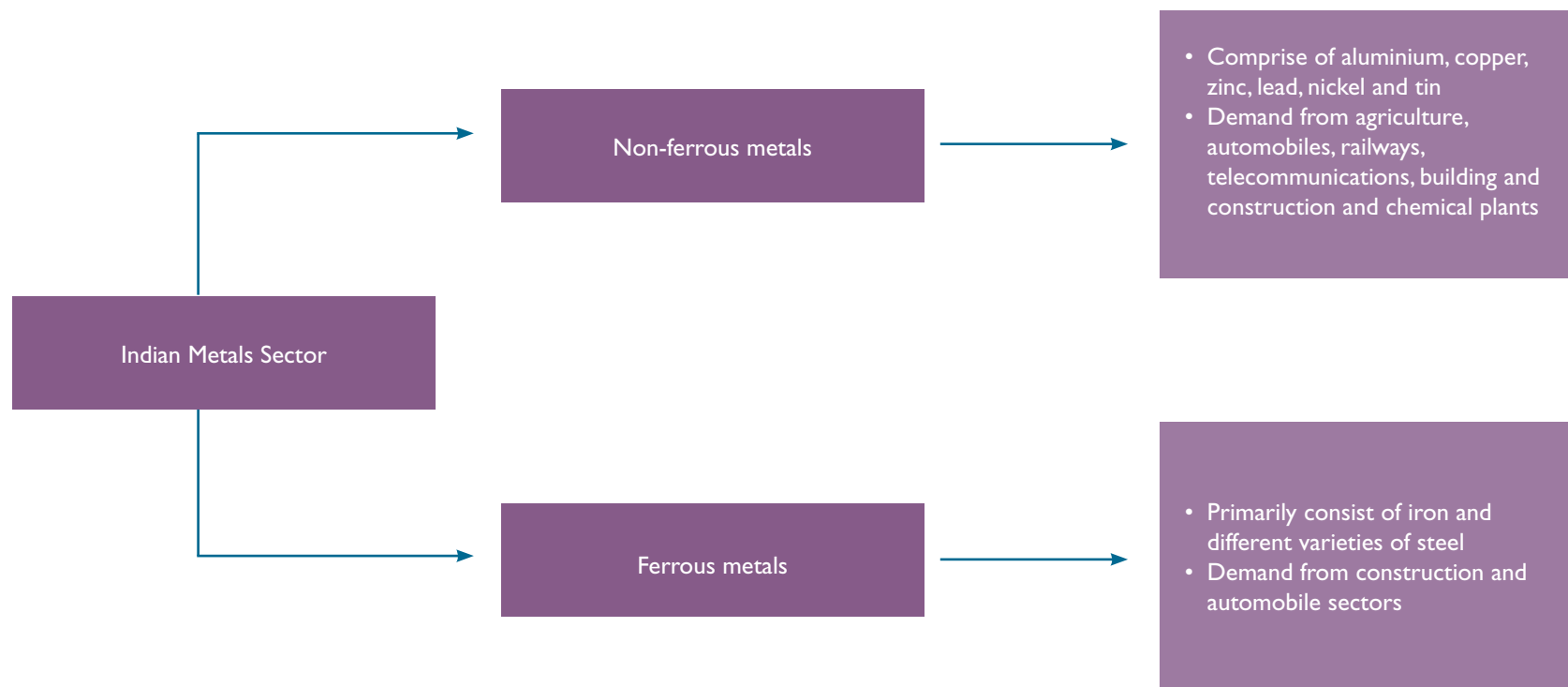




METALS

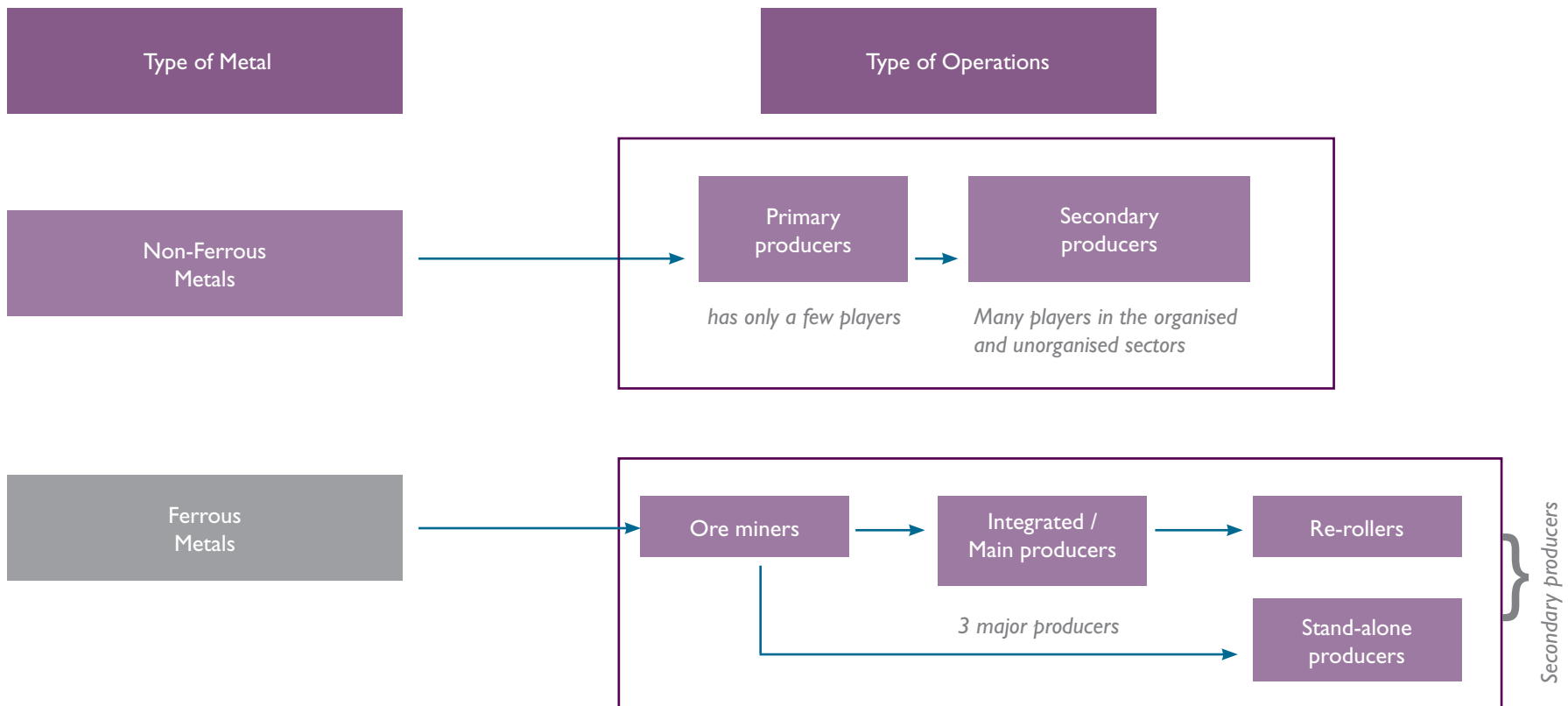
December 2008

The Indian Metals Industry has two main segments



It is a key sector as it meets the requirements of a wide range of key industries

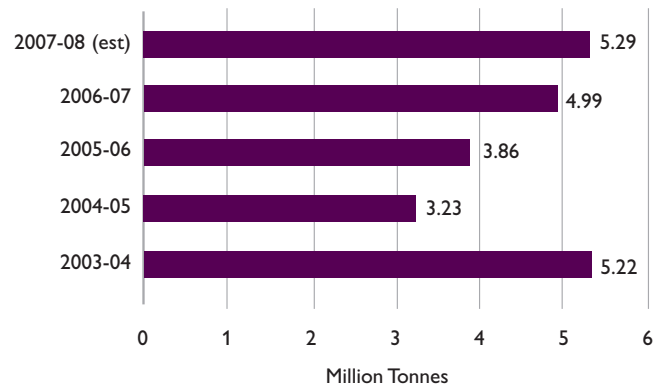
The industry is highly fragmented, especially in downstream segments



