METALS INDUSTRY IN INDIA

September 2009
The Indian metals industry has two main segments

- **Non-ferrous metals**
  - Non-ferrous metals include aluminium, copper, zinc, lead, nickel and tin.
  - Demand for non-ferrous metals comes from sectors such as agriculture, automobiles, railways, telecommunications, construction and chemicals.

- **Ferrous metals**
  - Ferrous metals primarily consists of iron and different varieties of steel
  - Demand for ferrous metals comes from construction and automobile sectors

Metals is a key sector as it meets the requirements of a wide range of important industries.
The industry is highly fragmented

Type of metal

Non-ferrous metals

Industry structure

Primary producers → Secondary producers

Has only a few players

Many players in the organized and unorganized sectors

Ferrous metals

Ore miners → Integrated / main producers → Re-rollers

Stand-alone producers

Secondary producers
The steel sector in India has been growing rapidly

While production of pig iron has been fluctuating over the years...

<table>
<thead>
<tr>
<th>Year</th>
<th>Production of Pig Iron (Million Tonnes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003-04</td>
<td>3.76</td>
</tr>
<tr>
<td>2004-05</td>
<td>3.23</td>
</tr>
<tr>
<td>2005-06</td>
<td>4.7</td>
</tr>
<tr>
<td>2006-07</td>
<td>4.95</td>
</tr>
<tr>
<td>2007-08</td>
<td>5.28</td>
</tr>
<tr>
<td>2008-09*</td>
<td>5.28</td>
</tr>
</tbody>
</table>

Production of Finished Steel has been growing steadily

<table>
<thead>
<tr>
<th>Year</th>
<th>Production of Finished Steel (Million Tonnes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003-04</td>
<td>40.7</td>
</tr>
<tr>
<td>2004-05</td>
<td>43.5</td>
</tr>
<tr>
<td>2005-06</td>
<td>46.56</td>
</tr>
<tr>
<td>2006-07</td>
<td>52.52</td>
</tr>
<tr>
<td>2007-08</td>
<td>56.07</td>
</tr>
<tr>
<td>2008-09*</td>
<td>56.39</td>
</tr>
</tbody>
</table>

India is the fifth largest producer of crude steel

Top producers of Crude Steel in 2008

- **China**: 502 Million Tons
- **Japan**: 19 Million Tons
- **USA**: 92 Million Tons
- **Russia**: 89 Million Tons
- **India**: 55 Million Tons
- **South Korea**: 54 Million Tons
- **Germany**: 46 Million Tons
- **Ukraine**: 37 Million Tons
- **Brazil**: 34 Million Tons
- **Italy**: 31 Million Tons

Growth in manufacturing and infrastructure is fuelling demand for steel products, thereby driving growth in the sector

Source: Ministry of Steel, GoI; World Steel Association
Steel trade out of India has also been going up...

Exports growing at a healthy 20 per cent CAGR; but imports growing at double the rate...

Belgium and USA are key exports markets

Imports of Steel into India

China and Korea are the key sources for imports

Source: Export Import Data Bank, Ministry of Commerce, GoI - www.commerce.nic.in
The aluminium sector in India is concentrated among three key players, and is growing

Key players in the Indian aluminium sector

<table>
<thead>
<tr>
<th>Group</th>
<th>Key Players</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aditya Birla Group</td>
<td>Hindalco Industries Limited</td>
</tr>
<tr>
<td></td>
<td>Indian Aluminium Company Limited (Indal)</td>
</tr>
<tr>
<td>Sterlite Industries</td>
<td>Bharat Aluminium Company Limited (Balco)</td>
</tr>
<tr>
<td></td>
<td>Madras Aluminium Company Limited (Malco)</td>
</tr>
<tr>
<td>Public Sector</td>
<td>National Aluminium Company Limited (Nalco)</td>
</tr>
</tbody>
</table>

The production of aluminium has been growing at a CAGR of over 10 per cent

Source: ICRA Industry report – Metals: Aluminium and Copper, June 2008
The copper industry has also shown steady growth

Production growing at a CAGR of 15 per cent

Hindalco and Sterlite account for more than 90 per cent of the output

Key applications:
- Wires
- Cables
- A/C and refrigeration tubings

Key user sectors:
- Telecom
- Power
- Engineering
- Auto
- Consumer Durables
- Defence
Zinc production and consumption have been increasing, primarily for galvanising.

