Dismal Economic & Industrial Show Retards Steel Industry's Growth

- Sanjay Sengupta

The liberalization of Indian steel industry, in 1992 ushered in a new era of growth. Modern greenfield steel plants started coming up one after another. There was a boost in the country's steel production. Essar Steel Ltd., Ispat Industries Ltd. (now JSW Ispat Ltd.), Jindal Vijaynagar Steel Ltd. (now known as Jindal South West Steel Ltd.), Jindal Steel & Power Ltd., Bhushan Steel & Strips Ltd., Uttam Galva Steel Ltd., Lloyds Steel Ltd. and many other steel plants were set up with state-of-the-art technologies with the help of world majors.

As the new greenfield steel plants became operational, India's production of saleable steel (semis plus finished steel) started increasing. In the first five years after the liberalization of the Indian steel industry in 1992, the production of saleable steel in the country rose from 22.33 Mt in 1992-93 to 35.18 Mt in 1997-98, recording an overall growth of 57.55 percent in five years, at an annual rate of 11.51 percent much higher than what was achieved in the previous five years.

New technologies installed by the greenfield producers, briefly mentioned were : Essar Steel installed the world's largest capacity HBI plant with MIDREX technology, Ispat industries installed the world's first MEGAMOND Midrex unit along with CONARCEAF supplied by Siemag Demag of Germany, followed by thin-slab casting production technology, JSW Steel Ltd., opted for the COREX – BOF process of VAI, Austria (now Siemens VAI), JSPL set up one of the biggest coal – based sponge iron plant in the world while Bhushan Steel & Strips Ltd. commissioned a state-of-the-art 6-H1 Universal Mill supplied by Hitachi of Japan. Other major existing producers like SAIL, Tata Steel, Vizag Steel Plant etc. also went for modernization and expansion. Tata Steel's world – class CR Complex deserves a special mention.

India's Fundamentals Remained Strong Up to 2010-11

The Indian economy is primarily driven by domestic demand as even after 20 years of the economic liberalization, exports constituted only of 20 percent of India's GDP in 2010-11 as compared to other Asian economies where exports had a share of 40 – 45 percent of the GDP at that time.

India has a demographic advantage. According to experts, the

country's depending ration (non-working age population aged below 15 years and old aged people over 64 years) has been steadily decining from 69 percent in 1995 to 56 percent in 2010 and set to fall to around 40 percent by 2050. This has resulted in significant wealth generation in the country, leading to a big rise in average disposable income per year, which more than doubled during the 6-7 years upto 2010-11. It helped in higher discretionary spending helping business to expand. It also added more impetus on the improvement in physical infrastructure in the country as witnessed in a big rise of fixed asset investment (FAI), especially during the last six to seven years upto 2010-11 at a CAGR of 10.3 percent.

The period of economic liberalization has also ushered in a rapid change in service sector industry, which became the backbone of India's economic growth. But the decline in agricultural growth and saturation in the service sector growth has necessitated the industry to grow in a big way.

But dashing all hopes of a substantial growth of India's IIP and manufacturing growth, India's Index of Industrial production recorded a dismal growth of 2.8 percent in 2011-12 over 8.2 percent in 2010-11. During the first 10 months of 2012-13 (April to January), India's IIP grew by just 1 percent as against 3.4 percent achieved during the same period of the previous year. Thus, the rosy pictures of a GDP growth of 9 percent during the 12th Five Year Plan period as projected by the government and some economic experts seems almost impossible to achieve.

Some Salient Features of Indian Steel Industry

Low Per Capita Consumption

India presently is the fourth highest producer of crude steel in the world and the third highest global consumer of finished carbon steel. While production of finished steel has increased steadily since the liberalization of steel industry, India's per capita consumption of the same remained remarkably low at 57 kgs. in 2011. In 2001, India's per capita consumption of finished carbon steel as per World Steel Association (WSA), stood at 26.8 kgs. as against 123.5 kgs. in China. In 2011, India's corresponding figure reached 57 kgs. while China's figures went upto 459.8 kgs.

India's rural population, which constitutes about 70 percent of the total, has a per capita consumption of about 10 kgs. Hence there is enough scope for substantial increase in India's per capita consumption of finished carbon steel.