The Steel sector in India has been growing rapidly

While production of Pig Iron has been fluctuating over the years

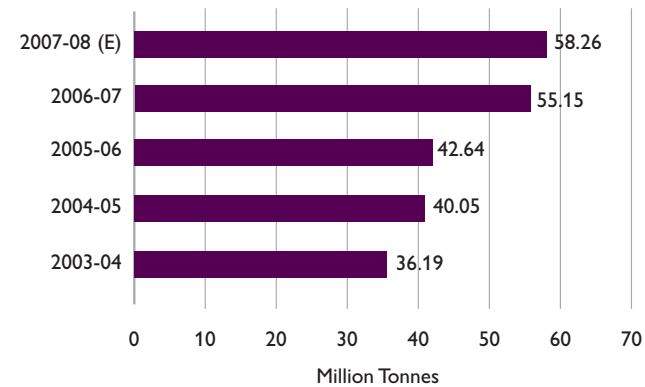
Production of Pig Iron



Source: www.steel.gov.in

Finished Steel production has been growing steadily

Production of Finished Steel



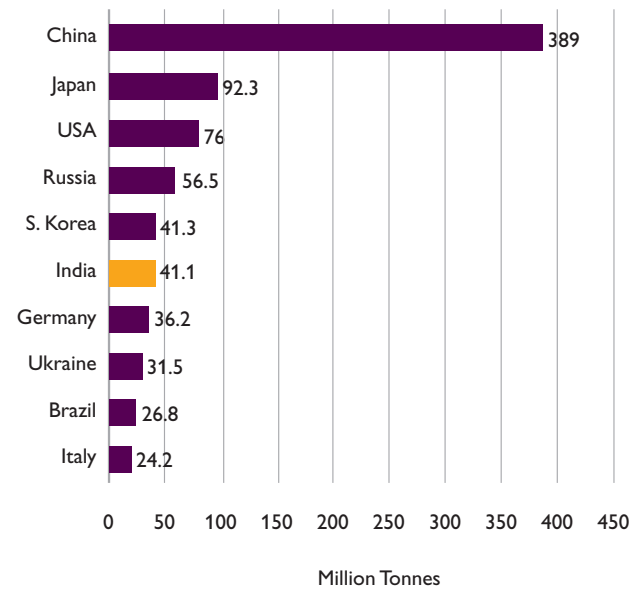
Source: www.steel.gov.in

The Steel sector in India has been growing rapidly

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

India is the seventh largest producer of Crude Steel

Top producers of Crude Steel in 2008 (Apr-Sep)

