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IN THE ISSUE

- Technology Profile of Indian Steel Industry (in continuation of write-up in previous Newsletter) by Shri S C Suri, Hon. Member
- Carbon Footprint by Shri K L Mehrotra, Chairman, IIM Delhi Chapter
- A brief report on technical talk on Sub lance Technology for BOF Shop & High Productivity Blast Furnaces
- Global Coal Consumption heads for biggest decline in History
- India's prospects relatively robust to grow at 7.2% OECD
- China to be the most critical factor for metal prices
- Steel cheap imports, Chinese supply glut hammer prices
- Many national & international news items

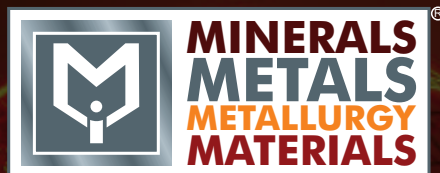


THE INDIAN INSTITUTE OF METALS - DELHI CHAPTER



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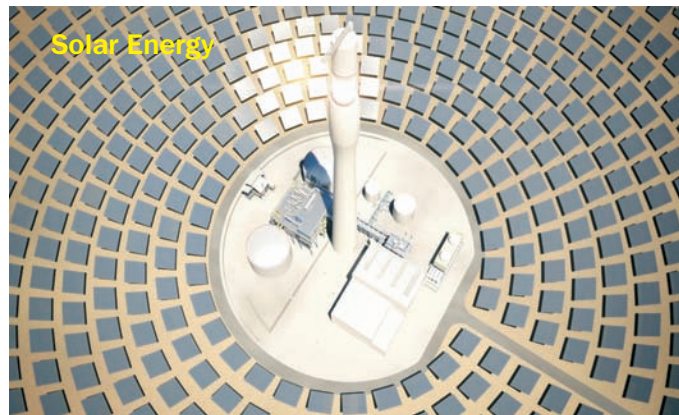
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TECHNOLOGY PROFILE OF INDIAN STEEL INDUSTRY

(In Continuation of previous edition)



Shri S C Suri Hon. Member IIM &
Editor-in-Chief, IIM DC Newsletter

Rolling Mills & Processing Lines

Hot Rolling Mills

Several state-of-the-art hot rolling mills have been set up by the steel plants, and others are in the process of acquisition of such mills. JSW Steel has recently commissioned one of the most modern and the widest hot strip mill (2.2 m wide) in India. Bhushan Power & Steel and Essar Steel have set up modern hot strip mill adopting CSP route recently. Tata Steel is in the advanced stage of setting up a second hot strip mill adopting CSP technology. Essar Steel has also set up the widest (5m wide) and one of the most sophisticated and state-of-the-art plate mill capable of producing all high quality plates including API, Q&T and normalized plates hitherto imported from abroad. The trend is continuing and in the next few years, many more state-of-the-art rolling mills are expected in the flat and long product segment. SAIL (RSP) is already setting up a wide (4.3m) plate mill with all modern features. In the long product segment, also, the scenario is changing. Modern bar and rod mills have been set up by JSW, JSPL, Tata Steel and others which are capable of rolling products with tight dimensional tolerances. SAIL is also setting up a universal Rail Mill at Bhilai Steel Plant.

Some plants are also practicing latest techniques like Hot Charging of Slabs (though partially) in hot rolling areas and reaping benefits in terms of productivity and energy conservation. Schedule-free rolling, high pressure descalers, AWC (Automatic Width Control), Use of HSS Rolls, Hydraulically controlled AGC for gauge accuracy, finishing stands with level-2 automation, Roll Cross Pair, Edge preheaters, Ultra-Fast Cooling in ROT and edge masking system are other developments to improve the productivity, quality and rolling efficiency. Improvement in heating efficiency and reduction in fuel consumption in reheating furnace can be achieved by installation of HEC (High Efficiency Combustion) regenerative burner, which also has favourable effect on CO₂ emission.

Older hot rolling mills however, are still handicapped with obsolete rolling technology and practices resulting in poor productivity, poor dimensional tolerance and higher energy consumption. The level of technology in these mills has to be changed through modernization and renovation.

Re-rolling mills in small and medium plants contributing over 20 million tonnes of finished steel production conventionally suffer with poor productivity and energy inefficiency also causing high CO₂ emission. On the initiative of Ministry of Steel, in association with UNDP, a specific energy efficiency improvement project has been taken up under which over 20 mills have been upgraded and several more units are in implementation stage. There is an urgent need to upgrade the technological face of this important sector in order to increase their productivity and energy efficiency through eco-friendly technologies.

