Praxis Business School

Iron and Steel Industry

A report

submitted to

Prof. Srinivas Govindrajan

In partial fulfillment of the requirements of the course

Marketing Management - 2

On 15-1-08

By

Anupam Agrawal

Enayath Sheikh

Abhishek Banerjee

Gaurav Motwani

BIG IDEA for IRON

AND STEEL INDUSTRY

Being a core sector, steel industry tracks the overall economic growth in the long-term. Also, steel demand, being derived from other sectors like automobiles, consumer durables and infrastructure, its fortune is dependent on the growth of these user industries. India is currently the seventh largest steel-producing nation in the world with crude steel production of approximately 42 MT.

Increased spending on infrastructure and governments initiatives on housing sector are the key positives for the steel sector, as these are key demand drivers for steel. From a long-term standpoint, the demand in India is not sufficient to absorb the increased supply and hence for an improved and consistent demand supply equation, India needs to ramp up its exports.

The present scenario is favourable for companies as steel prices have remained firm and are currently at healthy levels. However, for next year, there are some concerns about rate of growth of the global economy due to the sub-prime issue. But on the positive side, steel consumption is growing fast, and China is maintaining good growth.

Mergers and acquisitions (M&A) defined the steel sector in 2007, policy initiatives and consolidation of gains will underline 2008. Last year, the industry was home to the biggest ever acquisition by an Indian company in the form of Tata Steel's takeover of Corus for $12 billion. It catapulted the Tatas to the 5th position among the world's steel makers with a combined finished steel production capacity of 27 million tonnes (mt).

This M&A wave is part of a two-fold strategy -- one, to buy loss-making defunct steel companies in the West; and two, to acquire mines in Africa, Australia and elsewhere in the world. While the purpose of taking over existing steel mines is to target a larger share of the fast expanding international market for steel products and enjoy greater economies of scale, that of buying overseas mines is to gain access to vitally needed coal reserves. The Indian steel sector has ample iron ore reserves but is still dependent on imports of coal.

So, in terms of scale, 2007 was the year of the Tatas. But others were smelting strategies too. Essar and JSW Steel joined the bandwagon, with the Ruias buying the Canadian Algoma Steel for $1.58 billion and US-based Minnesota Steel, the Jindals' JSW Steel reached out to buy a service centre in the UK. Separately, Navin Jindal-led JSPL bought huge reserves of iron ore in Bolivia.

Coming to mining, 2008 is going to be a policy-packed year. The biggest thing to look forward will be the new mining policy. The question is: will the country's outdated mining policy get the thrust needed to boost exploration activities on the one hand and facilitate maximum possible exploitation of proven mineral reserves on the other?

BIG BRAINWAVE for

स्टील अथॉरिटी ऑफ इण्डिया लिमिटेड
STEEL AUTHORITY OF INDIA LIMITED

Steel industry is one the fastest growing sectors in the Indian economy. Steel Authority Of India Limited, the leader in Indian steel, has consolidated its position and is endeavouring towards shaping a sustainable future, turning India’s dreams into an inspiring reality.

To contribute to the growth of the Indian steel sector and maintain its leadership position in the domestic steel industry, SAIL has drawn up aggressive modernisation & expansion plans of all the plants and mines simultaneously to achieve hot metal production of over 25 million tonnes by the year 2010.

HIGHLIGHTS 2006-07

- Best ever turnover at Rs. 39,189 crore - up by 21%.
- Best ever EBIDTA at Rs. 10,966 crore - up by 49%.
- Best ever Profit before tax at Rs. 9,423 crore - up by 65%
- Profit after tax at Rs. 6,202 crore - up by 55%.
- Dividend of 31% (including 16% interim dividend) – up by 55%.
- Highest ever saleable steel production at 12.6 million tonnes, up by 4%.
- Highest ever sales of 11.9 million tonnes - up by 5%
- Lowest ever coke rate of 541 kg/ tonne of hot metal

- Best ever energy consumption of 7.16 G.Cal/ tonne of crude steel.
- Labour productivity increased to 200 tonne/ man/ year of crude steel.
- Continued improvement in debt-equity ratio from 0.35:1 as on 31st March,
- 2006 to 0.24:1 as on 31st March, 2007.