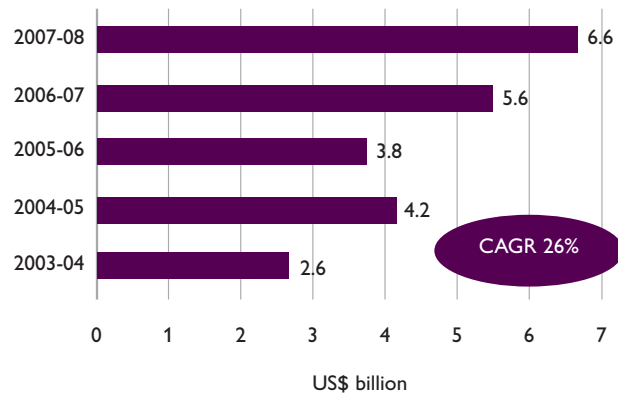


Source: www.worldsteel.org

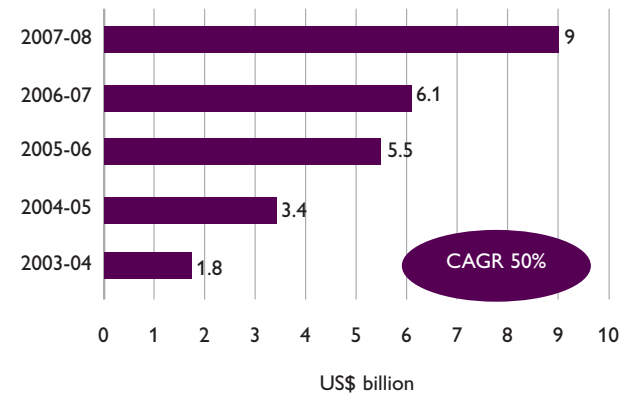
Steel trade out of India has also been going up

Exports growing at a healthy 26% CAGR; but Imports growing at double the rate

Exports of Steel from India



Import of Steel into India

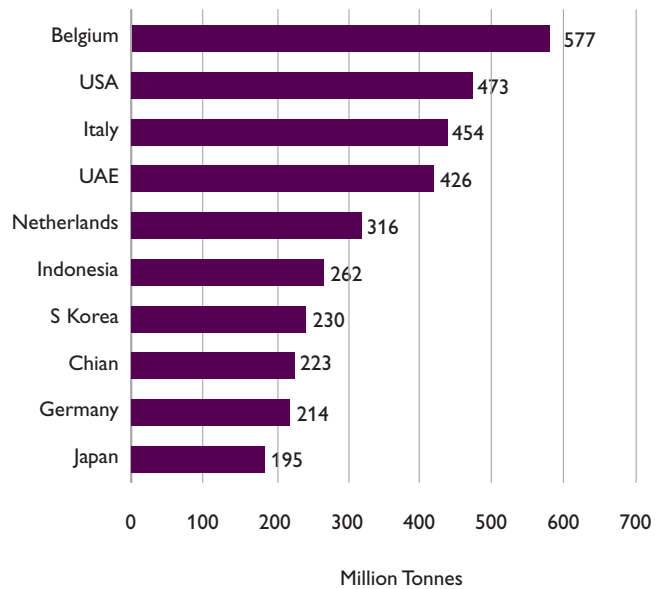


Source: Export Import Data Bank, Ministry of Commerce, Gol - www.commerce.nic.in

Steel trade out of India has also been going up

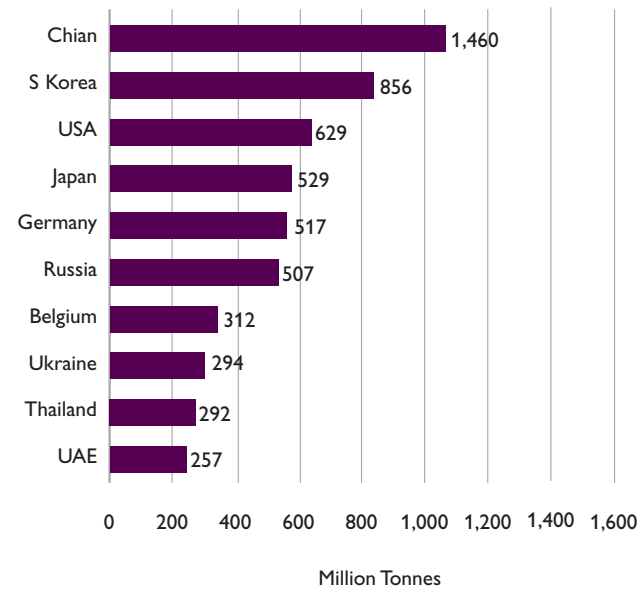
Belgium and USA are key exports markets

Top 10 steel exports destinations (2007-08)



China and Korea are the key sources for imports

Top 10 steel import destinations (2007-08)