Cold Rolling Mills

Like HRMs, CRM sector is also getting a facelift with setting up of modern, state-of-the-art mills with best productivity and quality. Till the end of 90's, most of the cold rollers with single stand reversing mills were handicapped with limited capacity, poor yield and also poor quality due to process limitations. However, the scenario has since changed substantially with setting up of several large capacity state-of-the-art rolling mills. To improve the overall yield and reduce the scrap, PLTCM (pickling line and tandem cold rolling mill) has been installed. Seeing the success of PLTCM at Tata Steel and Essar, many other steel producers such as Bhushan Steel are following suit. Tata Steel is planning to set up a wider PLTCM at Kalinganagar. JSW Steel and UTTAM Steel have established Twin Stand Reversing mill in recent times.

To improve the gauge consistency and shape, work roll bending, CVC crown, intermediate roll shifting, Feedback & Feed Forward Gauge Control, Hydraulically operated AGC, sophisticated X-Ray gauges and Level-2 automation system have been introduced. Most of the above have been adopted by the Steel producers, who supply Steel for the high-end application.

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Carbon Footprint

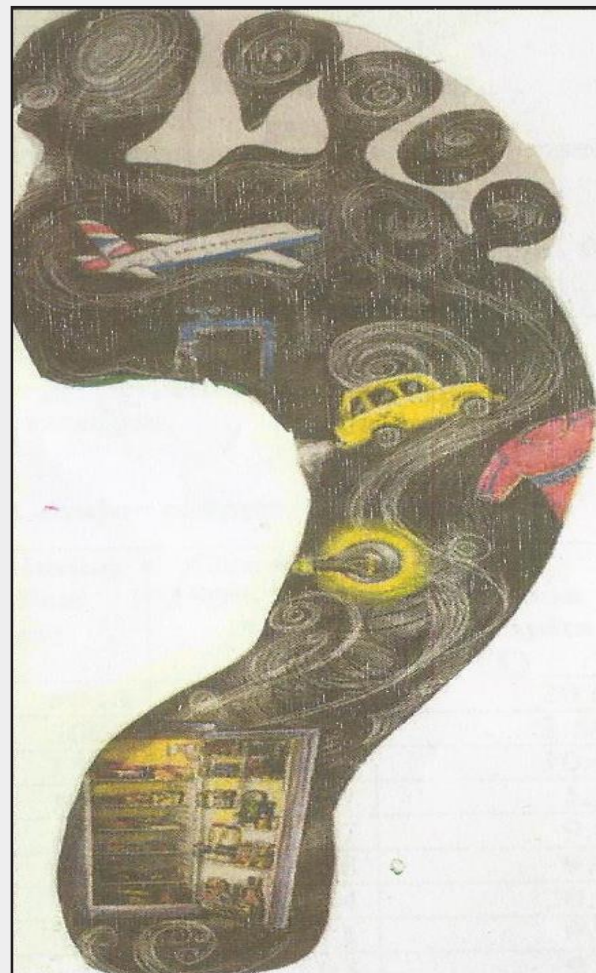


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How Climate Change Affects the Universe?

- Climate change is now with us. A decade ago, it was conjecture, today it is reality and the future is unfolding before our eyes.
- Global warming could cause more hunger in Afro-Asian countries and could melt most of the Himalayan Glaciers by 2030 – according to a UN Report.
- Hundreds of millions of people would be affected. The report also predicts more heat waves in countries such as US and EU countries, Canada etc.
- If the current global warming rates are maintained, Himalayan Glaciers could decay at very rapid rates shrinking from the present 500000 Sq. Kms. To 100000 Sq. Kms. By 2020.
- This would reduce water supplies for farming and lead to severe drought situation.
- Temperatures are set to rise by 2~3oC between 2004-2030 causing displacement of over 350 million people due to floods.
- Malarial infection would affect over 400 million people due to flood. Extinction of 25-30% of all the land species. About 265 million people were affected by natural calamities during 2000-2004, out of these 98% were in developing nations.
- Himalayan Glaciers called the "Water Tower of Asia" has a glacier coverage of 5,00,00 Sq. Kms.
- It provides 8.6 billion M3 of water. About 70% of the world's fresh water is frozen in glaciers. Himalayan Glaciers are the largest store of water outside the polar ice caps and feed seven great Asian rivers viz. Indus, Brahmaputra, Mekong, Salween, Yargtze, Huang Ho and hundreds of small rivers. Nearly 70% of the discharge into

Gangas is from rivers in Nepal which means that if Himalayan glaciers dry up so will the Ganga downstream in India.



