METALS
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Market Overview 2
Current Status 4
Competitive Advantages 9
Government Regulations and Support 12
Key Domestic & Foreign Players 13
Future outlook 17
Contact For Information 18

A report by KPMG for IBEF
Market Overview

The metal industry is a key sector in the Indian economy as it meets the requirements of a wide range of important industries such as engineering, electrical and electronics, infrastructure, automobile and automobile components, packaging etc. The metal industry consists of two major groups: 

ferrous metals and non-ferrous metals.

Non-ferrous metals, which include aluminium, copper, zinc, lead, nickel and tin, are used to make alloys, castings, forgings, extrusions, wires, cables, pipes, etc., and find their application in a number of sectors such as agriculture, infrastructure facilities like power plants, automobiles, railways, telecommunications, building and construction and in engineering and chemical plants.

There are significant reserves of non-ferrous metal ores in India. India is rich in bauxite (aluminium ore) and has grades of zinc, lead and copper reserves. Copper, lead and zinc are also imported as scrap or concentrates to be processed by secondary/custom smelters. Nickel and tin are also imported by India.

Ferrous metals primarily consist of iron and different varieties of steel. Indian steel industry has shown strong performance in the recent past in terms of production, capacity utilisation, exports and consumption. India is now a major competitor among steel producers in the world. The steel industry contributes 1.3 per cent to India’s GDP and accounts for 10 per cent in Excise Duty collections. The industry provides employment to 0.4 million people directly and 0.6 million people indirectly.

While this sector covers a large domain consisting of a variety of metals, this report focuses on four key metals namely, aluminium, copper, zinc and iron (steel).

The industry is highly fragmented, especially in downstream segments

The industry is highly fragmented, with a large number of players in both organised and unorganised segments across ferrous and non-ferrous metal groups.
Non-Ferrous industry

The Nonferrous metals industry comprises primary and secondary segments. **Primary** producers are those players who process the mined ore into primary metal, which is commercially available in the form of rods, ingots, cathodes, wires etc. **Secondary** producers are those players who manufacture value added products like foils, extrusions, dry batteries, castings etc. either by procuring the metal from the primary producers or from scrap.

The primary segment has only a few players; for example, the zinc industry is duopolistic (only two players), the lead industry is a monopoly and in the case of tin and nickel, there are virtually no players in the primary segment. However, in the secondary and downstream segments there are many players both in the organised and in the unorganised sectors.

Ferrous industry

In Indian ferrous industry, steel manufacturers are segmented into ore miners and producers. **Ore miners** are engaged in mining activities to extract the ore. Iron ore mines in India are mostly located in Jharkhand, Orissa, West Bengal and Chattisgarh. Recently Indian steel manufacturing companies have invested in steel and coal mines outside India especially in Australia.

**Producers** are further classified into main producers or integrated producers and other producers. Out of the three major **Integrated steel producers**, two are in the public sector - Steel Authority of India Ltd (SAIL) and Rashtriya Ispat Nigam Limited (RINL) - and one in the private sector - TISCO. Integrated producers account for 67 per cent of total crude steel production in India.

The other producers or secondary producers’ category include **rollers** and **stand alone producers**. These producers account for about 33 per cent of India’s steel production. There are a large number of secondary producers in India in both the organised and unorganised segments. Stand alone producers mainly operate as SSI units.

The highly fragmented nature of the downstream sector makes the industry highly competitive in these areas.
**Current Status**

Well-established, growing domestic market

Steel

India’s steel industry is significant, even by global standards. With an installed capacity of 36.12 million tonnes, India is the eighth largest steel producer in the world. The industry has a well-established presence across all sectors – ore miners, integrated producers and other producers.

Ore miners

Ore miners include companies, which are engaged in mining iron ore for the use of integrated producers. Key players include National Mineral Development Corporation (NMDC), Kudremukh Iron Ore Co (KIOCL) Essel Mining & Industries Ltd, and Sesa Goa (Sesa). Apart from these, some of the integrated steel companies like Steel Authority of India and Tata Iron and Steel Companies (TISCO) have their own captive mines.