Source: Export Import Data Bank, Ministry of Commerce, Gol - www.commerce.nic.in

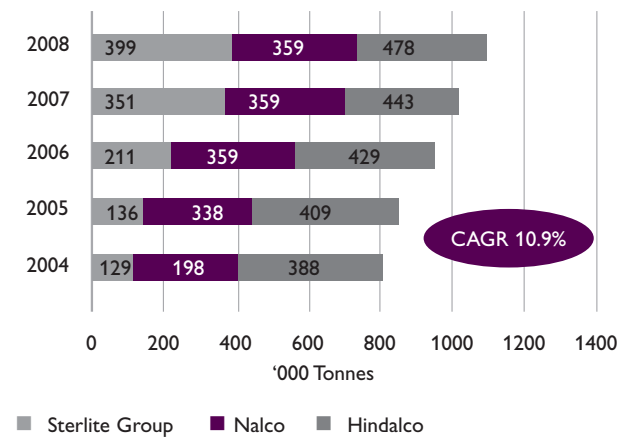
Sectoral distribution of aluminium consumption

Key Players in the Indian Aluminium Sector

Group	Key Players
Aditya Birla Group	Hindalco Industries Limited Indian Aluminium Company Limited (INDAL)
Sterlite Industries	Bharat Aluminium Company Limited (BALCO) Madras Aluminium Company Limited (MALCO)
Public Sector	National Aluminium Company Limited (NALCO)

- The production of Aluminium has been growing at over 10 per cent CAGR

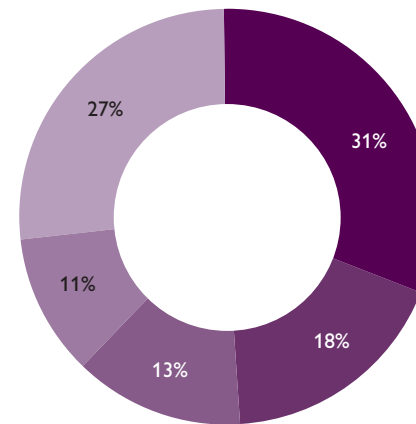
Primary Aluminium Production



The Aluminium sector in India is concentrated among three key players, and has been growing

Electrical, Automotive and Construction sectors are the key consumers

Aluminium Consumption by Sector in 2006



■ Electrical ■ Automotive
■ Building & Construction ■ Packaging
■ Others

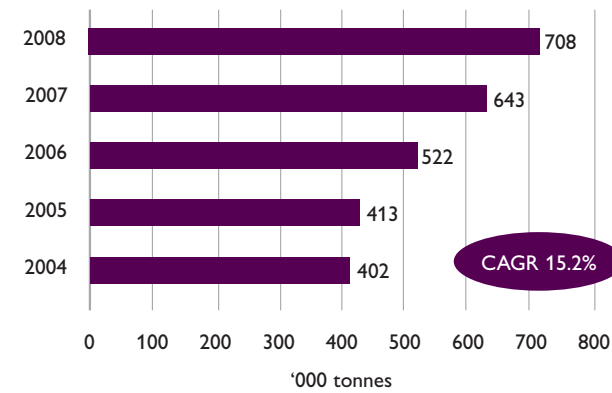
The Copper industry has also shown steady growth

Key Applications:

- Wires
- Cables
- A/C and Refrigeration Tubings

Production growing at 15% CAGR

Copper Production in India



Source: ICRA Sector Analysis, June 2008

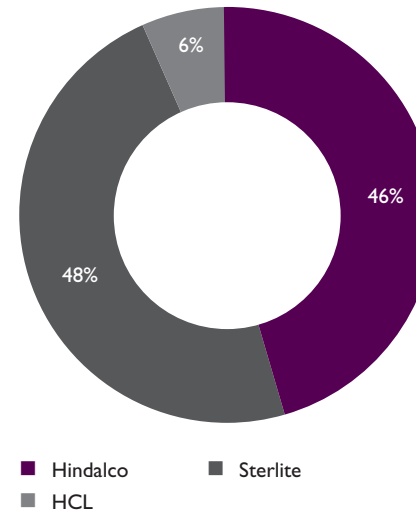
The Copper industry has also shown steady growth