.

Company has given its best ever performance in the year 2006-07. SAIL is also the market leader in the industry. Does that mean company's production efficiency, administrative expenses, capital rotation, marketing expenses and selling price is best in the industry?
We will discuss the following in the later part of the project.

MACRO ENVIRONMENTAL FACTORS AND ITS IMPACT

In the year 2006-2007 the govt fully exempted duty on coking coal which is an important input for the production of steel. The move is positive from the point of view of companies like SAIL (who partially imports coking coal), JSW Steel who import coking coal. Tata Steel owns captive coalmines will not be impacted by the reduction in coking coal duty.

In order to conserve the national resources and keep a check on raw material exports, export duty has been imposed on ores and concentrates.

Reduction in duty on seconds and defectives steel will reduce pressure on key raw material such as iron ore.

COSTING ISSUES

In the manufacture of steel, raw materials account for (approximately) 70% of the cost and power accounts for (approximately) 30%.

Since, raw material and power are the key drivers in the manufacture of steel we shall analyse them in detail:

RAW MATERIALS REQUIRED TO MANUFACTURE STEEL

IRON ORE	- 55%
COAL AND COKE	- 28.78%
LIMESTONE AND DOLOMITE	- 11%
FERRO MANGANESE	- 0.10%
ZINC AND ZINC ALLOYS	- 0.12%

SPELTER, SULPHUR, OTHER MATERIALS - 5%

Key interest areas are iron ore, coal and coke

Most of the steel plants are integrated, right from procurement of raw material from mines to delivery of finished goods. All the plants have their own mines but only TATA has sufficient mines and at suitable location to fulfil its production requirements due to which cost of raw materials of other major players are high.

Out of 160 million tons of iron ore 100 million tons are exported and rest 60 million tons are used by domestic players of iron and steel industry. So the companies are price takers for iron ore. Iron and steel prices are determined by the market force.

Iron ore prices are increasing since 2002, because of the boom the steel industry thanks to real estate and the new flourish in the economy, this impact is transferred to the consumer.

We expect strong demand growth in India over the next five years, driven by a boom in construction (60%-plus of steel demand in India). Outstanding projects in India currently stand at US$1 tn, growing 60%-plus YoY. Even at a marginal completion rate, steel demand would be an order of magnitude higher than that seen in the past. For example, even if two-thirds of the government's 11th Plan infrastructure targets (total spending of US$350 bn) are met, about 100 MT of steel demand could be generated. We estimate a 16% CAGR in 2008-12, in line with the 16% capacity CAGR we anticipate. In case domestic demand disappoints, export remains an option, although we note that the cost advantage of captive iron ore is more than compensated by inefficient production (an extra US$92/ton of cost).

The global steel demand is estimated to grow at a compounded annual rate of 4.9 (2007-2010). Steel consumption per person in India is only 40 kgs, compared to china at 270 kgs, the developed countries at 400kgs. This paves the way for huge potential growth in the iron and steel sector.

Looking at the key drivers and the analysis we can infer that companies need to first consolidate and also expand to meet future demand. Growth can be either organic or inorganic.

EXPECTED MARKET GROWTH OF KEY DEMAND DRIVERS

CONSTRUCTION - 19%

AUTOMOBILE - 15%

INDIAN ECONOMY - 9%

Since all the key demand driving sectors are in a booming stage the demand of steel is dependent on the growth and progress of these sectors.

