thin layer of the market at $84/unit. Egypt's prices at an average of $21/unit are in a head to head competition with Turkish products and are a little bit higher than its Chinese and Romanian competitors for the same segment.

Table 10E: Canada's imports of Ceramic Sanitary Ware 04
3.6 mil pcs at $111.5 Million

Exporters	2004		
	Value (US$ thousand)	quantity (000 pcs)	Unit value (US$/pcs)
USA	36492	57858	**42**
Mexico	26625	58768	**30**
China	18494	56749	**22**
Thailand	7970	15874	**33**
Brazil	3655	9939	**25**
Indonesia	2424	3174	**51**
Chile	2204	4683	**31**
Colombia	1531	7615	**13**
Guatemala	1507	3250	**31**
Italy	1327	1559	**57**

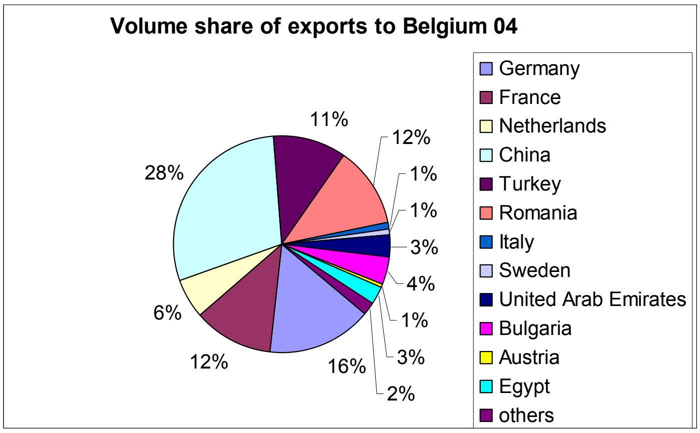


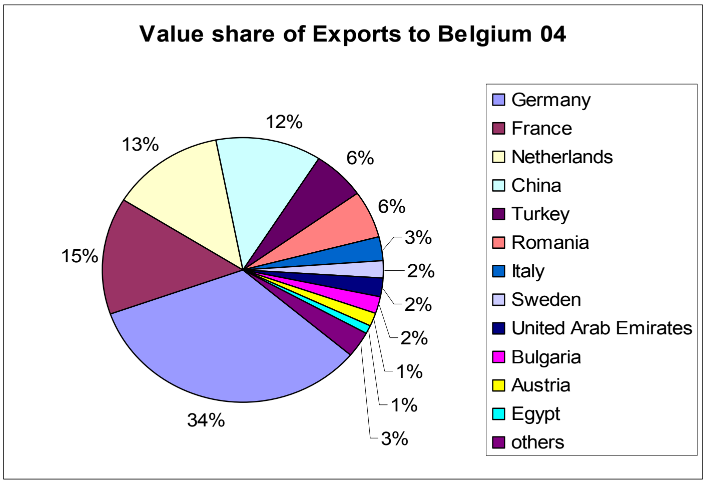


USA is firmly in control of the upper segment of the market, as is Mexico at the middle segment and China and the lower segment. Thai products compete at above average market price at $33 and Brazil at below average market prices at $25. The average import price for Canada from its top 10 import countries is $33.5, which is a high average relative to global norms. The import market is characterized by high concentration of 3-4 major players in control of over two thirds of the market and little players with smaller portions of this big imports market.

Table 10F: Belgium's imports of Ceramic Sanitary Ware 04
1.10 **million pcs at $66.5 million**