Steel Demand

According to an estimate of India's Ministry of Steel, demand for finished steel may cross the 100 Mt mark by 2015-16. In 2012-13, finished steel demand, according to Ministry's estimate, would reach 77 Mt and will go upto 85 Mt in 2013-14. In 2014-15, the demand may touch 93.6 Mt and then reach 103.5 Mt in 2015-16. Thus, according to the Ministry steel demand will have an average annual growth rate of 11.47 percent between 2012-13 and 2015-16.

However, as per World Steel Association (WSA), due to both unfavorable domestic and external economic conditions, India's steel demand is expected to rise by 5.5 percent in 2012 and by 5.0 percent in 2013 reaching 73.6 Mt in 2012 and 77.3 Mt in 2013.

World Steel Dynamics (WSD) in its issue dated 13.11.2012 has observed that India's steel demand continuous to grow at a substantial space; but to a far less – extent than what is forecast by many people in the country – perhaps 6 percent per annum versus the wishful forecast of 9 percent per annum.

According to trends, India's steel demand may grow by 5 to 6 percent in 2012-13 and 2013-14.

Rural Market of Steel

Presently, the per capita consumption of steel in rural India is low at about 10 kgs.

According to experts, the reasons for the low steel consumption in rural areas are as follows :

- Perception among the rural population that steel is a high cost material.
- Problems of processing steel in rural areas and supply constraints.
- Absence of specific policy support.
- Low growth of steel using industry in rural India.
- Absence of fabrication facilities and fabrication skills in the rural sector.
- Absence of concerted promotional efforts.
- Low disposable income of the rural population.

Thus, from the above analysis, the reasons for low consumption in rural areas can be identified as lack of availability of steel and more importantly, the lack of steel fabrication facilities around the Indian villages. There is a common perception among the rural population that steel is a high cost material which is not easily available. No sustained campaign has been organized in the past to educate the rural population about the safety and long-term benefits of using steel.

However, during the past five years or so, major Indian steel producers like SAIL, Tata Steel, Essar Steel, Jindal South West Steel Ltd. and RINL etc. have done commendable work to penetrate in rural areas by widening their rural network. The dealers and distributors are being engaged by these producers and this has facilitated additional marketing of steel products like reinforced bars, galvanized sheets and cold-rolled sheets in rural areas.

According to industry sources, more than 13,000 distributors / outlets have been set up by the above major steel producers all over the country for catering to the needs of small requirements of the rural people by innovative marketing strategies which includes free transportation of steel materials from plants / warehouses to the premises of the rural dealers. The producers are also taking the following steps to boost steel consumption in rural areas :

- Engaging rural dealers in promoting steel consumption by distributing brochures, products detail free of cost.
- The rural dealers / distributors are also motivated to hold small workshops / seminars by inviting masons, designs, small builders and discussing with them to convince them about the advantages of using steel products in construction and other application areas.

In order to promote steel fabrication facilities in the rural areas, INSDAG has devised a unique scheme of training village entrepreneurs on the basics of steel fabrication technology so that the steel-made doors, windows, racks, almirahs, storage bins etc. can

be made locally with adequate repairing facilities in the rural areas itself.

Raw Material

Iron Ore Scenario

India has a substantial reserve of iron ore with an average Fe-content of 61 percent (WSA). Iron ore deposits are mainly found in Odisha, Jharkhand, Chattisgarh, Maharashtra and Goa. The types of iron ore and their compositions in different states are shown below :

States	Type of Ore	Fe-Range %	Alumina %	Phos. % (Max)
Odisha, Jharkhand	Hematite	62-64	2-4	0.04-01
Chattisgarh, M.P., Maharashtra	Hematite	64-66	1.0-4.0	0.04-0.15
Karnataka	Hematite	62-64	2.0-4.0	0.04-0.09
Goa	Hematite	60-63	2.0-4.0	0.04-0.07
Karnataka	Magnetite	35-45	1.0	==

Source : Mecon Ltd.

As on 1.4.2011, India had iron ore resources of about 5.2 billion tones (BT) of which 14.6 BT is hematite and 10.6 BT is Magnetite. Even though use of Magnetite ore in iron making consumes less energy compared to hematite, the steel industry avoids its use due to higher beneficiation cost. Magnetite ore when used for pelletizing, gets converted to hematite during the process and can be used for DRI production.