OTHER IMPORTANT FINANCIAL FACTORS

Company Name	Production (in million tonnes)
Tata Steel Ltd.	5.2
Steel Authority Of India Ltd.	13.5
J S W Steel Ltd.	2.94
Ispat Industries Ltd.	2.63
Essar Steel Ltd.	2.83

MARKET SHARE

SAIL 32%

TISCO 11%

JSW 7%

ESSAR	6.3%

This clearly shows that SAIL is the market leader in the industry. Now let us analyse the Balance Sheet keeping in mind the key variables. Iron and Steel Industry is capital intensive and strongly affected by macro environmental factors. So the two ratios become important

1) Debt Equity Ratio
2) Interest Coverage Ratio

Company Name	**Debt-equity ratio**
Tata Steel Ltd.	0.7
Steel Authority Of India Ltd.	0.19
J S W Steel Ltd.	0.78
Ispat Industries Ltd.	4.89
Essar Steel Ltd.	1.55

Interest Coverage Ratio

	Mar ' 07	**Mar ' 06**	**Mar ' 05**
SAIL	33.12	15.92	18.45
TISCO	29.18	36.46	26.72
JSW	6.99	4.68	4.93

SAIL’s debt equity ratio has been decreasing over the years. It was 0.19 in 2006-2007 which was least in the industry. This was due to high equity base. As all the major players have low debt equity ratio the interest payment also was very less. SAIL’s interest coverage ratio was 33.12 which were highest in the industry. All the major players had kept their debt equity ratio low, so that in future they can easily acquire loan from the bank for their expansion plan.

To measure the performance of the major players in the industry let's analyse the profitability by looking at the GP, NP, Creditors Turnover and Debtors Turnover, Power and Consumption

Profitability Ratio

	Mar ' 07		Mar ' 06		Mar ' 05	
	GROSS	NET	**GROSS**	NET	**GROSS**	NET
SAIL	24.56	17.38	18.96	13.79	32.60	23.19
TISCO	34.03	23.42	33.76	22.78	36.83	23.72
JSW	26.99	14.98	21.12	14.14	29.44	13.00

TISCO has maintained a consistent GP and NP of approx 34 and 23 respectively over the years. Whereas SAIL has comparatively lower GP and NP of 24 and 17 respectively (fluctuating). The expenditure for TISCO is 11 and SAIL is 7. This was due to high marketing cost of TISCO and also salaries and wages forms a major sales expenditure.

Company Name	**Distribution expenses**	**Dist expenses per ('000) crores sales**
Tata Steel Ltd.	1117.45	56.52
Steel Authority Of India Ltd.	872.87	21.14
J S W Steel Ltd.	469.37	49.48
Ispat Industries Ltd.	150.89	10.80
Essar Steel Ltd.	137.32	15.26

Company Name	Average days of debtors	Average days of creditors
Tata Steel Ltd.	10.81	96.1
Steel Authority Of India Ltd.	19.41	29.78
J S W Steel Ltd.	9.51	106.01
Ispat Industries Ltd.	26.87	54.85
Essar Steel Ltd.	22.04	124.87

By looking at the above data we can infer that SAIL has low capital rotation as its debtor's turnover is high and creditor's turnover is low, whereas TISCO has the best capital rotation.

Major differences come in GP between the two companies SAIL and TISCO.

Power Consumption- As power and fuel consumption forms a very high proportion of the total cost this cost become important for analysis.

Company Name

	Power and fuel expenses	Fuel expenses per million tonne
Tata Steel Ltd.	1027.84	197.6615385
Steel Authority Of India Ltd.	2584.6	191.4518519
J S W Steel Ltd.	393.1	133.707483
Ispat Industries Ltd.	1153.52	438.6007605
Essar Steel Ltd.	2549.41	900.8515901

SAIL and TISCO's power and fuel consumption is almost at the same level whereas ESSAR Steel's cost is very high. So this doesn't make a huge difference where it comes to SAIL and TISCO.

Indian Steel Industries' are utilizing 90% of the capacity. So he key is to increase capital turnover.

THE BOTTOM LINE

SAIL being the market leader should increase its capital turnover ratio to increase its profit. So where the big idea does lies for SAIL?

There is a huge difference between the gross profit ratio of TATA and SAIL. This can be due to difference in efficiency, pricing and production .if we look at the pricing of the two major, sail is 2900 crore per million tonnes and TATA is at 3700 crore per million tonnes. This clearly shows that the selling price of TATA is high this is due to high selling expenses.