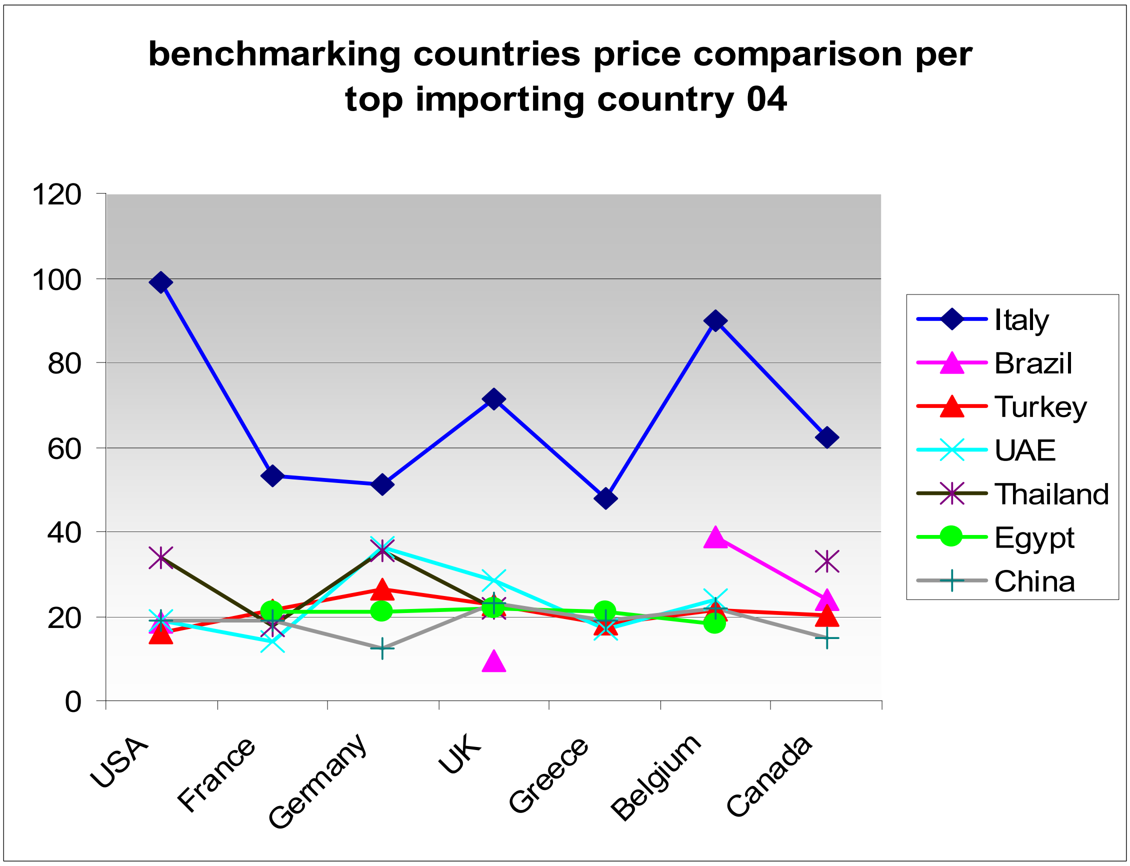
Exporters	2004		
	Value (US$ thousand)	quantity (Tons)	Unit value (US$/unit)
Germany	22023	286	**77**
France	9680	219	**44**
Netherlands	8637	107	**81**
China	8080	542	**15**
Turkey	3960	203	**20**
Romania	3914	225	**17**
Italy	1873	12	**161**
Sweden	1447	19	**75**
UAE	1426	59	**24**
Bulgaria	1424	76	**19**
Austria	960	10	**98**
Egypt	848	46	**18**





The Belgian market is primarily dominated by high value imports from Germany and the Netherlands at an average of $77 and $81 import price/unit respectively, followed by France at 12% volume share of the market at $44 targeting the middle segment. The market has a high average price of $41-43 per unit. Egypt is in head to head competition with Turkey, Bulgaria, UAE and Romania in the Belgian Market in the $17-24 price range. China at $15/unit is competing at the lowest end of the market that is though a big volume portion of the market at 28%.

Conclusion on Egypt's Global Price Positioning of Ceramic Sanitary ware:



Unlike in the Ceramic Tile sector, Egypt's export prices of sanitary ware in its top EU export destination are quite similar ranging from $17-22/unit. Depending on the export destination the market positioning of that price address at times the low end of the market and at times it is the average import price for the low-middle end of a market (e.g. in Greece).

In some markets Egypt is in direct competition with the Turkish products, at other destinations it is competing with the Chinese product (e.g. in UK).

Developed markets summary of demand trends:

Both sanitary ware and ceramic tiles are mainly imported through wholesale channels through which products are subsequently sold on to retailers/installers.
The key distribution methods include:

- Super wholesalers acting as importers, wholesalers and often with their own showrooms
- Direct from manufacturers
- Builders merchants
- Specialist retailers
- DIY “out of town” and “High Street” retailers
- Bathroom boutiques, generally catering for the top end market
- Department stores/general retailers
- The installer with his own showroom or shop. In most cases, these small companies buy directly from the manufacturers or importers.