Key User Sectors:

- Telecom
- Power
- Engineering
- Auto
- Consumer Durables
- Defence

Hindalco and Sterlite garner 90% of the output

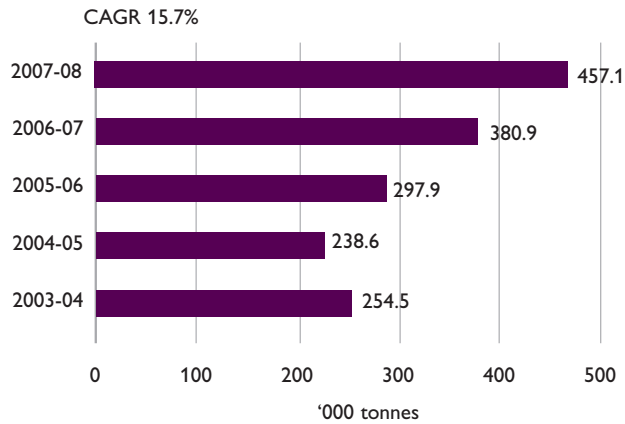
Copper Industry Market Share HCL



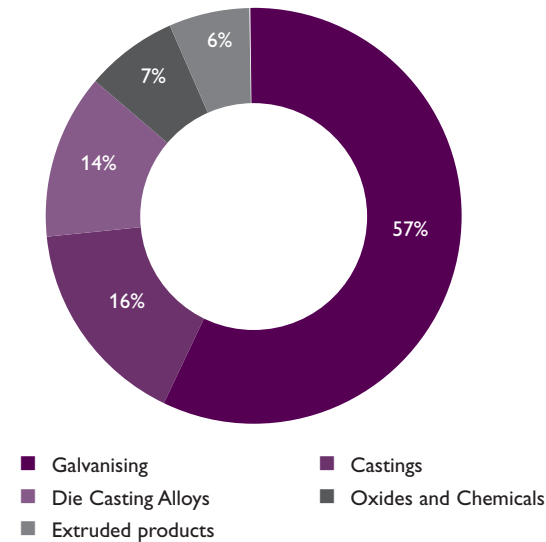
Source: ICRA Sector Analysis, June 2008

Zinc production and consumption have been increasing, primarily for Galvanising

Production of Zinc Concentrates



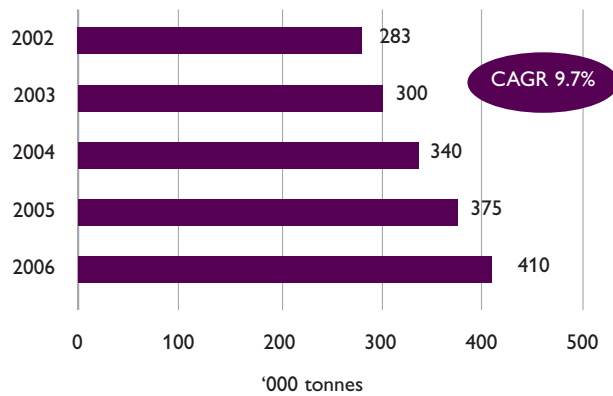
Zinc Market Segmentation



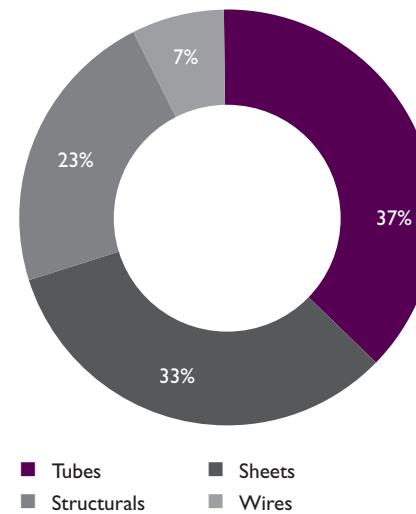
Source: Industry analysts reports, October 2008

