

CEMENT INDUSTRY IN INDIA: ISSUES AND FUTURE OUTLOOK

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Abstract

This paper presents a comprehensive analysis of the evolution and performance of the Indian cement industry, evaluating its growth in terms of output, plant expansion, demand patterns, and consumption levels. The study aims to trace the developmental trajectory and historical context of cement production in India. Cement serves as a critical element for infrastructural development and plays a pivotal role in national economic progress. Since its inception in 1914 in Porbandar, Gujarat, with an annual capacity of merely 1,000 tonnes, the industry has evolved into a foundational sector in India's developmental framework. Renowned for its energy efficiency, the Indian cement sector ranks among the most productive globally. From a production and consumption perspective, it holds the second position worldwide. This research sheds light on the current issues the industry faces and outlines the opportunities that lie ahead. It is descriptive in nature, relying on secondary sources such as published research, newspapers, online articles, and official reports. The paper also reviews policy measures and industry initiatives to gauge India's competitive position on the global stage.

Keywords: Cement Sector; Economic Contribution; Policy Support; Foreign Investments; Infrastructure Growth; Affordable Housing.

Introduction

India holds the position of the world's second-largest cement producer after China, boasting an installed capacity nearing 540 million tonnes, which is expected to surpass 600 million tonnes annually by 2025. The country's rapid urban expansion, government-driven smart city and low-cost housing schemes are likely to elevate India's role in the global cement market, potentially overtaking China in the foreseeable future. Approximately 67% of India's cement demand stems from residential construction, followed by infrastructure (13%), commercial projects (11%), and industrial development (9%). The Union Budget introduced an affordable housing initiative with a dedicated fund of Rs. 25,000 crores to support housing loans. (Ghosal, 2020) The cement industry is well-positioned to benefit from ongoing infrastructure and real estate development (FDI). Sustained demand from construction-related sectors significantly fuels the growth of cement production. (Kumar, 2022).

Review of Literature

Bhayani (2010) in his article on "Determinants of Probability in Indian Cement Industry: An Economic Analysis", measured the profitability and evaluated the effectiveness of the organisation taking into the size of the organisation, liquidity of management, growth of the organisation, components of cost and inflation rate. He concluded that liquidity ratio of operational profit, interest rate, inflation rate and duration of being in business are the key factors which determine the profitability of the industry.

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Mukhopadhyaya *et al.* (2012) in their work on "An Analytical Study of the Changing Structure in the Cement Industry of India" had given insight on how the deregulation process had affected the organisation of the Indian cement sector. They said that deregulation increased competition, which prompted consolidation. They believed that the consolidation, entry of multinational companies, and changing cement market had opened the door for the cement industry to perform better.

Potgieter (2012) in his research paper titled "An overview of cement production: How green and Sustainable is the industry", identified that the cement firms should be eco-friendly and green to achieve sustainable development. The researcher had concluded that the cement business could significantly contribute to sustainable and environmentally friendly development with its new modernised technology equipment and concepts.

Panigrahi (2013) in his research work on "Liquidity Management of Indian Cement Companies: A Comparative Study" explored the liquidity positions of the five largest cement businesses and came to the conclusion that a company could not survive or expand without managing its liquidity situation.

Bhandi & Kumnoor (2013) in their analytical study on "Problems and Prospects of Cement Industry" explored how the government implemented appropriate pricing and distribution which reduced the costs as well as being beneficial to the cement users and producers. They believed that in order to reduce costs, cement producers should relocate close to the market, expand the production of mix cement, take advantage of tax breaks, negotiate preferential power rates and set up captive power plants. According to them, all of these would contribute to cutting production costs, which would help to achieve self-sufficiency or even surplus quantity for exports.

Kumar & Bansal (2013) in their publication on "Growth of Indian Cement Industries, An Analysis" measured the quick rise in cement demand due to the overall expansion of the economy and had determined that the cement sector was ready for an expansion in installing capacity with strong growth in both present and the future.

Vaijayanthimala & Vijayakumar (2014) through their article on "Analysis of Operating Performance of Indian Cement Industry" investigated the trends of production, capacity utilisation, sales and market Share of selected companies of the Indian cement industry. The operating performance of the Indian cement industry had been examined using time series analysis of output and the application of chi square.

Devi & Sabarinathan (2015) in their research analysis "A study on Financial Performance of Cement Industries in Tamil Nadu with Reference to Select Cement Companies" while analysing the production and sales, had reached the conclusion that the effectiveness of the firm was based on its working activity, which helped in earning the profit which is necessary for its survival and expansion. They concluded that the company efficiency, short-term and long-term solvency positions were the key determinants of growth and profitability.

Kumar *et al.* (2015) in their article on "Profitability Analysis of Selected Cement Companies in India" they identified the profitability position of the cement industry and primarily focused on analysing the profitability of an Indian cement companies between the year of 2005 and 2014. Using different techniques like mean, standard deviation, coefficient of variation, and compound annual growth rate. They stated that in order to achieve positive and beneficial growth and profitability, all cement companies should implement cutting-edge manufacturing methods and different marketing techniques.