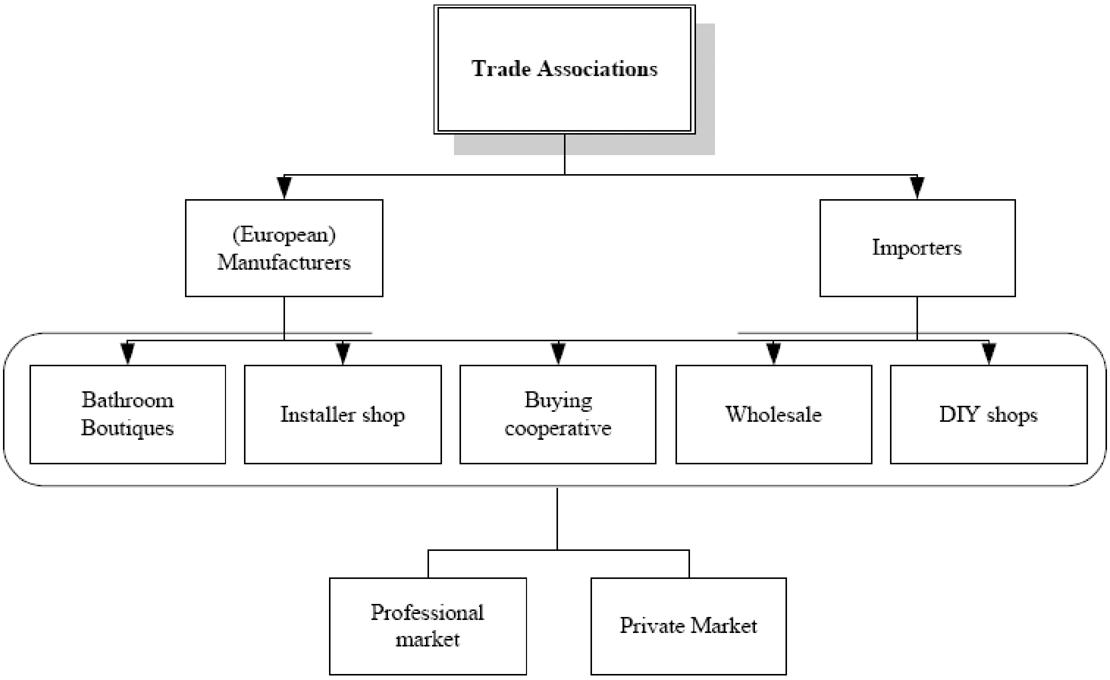
The market for sanitary ware and ceramic tiles has reached a stage of market maturity with household penetration at saturation level. Demand for sanitary ware and ceramic tiles is therefore influenced by general economic conditions within the product replacement sector plus new building development and housing.

The trade channels in Europe are characterised by a strong division into functions. Graphically the distribution network is presented below.

In the Netherlands and to some extent also in the UK, houses have been built through professional project development companies or housing associations. The individual consumer (buyer or tenant) was therefore not able to influence the choice of product and as a consequence, the replacement market for tiles and sanitary ware is rather correspondingly big in these countries.

Nowadays, the influence of the consumer is rapidly growing, although it still remains limited in comparison to other countries where the combination of architect/project manager/consumer is much closer.
In the housing market, tiles and sanitary ware are currently purchased by the professional installer but often chosen by the final consumer. Some of the wholesalers present their products in the context of a bathroom/kitchen concept by showing total bathrooms, kitchens and toilets in their own showrooms.
In the non-residential market (commercial buildings), sanitary ware and tiles are selected by the architect and purchased by the contractor. In this case the products are supplied by the wholesaler who will often buy directly from the manufacturer or importer.

5. EU Trade Channels



Source: CBI

In general, the European manufacturers have strong brands in their local home markets, especially so in Italy and Spain.
However in most cases these brands are still under development in most other countries. As cultural characteristics/design/styling and size form a serious barrier to success, most manufacturers do not easily explore other markets on their own initiative. It is more likely for them to enter into contract with local companies on an exclusive basis (exclusivity for a country or region) in exchange for attractive turnover targets. The contract partners are in most cases import organisations, agents and sometimes also wholesale organisations. These companies will then deal with local distribution.