Driven by a strong demand from China for iron ore and the resultant profitability, illegal mining flourished in Karnataka in 2009. The illegal mines controlled by the so-called 'Street Leaders', often with the support of local politicians, were exporting huge quantities of iron ore. These mines had no license to mine, did not pay royalties to the Government.

The Karnataka government lost hundreds of crore of revenue due to the illegal mining. In 2010, the Karnataka government banned transport of iron ore outside the state. This was followed by cancellation of licenses to over 500 mining companies.

India's Supreme Court set up a commission under the leadership of retired judge M. B. Shah, to investigate the legal basis of iron ore mining across Karnataka, Odisha and Goa. Justifying the ban, the Shah Commission recommended that only legal mines should be allowed to open in the above three states.

India's Supreme Court in its orders in July and August 2011 banned all mining activities in Karnataka. It later allowed NMDC to mine up to 1 Mt iron ore per month and sell it to steel companies through e-auction. However, iron ore mined by NMDC never reached more that 0.7 Mt per month. In addition to this 4 category. A mines have opened but their material were not available for auction in 2011-12.

In Goa, the State Government suspended all mining activities from 11th September, 2012. Later, India's Supreme Court on 5th October, 2012, banned all mining activities in Goa.

Restriction on iron ore mining has taken a toll in steel companies in Odisha. The state government has directed 10 mining companies, which have applied for renewal of license, to restrict iron ore mining only for captive use. Companies like Tata Steel, Jindal Steel and SAIL have mining presence in Odisha, while the rest are mercent miners. The restriction is expected to shave-off a supply of about 15 Mt of iron ore from the market and push the iron ore prices upwards.

Karnataka, Odisha and Goa together has a share of 70 percent in India's total iron ore output. The shortage of iron ore has compelled Indian steel producers to import iron ore from abroad.

For the Indian iron ore industry, the double whamy of mining ban and a sharp increase in the export duty on iron ore fines to 30 percent compounded by frequent upward revisions in the railway freight rates have made exports unviable. Consequently, export of iron ore from India which stood at 117 Mt or 53 percent of the country's total output in 2009-10, is expected to come down to 20 Mt or 12 percent of the total output in 2012-13.

According to CRISIL experts, over the next two years, demand – supply balance of iron ore in India is expected to remain tight. The situation is likely to improve marginally in 2013-14. Prices will ease slightly as efforts are underway to alleviate the supply situation and gradually restore the industry to some degree of normalcy. However, it is unlikely that the industry will regain its high export status that it enjoyed previously.

Coking Coal

In iron and steel industry, coal is either carbonized (heating in absence of air) to coke for use in blast furnaces or used as non-coking coal specially for making sponge iron. The Indian steel producers are using non-coking coal in the CONARC and COREX processes. They will be using non-coking coal in new technologies that are coming up like FINEX, H1 smelt and Kobe Steel iron magnet production process.

Indian coals have a high ash content between 20-40 percent. It has also poor washability.

According to the Geological Survey of India (GSI), as on 1.4.2011 India had a coal reserve of 285.87 billion tones (BT) of which coking coal was 33.47 Mt and non-coking coal 252.40 BT. Coking coal is usually sub-divided into three sub-class as mentioned below :

- Primary Coking Coal with low ash content, low volatile matter and high coking property.
- Medium Coking Coal with low ash content, medium volatile matter and low coking index.
- Semi Coking Coal with low ash content, high volatile matter and low coking index.

As on 1.4.2011, primary coking coal reserve in India had a share of 15.87 percent of the total coking coal reserves.

Coking coal required for use in Blast Furnace for making iron should have ash content. 17 percent max, volatile matter 20 to 26 percent, very low sulphur and phosphorus content, good rheological properties, wide range of fluidity and low inter content.

Metallurgical coke, when heated to a temperature between 900 – 1095^{0}C in absence of air, its complex organic modules break down to yield gases together with liquid and solid organic compounds of low molecular weight and the relatively non-volatile carbonaceous residue is called coke.

Techniques of Coke Rate Reduction

Major Indian steel producers have successfully reduced the coke rate consumption by adopting the following techniques :

- Coal Dusts Injection
- Coal Tar Injection
- Partial Briquetting of Coal Charge (PBCC)
- Selective Coal Crushing
- Stamp Charging of Coal – it reduces cost, improves productivity and is eco-friendly

Due to the non-availability of sufficient coking coal domestically, the Indian steel producers are compelled to import coking coal from abroad. According to industry sources in 2012-13 about 65 Mt of coking coal will be imported by the Indian steel producers.

