

# The Indian Cement Market Survey and Investment Horizon

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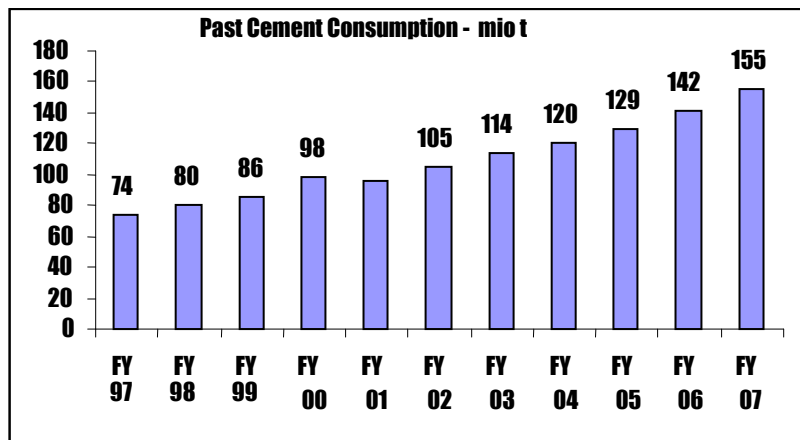


## 1. INTRODUCTION

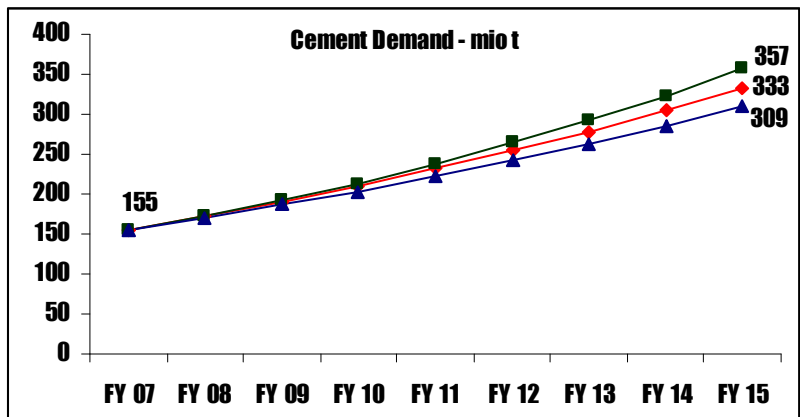
This paper gives an overview of the Indian Cement Market and attempts to demystify key myths that prevail in the industry. The focus is also on the future of the cement industry and the investment scenario over the next 7-8 years.

## 2. THE INDIAN CEMENT MARKET

India, the second largest cement market in the world, witnessed cement consumption to the tune of 155 mio tpa in FY 2007 (1 April 2006 – 31 March 2007). Consumption, over the past 10 years, has grown at an average rate of nearly 8 % pa. The higher growth, in the more recent past, has come from an unprecedented boom in the construction sector. This, in turn, has been driven by higher economic growth, higher investment in infrastructure, growing demand for housing as a result of rising disposable income, changing lifestyles, higher credit push by banks, etc.



Future demand, in the wake of higher growth rates expectations of GDP and construction, is estimated to grow at an average rate of 9.0 % - 11.0 % pa during the next 7-8 years. This will take the demand to 309 – 357 mio t in FY 2015 in limit cases.



India's *effective* cement capacity increased from around 120 mio tpa in FY 2002 to 180 mio tpa in FY 2007. The current capacity figures are derived from 125 operating production units, consisting of 95 integrated plants and 30 split located units (23 grinding units and 7 terminals), and innumerable *mini cement plants* having a combined production capacity of around 6 mio tpa. Effective capacity is estimated taking into account the actual cement producing capability of all these units. Based on available information on new expansions, cement capacity is estimated to increase from the current 180 mio tpa to around 350 - 360 mio tpa by FY 2015.