**Production of Zinc**

Year | '000 Tonnes
---|---
2003-04 | 254.5
2004-05 | 238.6
2005-06 | 297.9
2006-07 | 380.9
2007-08 | 457.1

**Zinc Consumption**

Year | '000 Tonnes
---|---
2002 | 283
2003 | 300
2004 | 340
2005 | 375
2006 | 410

**Zinc market segmentation**

- Oxides and Chemicals, 7%
- Extruded products, 6%
- Die Casting Alloys, 14%
- Castings, 16%
- Galvanising, 5%

**Zinc products**

- Wires, 7%
- Structural, 23%
- Sheets, 33%
- Tubes, 37%

Source: Industry analysts reports, October 2008
India has very low penetration levels of key metals, indicating high potential for growth.

India’s penetration levels are substantially lower, not only when compared to mature markets, but also countries like China.
Government policies play an important role in the growth of the industry

The Government of India has introduced several policy initiatives to give a boost to the metals sector:

• Foreign equity holding allowed up to 100 per cent through automatic route for all non-fuel, non-atomic minerals except diamond and precious stones.

• Thirteen minerals that were reserved for the public sector have been opened out for private sector investment. These include iron ore, manganese ore, chrome ore, sulphur, gold, diamond, copper, lead, zinc, molybdenum, tungsten, nickel and platinum.

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

• Steel
  • The National Steel Policy (NSP) 2005 lays emphasis on improving productivity, efficiency, cost, quality and product mix for accelerating growth in the domestic production and consumption of steel.

  • Import duties on various steel products have been reduced from 15 per cent to 10 per cent. Customs duty on alloy and stainless steel has been reduced to five per cent.

  • Duty on nickel reduced from five per cent to two per cent to help domestic stainless steel manufacturers tackle increase in global prices for raw materials.
Government policies play an important role in the growth of the industry

- Copper
  - Copper and copper products can be imported at zero duty from Sri Lanka under the Free Trade Agreement (FTA) with that country.

  - Duties on copper and copper products have been progressively reduced – for example, customs duty has been reduced from 35 per cent in 2001 to 10 per cent in 2006.

Source: www.chemicals.nic.in/petro1.htm
The metals sector is quite competitive, but presents attractive growth opportunities as well.

**Threat of New Entrants**
- Supportive policy regime
- Growing domestic market as well as exports across segments

**Supplier Power**
- The country has rich reserves of minerals, ores
- Growing, skilled manpower base

**Competitive Rivalry**
- Number of domestic players
- Highly competitive in secondary and downstream segments

**Customer Power**
- User industries experiencing strong growth
- Highly demanding customers
- Wide range of products, specifications to meet different needs

**Threat of Substitutes**
- Plastics and other substitutes being tried out in some user segments
- No viable substitute in a majority of usage areas
Many Indian players are looking at expanding capacities…

- Sterlite and Hindalco (Birla Copper, the copper division of Hindalco) are looking at adding significant smelting capacities in the coming years. Birla Copper’s expansion plan to double capacity from 250,000 tonnes per annum (TPA) to 500,000 TPA will make it one of the top 10 copper producers in the world.

- Sterlite Industries has made a higher $2.57B bid for Asarco, topping rival Grupo Mexico’s offer.

- Tata Steel, through its acquisition of Corus, became the fifth largest steel maker in the world.

- Essar Steel will invest US $ 213 million in setting up steel processing units in India, the Middle East and North America.

- Hindalco Industries, an integrated producer of aluminum and a leading copper manufacturer, has drawn up a US $ 3.4 billion capex plan for the next two years.

- Tata Steel plans to invest US $ 8.5 billion over the next five years to ramp up its production capacity to 16 million tonnes.
Attractive states for investment

• Raw material supplies for key metals is concentrated in some states:
  
  • Copper reserves – Bihar, Rajasthan, Madhya Pradesh
  
  • Bauxite – Orissa, Chattisgarh, Karnataka
  
  • Iron Ore – Orissa

• Access to supply of raw materials, labour and energy are key requirements for setting up operations in this sector.