Coal India Ltd. (CIL) has set a target to produce 482 Mt of Coal in 2013-14, with a rise of 7.11 percent over the previous year and to supply 492 Mt of coal in that year – a growth of 5.8 percent over 2012-13.

The extra coal over production will be supplied from earlier stocks.

Infrastructure

The status of infrastructure development in India is poor and it suffers from low capacity in power generation, poor roadways, inadequate railway facilitates particularly in goods transportation, low port facilities etc. Hurdles by environment and forest departments has delayed many infrastructure projects. Land acquisition problems has been a road block for setting up new projects.

During the 11th Five Year Plan period, excepting airports and telecommunications, all other infrastructure sectors recorded shortfalls in target achievement to the extent of 20 percent or more. The worst performer was the Electricity (incl. NCE sector) which had a share of 32.42 percent in 11th Plan total investment on the infrastructure development. It has added only 71.67 percent of planned capacity addition of 76,700 MW during the plan period – a shortfall of 28.33 percent.

During the 12th Plan, the estimated investment on infrastructure development is US$ trillion. According to sources, the investment on major infrastructure sectors during the plan period will be :

- Electricity – 1,499,914 crore
- Roads & Bridges – 920,071 crore
- Telecommunications – 884,204 crore
- Railways – 456,743 crore
- Irrigation (Incl. watershed) – 430,103 crore

The investment on the above sectors, taken together, will account for about 86.5 percent of the total investment of US$ 1 trillion planned during the 12th Five Year Plan.

Infrastructure Funding During 12th Plan

Out of the total investment on infrastructure of US$ 1 trillion during the 12th Plan period, the Private Sector is expected contribute 50 percent through PPP projects.

To kick-start long-term infrastructure funding, the government had decided to put in action the operational structure of the Infrastructure Debt Funds (IDFs) including underlying regulations. This has been necessitated in the backdrop of banks, with a growing asset-liability mismatch, are constrained to providing long-term funding for infrastructure development.

According to a Law Ministry Official, it would be possible for interested sponsors to launch IDFs once SEBI notifies the procedures / guidelines for IDFs through the Mutual Fund route and the Government notifies Model

Tripartite Agreements for IDFs through the NBFC route. The key to operationalising IDFs was the finalization of a Model Tripartite Agreement between the concession are, private party and IDF which will strengthen the legal rights of the primary lenders and will be applicable for financing all infrastructure projects.

Technology Upgradation

India steel producers are continuously upgrading their production technology in recent years. The country has established itself as a recognized exporter of steel products like plates, HR, CR, GP Coils as well as Wire Rods, TMT Bars etc. However, India's steel quality has not yet attained the super quality standards of the Japanese, Korean and German steel producers.

New Technologies in India

Some of the new technologies that have come up or being installed in Indian steel plants are mentioned below:

FINEX

The FINEX process, developed by POSCO of Korea in partnership with Siemens VAI of Austria, uses iron ore fines and non-coking coal for making iron. In this process, iron ore fines are pre-heated and reduced to DRI in a four stage fluidized system. It helps in the dramatic reduction of SO x and NO x emissions. It is more eco-friendly than BF route.

SAIL is setting up a 3-Mtpy capacity steel plant at Bokaro in Jharkhand in a JV with POSCO of Korea and will use FINEX technology for the first time in India.

CONARC

Developed by Mannesman Demag (new SMS Siemag), CONARC is a hybrid steelmaking process which effectively combines the EAF and Oxygen Converter (BOF). The name is derived from CONverter ARCing. The equipment used in this process comprises of twin vessels with electric arching in one vessel and oxygen lancing from top in the other vessel. The change-mix in CONARC process comprises of DRI, pig iron and hot metal depending on the steel grade to be produced. The process can use any type of energy : electricity, coal or gas.

CONARC was first installed by Ispat Industries Ltd. (now JSW Ispat) in India in its Dolvi plant in Maharashtra about a decade back. Recently, Essar Steel Ltd. has commissioned two CONARC furnaces of 2.5 Mtpy capacity each, taking the capacity of its meltshop to 5 Mtpy.