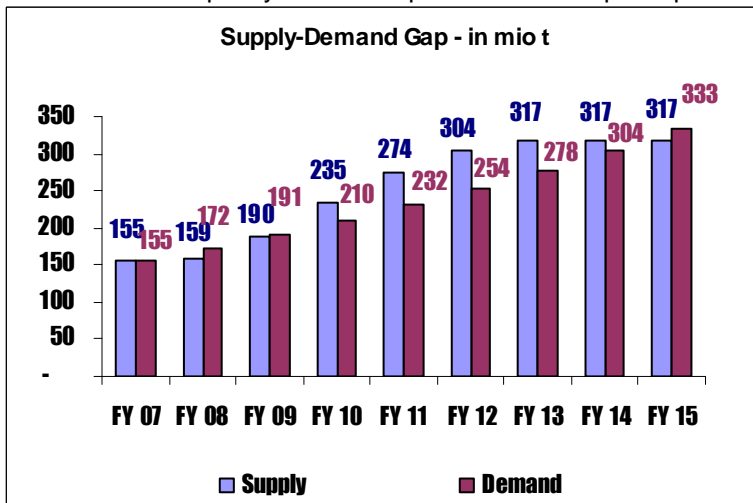
As against a domestic supply of 155 mio t in FY 2007, forecasts for domestic supply, in FY 2015, are in the range of 315 – 325 mio t. This is arrived at after adjusting available capacity against international cement trade, capacity utilization limited by seasonality and logistic related bottlenecks, and expectations of capacity closure due to obsolescence.

Demand-supply analysis indicates that creation of additional capacity will be required to be ramped up much before demand overshoots supply in FY 2015. Assuming an average gestation period of 36 months, project work for creating 20-25 mio tpa of additional capacity would need to commence by FY 2012.

The **international majors** currently operative in India are Holcim, Lafarge, Italcementi, Heidelberg and Cimpor. Some recent major mergers and acquisitions include ACC and Ambuja taken over by Holcim and UltraTech by Grasim. These 2 national players currently control around 40 % of India's cement capacity, while regional players like BK Birla Group, Dalmia, India Cements, Jaypee, JK, Madras Cement, etc control around 33 % of the country's capacity. The balance 27 % is controlled by stand alone players.

The number of national players is estimated to increase over the next 4-5 years. The share of national players is estimated as 47 % by FY 2012. The share of regional players will not see a major change, whereas the share of standalone players will go down to around 20 %.

Given the recent trends and envisaged future of the cement industry, several myths have emerged. These myths are addressed in the subsequent section of this paper.

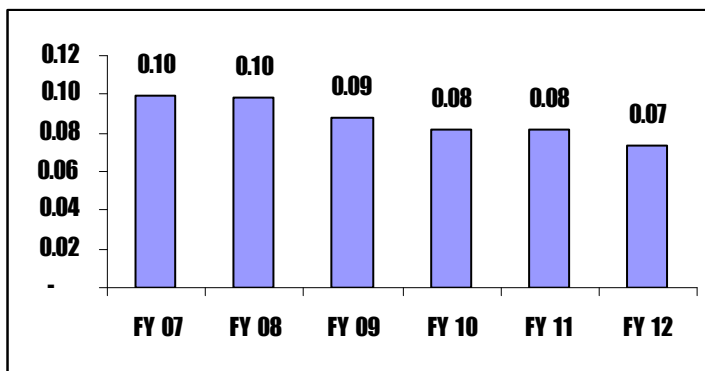


### 3. MAJOR MYTHS

#### Myth 1: The cement industry is moving towards consolidation

With large capacities planned by the “biggies” in the cement industry, there is a feeling that the industry is moving towards consolidation and would be dominated, if not controlled, by a “handful” of players.

We have used Herfindahl Index to examine the validity of this myth. Herfindahl Index (value range : 0:1) is used by many countries around the world to measure market concentration and is seen to possibly have the most significant relationship to market prices. A higher index is indicative of higher market concentration.



Applying Herfindahl Index to the Indian Cement Industry reveals that the current score of 0.10 is likely to decrease to 0.07 by FY 2012. The result seems logical as the number of cement groups/companies will increase from the current 40 nos

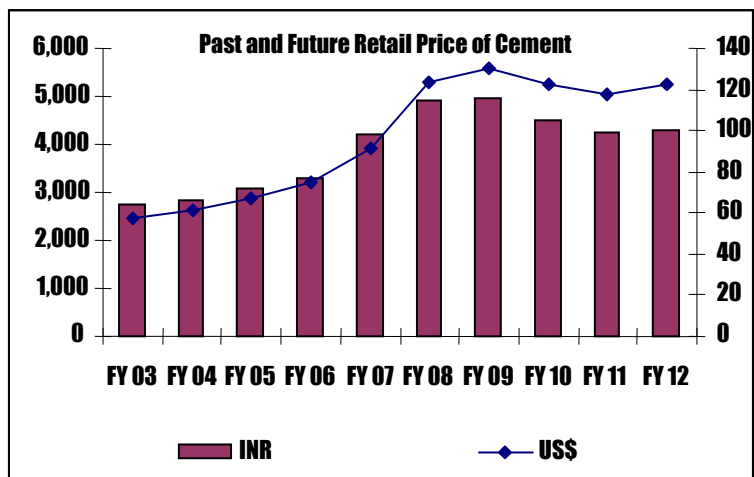
to 58 nos by FY 2012. With fragmentation increasing, the industry's hold on market prices, if any, will be keeping diminishing as the number of cement players increase.