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Objectives of the Study

The study intends to

- 1. Outline the historical and contemporary development of the Indian cement industry.
- 2. Examine the role of government initiatives in supporting the sector.
- 3. Identify present-day challenges and assess future potential for growth.

Historical Overview and Industry Development

Although the first cement plant was established in Porbandar, Gujarat in 1904, it was South India Industries Ltd. in Madras (Chennai) that pioneered production. Cement plants emerged in Porbandar, Katni, and Bundi between 1912 and 1913, producing cement in the style of the British Standard Committee's "Artificial Portland Cement." Favorable factors like rising domestic demand, reduced imports due to war, accessible raw materials, and affordable labor fostered early growth. (Ravi & Nallanavar, 2022). In 1926, Indian manufacturers formed the Indian Cement Producers Association, and in 1936, 10 firms merged to form ACC Limited—India's first major merger. After independence in 1947, India retained 18 cement units with a capacity of 1.5 million tonnes. This increased to 3.28 million tonnes by 1951. Planning era policies facilitated steady growth, and by the late 1980s, India had become self-reliant and began exporting. (Pandey, 2017; Pareek & Pincha, 2015).

Today, India hosts around 210 large cement plants with an installed capacity of 410 million tonnes and about 350 mini-plants adding 11.1 million tonnes. Andhra Pradesh, Rajasthan, and Tamil Nadu account for the highest number of large plants. (IBEF, 2022)

Challenges Facing the Cement Sector

The transition to modern production has been evolutionary rather than revolutionary. However, the demand for sustainability necessitates adopting innovative practices and digital technologies. Cement accounts for 6–9% of global CO2 emissions, making environmental responsibility a pressing concern. The 2016 Paris Agreement mandates an 80–90% reduction in CO2 emissions by 2050, which places significant responsibility on the industry. (Rodriguez, 2021).

Key challenges include

- **Reducing Carbon Footprint:** Cement production emits substantial CO2. Indian firms are exploring hydrogen fuel, electrification, and biomass use to achieve carbon neutrality.
- **Sustainable Transportation:** Shifting to electric or hydrogen-powered logistics for internal and external movement is critical.
- **Digital Identity and Traceability:** Ensuring environmental performance and traceability of cement materials through digitization and agent-free monitoring systems.
- Automation and Smart Manufacturing: Advanced technologies, remote diagnostics, AI, and big data will help enhance operational efficiency while meeting emission targets.
- **Cybersecurity:** Increased digitization requires stringent data protection and cybersecurity protocols.
- **Real-time Operational Connectivity:** Timely integration of inputs, suppliers, and customer data is essential for efficient production planning and demand forecasting.

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Government Support and Policy Initiatives

The construction sector contributed about 8% to India's GDP in 2021-22, registering a 68% YoY growth. The Union Budget emphasized infrastructure investment, creating ripple effects across related industries. (Cement Industry of India: Outlook and Challenges, 2021).

Key government initiatives include

- Support for "Make in India," smart cities, metro networks, road construction, rural electrification, and affordable housing under schemes like PMAY.
- The Union Budget 2022–23 allocated Rs. 48,000 crores for PMAY, Rs. 64,573 crores for roads and bridges, and Rs. 1,40,367 crores for railway modernization—boosting cement demand.
- Per capita cement usage in India stands at 235 kg, significantly lower than the global average of 500 kg—indicating scope for expansion.
- The National Infrastructure Pipeline (NIP) has scaled up from 7,400 to 9,305 projects. (IBEF, 2022)

Future Outlook

Cement demand is inherently linked to economic expansion, particularly in infrastructure and housing. Declining global commodity prices may also lower input costs, improving margins. Factors supporting future growth include: (Birla, 2021)

- Expected demand of 550–600 million tonnes by 2025 across housing, roads, and industry.
- Central and eastern regions will drive growth due to housing and road infrastructure needs.
- Government schemes like "Housing for All" and PMAY will fuel rural and urban demand.
- Upcoming metro, freight corridor, and highway projects will elevate consumption.
- Major players like UltraTech, Shree Cement, Ambuja, ACC, and Dalmia Bharat are expanding capacity.
- Retail and commercial real estate development in tier-2 and tier-3 cities will also raise demand.

Conclusion

India's cement industry has progressed remarkably since 1904, now ranking second globally with a capacity of over 545 million tonnes. Bolstered by government initiatives, infrastructure projects, and rising private sector investment, the sector is poised for further expansion. Despite present challenges, including environmental concerns and digital transition, the sector has shown adaptability. Diversification into green products and strategic planning will be vital for retaining competitive advantage. As India moves toward a \$5 trillion economy, the cement industry is set to be one of its strongest pillars.

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