In production efficiency, we had already found out that power doesn't make a huge difference in the cost structure; hence efficiency in production in such a case is efficiency in managing raw material prices so we need to turn our attention to raw material costs.

Raw material cost

Company Name	Raw material expenses	Raw mat per million tonne
Tata Steel Ltd.	3121.46	600.28
Steel Authority Of India Ltd.	13833.21	1024.68
J S W Steel Ltd.	4112.98	1398.97
Ispat Industries Ltd.	9193.04	3495.45
Essar Steel Ltd.	2553.74	902.38

Company Name	Raw material consumed	Raw material consumed per million tonne
Tata Steel Ltd.	3419.46	657.59
Steel Authority Of India Ltd.	13274.91	983.33
J S W Steel Ltd.	3964	1348.30
Ispat Industries Ltd.	3643.46	1385.35
Essar Steel Ltd.	2553.74	902.38

From the above table we can see a huge difference in the cost of raw materials consumed and also raw material expenses per million tonne of production. The raw material consumed per million tons for SAIL is much higher than TATA. So SAIL need to work on its operating efficiency to curb cost.

Iron ore, coal and coke forms the major part of raw material lets discuss those in detail.

1. IRON ORE

Since iron ore is 55% of the raw material, we shall look at the prices of iron ore and location of iron ore mines.

The cost per tonne of acquiring iron ore for SAIL is 600 Rs per tonne and TATA it is 420 Rs per tonne.

INDUSTRY NORM

Royalty – Rs 25 to Rs 50 per tonne is paid to the government. The government allots iron ore mines to the iron and steel companies on rent for a specified period (say 10 years)

Digging charges – Rs 350 to Rs 500 per tonne of iron ore.

Transportation cost – varies with the location of the plant.

TATA steel is the only plant in India which was established before independence, so the Indian government has provided them with the best iron ore and coal mines in India. Most of the mines were located in Orissa so the TATA's decided to open the plant in Jamshedpur which is closer to the mines.

SAIL was established after independence. All their mines were located closer to Orissa but not as close as the TATA's, because of this difference, the transportation costs of raw materials are higher. But this difference is small and does not explain the huge difference in the raw material prices so we look at the second component, coal and coke.

2. COAL AND COKE

The cost per ton of procurement of coal and coke for TATA is Rs.2550 and for SAIL it is Rs.6260 (approximately). Coal is used in blast furnace and for manufacturing coke. TATA steel has their own colliery and they used modern mining techniques to improve their quality. Most of their requirement of coal is met by its existing collieries. So the cost is low as compared to the industry standard.

SAIL has their collieries but those are not sufficient to meet their raw material requirement. So most of the coal requirement are meet by foreign countries. So their cost is very high. Iron and steel requires coal of low ash concentration which are limited. So industry depends on foreign mines for their requirement of coal.

As the consumption of coal is very high in SAIL, high prices of coal as compared to TATA make a huge difference in their costing. So SAIL should try to minimise its **coal procurement** charges to increase their gross profits.

HERE COMES THE BRAIN WAVE FOR SAIL (Coal procurement)

Option available to the company:

- **Backward integration by acquiring collieries around the world.**
- **Backward integration by acquiring existing coal companies.**
- **Backward integration by foreign tie-up.**

1) **Backward integration by acquiring collieries around the world**

Acquiring collieries is tough task. Also in India all the mines are already acquired, so they have to acquire mines outside India. As the government usually allot mines to the resident of that country, so it's difficult to acquire mine outside India.

SAIL can purchase coking coal against long term and spot coking coal contracts. However, acquisition of mines would confer overall long term advantage to both the companies.

So this option is not seem viable. Company should look for any other option available.

2) **Backward integration by acquiring existing coal companies**

Since coal is in short supply in India coal producers in Indonesia, Australia, South Africa and China are ramping up their production anticipating a steady growth in India's imports. Coking coal suppliers are especially buoyant as the Indian Steel industry continues to live heavily to meet its demand.