In general, importers and other trade partners expect a flexible and service oriented contact with the manufacturer in order to limit their buffer stock and to reduce the delivery time to their customers.
Reliability is therefore the most important requirement, in particular in the UK, the Netherlands, Germany and France. This is also why most of the importers strive for a reduction of the number of supplying manufacturers and are only interested in changing suppliers when presented with original populist designs, particularly advantageous delivery schedules or price reductions; quality and reputation are taken as a given.

The close relationship between manufacturers and national and local distributors makes it difficult for foreign manufacturers to enter the market. **The professional building sector** tends to make exclusive agreements with suppliers, through discounts and credit arrangements. It is also common for installers (plumbers) to deal principally with a limited number of suppliers with a strong brand. Some of them have a shop of their own and wish to compete on a price basis and are also willing to buy and sell unknown brands. In that case they prefer to purchase at an import organisation. This seems to be the case for most of the European countries, although the phenomenon of small shops in Italy and France is relatively strong.

Besides the wholesale channel, manufacturers are increasingly selling their products on the **DIY market**. This market has become particular popular in Western Europe and its popularity is growing elsewhere as well. Sales through this channel vary across Europe, with the largest markets in Germany, France and the UK. Less familiar is the fact that also small contractors, especially in the refurbishing sector, buy their materials at the DIY market.

DIY stores are arranged in such a way that the contractor is able to collect the material he needs for the day, making it easier to work within a tight working schedule.
Some of the DIY chains are even introducing discount cards for this category of trade clients.

Together with the so-called black market, this group of semi-professionals represent a substantial part of the total turnover of the DIY market. This phenomenon is stronger in France, Italy and Spain than in the other countries. In Germany, where crafts are still highly respected, the phenomenon is hardly present at all.

A third distribution channel is through the **'bathroom boutiques'**, which is particularly popular in the UK. However this channel accounts for a maximum of five percent of total sales.
Bathroom boutiques sell and install bathroom suites as 'fashion goods', and specialize mostly in up-market brands. Service and after-sales care encompass a very important aspect of the bathroom boutiques. This requires a close relationship between manufacturers and national and local distributors, which makes it more difficult for foreign manufacturers to enter the market.

In all distribution channels the communication with the manufacturer is of great importance. In order to consolidate the relationship of the importer, agent or wholesaler with their main customers, visiting the factory once in a while brings with it great advantages.

The feedback from the market is also an important issue in order to be able to optimize the delivery programme according to market developments.

The Internet is gaining ground as an instrument for communication, but personal contact will always remain of great importance, especially in the southern Europe. Nevertheless E-commerce is growing rapidly in Western Europe. The UK and Germany are up front, but also in countries like Italy and Spain e-commerce is growing at a fast pace. A lot of trading companies nowadays demand a certain Internet protocol, for example for ordering, specifications, payment, support, etc.

Another aspect of the distribution system is the influence of certain indirect partners in building. Architects, consultants, local authorities, will never purchase products themselves, but they may have a major influence on the material that will be bought by the general contractor.
This influence differs from country to country. In Italy and Spain the influence of the architect is quite strong. The architect is especially interested in colour, structure, form and durability.
In Germany, the role of the architect is also strong since he has a responsibility towards the end result. Legal responsibility of the architect causes "no risk" behaviour. The German architect will pay special attention to durability and general quality, rather than form and colour. A wide body of standardisation requirements is further restricting the freedom of choice in Germany.

In the Netherlands, the role of the architect differs from project to project. Some of them are hardly interested in the interior decoration of the building. The influence of the consumer (the future owner of the house) is rather limited, although there is a tendency for consumers to have a say in interior design. In most cases, though, there is still no direct contact between the architect and the buyer of the house.

For the UK, although to a lesser extent, the situation is similar to that of the Netherlands.

In France, the influence of the house-owner is dominating, and tiles and sanitary wares are almost regarded as consumer products.

Implications to the Egyptian manufacturer:

For the Egyptian manufacturer, there are some very important differences between the various distribution channels.

First, the wholesaler channel involves more levels, each of which increases the cost.
Products in the **DIY** market are generally sold at a lower price because purchasers are relatively more price conscious and manufacturers deliver direct to store.

