Summary
Cement is a key sector for the Global Manufacturing & Services department, accounting for about 18% of the department’s commitment volume. Development results for this sector have been consistently superior to those for GMS and for IFC. A detailed study of 26 XPSR’s for the cement portfolio reveal key common trends affecting project success rates. Firstly, IFC commitment in the cement portfolio is cyclical. Cement follows GDP growth patterns and hence economic downturns have negatively affected projects due to low capacity utilization and poor financial performance. Secondly, difficult regulatory and business environments have also negatively affected project development success. Thirdly, projects focusing on cost reductions or securing operational efficiency gains have been more successful in achieving development results. Finally, strong sponsors are crucial for project success.

The following analysis is based on the study of the XPSR’s (Expanded Project Supervision Reports) prepared by IFC staff and validated by the Independent Evaluation Group for 26 projects in IFC’s cement portfolio. These projects represent a random representative sample of projects that were evaluated between 1996 and 2008 and span approval years of 1991 to 2003. For the purposes of the analysis, it has been assumed that a cement project would start commercial operations two years after IFC Board approval, and would therefore be subject to market conditions at that point.

**IFC’S CEMENT PORTFOLIO**
Cement is a key sector for the Global Manufacturing and Services (GMS) department. The total committed portfolio for IFC’s account in cement as of June 30th, 2009 was $1.2 billion which accounts for about 18% of GMS total committed portfolio and 3% of IFC total committed portfolio for the same period. Total outstanding exposure was $607 million at the end of the same period. At the end of FY09, there were 29 active projects in 17 countries in IFC’s portfolio, out of which 9 projects were in IDA countries.

IFC’s committed cement portfolio is split across regions as shown in Figure 1. The biggest commitment volume is in East Asia & Pacific (driven by China). In terms of number of projects, East Asia and Middle East & North Africa have the largest number of projects (7 each).

**DEVELOPMENT RESULTS**
Cement has consistently outperformed the GMS and IFC development results for the last 3 years on DOTS success rates (Figure 2). IEG evaluations reinforce this trend (Figure 3). Of the 26 projects evaluated by the IEG over the period 1996-2008, 19 projects (or 73%) were rated successful. For the same period, 53% of CGM projects and 63% of IFC projects evaluated were rated successful.
KEY FINDINGS

When we look at IFC commitment figures in cement over the last 12 years, we find that they have loosely followed the global capacity expansion trend in cement. The figure below shows a cyclical pattern between the two. China has been excluded in this data as it is a very large player in the global cement market and its inclusion would hide the pattern in the industry.

Financing capacity expansion at the same time as the rest of the world has affected the success of some of these projects due to an adverse demand supply balance.

Some of the key trends are presented here.

1. Cement is cyclical and follows GDP growth in the country of operation

Cement follows GDP growth patterns. When GDP falls, growth in this industry also tends to slow down, impacting capacity utilization and profitability. This trend has been evident across all the IFC projects in our sample set which faced the downturn that the cement industry went through in the latter part of the last decade. For all the cement projects that were rated unsuccessful, the project’s financial performance was also rated unsuccessful on account of lower than projected capacity utilization and revenues and subsequently lower margins.

In some cases, another negative outcome of the business downturn was cartelization of the cement industry with cement firms colluding to create artificially high prices. This hurt consumers and also the cement markets which might otherwise have been competitive.

2. Difficult business environments contribute to unsuccessful projects.

Difficult or poor regulatory and business environment was mentioned as one of the reasons for the failure of the project in 4 of the 7 projects rated unsuccessful. For a highly capital intensive sector which has inherently high barriers to entry, a strong business and regulatory environment is important to enable project success.

3. Emphasis on competitiveness through operational efficiency gains is important

Projects which had a stated objective of addressing operational inefficiencies in existing plants or improving environmental compliance, besides focusing on expanding supply were more successful.

The reason was that adopting more efficient production methods such as switching from the wet to the dry method, or to cheaper alternatives for fuel resulted in cost reductions. This allowed margins to be sustained despite loss of revenue on account of falling demand. Also, these alternatives reduced emissions and waste thereby improving environmental compliance of the projects.

Of the 19 projects in the sample set that were rated successful, 13 projects had a mention of efficiency gains that arose out of cost reductions in the production process.
As concluded in some XPSR’s, where there is a significant risk of a downturn in the country’s growth or the cement business cycle, it may be prudent to focus investment on competitiveness in projects rather than expanding supply.

Environment and Cement: The case of Kunda Cement

The nature of the cement industry is such that it can cause significant environmental damage through emissions. For example, it is a highly energy intensive contributing 5-6% of the total man-made CO₂ emission. 45% of CO₂ emission during the cement production cycle is due to the use of fuel and electricity in the production process. Hence adopting efficient processes are key to environmental performance. As mentioned earlier, in our sample set of cement projects that were evaluated, shifting to more efficient production processes not only reduced emissions but also resulted in cost reductions.

Kunda Cement is a project financed by IFC in the early 90s, which exemplifies the environmental benefits emerging from investments made for targeted environmental improvement. The Kunda Nordic Cement Corporation (KNC) was a heavy polluter before it became partly privatized. The new owners undertook a major renovation program part financed by IFC.

Before this renovation began, the cement plant used to generate very high air pollutants earning it the dubious distinction of ‘The Gray Town of Estonia’. The emissions affected an area of as much as 100 km² around the plant.

The renovation program undertaken had a three pronged strategy (1) assigning formal responsibility for environmental matters (2) investing in modern equipment and production processes and (3) providing basic environmental training to all staff to raise awareness.

A ‘before and after’ study was done to try and quantify the benefits of this program which estimated that there had been a 98.5% reduction in dust emissions. The present value of the quantifiable benefits was measured at $22.6 million net of operating costs.

The Old Kunda Cement Plant: Belching 1/3 rd of Estonia’s particulate emissions

Of this, $16 million was estimated to accrue locally to the plant and Kunda residents on account of savings in raw materials, improvement in real estate values, improved agricultural results through reduced soiling damages, increased tourism and reduced health care costs.

It was estimated that benefits of $7 million accrued to a wider area comprising residents of neighboring countries on account of less damage due to lower SO₂ and NOₓ emissions. Besides these quantified benefits, the study also noted the unquantifiable benefits that accrued across local and neighboring regions due to improvements in salmon spawning etc.
CONCLUSION

Given that cement has been one of the most successful sectors in GMS in delivering development results, it should continue to be a focus area for IFC. To further improve performance, the sector will benefit from a counter cyclical approach to investment. Secondly, since its close movement with economic growth cycles is known, detailed attention to robust forecasting of country growth and demand is warranted. Thirdly, where there is a significant risk of a downturn, the project focus should be on cost reductions and efficiency gains, specifically with an emphasis on environmental improvements. Finally, strong sponsor support can be instrumental in ensuring the development outcome success of a project.

4. Sponsor quality can be crucial for project success

Our analysis of development results of these cement projects confirm that sponsor quality can be critical for project success. Among other reasons, the importance of strong sponsors is on account of their ability to adapt to changing environments and also their financial strength to weather an economic downturn.

8 of the projects rated successful have a mention of strong sponsors being responsible in part for the project success for reasons mentioned above. For 3 of the 7 projects that were rated unsuccessful, lack of strong sponsorship was considered instrumental in failing to meet the challenges that arose out of falling demand and increasing costs.