#### Myth 2: Prices are set to fall sharply

Cement prices have increased by nearly 50 % over the past 2 years. The average current retail price is around INR 4,900/ t (US\$ 124/ t). The sharp rise in recent years is primarily attributed to a higher demand-supply gap. Industry observers have voiced their fears about a sharp fall in cement prices as the significantly high, planned capacity expansion comes on stream.

We tested this hypothesis by examining the possible impact of over 40 variables on cement price. Some of the variables includes demand-supply gap, industry consolidation, returns expectations of investors, cement spend, price elasticity of demand, past cement prices, shift in customer segment, capex for capacity creation, availability of input materials, differential costs of delivery, etc. Probability distributions, instead of single-point estimates, were accorded to each variable constituting the modeling exercise. Monte Carlo simulation was used on the model to estimate future price bands. Our analysis indicates that prices would, in all likelihood, increase over the next 2 years (FY 2008 and FY 2009) and then reduce. However, the reduction would be significantly less than the doomsday predictions currently being voiced.

The most likely estimate of cement price in FY 2012, is around Rs 4,280/ t (US\$ 122/ t). This price is much higher than the price of Rs 165-170/ bag (US\$ 94 – 97/ t) feared by the industry. Prices, in US dollar terms, are seen to higher, on account of expectations about the continued appreciation of the rupee versus the dollar.



With prices forecast at Rs 4,280/ t (US\$ 122/ t), the fears of the industry are, possibly, unfounded. The cement industry will continue to earn high EBIDTA margins and enjoy a satisfactory ROI.

### Myth 3: Plants will need to work at 75 % - 80 % capacity utilization to break-even

Cement players are of the perception that new plants need to work at high capacity utilization in order to achieve cash break-even. The basic reasons for this are the higher costs of ownership (interest) and higher fixed costs due to mushrooming salaries in the sector. To address this myth, three cases were considered in which the average retail price was taken as Rs 3,300/ t (FY 2006 level), Rs 4,900/ t (FY 2008 level) and Rs 4,280/ t (estimated price in FY 2012). Specific investment cost is taken US\$ 132-135/ t, OPC equivalent.

Operational cash breakeven was estimated for the 4<sup>th</sup> year of operation. In case 1 (Price Rs 3,300/ t), the plant achieves cash breakeven at 52 % capacity utilization. In case 2 (Price Rs 4,900/ t), the plant achieves cash breakeven at 23 % and in case 3 (Price Rs 4,280/ t), the plant achieves cash break even at around 30 % capacity utilization. Any new plant now being planned, would command an average retail price of at least Rs 4,280/ t (which is the lowest price estimated in the next 5 years). At this price, if loan repayment is also considered while estimating cash break even, the capacity utilisation figure goes up to 49 %. Other than price, a principal reason for this is the lower variable cost of production effected through improved, technologically-driven, energy efficiencies and a much higher volume of blended cement.

The above analysis indicates that plants can work at around 50 % capacity utilisation, and yet be profitable. This also implies that first time entrants in the cement industry, who may take a few years to establish their market position, will, in all likelihood be able to sustain themselves during their initial years of operation.

### Myth 4: Imports will create a huge downwards pressure on domestic prices

Many countries in the Gulf are witnessing massive cement capacity expansions. Examples of this include Saudi Arabia, UAE, etc. These countries, other than already surplus countries such as Pakistan, could look at India as an export destination for their surplus capacities. Also, other low-cost of production countries like Egypt, China, Iran, Indonesia, Thailand and Oman could target India to take advantage of the recent high prices. This, coupled with the recent removal of import taxes, has led to the perception that imports will increase significantly, creating a huge downward pressure on domestic prices.