- Thus by 2020, over 1.2 billion people in Asia will experience increased water stress and over 2.0 billion by 2030. The per capita availability in India would drop from 1900M3 to 1000 M3 by 2025.
- Cereal yield in Asia could drop upto 30% by 2050 causing hunger.
- Even modest rise in sea level will cause flooding and economic disruptions in densely populated areas.
- Cholera/Malaria could increase, thanks to flooding and wider habitat range for mosquitoes.
- Some 30% Asian coral reef which sustain a large percentage of marine life are expected to be lost in next 30 years due to climate changes.

- Green House Gases (GHG) – A Major Culprit.

S. No	Country	CO2 Emission (In Million Tonnes)	Growth 1990-2004 %	CO2 Emission Per Capita (T)
1	US	6046	25	20.6
2	China	5007	109	3.80
3	Russia	1524	-23	10.6
4	India	1324	97	1.2
5	Japan	1257	17	9.9
6	Germany	808	-18	9.8
7	Canada	639	54	20.0
8	UK	587	1	9.8
9	Korea	465	93	9.7
10	Italy	450	15	7.8
	World	28,983	28	4.5

- The environmentalists say that the fastest growing contributor to global warming is aviation sector.
- In 2006, all around the world, people took more than two billion journeys on schedule airlines, which is higher by 4% over 2005. As per ICAO, IATA predicts 50 billion journeys would be performed by 2016.
- As the airplane travels at high altitude, the impact on global warming is more. The average plane releases close to one tonne of CO2 for each passenger, it covers from London to New York or Delhi to London. The logic being that since the emission of CO2 in huge amount and at such high altitude will have a direct impact on CHG effect leading to increase in global warming.
- Flight are something that people should try to avoid for short distances or unless there is an emergency.
- The authorities instead of promoting aviation in a big way should focus on developing other modes of transports like road and electric trains/metro which are much cleaner and more environmental friendly.
- Every activity we do generates a certain amount of Green House Gases (GHG), which can be measured in units of CO2 and that is what Carbon Credit is all about.
- In India, average Indian emits 1.3 tonnes of CO2 and with increasing lifestyle it may go up to 1.8 tonnes CO2/year. While an

American emits 23 T of CO2, a British emits 11.0 T and a Chinese, 3.1 T, Brazil – 4.1 T/year, Japan 10.6 T/year, Germany 12.3 T, France 8.6 TPY and Russia 13.4 TPY.

- In India, the population who earns more than Rs. 50,000/- per month emits 5.0 TPY, between Rs. 25,000 – Rs. 50,000/- - 3.1 TPY and below Rs. 5,000/- per month is 1.0 TPY.
- If the fridge is placed away from heat / Sun, 150 Kg of CO2 / year can be reduced more so ever, energy efficient and CFC free fridge is very essential to use.
- While shopping, usage of reusable bag rather than plastic / PP bags can prevent 8 Kg per year of CO2 emission.
- While brushing the teeth, if the habit of keeping the water tap open throughout, is stopped 3 Kgs. CO2 / year emission can be reduced.
- 55% of world carbon emission is produced by 15% of population in US, Canada, EU countries etc.
- There are three basic things which one can make a beginning.
 1. Reduction in usage of the planet, which we inhabit
 2. Reusing of the items we use in daily life
 3. Recycling of items, which may produce certain by-products, viz paper recycling, aluminium can recycling, PET recycling and metal scrap recycling.
- If one would like to see the size of his / her Carbon Foot Print in other words, how much tonnage of CO2 emitted through their life style every month / year. Let's make a beginning.
- Reduce electricity consumption and switch to CFL bulbs / LED lights in houses / offices in place of incandescent bulbs / tube lights. This helps to save ½ a ton of CO2 in a year. 10,000 MW power/per year would be saved if energy efficient CFL/LED were used to light up homes in India.