Zinc production and consumption have been increasing, primarily for Galvanising

Zinc Consumption



Zinc Products

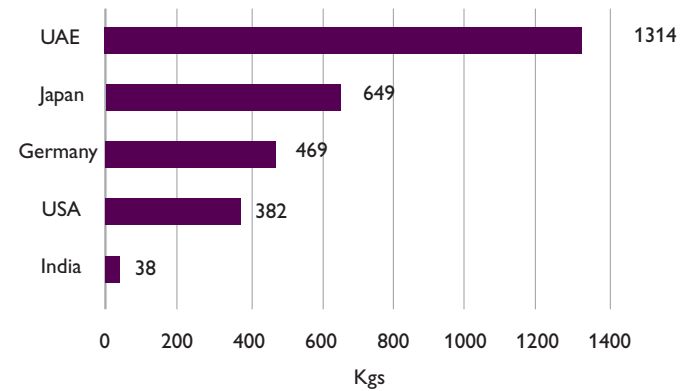


Source: Industry analysts reports, October 2008

India has very low penetration levels of key metals, indicating high growth potential

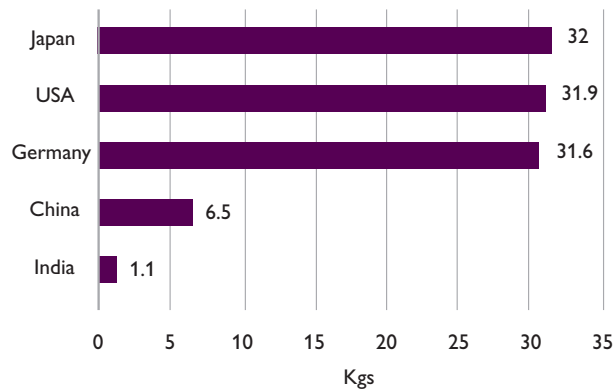
India's penetration levels are substantially lower, not only when compared to mature markets, but also countries like China

Per Capita Consumption of Steel

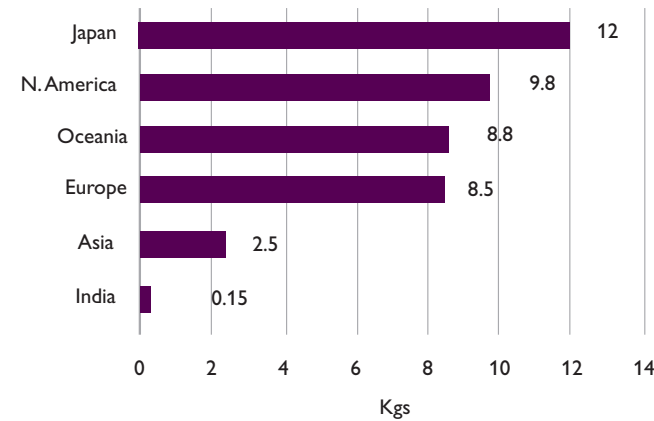


India has very low penetration levels of key metals, indicating high growth potential

Per Capita Consumption of Aluminium



Per Capita Consumption of Copper



Government policies play an important role for the growth of the industry

The Government of India has taken up several policy initiatives to boost the metals sector:

- Foreign equity holding allowed up to 100 per cent on automatic route for all non-fuel, non-atomic minerals except Diamond & Precious Stones
- 13 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 & Secondary metals reduced from 15 per cent to 10 per cent

Government policies play an important role for the growth of the industry

- 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 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 raw material prices

Source: www.chemicals.nic.in/petro1.htm

Government policies play an important role for 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 options as well

Threat of New Entrants



- Supportive policy regime
- Growing domestic market as well as exports, across segments

Supplier Power






- Rich reserves of minerals, ores
- Growing, skilled manpower base

Competitive Rivalry



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

HIGH	
MEDIUM	
LOW	

Source: KPMG Analysis

The Metals sector is quite competitive, but presents attractive growth options as well