The cash cost of production in the above mentioned countries vary from US\$ 17 in subsidized Iran to US\$ 29 in UAE. The landed cost of cement on the west-coast of India is reckoned to be of the order of US\$ 55-60/ t.

Against this, the delivered cost of domestic cement would be around US\$ 50 - 60/ t. A similar scenario is seen in the east coast markets of India.

While the possibility of imports cannot be ruled out, imported cement can only be competitive in off-shore locations as also in some coastal markets where domestic cement is supplied from inland plants located at considerable distances. Also, importers could find it difficult to create a strong and reliable distribution network to market their cement in the interior parts of the country, as they may not be able to deliver regular sales volumes. Their natural market will be restricted to 100-200 kms from the import point. Infrastructure constraints and growing traffic at ports could also be a hindering factor that could restrict high volume imports.

Given the above situation, threat from imported cement is seen to be low and imported cement is unlikely to affect the domestic capacity expansion plans, or exercise, in any significant way, a downward influence on retail prices.

#### **Myth 5: We are heading towards blending material shortage**

Cement players are leaving no stone unturned to secure blending material for their existing plants or forthcoming expansions. There is a general feeling within the industry that there is scarcity of blending material and tomorrow's fight will be over securing blending material, rather than over markets or any other resource.

We examined the blending material situation and found that India has fly ash generation capacity of over 215,000 tpd and slag generation capacity of over 27,000 tpd. This implies that over 285 mio t of Portland Pozzolana Cement (PPC) could have been potentially produced in FY 2007, against the actual production of 93 mio t. Even if one were to discount the fly ash that is not fit for economic PPC production on account of its higher carbon content, larger particle size distribution, wet availability, etc, at least 140 mio t of PPC could still have been economically produced. Likewise, 20 mio t of Portland Slag Cement (PSC) could have been produced in FY 2007, against the actual production of around 13 mio t.

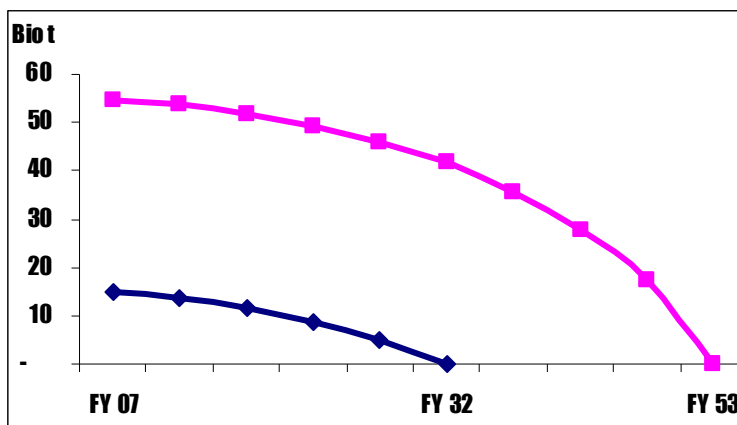
In FY 2012, with new thermal power plants and steel plants coming on stream, the total fly ash and slag generation capacity is estimated to be over 480,000 tpd and 100,000 tpd respectively. Given the blending material sources' capacity, India can potentially produce around 635 mio t of PPC and 77 mio t of PSC, the addition of which is almost thrice the total cement demand of 254 mio t in FY 2012!

The above clearly indicates that blending material is not a major constraint in India. However, given the location of the blending material sources and the economical freight to cement plants, production of blended cement would be restricted near the blending material sources. Slag is primarily available in the Eastern and some parts of the Southern region of India. However, thermal power plants are located in almost every Indian State and thus fly ash availability does not appear to be a major issue. India will continue to witness PPC production in almost all parts of the country, whereas PSC production would be restricted to the Eastern region and parts of Southern region.

#### **Myth 6: Limestone availability is abundant.**

Till very recently, the continued availability of limestone's was taken for granted by the industry. However, like any other mineral, limestone also has a limited availability and its pace of depletion is dependant upon its utilisation pattern.

The total limestone reserves measured across 272 deposits, which have individual tonnages greater than 50 mio t and CaO values exceeding 42%, is estimated at 37 bio t. Of this, 4 bio t, fall in forest land and 18 bio t in areas that are otherwise statutorily blocked. This leaves approximately 15 bio t of



exploitable cement grade limestone. Given the expected industry growth rate and its current utilisation pattern of limestone, this reserve could be fully consumed by 2032!