- Reduce a Petrol/Diesel by using fuel efficient car with higher mileage say 16 Kms/Ltr., which would emit 40 T of CO₂ in its lifetime say 10 years (4 T CO₂/year). We may also use Biodiesel / bio fuel, admixture to reduce CO₂ emissions. 660 Kg of carbon emission can be reduced if fuel is improved in car/bus engines etc.
- Do not print out, unless need arises and be conservative in use of paper, 24 grown up trees are required to be cut to produce 1 ton of paper, which has a direct impact on absorbing CO₂. One big tree absorbs 20 Kgs. Of CO₂ / year.
- Reduce Air journey. Do it only in if it is unavoidable. Aircraft emits 12.5 Kg of CO₂ / per person/100 Kms. all journey at high altitude. Thus a return journey Delhi/ Mumbai or Delhi/Kolkata emits 0.33 T of CO₂ per person.
- As well said, for any climate change entire humanity is involved and all of us are concerned. The GHG / CO₂ emission can be attributed in two ways. Direct emission of CO₂ is due to usage of car / scooter, heavy vehicles, air planes etc. Indirect CO₂ emissions is like electricity through coal fired thermal plant, which we use, cooking gas, water supply, eating habits, shopping, etc.

CARBON TRADING: Money from CLEAN AIR

What's Carbon Trading?

- The idea of a trade in Certified Emission Reduction of CO₂ (CER) took place after signing of **KYOTO PROTOCOL** of UN Framework Convention of Climate Change (UNFCCC).
- It mandates GHG emission caps on industrialized developed nations which have ratified it but also allows them to buy greener nations GHG emission level, which means a CER can be earned by reducing emissions through eco-friendly projects. Thus a developed nation can buy a CER

from a developing country that doesn't face a cap.

- India / China are the sellers under CDM (Clean Development mechanism) protocol. CDM allows company projects in developing countries to trade in CERs with countries that have a cap. One CER is equivalent to a reduction of one tonne of CO₂.
- Clean money for dirty air, that's the promise of an emerging trade in Carbon Credit.
- The value of Carbon Trading was around US 30 billion in 2006 as per the estimate of International Emission Trading Association.
- The CER is sold at a price negotiated between buyer and seller. Currently, Indian sellers are able to realize 6-8 Euros on an average per CER.
- Hence, the CER is offered with guarantee of delivery by the regulator. Since its launch, in April, 2005, the EU's contract has been close to 1.3 billion tonne CO₂ (CER) traded with a market value of 24 billion Euros.
- Therefore carbon credits bought by a Company are a tradable permit that provides a way to reduce GHG emissions by giving them a monetary value. A credit gives the owner the right to emit one ton of CO₂.
- Typically companies that invest in windmill, bio-diesel, co-generation, solar power etc., are the ones that can generate Carbon Credits for selling to the developed nations.
- Barely a day goes by without talk of climate change, the scientific report have shown, it is happening and that human activity is responsible. If we are to move beyond talk, we need urgent solutions. The renewable energy, carbon capture and bio-fuels are among the main source to mitigate climate change.

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BRIEF REPORT ON TECHNICAL PRESENTATIONS ON SUB LANCE TECHNOLOGY FOR BOF SHOP AND HIGH PRODUCTIVITY BLAST FURNACES

The Delhi Chapter organised a technical presentation on the following two topics at our premises on 21st December 2015:

- a) Sub lance Technology for BOF Shop and
- b) High Productivity Blast Furnaces

At the outset Shri SC Suri, immediate past Chairman, Delhi Chapter, spoke about the activities of Delhi Chapter.

Thereafter K L Mehrotra, Chairman, welcomed the participants in the programme. He gave an introductory remarks about the speakers of M/s Daniel Corus who were to make the presentations on the above two topics. Thereafter, the dais was handed over to the speakers for presentation.

The presentation on (a) above was given by Shri Subrat Mishra and on (b) above was given by Shri Manish Wadhwa of M/s Daniel Corus India Pvt Ltd located at New Delhi.

Shri Mishra, in his presentation, touched upon the successful implementation of a sublance based BOF process control system in India. He spoke about the advantages of installation of sublance system. Design and automation aspects of sublance technology were also discussed. Use of calcium carbide and magnesium in the desulphurisation of hot metal was also discussed. The advantages of sub lance technology results in reduction in tap to tap time, increase in LD productivity by around 20%, increased

hit rates, reduction in consumption of fluxes, optimal utilisation of scrap, energy savings and improvement in the refractory linings life and improvement on safety and environmental fronts.