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

Source: KPMG Analysis

HIGH	
MEDIUM	
LOW	

Many Indian players are looking at expanding capacities

- Sterlite and Hindalco (Birla Copper) are looking at adding significant smelting capacities in the coming years. Birla Copper's expansion plan to double capacity from 250000 TPA to 500000 TPA will make it one of the top 10 copper producers in the world
- Both Sterlite and Hindalco have also acquired copper mines (in Australia) to assure consistent supply
- Tata Steel, through its acquisition of Corus, became the fifth largest steel producer in the world

Many Indian players are looking at expanding capacities

- Though the sector is capital intensive, the growth opportunity presented by the sector makes it attractive for investment
- Getting into JVs or Strategic Alliances with Indian players could be a winning proposition for new investors to leverage this growth

Source: www.plastindia.org

Attractive States for investment

- Raw materials supply for key metals is concentrated in certain states:
 - * Copper reserves – Bihar, Rajasthan, Madhya Pradesh
 - * Bauxite – Orissa, Chattisgarh, Karnataka
 - * Iron Ore – Orissa
- Access to raw materials supply, 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

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 Anglo-Dutch steel company Corus
- Plants - Jharkhand, Karnataka, Orissa, West Bengal, Maharashtra

Profile of Key Players

Steel Authority of India Limited (SAIL)

- Government of India has 86 per cent stake in the company and it is the world's 13th largest steel producer
- Sales – US\$ 11 billion in 2007-08
- Manufactures steel for domestic construction, engineering, power, railway, automotive and defence industries and for exports
- Plants - Bhilai, Bokaro, Durgapur, Rourkela, Salem, Bhadravati

Profile of Key Players

Essar Steel

- Promoted by the mumbai-based Essar group which is into Power, Shipping, Oil & 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 for supplies to some of the world's most renowned automotive companies and Oil & Gas Pipeline projects
- Plants – Hazira, Vishakapatnam and Indonesia

Profile of Key Players

Jindal Iron and Steel Company Limited (JISCO)

- Leading company in Galvanised Steel Products
- Sales – US\$ 1.3 billion in 2007-08
- Engaged in Hot Rolling, Cold Rolling and Galvanizing
- Plants - Vasind and Tarapur in Maharashtra

Hindustan Copper Limited (HCL)

- Public Sector Enterprise under the Ministry of Mines, Government of India
- Sales – US\$ 455 million in 2007-08
- The company's major activities include exploration, mining beneficiation, smelting, refining and casting of finished copper
- Plants - Khetri in Rajasthan, Jharkhand, Malanjkhand in Madhya Pradesh, Talaj in Maharashtra

Profile of Key Players

Hindalco Industries Limited

- 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
- Plants - Renukoot, Muri, Belgaum, Hirakud, Alupuram, Belur, Taloja, Silvassa, Kalwa and Dahej

Profile of Key Players

National Aluminium Company Limited (NALCO)

- A public sector enterprise of the Government of India
- Net sales – US\$ 1.4 billion in 2007-08
- Asia's largest integrated aluminium complex, encompassing bauxite mining, alumina refining, aluminium smelting and casting, power generation, rail and port operations
- Captive power plant and aluminium smelter. Rolled products unit at angul, alumina refinery at Damanjodi, bauxite mines at Panchpatmali

Profile of Key Players

Sterlite Industries India Limited

- 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\$ 6.7 billion in 2007-08
- The Group's principal activity is to manufacture and market cast copper rods, copper cathodes, aluminium cold rolled products and conductors
- A copper producer with its own captive mines in Australia and refinerius and smelter in India – Silvassa refinery, Tuticorin smelter

Profile of Key Players

Hindustan Zinc Limited

- 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\$ 800 million in 2006
- Only integrated zinc manufacturer in India and owns captive Zinc mines that supply complete requirement of zinc concentrate for its smelters
- Mines and smelters are spread across multi-locations – Rajpura Dariba mine, Zawar mining complex, Chanderiya smelter, Debari smelter, Vizag smelter, Rampura Agucha mine

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