More importantly, there are fewer obstacles to trade in the DIY market than in the wholesale market, because national quality certificates are not essential. Individual buyers do not necessarily demand quality marks, although these might have a marketing advantage. **Wholesalers**, however, prefer to buy products with a national quality mark, because **professional installers** demand them, and they are necessary for many public works projects or are specified by architects. Also, the confidence in strong brands plays a major role. Apart from this, wholesalers tend to do business with a limited number of suppliers in order to make use of economies of scale and control their overheads and therefore their margins

Another possible channel that may be pursued by Egyptian manufacturers is the one of **European producers**. The rationale is that European producers are not capable of producing the full product range themselves but do want to have a full product range to offer to their clients.

The trend to create certain product atmospheres, which can then be sold as total concepts, provides manufactures with another opportunity to enter the EU market. Trends for these concepts are in most cases spotted by so-called trend watchers, who are consulted by the industry. It is very possible that manufacturers are able to fill in a complete programme for trends often indicated by names like “colonial”, “nature” or “adventure”.

The most fashionable motifs are momentarily taken from nature. Out in the marketplace, those products with a design inspired by nature are the most successful. In demand are products whose surfaces reflect natural stone but that do not necessarily replicate the original exactly. A close look at the trends in floor tiles indicates that the leading colours are beiges, browns, anthracite, black and, above all, shades of terracotta. A relatively new development is the high tech look. Tiles in black and white or pale colours with geometrical figurations and sometimes combined with other materials like mirror and metal inlays. The preferred colour for wall tiles is white, especially combined with blue. Combinations of white and Mediterranean colours such as yellow and green are nonetheless being seen more frequently now. There is currently a move back to using loud colours in decor and these are gaining ground on pastels.

Manufacturers interested in the DIY channel, will find that ways to explore this channel are either through an **importer**, a manufacturer, or through **trade associations**. An importer might buy a wider variety of products, whereas a manufacturer often uses cheaper products to complete its assortment. Manufacturers might also be interested in specialities completing their programme.

An Egyptian manufacturer approaching a European manufacturer will need to keep in mind the product needs to fit the exact demands of the manufacturer, and that the product will be used in addition to the manufacturer’s product range. In this case, the product will probably be presented under their own, European brand. This will be especially attractive for products in which the European manufacturer is unable to produce at a low price or does not have the particular production facilities.

It is not expected that exporters can compete with the more expensive products sold via the wholesale channel or bathroom boutiques as traders require high quality goods and a high service level from producers.

This also applies for the distribution channel through installers with an own shop and showroom. Since some of them wish to compete on price basis this might provide opportunities. As a supplier, it is however better to do business with import companies, who have their established network of shop owners. Taking into consideration the small scale of most installers and shop owners, a direct approach would be too laborious.

As far as the newly acceded EU member states of Eastern Europe, there will be an increasing influence from their side on the market by expanding trade, caused by e.g. levelling trade barriers. Traditionally, this trade was directed to the east. Through their accession to the EU, it is expected that export to the west will increase in the future. Now building products must comply with European standards and this will concentrate their minds in the coming years.

Also, the wages will be lower than in the original member states and therefore products will be available for export. It can be expected that they will find their way to DIY shops and wholesale stores. On the other hand, increasing income in these new EU countries will increase the demand for more expensive tiles and sanitary ware, especially luxury brands from mainly Italy and Germany.

In Poland, one of the new member states, Cersanit is a large (market leader) and technically advanced manufacturer of sanitary ware and ceramic tiles. They have for example the integrated quality control system ISO 9001 and 14001.

Poland is interesting as a big market. Ceramic tiles, sanitary ware and bathroom accessories are sold through small speciality shops, mostly located in cities. DIY products are sold primarily through large stores located on the outskirts of cities. These are also sold through factory outlets. They supply distributors, warehouses and individual clients and have competitive prices, usually the lowest on the market. Networks of large stores purchase about 90 percent of their products directly from manufacturers, the rest is bought from warehouses. There are 8 large store networks in Poland that began operations in the mid-nineties and operate through more than 100 storefronts.

5. EU Price structure

Different trade channels mean different export prices and margins for ceramic tiles and sanitary ware products.

Different prices and margins that apply to the various channels are of direct influence on the composition of the export price.