Shri Manish Wadhwa spoke about the installation of high volume blast furnaces installed by Daniel Corus at SAIL and other steel plants. The use of

higher volume blast furnaces results in higher production of hot metal. He also spoke about the 4506 Meter cube blast furnace being erected by them at the proposed steel plant of NMDC at Nagarnar, Chhatisgarh, on turnkey basis. He informed that this will be India's largest furnace to date. It was also indicated by him that JSW is planning to instal a blast furnace of 5000 meter cube capacity wherein Daniel Corus will play a major role in installation of the same. He also stated that raw material stipulation for larger blast furnaces are more critical than the smaller blast furnaces. So the raw material burden for the higher blast furnaces has to meet the critical requirements

After conclusion of the presentations, there was lively question and answer session. About 30 persons participated in the programme.

Shri G I S Chauhan, Hony Jt. Secretary, gave vote of thanks.

At the end the speakers were given away mementoes by Chairman on behalf of the Chapter.

The programme concluded with lunch.

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Global Coal Consumption Heads for Biggest Decline in History

Coal consumption is poised for its biggest decline in history, driven by China's battle against pollution, economic reforms and its efforts to promote renewable energy. Global use of the most polluting fuel fell 2.3 percent to 4.6 percent in the first nine months of 2015 from the same period last year, according to a report released recently by the environmental group Greenpeace. That's a decline of as much as 180 million tons of standard coal, 40 million tons more than Japan used in the same period. The report confirms that worldwide efforts to fight global warming are having a significant impact on the coal industry, the biggest source of carbon emissions. It comes a day before the International Energy Agency is scheduled to release its annual forecast detailing the ways the planet generates and uses electricity. "These trends show that the so-called global coal boom in the first decade of the 21st century was a mirage," said Lauri Mylyvirta, Greenpeace's coal



and energy campaigner. The decline in coal use will help reduce greenhouse-gas emissions that are blamed for heating up the planet. To limit the rise in global temperatures to 2 degrees Celsius (3.6 degrees Fahrenheit) -- the level scientists say cannot be exceeded if the world is to avoid catastrophic climate change -- emissions from coal must fall 4 percent annually through 2040, Greenpeace said.

China Declining

In China, responsible for about half of global coal demand, use in the power sector fell more than 4 percent in the first three quarters and imports declined 31 percent, according to the report. Since the end of 2013, the country's electricity consumption growth has largely been covered by new renewable energy plants. "The coal industry likes to point to China adding a new coal-fired power plant every week as evidence that coal demand will pick up in the future, but the reality on the ground is rather different," according to the report. "Capacity utilization of the plants has been plummeting. China is now adding one idle coal-fired power plant per week."

U.S. Electricity

The share of coal used to generate electricity in the U.S. will fall to 36 percent this year from 50 percent a decade ago. More than 200 coal-fired power plants, with total capacity of 83 gigawatts, have been scheduled for retirement, including 13 gigawatts expected to retire this year. Coal consumption in the European Union was flat in the first nine months, after declining a record 6.5 percent in 2014, according to Greenpeace. In India, domestic coal production has been on the rise, with sales by Coal India increasing 7 percent in the first nine months, and consumption increasing about 5 percent. India's efforts to promote renewable energy is also eating into demand for coal, and stockpiles in the country have increased sharply. "Coal is in terminal decline, and those countries investing in coal for export markets are making reckless decisions," Myllyvirta said.

Source: <http://www.bloomberg.com>

India's prospects relatively robust; to grow at 7.2%: OECD

With 'relatively robust' growth prospects, the Indian economy is expected to expand by 7.2 per cent this fiscal but difficulty in passing key structural reforms and large non-performing loans are holding it back, says Paris-based think tank OECD. However, the Organisation for Economic Cooperation and Development (OECD) cut the global growth forecast for this year to 2.9 per cent citing a "further sharp downturn in emerging market economies and world trade". The latest growth estimate for India is same as the forecast made in September by the think tank.

In the current financial year (ending March 2016), India is estimated to grow 7.2 per cent, followed by 7.3 per cent in 2016-17 and 7.4 per cent in 2017-18 period, as per OECD. "Brazil and Russia have experienced recessions and will not return to positive growth in annual terms until 2017. "By contrast, growth prospects in India remain relatively robust, with GDP growth expected to remain over 7 per cent in the coming years, provided further progress is made in implementing structural reforms," the think tank said in a statement. Economic growth of India is projected to remain robust, at around 7.25 per cent over the projection period, it added.