The production of iron ore in India has grown from 80.5 million tonnes in 2001 to 120.6 million tonnes in 2003-04, at a compounded annual growth rate of around 14.4 per cent.

Main Producers

Main Producers can be classified on the basis of the production process and the type of products manufactured by the producers.
Based on production process: Producers use three types of processes for converting iron ore into steel: coke oven (BF/BOF route), electric arc furnace (EAF route) or corex process.

Based on the products: Products manufactured by the main producers are of two types - long products and flat products. Long products include bars, structural products, wire rods, angles and rounds. They are used in the construction and heavy engineering. Flat products include hot rolled coils/sheets (HRC), cold rolled coils/sheets (CRC) and galvanised sheets.

RINL, SAIL and Tata Steel are the major producers of long products. The major producers of flat products are SAIL, Tata Steel, Ispat Industries, Jindal group of companies, Uttam Steel and Bhushan Steel. These products are used for automotive sector and white goods, fabrication work like car bodies, ducts, consumer durables and roofing. The end user industries of these products are growing at a significant rate in India. For example, the domestic sales of automobiles have grown at the compounded annual growth rate of around 14 per cent over the past four years. Thus, they provide attractive opportunities for the companies investing in the steel based products in India.

Secondary producers

Secondary producers consist of suppliers of processed inputs for steel making, the primary steel makers and the independent re-rollers. The producers primarily include stand alone producers and the re-rollers. Secondary producers account for about 36 per cent of India's steel production. During the nine months ended December 2004, production of secondary steel producers witnessed 4.9 per cent rise to 16.9 million tons compared to same period in the previous year.

Stand alone producers produce sponge iron and pig iron to be used by the main producers. India is the largest producer of coal based sponge iron in the world, and accounts for 15 per cent of the global output. Jindal Steel & Power Ltd. is the largest producer of coal based sponge iron in India - it is also the second largest in the world – with a capacity of 650,000 TPA.

During the year 2003-04, the production of pig iron was 5.221 million tons. KIOCL, Sesa Goa and Usha Ispat are the major producers of pig iron. Integrated steel plants like SAIL and RINL also produce a significant amount of pig iron.

Non-ferrous metals

The non-ferrous metals industry in India is growing strongly aided by the privatisation process started in early 2000. By 2020, it is expected that the industry, comprising aluminium, copper, lead and zinc sectors, will be completely privatised, and India will grow to become a global player in the non-ferrous metals industry.
Aluminium

India has nearly 10 per cent of the world’s bauxite reserves and a growing aluminium sector that leverages this. Demand in the domestic market is expected to grow by 8-10 per cent in 2005-06. By 2020, India is expected to have an installed aluminium capacity of 1.7 to 2 million tones per annum.

The primary market for aluminium in India is the power sector, which consumes about 35 per cent of the domestic production. This is in contrast to the global market, where the bulk of aluminium is consumed by the construction and packaging sectors. The ongoing reforms in the power sector and focus on improving power infrastructure, is expected to further boost the aluminium sector in India.

Copper

Copper is a key sector impacting the Indian economy. Copper has a number of applications across several sectors such as telecom, power, construction, transportation, handicrafts, engineering, and consumer durables.

The Indian industry has an installed capacity – about 477,500 tonnes per annum in 2003-04 - that is greater than the domestic market – about 290,000 tonnes - leading to a surplus situation. This is an advantage that can be leveraged for boosting exports, especially since the Asian region has a deficit of around 2.6 million tonnes. Nearly 40 per cent of copper production in India is currently exported.

The industry currently has three major players - Sterlite, Hindalco and Hindustan Copper Ltd. (HCL), which together account for nearly 80 per cent of the total copper production in the country. Other players include around 1000 small-scale industries (SSIs), which are primarily involved in converting scrap into ingots. While HCL is the only primary producer, which mines and refines copper, Hindalco and Sterlite are secondary producers, who process indigenous and/or imported copper concentrate to produce end products like copper bars, rods and wires.

