



The Global Cement Industry

Cement is a basic ingredient for the construction industry. Cement is made out of limestone, shell, clay mined out of a quarry close to the plant. The raw material is crushed, and then heated at temperature in excess of 1000 °C in rotating kiln to become clinker. Clinker is then mixed with gypsum and ground to a fine powder to produce final grade of cement. The technology is a continuous process and is highly energy intensive.

Cost of cement is 29% energy, 27% raw materials, 32% labour and 12% depreciation.

The weight/to price ratio make transportation cost very high. The competitive radius of a typical cement plant for most common types of cement extends no more than 300 kilometers. However, cement can be shipped economically by sea and inland waterway over great distances, extending greatly the competitive radius of cement plants with access to waterborne shipping lanes. Thus, the location of a cement plant and the cost to transport the cement it produces through its distribution terminals bear significantly on the plant's competitive position and the prices it may charge. The minimum efficient size for a cement plant is around 1 million ton a year.

As a consequence of a relatively low minimum efficient plant and transportation costs cement production is highly fragmented. It is estimated that there are around 1500 integrated cement production plants in the world. Although the industry has seen the emergence of strong global players such a Lafarge or CEMEX, the share of the four largest firms account only for 23% of the overall demand.

Cement is distributed in bags or is delivered to construction sites through ready-mix lorries.

The major segments of the industries are:

- Aggregates: quarries and crushing minerals to be mixed with cement to make concrete
- Cement production
- Ready Mix: distribution of ready to use concrete



Demand

World cement demand was 2,283 million Tons in 2005, with China accounting for 1,064 MT (47% of total). The expected demand for 2010 is estimated at 2836 MT. China will increase its demand by 250 millions tons during the period, an increase higher than the total yearly European demand.

Demand for Cement in Million Tons	<u>2005</u>	<u>2010</u>	Growth rate
North America	170	200	2.9%
Western Europe	208	236	2.2%
Asia/Pacific	1500	1900	5.2%
Other Regions	405	500	4.7%
WORLD Cement Demand	2283	2836	4.7%

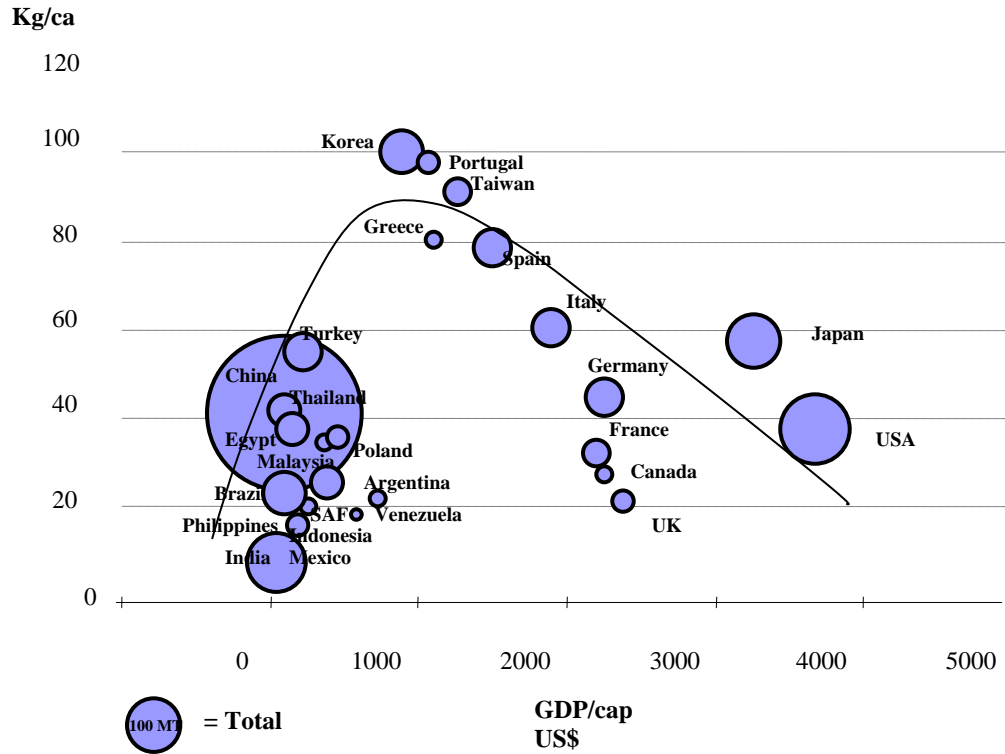
The demand for cement per capita follow a bell curve pattern as shown in Appendix 1. Emerging countries during their high growth phase consume a large quantity of cement because of their needs for infrastructure.

Questions

- 1) Using the tool provided in appendix 1.1 of the textbook and based on your personal observation can you say that cement is a global industry?
- 2) Why companies like Cemex, Lafarge or Holcim globalise?