In its latest Economic Outlook report, OECD said that in India public investment has picked up with faster clearance of key projects while better infrastructure and greater ease of doing business are promoting private investments. More generous benefits and wages for public employees are supporting private consumption. "Even so, large non-performing loans, high leverage ratios for some companies and difficulty in passing key structural reforms are holding the economy back. The current account deficit is widening as machinery imports increase, but is largely financed by rising foreign direct investment inflows," the report said.

India's economic growth slowed to 7 per cent in the three months ended June compared to 7.5 per cent expansion recorded in the January-March quarter, as per official estimates. While cutting the world economic growth estimate to 2.9 per cent for this year, OECD has projected a gradual strengthening of global growth in 2016 and 2017 to 3.3 per cent and 3.6 per cent, respectively. "But a clear pick-up in activity requires a smooth rebalancing of activity in China and more robust investment in advanced economies," it added. As per OECD's September estimates, global growth was to be 3 per cent this year and 3.6 per cent in 2016.

The think tank said China's growth is expected to slow to 6.8 per cent this year and continue to decline gradually reaching 6.2 per cent by 2017 as activity rebalances towards consumption and services. About India, OECD said that fiscal policy is assumed to remain supportive. Public investment in the energy, transport, sanitation, housing and social protection sectors is critical to raising living standards for all and can be financed through tax reform and reductions in

subsidies, it added. "The remaining slack in the economy and the disinflation process will provide room for some monetary easing by the end of the projection period." Creating more and better jobs will require further improving the ease of doing business, modernising labour regulations, implementing the goods and services tax and making land transactions easier," the report noted. Further, OECD said that rapid economic growth, better household access to energy and more manufacturing activity would raise energy consumption, which is now highly subsidised and carbon intensive. "Despite recent hikes in coal, petrol and diesel duties, average effective tax rates on CO2 emissions remain relatively low. Phasing out subsidies for kerosene and gas and raising electricity prices would help contain emissions. Such measures risk hurting the poor, however, and so will need to be accompanied by compensating measures," it added. OECD Secretary General Angel Gurría said the slowdown in global trade and the continuing weakness in investment are deeply concerning.

In the US, output remains on a solid growth trajectory, propelled by household demand, with GDP expansion expected to be 2.5 per cent next year and 2.4 per cent in 2017, the think tank said. "The recovery in the euro area is set to strengthen, helped by accommodative monetary policy, lower oil prices and an easing of the pace of budget tightening. Euro area activity is expected to grow by 1.8 per cent in 2016 and 1.9 per cent in 2017," the report noted.

Source: The Economic Times

China to be the most critical factor for metals prices

Metals prices across the globe remain weak. Significant fall was seen in iron ore, steel and aluminium prices. Aluminium also has been a victim of China's excess capacity. Recently, the move by China to cut power tariffs for the second time has postponed planned shutdowns by players like Chinalco. As, per Bloomberg estimates China should continue to add 3.9 mt aluminium capacity, 90% of the total global capacity addition.

Thus, Emkay Global research analyst believes that China is going to be the most critical factor

for the metals prices. Emkay expect iron ore and aluminium prices to remain weak demand scenario. Steel prices might stabilize provided there is faster production cuts. Though, global prices will have their impacts, domestic prices are likely to be driven primarily by the underlying demand going forward, for which proper implementation and execution of projects are must.

Emkay Global analyst expects volatility in the metals prices which will continue pending the rate decision by the US Fed. Also, China issues should be watched closely in this regard, which should guide the price direction going forward. Reserve Bank of India, on 29th September, 2015 cut the benchmark repo rate by 50 basis points to 6.75%. This is likely to boost the sentiments by way of lower interest cost and attracting investments in medium to long term.

Financial Support

Coverage Universe	EPS		EV/EBITDA		P/E	
	FY16E	FY17E	FY16E	FY17E	FY16E	FY17E
Coal India	27.1	30.5	7.7	6.2	11.8	10.5
GMDC	8.6	10.6	4.8	3.7	8.5	6.9
GPIL	2.8	28.4	5.9	3.9	26.0	2.6
Hindalco	7.6	7.5	7.2	7.0	11.1	11.2
JSW Steel	34.3	121.6	7.4	5.0	26.5	7.5
MOIL	23.6	28.0	1.3	0.4	9.0	7.6
NMDC	10.3	10.4	5.7	6.3	9.7	9.6
SAIL	-2.6	2.4	47.5	12.8	-20.8	22.2
Vedanta Ltd.	8.4	15.4	5.7	5.0	11.9	6.5
Tata Steel	-2.1	16.1	8.1	6.6	-117.8	15.3