COREX

The COREX process was jointly developed by VAI of Linz, Austria and DVAI of Dusseldort of Germany. For decades, there has been a number of initiatives towards the development of an alternative smelting reduction process for ironmaking. COREX has provided the alternative.

The COREX process offers high smelting intensity and hence facilitates higher productivity. It has the ability to use various types of non-coking coals, iron ore fines, has a low operating coast, helps in the generation of power or alternative use of the Export Gas generated from the ironmaking unit, besides being eco-friendly.

The economic viability of the COREX process has further enhanced by the introduction of special features such as the possibility to charge high amount of recycled / waste materials from iron and steel works and the low cost of alternative materials.

Jindal Vijaynagar Steel Ltd. (now known as Jindal South West Steel Ltd.) was first to introduce COREX process in India and installed 2 COREX units of 1.6 Mtpy each at its Vijayanagar steel plant, with certain modifications, which resulted in achieving best performance.

Essar Steel Ltd. has recently installed two COREX modules of 0.87 Mtpy each capacity at Hazira, supplied by Siemens VAI of Austria. These COREX units are running in a very successful manner since commissioning.

H1 – Smelt

This process uses iron ore fines and low

cost steaming coal, eliminating coke oven, blast furnace and sinter route used in conventional ironmaking. H1 Smelt process is capable of using iron ore fines (-0.6mm) and non-coking coal fines (-0.3mm). In this process no oxygen is required – only pre-heated air is used. It has been claimed that the H1 – Smelt process may be more suitable for EAF steelmaking than after iron ore units such as DRI.

Jindal Steel and Power Ltd. (JSPL) has signed an agreement with Rio Tinto of Australia to install H1 – Smelt technology for the first time in the world – other than a Pilot Plant of Rio Tinto – the Kwinana H1 – Smelt facility in Australia.

As per the agreement, Rio Tinto's Kwinana plant will be relocated at JSPL's upcoming plant at Angul is Odisha.

ITMK3

Developed by Kobe Steel of Japan, the ITMK3 iron nugget process features a Rotary Hearth Furnace (RHF) fed with composite green pellets made of iron ore concentrate and non-coking coal. The green pellets are heated – the coal reduces the iron oxides to iron and the charge is heated to 1350 – 1450^{0}C, forming separate globules of slag and iron. The mixture is cooled and iron nuggets are separated from the slag by using magnetic separation and screening. The resulting nuggets are high in iron content (96 – 98% Fe).

SAIL will use ITmk3 technology in a joint venture project with Kobe Steel to be set up at its Alloy Steel Plant, Durgapur in West Bengal. The plant will initially produce 0.5 Mtpy of iron ore nuggets of 96 percent purity. Initially the project cost its estimated at Rs. 400 million. Subsequently, the capacity of the SAIL's nugget plant will be increased to 1 Mtpy.

Pelletizing

Pelletizing is the process of converting iron ore fines into uniformed size iron ore pellets that can be charged into the blast furnaces or for the production of Direct Reduced Iron (DRI). Pellets are of uniform size, with purity of 63-68 percent contributing to faster reduction and high metallization rates.

Pellets with their high mechanical strength and high abrasive strength is capable of increasing the production of sponge iron by 25-30 percent with the same amount of fuel.

Indian iron ore production consists about 55 percent of microfines and till recently, about 85 percent of India's export of iron ore was in the form of fines and concentrate.

Experts from MECON Ltd. have observed that in view of the changing iron ore scenario in the country, the Indian iron producers must shift focus from sinter intensive blast furnaces to pellet oriented (15 to 20 percent) operation. They have also mentioned that due to the sharp increase in the price of Calibrated Lump Ore (CLO), it is imperative to switch over to the use of pellets in some of the coal – based DRI Installations.

Some big Indian steel producers are erecting state-of-the-art large size that furnaces of 4000m^{3} capacity or more. However, the use of sinter beyond 75-80 percent is not technically advisable in such big furnaces, because of its weaker properties resulting in the disintegration of the sinter. In such a situation, the use of pellets is essential.

JSWSL is charging 50 percent pellets in blast furnaces at its Vijaynagar Steel Plant and the plant's COREX units are successfully operating with use of over 80 percent pellets in the burden.