The performance of the copper industry is highly dependent on the performance of and demand for products like power and telecommunication cables, transformers, generators, radiators and other ancillary components. Hence, its growth is closely linked to the country’s economic and industrial growth. India has been growing at a steady and sustained compounded average growth
rate of 5.6 per cent for the past 20 years. This is expected to improve further to a level of around 8 per cent in the future. The outlook for the copper industry in India is therefore positive.

Zinc

With the privatisation of the largest zinc producer, Hindustan Zinc Ltd, sold to the Sterlite group in April 2002, the Indian zinc industry is completely under the private sector and is in the midst of expansion.

At present the smelting capacity for primary zinc in India is 260,000 tonnes per annum, as against a domestic demand of about 350,000 tonnes per annum. Over the next 5 to 6 years, demand is expected to grow at about 12 – 15 percent annually, as against a global average of 5 per cent. Domestic production capacity, however, is also expected to increase to attain self-sufficiency by 2010.

The main consumer for zinc in the domestic market is the steel industry - over 70 per cent of zinc is used for galvanising. Other sources of demand for zinc include die-casting, guard rails for highways and imported-substituted zinc alloys.

The steel industry has bright prospects with demand drivers being the construction industry and exports. With continued infrastructure development such as roads, irrigation, construction, oil & gas, ports etc, there is a rising demand for steel, thus providing significant opportunities for zinc in India.

Exports – potential for growth

India is a net exporter of steel - the total exports of steel from India were around US$ 2.6 billion against imports worth around US$ 1.8 billion in 2004. Exports increased further to 3.45 million tonnes during the 11 months ending
Feb 2005. India’s exports mainly consists of carbon steel, which accounts for 95 per cent of total steel exports, the balance being pig iron.

The main consuming market for steel exported from India is China, which accounted for 24 per cent of the total steel exports in 2004. The other key markets include USA (8 per cent), UAE and Thailand (5 per cent each).

The major steel import destinations for India include Russia, Germany, Japan, UK and Korea.

In case of non-ferrous metals, India is a net exporter of copper and net importer of zinc. 40 per cent of copper production in India is exported. Given the surplus in production of various metals in India and deficit in other markets, there is ample opportunity for growth in exports for the Indian Metals industry.

**Foreign Direct Investments (FDI)**

In India, 100 per cent FDI has been approved in metallurgical industries since 1991. During the period 1991-2004, the industry received 407 approvals for FDI worth US$ 4.27 billions. Actual inflow of FDI has been US$ 0.31 billion. The metallurgical sector accounts for 5.31 per cent of total FDI approved in India.
Competitive Advantages

India’s competitiveness in metal industry can be analysed by using the framework given below.

The key advantages can be categorised under:

- Growing market demand.
- Favourable factor conditions for production.
- Presence of related and supporting industries.
- Government support for helping companies improve performance and stimulating industry environment.

Growing market demand

Metals constitute a key input to other manufacturing sectors like engineering, electrical and electronics, automobile and automobile components, packaging etc. and infrastructure. The performance of the metal sector is hence a reflection of the overall economy.

There are several positive indicators for growth in the metals industry, such as capacity creation and growth in sectors like infrastructure, power, mining, oil & gas, refinery, automotive and consumer durables. For example,

- India’s overall economic growth is expected to sustain an annual projected growth of about 8 per cent. The manufacturing sector, that currently constitutes about 17 per cent of GDP, is expected to grow faster and contribute significantly to the overall economic growth. This will have a positive effect on the demand for metals.
The industrial sector has been registering healthy growth—overall industrial growth (measured in terms of the Index of Industrial Production) was at a rate of 7.9 per cent during the April–September 2004-05 compared with 6.2 per cent during the same period last year.

Major infrastructure projects such as the World Bank-funded Golden Quadrilateral Project, and the North-South and East-West corridors linking major cities across the country have also fuelled the industry’s growth, which in turn, has positively impacted the metals industry.

The user industries are also getting increasingly demanding and sophisticated. This drives firms in the metals industry to constantly improve their competitiveness through innovative products, higher quality, thereby improving their global competitiveness.