Valuation table for Emkay Metals & Mining universe

Company	M. Cap (Rs bn)	CMP (Rs) as on				P/E		P/B		EV/EBITDA	
		30-Sep-15	30-Oct-15	Chg (%)	YoY Chg (%)	FY16E	FY17E	FY16E	FY17E	FY16E	FY17E
Coal India	2,020.6	328	320	(2.4)	(11.1)	11.8	10.5	4.4	3.8	7.7	6.2
GMDC	23.3	72	73	2.3	(51.6)	8.5	6.9	0.7	0.6	4.8	3.7
GPIL	2.4	73	74	1.4	(50.7)	26.0	2.6	0.3	0.2	5.9	3.9
Hindalco	173.6	71	84	18.7	(47.6)	11.1	11.2	0.4	0.4	7.2	7.0
HZL	664.0	140	157	12.4	(7.0)	8.1	7.7	1.4	1.2	4.0	3.3
JSW Steel	220.1	889	910	2.4	(27.0)	26.5	7.5	1.0	0.9	7.4	5.0
MOIL	35.8	197	213	8.0	(30.3)	9.0	7.6	1.0	0.9	1.3	0.4
NMDC	397.5	93	100	7.7	(40.4)	9.7	9.6	1.3	1.2	5.7	6.3
SAIL	220.3	51	53	3.9	(36.0)	-20.8	22.2	0.5	0.5	47.5	12.8
Vedanta Ltd.	296.3	85	100	18.0	(60.5)	11.9	6.5	0.5	0.5	5.7	5.0
Tata Steel	239.5	213	247	16.0	(48.0)	-117.8	15.3	0.7	0.7	8.1	6.8

Trend: Ferrous Metal

Weak undertone continues in domestic markets too, as global prices continue to fall. Though safeguard duty of 20% has given some relief, it cannot be considered enough. The industry is asking for further hike in basic custom duty. We continue to believe that the underlying demand has to pick up for the price stability. Global crude

steel production for September'15 stood at 130.9 million tonne (-3.7% YoY; -1.1% MoM). Capacity utilization rose marginally MoM to 69.3%.

Trend: Non-ferrous metals

Prices of most of the base metals stabilized after their sharp corrections in last few months except aluminium which fell steeply recently. Aluminium prices fell 7.3% during October as its inventory level also decreased surprisingly by 4.4%. Other than aluminium prices of rest of the metals rose slightly during the month. A rise of 1.5%, was seen in lead, while marginal rise was noticed in zinc by 1% and copper by 0.8%. Marginal rise in USD index by 0.6% in October helped the prices to remain in range and stop the price fall for base metals. Inventory levels subsequently fell, sharp fall was seen in copper and lead by 17.3% and 9.7% respectively and slight fall of 2.9% in zinc.

Aluminium premiums increased after falling for last 2-3 months as US Midwest aluminium premium was up 5.4% at US\$ 163/tonne, while, on the other hand Japanese aluminium premiums fell by 5.2% to come in at 84/tonne MoM.

Major New / Events

After the success of coal block auctions, the government is set to start the bidding process for mines containing major minerals in an attempt to revive the sector affected by suspension of mining. The process will start shortly with auction of around 70 mines. More blocks are to be put up for bidding depending on the success of the initial round...

The government is planning to auction up to 11 coal blocks in the fourth round of bidding.

Organisations like Niyamgiri Surakshya Samity (NSS), Lok Sangram Manch (LSM) and All India Kisan Mazdoor Sabha (AIKMS) have decided to restart organising people's movement against alleged attempt of Odisha government to revive proposal of bauxite mining in Niyamgiri hill range...

Aluminium major National Aluminium Company (Nalco) has moved closer in its bid to bag the Pottangibauxite deposits with Odisha government writing to the Union mines ministry to allocate the mines in favour of the central PSU...

Ground-breaking ceremony for the first manufacturing unit to be set up in Gopalpur

Industrial Park Special Economic Zone (SEZ) project of Tata Steel in Ganjam district of Odisha was held in October...

The British steel industry is full-scale crisis. Before they were pushed, the Government seemed unwilling to do anything practical about it. In the last 1-2 weeks, 2,200 employees in Redcar have lost their jobs, 3,000 on-site contractors have been laid off, and 6,000 further jobs will be lost in the local community...