Essar Steel Ltd. has commissioned a 6 Mtpy capacity Pellet Plant at Dabuna in Odisha in the first phase of its 12 Mtpy capacity pellet plant to be made operational by 2013. Essar is building a 253 km long slurry pipe line connecting Dabuna and Paradip. The 12 Mtpy capacity pellet plant at Paradip along with the 8 Mtpy capacity pellet plant of Essar at Vizag will take the company's pellet making capacity to 20 Mtpy. SAIL has planned to build a 4 Mtpy capacity pellet plant at its Gua iron ore mines. The company is also examining the feasibility of installing three more pellet plants in its other iron ore mines.

RINL's Vizag Steel Plant is installing a 4 Mtpy capacity pellet plant at Vizag. RINL and NMDC has signed a MoU to build a 336 km long slurry pipeline from Jagdalpur to Visakhapatnam. JSPL has plans to expand the capacity of its pellet plant at Angul in Odisha.

JSWSL, under its 20 Mtpy capacity iron ore beneficiation programme will increase the capacity of its pellet production.

The total installed capacity of pellet plant in India in 2007-08 was about 18 Mt. according to experts, the pellet plants, now under commissioning, will take India's total pellet production capacity to about 45 Mt by the end of the 12th Five Year Plan.

SYNGAS

JSPL is constructing a 1.8 Mtpy capacity MIDREX DR Plant to be paired with a LURGI Gasification unit to supply the reductant gas at its Angul steel plant in Odisha. The MIDREX module will pair with the commercially available gasification technology from LURGI of Germany, with a 7.5 meter diameter MIDREX shaft furnace to produce DRI as a feed stock to the electric furnace.

JSPL' project will for the first time pair a Lurgi gasifier with MIDREX shaft furnace and effectively enable the production of synthetic gas or SYNGAS from Indian domestic thermal coal to be used in the ironmaking process.

If JSPL's SYNGAS process becomes operational successfully, it would be landmark in reducing the steel industry's dependence on coking coal.

Growth of Indian Economy and Steel Industry – Recent Trends

The Economy – India's GDP growth in the first six months of 2012-13 averaged 5.4 percent. In Q3, it recorded a growth of 4.5 percent. Even if the country's GDP grows significantly in the fourth quarter, the overall GDP growth in 2012-13 may reach 5.5 percent as against 6.2 percent (revised), a year ago.

India's Index of Industrial Production (IIP) rose by just 1.0 percent between April – January of 2012-13 as compared to 3.4 percent during the same period of the previous year. Manufacturing sector, having a weightage of 75.5 percent of the IIP, recorded a meague growth of 0.9 percent over 3.7 percent in the above comparative periods.

The CORE SECTOR, representing the eight infrastructure industries, recorded a low growth of 2.6 percent during April – February of 2012-13, compared to 5.2 percent in the corresponding period of the preceding year.

India's Current Account Deficit (CAD), which in effect is the difference between in flow and outflow of foreign capital, stood at 5.4 percent of the GDP during April – December, 2012 as compared with 4.1 percent during the same period of the previous year.

Despite the above gloomy scenario of India's economic and industrial growth, the country's production for sale of finished carbon steel grew by 3.3 percent and their consumption went up by 3.4 percent during April – December, 2012 over the corresponding period of the preceding year.

Performance of Indian Steel Industry : April – December 2012

Production for Sale of Finished Carbon Steel

Production for sale is arrived at after deducting Inter-Plant Transfers (IPT) and producers own consumption from gross production.

Production for sale of finished carbon steel during April – December, 2012 vis-à-vis April – December, 2011 is shown in Table – 1.

In the long product group, production for sale of Bars & Rods at 20.734 Mt declined by 2 percent during April – December, 2012 over the

same period of the previous year. This was due to a lack of demand from infrastructure and construction sector.

In the flat product segment, production for sale of plates during April – December, 2012 at 3.043 Mt declined by 8.1 percent over the same period of the previous year while the same for HR Coils at 11.374 Mt rose by 2.5 percent, that of CR Sheets / Coils at 6.555 Mt grew by a healthy 27 percent and that of GP / GC Sheets at 4.866 Mt grew by 11.5 percent during the above comparative periods.

Imports – Imports of Finished Carbon Steel

Imports of finished carbon steel during April – December, 2012 vis-à-vis April – December, 2011 are shown in Table – 2.