The price composition is:

Factory cost price, including transport to port (i.e. FOB)
+ Transportation and insurance costs (i.e. CIF)
+ Other costs (storage, banking, etc)
+ Import duties
Landed-cost price
+ Margin Importer, Wholesaler, Buying Organisation, Retailer
+ Value Added Tax (VAT)
Consumer price

Margins

The margins for the different intermediaries in the trade structure (importers, wholesalers, retail) are difficult to determine, because they are influenced by many factors, such as:

- Size of the order;
- Length of the trade channel;
- Quality of the product;
- Availability of the product;
- Added value

The value that is added within the trade channels arises from the logistics and services provided in the channel. These functions range from distribution and repackaging to the preparation of a total sales formula and extensive after sales services.
The box below gives an assessment of the ranges of mark-ups per intermediary.

Intermediary	Low	High
Wholesaler	10 %	40 %
Buying co-operative	10 %	20 %
Bathroom boutiques	30 %	50 %
DIY	30 %	50 %

- ***Sales Channel Assessment***

Wholesalers of sanitary ware and tiles	▪ More players involved in the sales channel ▪ Higher costs ▪ Require (national) quality standards ▪ Require strong brands ▪ Tend to limit suppliers
Do-It-Yourself markets	▪ Less emphasis on (national) quality standards ▪ Generally lower prices to consumers ▪ Increasing importance in several EU markets ▪ Can be targeted through importers, manufacturers or trade associations
European Producers of sanitary ware and tiles	▪ Buys smaller product range to complement its own delivery program, products need to fit this program. ▪ May buy specialty items to offer under own brand ▪ Can promote items under own brand name. ▪ May open "protective" markets
Importers	▪ Able to "reach" the larger number of installers with showroom/shop ▪ Will give feed back on price level needed to enter this segment. ▪ Will lessen the perceived risk from the point of view of the buyer.
E-commerce	▪ Rapidly increasing interest of buyers to streamline communication. Also used to check on abilities/background of suppliers. ▪ Even direct selling via B2B portals is possible. See also chapter 13 sales promotion

The main purpose of this assessment is to list the requirements of the chosen channel that may be important to you. Good research of the typical behaviour of the sales channel will pay off in an eventual smooth cooperation.

The Egyptian Exporters are therefore advised to individually do this exercise in every target market and to use this checklist:

Product standards:

- What is the quality required? (finish, material, durability)
- What are the necessary (national) quality certificates?

Logistics:

- What are the required quantities within the delivery times that are needed?
- Can special requests occur to deliver more products because of suddenly increased sales volumes?
- What are the required packaging standards?
- What are the established customary shipping methods used in the particular channel?

7. MARKET REQUIREMENTS FOR :ESSENTIAL B2B EU

1. Glazed ceramic wall tiles

2. Market requirements:
Quality standards:
Main quality standards are on abrasive resistance, water absorption, and dimensional accuracy. Standards are mostly set by import organizations for the DIY market, which is rather extensive) or by terms of reference in projects. Official standards are mainly focussing on floor tiles. Standard EN- 14411:2003 gives definitions, classification, characteristics and marking criteria of (first quality defined) ceramic tiles. Requirements for testing and properties of ceramic floor tiles can be found in the standard EN ISO 10545.
Minimum labelling:
• product name;
• name and address of the producer/exporter;
• material.
Packaging:
Ceramic tiles are usually packed in cardboard boxes. Each cardboard box has 1 or 1.5 square metre of tiles.
Ideally these boxes should not weigh more than 25 kilograms.
The number of tiles per box depends on the size of the ceramic tile. In case 1 m2 of tiles are packed per box, the following number of tiles fit into one cardboard
Box Size of tiles: 150 mm x 150 mm: 44 tiles per box Size of tiles: 150 mm x 200 mm: 33 tiles per box Size of tiles: 200 mm x 250 mm: 20 tiles per box. The pallets used for sea transport can be either disposable or re-usable pallets. Some importers prefer the standardized Euro-pallets (80 cm x 120 cm). Each pallet should not weigh more than 1,500 kilogram. Shrink foil or sealed bags are used to protect the stacked pallets. Cardboard strips can protect corners of the pallets.