Appendix 1

Cement Consumption and GDP/Cap (2001)





Appendix2 Main Global Competitors

Lafarge

Lafarge is the world leader in building material. It operates in 76 countries in four majors sectors: cement, aggregates, roofing and gypsum. It defines itself as a multi local global firm. Over the past years it invested heavily in emerging countries. Its recent association with the Chinese group *Shui On* gave the group a 21 Million Tons presence in this country.

LAFARGE	2004	2005	Cement	Aggregate	Roofing	Gypsum
Sales (M\$)	17900	18910	47.6%	33.7%	9.5%	9.2%
Net Income	1300	1690				
Employees		80,000	40,000	21,000	12,000	6,000
Number of plants*		1538*	152*	1141	162	78
Number of countries		158	43	27	35	23
Global Competitive position			#1	#2	#1	#3

	North							
CEMENT	Europe	America	Middle East	Eastern Europe	Latin America	Africa	Asia	Total
Number of Plants*	35	24	16	12	15	16	34	152
Capacity (Million Tons)	38.8	20.2	17.1	19.5	11	14.1	46	166.7

(*including grinding plants)

Holcim

Holcim is one of the world's leading suppliers of cement and aggregates (crushed stone, sand and gravel) as well as further activities such as ready-mix concrete and asphalt including services. The Group holds majority and minority interests in more than 70 countries on all continents, and employs some 90,000 people. Holcim has a strong presence in India.

HOLCIM	2004	2005	Cement	Aggregate	Ready Mix and Asphalt
Sales (M\$)	10657	14774	68.2%	7.2%	24.6%
Net Income	710	1232			
Employees		59,900	34,500	6,500	18,750
Number of plants*		1638	140	398	1100
Number of countries		70	47	22	33
Global Competitive position			#2	#5	#3

	Africa					
CEMENT	Europe	North America	Middle East	Latin America	Asia	Total
Number of Plants*	47	20	17	28	28	140
Capacity (Million Tons)	42	22.3	15.3	34.9	40.7	155.2



Heidelberg

Originated in Germany the Heilderber group is concentrating on cement production

					Ready Mix and Alsphalt
HEIDELBERG	2004	2005	Cement	Aggregate	
Sales (M\$)	8592	9676	57.3%	31.6%	15.2%
Net Income	-413	584			
Employees		41,200			
			Africa		
			North		
			Middle		
CEMENT	Europe	America	East Asia	Total	
Sales in M\$	2537	1540	1246	5323	
Sales in Million Tons	30.3	42.4	17	89.7	

Geographical Locations

	LAFARGE	HOLCIM	CEMEX
Europe	Austria Germany Greece France Italy Spain	Austria Belgium Germany Italy Spain Switzerland	UK Germany France Spain
North America	USA Canada	USA Canada	USA Canada
Central and Eastern Europe	Chzec Republic Moldavia Poland Russia Romania Serbia Slovenia Ukraine	Bulgaria Chzec Republic Hungary Poland Romania Slovakia	Croatia Latvia Poland
Latin America	Brazil Chile Equador Honduras French Antilla Mexico Venezuela	Argentina Brazil Chile Columbia Costa Rica Equador Mexico Venezuela	Domican Rep. Columbia Costa Rica Mexico Nicaragua Panama Puerto Rico Venezuela
Africa and Middle East	Egypt Jordan Kenya Morocco Nigeria Turkey Uganda Zimbabwee	Egypt Morocco South Africa	Egypt
Asia	China India Indonesia Korea Malaysia Philippines Vietnam	Bangladesh Indonesia Malaysia Philippines Sri Lanka Thailand Vietnam	Philippines Thailand



Cemex

Cemex is the 3rd largest cement company in the world measured by cement production capacity. Originated from Mexico By 2005 it had achieved an estimated production capacity of 94 million tons per year. It was the number one producer of ready-mix with 76 Million Tons, one of the largest aggregate producer with 175 Million tons and one of the top cement traders in the world, selling more than 17Million tons in 2005.

It is present in the Americas, Europe and Asia, although not in India nor China.

Financials Million US\$

	1999	2000	2001	2002	2003	2004	2005
Net Sales	4793793	5590453	6831115	6654052	7072925	7806225	15221804
Operating Income	1428629	1644439	1630788	1333863	1436723	1771730	2469439
Consolidated Net Income	1022377	1071929	1314135	572999	682003	1273398	2149845
EBITDA	1779448	2018466	2225030	1950982	2081157	2429097	3534090
Free Cash Flow *	866000	920000	1127000	982895.8	1118000	1384000	1993000

CEMEX Breakdown by regions	% of total sales	% of total assets	Number of cement plants	Installed capacity (Mtons)
Mexico	19	17.5%	15	27.2
USA	25	17.5%	12	13.3
South and Central America, Caribbean	9	8.0%	13	15.4
Spain	9	6.8%	8	11
UK	9	11.9%	3	2.7
Rest of Europe	16	11.7%	9	13
Asia	2	2.9%	4	10.7
Africa and Middle East	3	2.2%	1	4.9
Others (Trading)	8	21.6%	-	-
TOTAL	100	100	65	98.2

CEMEX Annual report 2005