Import of Bars & Rods in the long product segment rose by 25 percent in April – December, 2012 over the corresponding period previous year while in the flat product group the same for Plates. HR Coils and GP/GC Sheets went up by 19 percent, 10 percent and 24 percent respectively. The imports of the above three products in volume terms were Plates - 0.56 Mt, HR Coils : 1.225 Mt and 0.33 Mt for GP / GC Sheets respectively.

Exports of Finished Carbon Steel

Exports of finished carbon steel during April – December, 2012 vis-à-vis April – December, 2011 are shown in Table – 3.

In, the long product segment, export of Bars & Rods rose by 75 percent in April – December, 2012 over April – December, 2011 while in the flat product group during April – December, 2012 exports led by GP / GC Sheets at 1.279 Mt and HR Coils at 0.976 Mt.

India remained a net importer of finished carbon steel in April – December, 2012.

Consumption of Finished Carbon Steel

Consumption of Finished Carbon Steel during April – December, 2012 vis-à-vis April – December, 2011 are shown in Table – 4.

In the long product segment consumption of Bars & Rods at 21.1 Mt recorded a decline of 1.8 percent during April – December, 2012 on Y-o-Y basis. In the flat product group consumption of HR Coils at 11.8 Mt rosy by 3.1 percent, that of CR Sheets / Coils at 7.5 Mt grew by a hefty 22 percent and the same for GP / GC Sheets at 3.9 Mt went up by 9.4 percent during April – December, 2012 over April – December, 2011.

Conclusions

There has been a significant decline in India's economic and industrial growths in 2011-12 and 2012-13. This has adversely affected the performance of most of the industries including that of steel. Lack of demand in the domestic and global markets, high inflation, high taxes, depreciation of the Indian rupee against U.S. Dollar – all have brought down the profitability of Indian steel producers. Shortage of iron ore and its high prices, huge import of coking coal are also jeopardizing the growth of Indian steel industry.

In a developing country like India, high growth in infrastructure attracts both domestic and foreign investments. In the first eleven months of 2012-13 (the starting year of the 12th Plan), - India's infrastructural industries have recorded a meagre growth of 2.6 percent. The Government has planned an investment of about 1 trillion US dollar during the 12th Plan for the development of the country's infrastructure with a target of achieving 9.95 percent share of the GDP over the 12th Plan period. According to trends, this seems almost impossible to materialize.

It is expected that in future years, the situation will improve to some extent and India's steel industry will record higher growths.

Table – 1 : Production for Sale of Finished Carbon Steel During April – December, 2012 vis-à-vis April – December, 2011 ('000 tonnes)

Products	Production for Sale During		% Change
	Apr. – Dec. 2012 (P)	Apr. – Dec. 2011 (P)	
Long Products	25063	26367	(-) 1.20
Flat Products	28084	26083	7.67
Total Fin. Carbon Steel	**53147**	**51450**	**3.30**

Data Source : (P) = Provisional

Table – 2 : Imports of Finished Carbon Steel During April – December, 2012 vis-à-vis April – December, 2011 ('000 tonnes)

Products	Production for Sale During		% Change
	Apr. – Dec. 2012 (P)	Apr. – Dec. 2011 (P)	
Long Products	472	365	29.32
Flat Products	3931	3497	12.41
Total Fin. Carbon Steel	**4403**	**3862**	**14.01**

Data Source : (P) = Provisional

Table – 3 : Exports of Finished Carbon Steel During April – December, 2012 vis-à-vis April – December, 2011 ('000 tonnes)

Products	Production for Sale During		% Change
	Apr. – Dec. 2012 (P)	Apr. – Dec. 2011 (P)	
Long Products	318	209	52.15
Flat Products	2991	2541	17.71
Total Fin. Carbon Steel	**3309**	**2750**	**20.33**

Data Source : (P) = Provisional

Table – 4 : Consumption of Finished Carbon Steel during April – December, 2012 vis-à-vis April – December, 2011 ('000 tonnes)

Products	Production for Sale During		% Change
	Apr. – Dec. 2012 (P)	Apr. – Dec. 2011 (P)	
Long Products	25509	25845	(-) 1.30
Flat Products	24518	22534	8.80
Total Fin. Carbon Steel	**50027**	**48379**	**3.41**

Data Source : (P) = Provisional

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