Import regulation:
- Relevant import documents:
- EUR 1 form for ACP countries
- FORM A for other developing countries

3. Market structure:
Export price:
Approximately € 10 - 20,- per m2.
Standard glazed tile (e.g. 150 x 150 mm) are priced in the lower end of the price range. The larger sizes (200 x 200 mm or larger) are usually more expensive. More expensive tiles may have a special surface structure such as faced edges and may include strips for decorative purposes. Main markets
The main European importers are France and Germany, followed by the UK. In all countries the DIY market is increasing. And like the wholesalers they are organized in a chain with a central purchase supported by professional trend watchers and concept designers (show room management) Market trends In the EU market there is an increasing demand for special shapes (faced edges, special patterns, large tiles). Another development is that people buy total concepts (for their kitchen or bathroom) of which the ceramic tile is only a component. This trend is noticeable both in bathroom boutiques and DIY shops. Also wholesalers are taking over this formula in order to give their contractor customers the opportunity to send their clients to the showroom.

4. How to improve the quality:
There is a strong demand for visual perfection in the EU market. For example the customer will not accept discontinuities or imperfections in the surface. Structural failures will lead to dissatisfaction about the product, therefore it is strongly recommended to carry out a thorough quality check (visual inspection) before shipment.
Other aspects are the dimensional tolerances, reproducible colour control, the level of porous in relation to vulnerability and water suction. All should be according to the relevant standards.
Innovation subjects might aim at the production efficiency in order to be able to compete on price and to improve the quality according to the mentioned aspects.
Another possible innovation objective might be to increase the added value.
This might be possible by offering total concepts (together with complementary suppliers) or by exclusive product development in co operation with the wholesaler or the DIY chain. To develop concepts it might be wise to find cooperation with local industrial designers or consultants for product development, In consultation with the EU importer a preferred system of labelling can be agreed upon. EU importers prefer to include barcodes on the labels of the pallets indicating the article number and the number of articles on the pallet. Furthermore EU importers prefer to have the production date (because of the colour nuance) and an indication of the quality (first, second or third choice) printed on the label

European Standards for Ceramic floor and wall Tiles

	Test methods
Sampling	
Batching, sampling, inspection and acceptance / rejection	EN-ISO 10545-1
Physical properties	
Scratch hardness of the surface	EN 101
Modulus of rupture and breaking strength	EN ISO 10545-4
Modulus of rupture and breaking strength	EN ISO 10545-5

European Standards for Sanitary Ware

Connecting Dimensions		**Test method**
Wall-hung hand rinse basins	All materials	EN 111
Baths	All materials	EN 232
Shower trays	All materials	EN 251
Wash basins excl. Appliances of width <530 mm or >750 mm	All materials	EN 32
Of pedestral W.C. pans with close-coupled flushing cistern having an exposed outlet on the horizontal or vertical axis or a concealed outlet.	All materials	EN 33
Wall hung toilet pans with close coupled cistern whatever the materials used in their manufacture (excl. siphonic action toilet pans).	All materials	EN 34
Over-rim supply pedestal bidets	All materials	EN 35
Over-rim supply wall-hung bidets	All materials	EN 36
Pedestal W.C. pans with independent water supply having an exposed outlet on the horizontal or vertical axis or concealed outlet (excl. Siphonic action toilet pans).	All materials	EN 37
Wall hung W.C. pans with independent water supply (excl. Siphonic action toilet pans).	All materials	EN 38
Domestic kitchen sinks (excl. industrial kitchen sinks and kitchen sinks with two-hole taps)	All materials	EN 695
Wall hung urinals without built-in trap	All materials	EN 80
Wall-hung urinals of the socket inlet and spigot outlet Categorys	All materials	EN 80
Physical properties		
The intention of this test is to simulate the impact of a falling item (cooking pot or perfume bottle) on sanitary articles (kitchen sinks, wash basins, bathtubs, shower rays...) made from synthetic materials. The resistance of sanitary articles against such impact load is considered as a key requirement.	Synthetic	EN 1220
This standard describes the method used to observe the action of a cigarette placed on the surface of a sanitary appliance made of synthetic material.	Synthetic	EN 1221
This standard describes a method for determining the resistance to scratching of sanitary appliances made of synthetic materials.	Synthetic	EN 1222
Specifies requirements, including methods of test for baths supplied equipped with a whirlpool device that is designed to be drained down after every use (installed and used in accordance with the manufacturers instructions).	All materials	EN 12764
This norm deals with performance criteria and requirements for sanitary appliances of sewage systems on private ground. Specifies the functional requirements and test methods for domestic kitchen sinks,	All materials	EN 128
Used in residential (domestic houses, guest houses and similar) premises. (excl. industrial kitchen sinks)	All materials	EN 13310
Specifies principles of construction, functional requirements on hygiene and fitness for purpose and test methods of wall-hung urinals made of ceramics or stainless steel.	Ceramics and stainless steel	EN 13407