Favourable factor conditions for production

India has rich reserves of minerals like bauxite, iron ore, copper, zinc etc. India has large resources of high-grade bauxite deposits-3037 million tones. India ranked fifth in the world bauxite reserves next to Australia, Guinea, Brazil and Jamaica. Bauxite reserves in India account for 7.5 per cent of the world’s total world deposits.

Availability of skilled labour

<table>
<thead>
<tr>
<th>Country</th>
<th>Availability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Singapore</td>
<td>High</td>
</tr>
<tr>
<td>USA</td>
<td>High</td>
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<tr>
<td>India</td>
<td>High</td>
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<tr>
<td>Germany</td>
<td>Moderate</td>
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<td>Hong Kong</td>
<td>High</td>
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<td>Japan</td>
<td>High</td>
</tr>
<tr>
<td>Taiwan</td>
<td>Moderate</td>
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<tr>
<td>Korea</td>
<td>Moderate</td>
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<tr>
<td>Mexico</td>
<td>Low</td>
</tr>
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<td>China</td>
<td>Low</td>
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</tbody>
</table>

Source: IMD Competitiveness Yearbook, 2003

India also has a growing workforce that is English-speaking and highly skilled. India’s well developed designing and machining capabilities makes it second only to Germany in these areas. These strengths provide competitive advantage to India in the engineering and manufacturing fields, which in turn positively impact the metals sector.
Conditions are also favourable for the sector’s growth, from the point of view of capital investments. Indian players in the sector have been investing in capacity building to fuel growth. Sterlite Industries (India) Ltd. (SIIL) is expanding its Tuticorin complex for an estimated total cost of US$ 81.4 million, while Hindalco is planning a brownfield expansion in its Copper business to double its capacity from 250,000 tpa to 500,000 tpa. The Tata Iron and Steel Company (TISCO) has initiated a 2.4 million tonnes expansion programme in 2004, while Ispat industries increased hot rolled coil steel and sponge iron production capacity from 1.5 mtpa to 2.4 mtpa and 1.4 mtpa to 1.6 mtpa respectively in 2004.

Ample availability and potential growth in key factors of production provide the right stimulus for India’s Metals sector to grow and become globally competitive.

Presence of related and supporting industries

Apart from the favourable demand and factor conditions, the Indian metals industry is well supported by India’s mining industry and educational and research institutions.

India is endowed with significant mineral resources and has a well-developed mining sector to leverage these resources. Indigenous mining capability supports the metals sector by making available raw materials at lower costs and reducing dependence on imports.

India also has several educational institutions, including the Indian Institutes of Technology (IITs) for advanced studies in the areas of metallurgy and materials science. Thesenot only provide a steady stream of qualified persons to the metals industry, but also promote fundamental research and innovation.
Government Regulations and Support

The Government of India has revised its foreign direct investment policy to attract foreign investments in the metal sector. Government initiatives to boost the end-user segments (like telecom, power, construction, transportation, engineering, consumer durables etc.) also have a significant positive impact on the demand.

Some of the policies aimed at boosting investment and growth in the metals sector are:

• Foreign equity holding is allowed up to 100 per cent on the automatic route for all non-fuel, non-atomic minerals except diamond and precious stones for which the limit for automatic approval is 74 per cent foreign equity.

• Thirteen minerals like iron ore, manganese ore, chrome ore, sulphur, gold, diamond, copper, lead, zinc, molybdenum, tungsten, nickel and platinum group of minerals, which were reserved exclusively for public sector have been thrown open for exploitation by private sector.

• Duty reduced to 10 per cent on inputs to the steel industry such as electrodes, graphite and refractory catalysts.

• Import duty on stainless steel & alloy steel reduced from 15 to 10 per cent.

• Customs duty on primary and secondary metals reduced to 10 per cent from 15.

• Customs duty on coking coal reduced to 5 per cent from 10. This will increase the profitability of the steel sector.