Indonesia is the leading coal exporter to India. Indonesia is accounting for nearly 38% of the countries coal imports, with South Africa, China, Australia and Russia contributing to about 21 per cent, 19 per cent, 17 per cent and 2 per cent of the imports, respectively.

SAIL should identify suitable coal mining companies/properties in countries from where landed cost of coal to India would be competitive.

SAIL's major import comes from Australia, so they should try to acquire equity stakes in their existing or new mine development projects. As they already have good tie ups with the Australian companies and have good knowledge about their regulation and culture.

Australia's Coal Industry

●World's largest exporter of black coal
●Export Thermal Coal Markets Booming since 2004
●Australia is world's biggest exporter of Steaming Coal
●Second biggest exporter of Coking Coal
●World's most efficient and reliable producer of high quality coal
●Queensland is coal mining friendly
●Queensland is largest coal exporting state in the world

So now let's find out the prospective companies, where SAIL can buy major stake for short term requirements and acquire coal mining companies for their short term requirement.

SAIL imports approximately 50% of their coal which is required to meet its current production demand. So we should look for companies where the annual production capacity is at least 10 million.

Production: by Mining Method and State, 2005 and 2006 *
(Million tonnes)

Mining Method/ State	Black Coal, Raw		Black Coal, Saleable	
	2005	2006	2005	2006
States and Australia				
NSW	158.9	167.0	124.2	128.9
Qld	229.3	227.0	173.2	177.4
S.A.	3.6	3.6	3.6	3.6
W.A.	6.4	6.8	6.4	6.8
Tas	0.6	0.7	0.4	0.4
Australia	398.9	405.1	307.9	317.1

Since SAIL would require at least 10 million tonnes, only NSW and Queensland have the capacity to produce above requirements.

SAIL should invest in **Sennen Resource Limited**,

Why invest in Sennen?

- Over 500 Mt of defined coal reserves/resources
- Thick, mineable, near surface coal deposits
- High quality, low ash coals
- Initial years amenable to low cost surface mining
- Massive infrastructure already in place
- Mining friendly location
- Security of Tenure and Political Stability
- Close to Markets
- Products in demand

Company operates out of Queensland and has the capability to fulfil the requirement of SAIL.

Its market capitalisation is 15 million dollars, so we will acquire this company which will long term guarantee us a supply of coal at a good price. In the long run, as demand for steel is going to raise SAIL will need more coal to produce more steel. So SAIL can look for other option.

As iron and steel industry is booming around the world, the requirement of its raw material is also increasing and is a profitable business. Acquiring a company with collieries outside India may be very costly. Company will charge huge premium on its acquisition which in turn will again increase the cost of the company.

So this option is not advised for the company, as acquiring may not prove a profitable decision.

3) Backward integration by foreign tie-up

SAIL is currently doing the same, they have tie ups with Australian and Indonesian coal suppliers. But their cost is very high. So this option is not viable.

BIG IDEA FOR SAIL

– **"TO TAP <u>EXISTING SYNERGIES</u>, SAIL SHOULD <u>BACKWARD INTEGRATE</u> INTO THE ACQUISITION OF <u>COAL COMPANY</u>**

USING THE <u>INORGANIC GROWTH</u> ROUTE BY ACQUIRING SENNEN RESOURCES LIMITED AT 15 MILLION"

- SAIL should modernise their production process to improve their operating efficiency. It should also cut down their administrative expenses to improve profits.

Bibliography:

CMIE Database
Wikipedia.org
www.tatasteel.com
www.sail.co.in
www.jsw.in
www.essar.com
http://www.australiancoal.com.au/production.htm
http://www.bhpbilliton.com/bb/home.jsp
http://ibef.org/
http://www.hinduonnet.com/businessline
http://www.sennenresources.com/
http://www.worldsteel.org/?action=lateststeellist
http://uk.reuters.com
http://www.hooghlymetcoke.com/
http://www.jpcindiansteel.nic.in