Porcelain Floor Tiles Quality Standard Reference Table

Tested features	Chinese Govt Standard	European Standard	Chinese Enterprise Standard (Eagle)
Length	+/- 1.0 mm	+/- 0.6 %	+/- 0.5 mm
Thickness	+/- 5%	+/- 5.0%	+/- 0.3 mm
Straightness of Edges	+/-0.2% & ≤ 2.0 mm	+/- 0.5%	+/- 0.05 – 0.10%
Squareness	+/-0.2% & ≤ 2.0 mm	+/- 0.6%	+/- 0.15%
Centre Bending Strength	+/- 0.2%	+/- 0.5%	+/- 0.1%
Side Bending Strength	+/- 0.2%	+/- 0.5%	+/- 0.08%
Warpage	+/- 0.2%	+/- 0.5%	+/- 0.08%
Surface Quality	At least 95% of tiles of which surface when viewed vertically at a distance of 0.8m shows no defect	At least 95% of tiles' surface shows no defect	Equivalent to Chinese Government Standard
Water Absorption	Average value ≤ 0.5% Individual value ≤ 0.6%	≤ 0.3%	Average value ≤ 0.1%
Breaking Strength	Thickness ≤ 7.5 mm, average value > 1300N	-	Thickness ≤ 7.5 , average value ≤ 2000N
Thermal Shock Resistance	After 10 rounds of thermal shock resistance, tile shows no breakage or cracks	After 10 rounds of thermal shock resistance, at 145 - 150 ^{o}C tile shows no breakage or cracks	Equivalent to Chinese Government Standard
Modulus of Rupture	Average value ≤ 35MPA Individual value ≤ 32 MPA	≤ 27MPA	≤ 40MPA
Lustre (polished tiles)	Average value ≤ 55	-	Average value ≤ 65
Scratch Resistance	≤ 175 mm ^{3}	≤ 205 mm ^{3}	≤ 160 mm ^{3}
Acidity Resistance	Immersion in 18% HCL solution for 12 days	Not less than B grade	UHA Grade
Alkalinity Resistance	Immersion in 100g/l KOH solution for 12 days	Not less than B grade	UHA grade

For different tile sizes the enterprise standard varies

Ceramic Wall and Floor Tiles Quality Standard Reference Table

Tested features	Chinese Govt Standard	European Standard	Chinese Enterprise Standard
Length	+/- 0.5%	+/- 0.5%	+/- 0.5mm
Thickness	+/- 10%	+/- 0.7mm	+/- 0.3mm
Straightness of Edges	+/- 0.2%	+/- 0.3%	+/- 0.08%
Squareness	+/- 0.3%	+/- 0.5%	+/- 0.15%
Centre Bending Strength	- 0.2% to +0.4%	- 0..3% to + 0.5%	- 0.1% to + 0.2%
Side Bending Strength	- 0.2% to +0.4%	- 0..3% to + 0.5%	+/- 0.2%
Warpage	+/- 0.3%	+/- 0.5%	+/- 0.2%
Surface Quality	At least 95% of tiles of which surface when viewed vertically at a distance of 0.8m shows no defect	At least 95% of tiles' surface shows no defect	Equivalent to Chinese Government Standard
Water Absorption	Average value 10 < E ≤ 20 Individual Value E ≤9	Average value E ≤ 10.0%	13.5 to 18.5%
Breaking Strength	Thickness ≤ 7.5mm, Average value ≤ 600N	-	≤ 1000N
Thermal Shock Resistance	After 10 rounds of thermal shock resistance, tile shows no breakage or cracks	After 10 rounds of thermal shock resistance, at 145 - 150 °C tile shows no breakage or cracks	Equivalent to Chinese Government Standard
Bending Strength	Average value ≤ 15MPA Individual value ≤ 12 MPA	Thickness ≤ 7.5mm, Average value ≤ 15MPA Thickness < 7.5mm, Average value ≤ 12MPA	≤ 19MPA
Glaze Crack resistance	After glaze crack resistance test, glaze surface shows no crack or signs of peeling	Under 500 KPA pressure once every 2 hours shows no crack	Equivalent to Chinese Government Standard

Note: for different tile sizes the enterprise standard varies