• Entered into a Free Trade Agreement (FTA) with Sri Lanka, which has resulted in a large influx of copper and copper products at zero import duty from Sri Lanka.

Government has come up with India's National Steel Policy draft, which envisages production level of steel to touch 100 million tonness by the end of 2020.

These government policy initiatives reflect the importance perceived by government of the metals sector. Liberalised overall policy regime, with specific incentives, provides a very conducive environment for investments and exports in the sector.
<table>
<thead>
<tr>
<th>Name of the company</th>
<th>Parent company</th>
<th>Output</th>
<th>Products/divisions/sectors served</th>
<th>Plants</th>
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<tbody>
<tr>
<td>Hindustan Copper (HCL)</td>
<td>Public Sector Enterprise under the Ministry of Mines, Government of India</td>
<td>Sales - US$ 108.6 million in 2004</td>
<td>The company’s major activities include exploration, mining beneficiation, smelting, refining and casting of finished copper.</td>
<td>Khetri in Rajasthan, Jharkhand, Malanjkhand in Madhya Pradesh, Taloja in Maharashtra</td>
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<tr>
<td>Ispat Industries</td>
<td>Jindal group</td>
<td>Sales - US$ 860 million in 2004</td>
<td>produces sponge iron, galvanized sheets and cold rolled coils, in addition to hot rolled coils</td>
<td>Dolvi and Kalmeshwar</td>
</tr>
<tr>
<td>SAIL</td>
<td>Government of India has 86 per cent stake in the company and it is the world’s 13th largest steel producer</td>
<td>Sales - US$ 4,960 million in 2004</td>
<td>manufactures steels for domestic construction, engineering, power, railway, automotive and defence industries and for exports.</td>
<td>Bhiilai, Bokaro, Durgapur, Rourkela, Salem, Bhadravati</td>
</tr>
<tr>
<td>Tata Iron &amp; Steel Co. (TISCO)</td>
<td>Tata Group</td>
<td>Sales - US$ 2,781 million in 2004</td>
<td>TISCO has diversified to manufacture, welded-steel tubes, cold-rolled strips, seamless tubes, carbon and alloy steel bearing rings, alloy steel ball bearing rings, bearings, ferro manganese, ferro chrome, metallurgical machinery, etc.</td>
<td>Jharkhand, Karnataka, Orissa, West Bengal, Maharashtra</td>
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<tr>
<td>Name of the company</td>
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<td>Essar Steel</td>
<td>Promoted by the Bombay-based Essar group which is into power, shipping, oil &amp; gas, construction and telecom.</td>
<td>Sales - US$ 853 million in 2005</td>
<td>Offers over 300 customised grades of steel and is on the approved list of companies for supplies to some of the world's most renowned automotive companies and oil &amp; gas Pipeline projects.</td>
<td>Hazira, Indonesia, Vishakhapatnam</td>
</tr>
<tr>
<td>Hindalco Industries Ltd</td>
<td>a flagship company of the Aditya Birla Group</td>
<td>Turnover - US$ 2.12 billion (Rs 95.23 billion) in 2005</td>
<td>Structured into two strategic businesses - aluminium and copper- and is an industry leader in both these segments. It is the largest integrated aluminium manufacturer in the country.</td>
<td>Renukoot, Muri, Belgaum, Hirakud, Alupuram, Belur, Taloja, Silvassa, Kalwa and Dahej</td>
</tr>
<tr>
<td>Bhushan Steel &amp; Strips Limited</td>
<td>Bhushan group</td>
<td>Operating profit during the period between April-Dec 2004 was US$ 63.5 million</td>
<td>Cold rolled steel coils, Galvanised steel coils and sheets, Billets, Stainless steel plates</td>
<td>Major plants are located at Sahibabad (UP) and Kharadi (Maharashtra).</td>
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<tr>
<td>Name of the company</td>
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<tr>
<td>Hindustan Zinc Ltd.</td>
<td>A part of Vedanta resources, a London listed metals and mining major with aluminium, copper and zinc operations in UK, India and Australia</td>
<td>Net sales - US$400.7 million</td>
<td>Only integrated Zinc manufacturer in India and owns captive zinc mines that supply complete requirement of Zinc concentrate for its smelters.</td>
<td>Mines and smelters are spread across multi-locations - Rajpura Dariba mine, Zawar mining complex, Chanderiya smelter, Debari smelter, Vizag smelter, Rampura Agucha mine.</td>
</tr>
<tr>
<td>Nalco</td>
<td>a public sector enterprise of the Government of India</td>
<td>Net sales - US$705 million</td>
<td>Asia's largest integrated aluminium complex, encompassing bauxite mining, alumina refining, aluminium smelting and casting, power generation, rail and port operations.</td>
<td>Captive power plant and aluminium smelter, Rolled products unit at Angul, alumina refinery at Damanjodi, Bauxite mines at Panchpatmali</td>
</tr>
<tr>
<td>Sterlite Industries India Ltd.</td>
<td>Part of Vedanta Resources, a London listed metals and mining major with aluminium, copper and zinc operations in UK, India and Australia</td>
<td>Net sales- US$1510.2 million</td>
<td>The Group's principal activity is to manufacture and market cast copper rods, copper cathodes, aluminium cold rolled products and conductors.</td>
<td>A Copper producer with its own captive mines in Australia, and Refineries and Smelter in India - Silvassa refinery, Tuticorin smelter</td>
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<tr>
<td>Name of the company</td>
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<tr>
<td>Rio Tinto</td>
<td>Part of Rio Tinto Group.</td>
<td>World's largest private mining company with assets of over US$ 17.7 billion.</td>
<td>Produces and/or refines aluminium/ bauxite, borates, coal, copper, diamonds, gold, iron ore, molybdenum, salt, silica, silver, talc, tin, titanium dioxide, uranium, zinc and other industrial metals.</td>
<td>over 60 mines and processing plants in 40 countries. The company is looking for developing iron ore mines in India.</td>
</tr>
<tr>
<td>BHP Billiton</td>
<td>World's Largest Diversified Resources Company.</td>
<td>In 2004, it had turnover of US$ 24.9 billion.</td>
<td>It has the industry leader or near industry leader positions in major commodity businesses, including energy coal and metallurgical coal, copper, nickel, iron ore, uranium, silver and titanium minerals, and have substantial interests in oil, gas, liquefied natural gas and diamonds.</td>
<td>The company has around 35,000 employees working in more than 100 operations in approximately 20 countries. BHP Billiton in India is present for over 30 years and is a major supplier to steel industry. It has Memorandum of Understanding with SAIL.</td>
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Future outlook