• Based on these factors, Orissa, Chattisgarh, Madhya Pradesh, Andhra Pradesh and Karnataka could be attractive locations for investment in the sector.
### Profile of key players

<table>
<thead>
<tr>
<th>Company Name</th>
<th>Key Points</th>
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</table>
| Tata Iron and Steel Company Limited (TISCO) | - 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 and ferro chrome.  
- It has become the fifth largest steel producer in the world, after acquiring the Anglo-Dutch steel company, Corus.  
- It has plants in the states of Jharkhand, Karnataka, Orissa, West Bengal and Maharashtra. |
| Steel Authority of India Limited (SAIL) | - The Government of India has an 86% stake in the company and it is the world’s 13th largest producer of steel.  
- Sales – US$ 11 billion in 2007-08  
- Manufactures steel for domestic construction, engineering, power, railway, automotive and defence industries and also for exports.  
- It has plants at Bhilai, Bokaro, Durgapur, Rourkela, Salem, and Bhadravati. |
| Essar Steel | - It is promoted by the Bombay-based Essar group which has business interests in power, shipping, oil and gas, construction and telecom.  
- Sales – US$ 2.9 billion in 2007-08  
- Offers over 300 customised grades of steel and is on the approved list of companies as supplier to some of the world's most renowned automotive companies and oil and gas pipeline projects.  
- It has plants at Hazira and Vishakapatnam in India and at Indonesia. |
Profile of key players

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<th>Jindal Steel &amp; Power Limited</th>
<th>Hindustan Copper Limited (HCL)</th>
</tr>
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<tbody>
<tr>
<td>• It is a leading company for galvanised steel products</td>
<td>• It is a public sector enterprise under the Ministry of Mines, Government of India</td>
</tr>
<tr>
<td>• Sales – US$ 2.1 billion in 2008-09</td>
<td>• Sales – US$ 297 million in 2008-09</td>
</tr>
<tr>
<td>• It is engaged in hot rolling, cold rolling and galvanizing business</td>
<td>• The company’s major activities include exploration, mining beneficiation, smelting, refining and casting of finished copper.</td>
</tr>
<tr>
<td>• It has plants at Vasind and Tarapur in Maharashtra</td>
<td>• It has plants at Khetri in Rajasthan, Jharkhand, Malanjkhand in Madhya Pradesh and Taloj in Maharashtra.</td>
</tr>
</tbody>
</table>
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<thead>
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</tr>
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</table>
| Hindalco Industries Limited                  | - It is a flagship company of the Aditya Birla Group.  
- Turnover – US$ 4.8 billion in 2006-07  
- 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.  
- It has plants in Renukoot, Muri, Belgaum, Hirakud, Alupuram, Belur, Taloja, Silvassa, Kalwa and Dahej. |
| National Aluminium Company Limited (NALCO)   | - It is a public sector enterprise of the Government of India.  
- Net sales – US$ 1.4 billion in 2007-08  
- It has Asia’s largest integrated aluminium complex, encompassing bauxite mining, alumina refining, aluminium smelting and casting, power generation, rail and port operations.  
- It has captive power plant and aluminium smelter and a rolled products unit at Angul, alumina refinery at Damanjodi and Bauxite mines at Panchpatmali. |
| Sterlite Industries India Limited            | - It is a part of Vedanta Resources, a London listed metals and mining major with aluminium, copper and zinc operations in UK, India and Australia.  
- Net sales- US$ 4.2 billion in 2008-09  
- The group’s principal activity is to manufacture and market cast copper rods, copper cathodes, aluminium cold rolled products and conductors.  
- It is a producer of copper with its own captive mines in Australia, and refineries and smelter in India such as the Silvassa refinery and the Tuticorin smelter. |
Profile of key players

Hindustan Zinc Limited

• A part of Vedanta resources, the London listed metals and mining major with aluminium, copper and zinc operations in UK, India and Australia.
• Net sales – US$ 1100 million in 2008
• It is the only manufacturer of integrated zinc in India and owns captive zinc mines that supply complete requirement of zinc concentrate for its smelters.
• Its mines and smelters are spread across many locations, for example the Rajpura Dariba mine, Zawar mining complex, Chanderiya smelter, Debari smelter, Vizag smelter and the Rampura Agucha mine.
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