Even if we were to assume that by exploration of new deposits, etc an incremental reserve of 40 bio t is created, and further assume that cement demand growth slows down to 7.5 % pa between 2016 - 2020 and 6 % beyond 2020 and 100 % blended cement is produced beyond 2015, the total limestone reserve would still be depleted by 2053!

#### **4. INVESTMENT SCENARIO**

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We have attempted to foresee the investment scenario for the next 7-8 years. The preceding sections indicate that cement capacity is going to increase by nearly 170-180 mio tpa, over its current level, by FY 2015. Demand will overshoot supply in FY 2015, indicating that an additional capacity of around 20 mio t will be required to be on-stream by end-FY 2014, to meet the demand for FY 2015. Post FY 2015, cement capacity of 35 – 45 mio t annually would need to be additionally created to meet subsequent demand. Despite a promising “tomorrow”, the need to conserve limestone and reduce its depletion rate will remain a top priority. With more than sufficient blending material availability, a higher shift toward blended cement is envisaged in the coming years. Such a shift will not only extend the life of limestone reserves, but also keep the cost of production low and EBIDTA high.

Investment from regional and independent players will continue, albeit at a lower rate than the national level players. However, due to lower consolidation in the future, good prices and break-even at around 50 % (including loan repayment), the new players will find it easier to survive in their nascent stage of operations. With higher industry fragmentation in the future, M&A investors could possibly be able to target varied capacity sizes available with different groups/ companies.

We can expect cement capacity boom to be back in FY 2012. Capacities on which construction would have commenced from FY 2012 and onwards will meet the cement deficit of FY 2015 and beyond. CAPEX for new plants is expected to increase from the current US\$ 115/ t levels to around US\$ 140/ t by FY 2012 due to rising investment costs and the appreciation of the Indian rupee versus the US dollar. Based on the year-wise capacity buildup and assuming a 36 months gestation period, the total CAPEX envisaged from FY 2008 to FY 2015 is of the tune of US\$ 30 bio. The CAPEX on de-bottlenecking and retro-fitting is estimated as US\$ 4.5 – 5.0 bio for the same period.

Supply-demand gap indicates that M&A activities should gain momentum in FY 2010 – FY 2013, as supply will outstrip demand and the acquiring price should be lower than the current levels. During this period, M&A's could result in 20-30 mio t of capacity exchanging hands at a total transaction value of US\$ 4.5-6.5 bio.

#### **5. CONCLUSION**

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The Indian Cement Industry is heading towards an inflexion point, where the demand is estimated to grow at an annual growth rate of around 10 % over the next 7-8 years. Cement demand is estimated to increase from the current level of 155 mio t to over 330 mio t by FY 2015. The current capacity boom will continue for another few years and then slow down. While cement capacity will increase to 350-360 mio tpa by FY 2015, the effective supply available to meet the demand will be around 320 mio t. To meet the demand of FY 2015 and beyond, the next capacity addition cycle is estimated to start between FY 2011-FY 2012.

The current high prices will see a downward trend after another 1-2 years, with prices expected to reach Rs 4,280 (US\$ 122/ t) by FY 2012. Despite the capacity share of National Levels players increasing from 40 % in FY 2007 to around 47 % by FY 2012, higher consolidation appears unlikely due to the distributed ownership of new capacity. Imported cement will increase its presence in the coastal markets in India, albeit in a small way. Domestic cement capacity buildup and prices will not witness any significant impact due to imports.

The availability of blended material appears assured to satisfy the industry demand. However, limestone availability in the longer term could be threatened. Blended cement will continue to see an upward trend, to fulfill the twin objectives of conserving limestone as also reduce production costs, and is estimated to constitute around 85- 90 % of the production in FY 2012.

The investment in the cement industry, to meet the growing demand during the next 7-8 years, is reckoned as US\$ 35 bio. Additionally, ownership swaps to the tune of 20-30 mio t are envisaged at a value of around US\$ 6 bio.

India has recently entered into a growth phase, which is likely to continue for another decade. The economic growth, which could have small, intermittent dips, will create pressure for improvements in infrastructure, demand for housing, etc which would drive accelerated growth in the construction industry. It thus appears fairly certain, that the recent boom in the cement industry can be expected to perpetuate over the next 7-10 years. This, along with expectations of good financial returns, will give opportunities for strong players to create stronger footprints.