The outlook for the metals sector in India is bright. Sustained growth is expected across all key segments, aided by several factors, such as growing domestic demand, investment in capacity addition, increasing supply deficit in other countries and favourable government regulations.

- Government’s initiatives such as power and infrastructure development, reduction in import duties and facilitation of FDI, along with overall economic growth, will provide a boost for the Indian metal industry.

- With economy projected to grow at 8 per cent in the coming years, there is expected to be a surge in per capita steel consumption and doubling of its capacity to 60 million tonens by 2010.

- Growth in the steel sector will have an immediate positive rub-off on the zinc sector, as 70 per cent of zinc production is used for galvanising.

- Current shortages in worldwide copper supplies are expected to continue following production cuts by leading producers in Mexico and Chile. This would further shore up demand for Indian copper. For aluminium, exports would be a major demand source.

The positive outlook in the Indian metals sector has attracted multinationals like BHP Billiton and Rio Tinto to enter India for prospecting. At the same time, successful Indian players are looking at acquiring mining rights abroad – for example, the AV Birla group has acquired mining rights in two copper mines in Australia.

The metal sector in India is clearly an attractive sector for investment and offers significant growth potential both in the domestic as well as exports markets.
CONTACT FOR INFORMATION

Information on the market and opportunities for investment in the metals sector in India can be obtained from the Confederation of Indian Industry (CII), which works with the objective of creating a symbiotic interface between industry, government and domestic and international investors.

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