A beaten-down stock coupled with perceived low appetite among foreign investors could force the government to trim the Coal India (CIL) offer for sale to 5% from 10% planned earlier and push the big-ticket disinvestment to the January-March quarter...

Source: MMR

Steel Cheap imports, Chinese supply glut hammer prices

Global steel prices have continued their free fall during the month of October largely due to demand weakness and as a result of oversupply of steel in the global market. In addition to this, steel making key ingredient, iron ore prices fell sharply during October 2015 due to continuous over supply and demand slowdown in China leading to production cuts in steel. There would be further moderation in capacity utilization especially in China as per the market analyst report. In April and August this year, the country has imported 3.2 million tonne, a growth of 23% over the corresponding period last year. In the month of August alone, imports were to the tune of 870,000 tonne.

Such a weaker tone suppresses the domestic markets due to sluggish demand, rupee devaluation, cheaper imports from China, South Korea and Japan steel exporting steel products to their counterpart in India as per the FTA policy. As a result, India's biggest private sector steel manufacturer, JSW Steel had to cut its prices in the range of Rs 500-700 per tonne for flat products and Rs 1,000 per tonne for long products during the month of October 2015. It was the second price cut in the long products announced by the company recently.

This reduction in prices comes in the wake of sluggish demand for steel products and cheap

imports flooding the market. Steel long – especially TMT bars are imported in the guise of alloy bars from China. The imported products are cheaper by at least Rs 5,000-6,000 per tonne compared to the domestic prices. The volatility in currency, which has depreciated by 1.6 percent in the last one month has caused a lot of difficulties for the steel makers. In line with primary players, secondary steel long spot prices trading at Mandi Gobindgarh also recorded hefty fall from Rs 26,000 to Rs 23,700 per tonne during October 2015.

In order to curb the cheap steel import, the government had imposed a 20 percent import duty on certain products for 200 days from mid-September. The safeguard duty imposed by India a month ago on steel imports has had limited impact, except for a price increase of Rs 1,000 per tonne. Imports have maintained an upward trend and even inventory levels continued to remain high. The government had imposed a 20 percent import duty on certain products for 200 days from mid-September.

Domestic prices could stabilize, if more products are brought under safeguard duties. However, the reverse may be true if the safeguard duty on hot rolled coil flats is allowed to lapse and if safeguard duties are not extended on products in the steel value chain.

Increase in Capacity Utilisation

As per the recent India Ratings and Research (Ind-Ra) report the capacity utilisation of Indian steel manufacturers is set to decline as close to 12-14 million tonne of crude steel capacity will come on board by FYE16 with no significant hike in consumption demand. This would put further pressure on large steel products in terms of end-product pricing and EBITDA/tonne.

The Indian steel industry is under stress with the credit metrics of steel producers deteriorating substantially from FY11 to FY15.

Ind-Ra opines that the credit metrics of its rated steel manufacturers would remain stressed in the near term, and the improvement in metrics to reach the levels of FY11, would require a significant increase in capacity utilisation and profitability. Ind-Ra estimates the EBITDA/tonne has to increase by 60%-70% by FY17 to allow the leverage profile of large steel producers to return

to the FY11 levels.

Amid concerns of demand slowdown in China, steel mills have started curtailing their production too. On the other hand the supply of iron ore from Australia and Brazil have been robust. These two factors together have weighed heavily on iron ore prices and pulled down prices again below US\$50/tonne mark. In case of steel, it is sharper contraction in demand as against response by the suppliers. This is resulting into higher availability of steel in the market, which in turn is putting pressure on the price. This is also resulting into higher exports from China and has been the biggest threat for global steel prices.

Low grade iron ore in demand

Indian iron ore miners resuming exports after a three-year hiatus face a radically altered market, but may find buyers for low-quality ore among loss-making Chinese steel mills bent on slashing costs. Vedanta Ltd, India's biggest private miner, shipped its first iron ore cargo of 88,000 tonne to China.

So overall, iron ore sank 12 percent in October from low-cost miners including BHP, Vale and Rio Tinto Group combined with weaker consumption in China to spur a glut. The top miners are betting that higher output will enable them to cut unit costs and raise market share while less efficient producers get squeezed.

Iron ore extended a slump below \$50 a metric tonne, dropping to the lowest level since July, as BHP Billiton Ltd. forecast prices will probably extend their decline for years as output rises, while Vale SA reaffirmed plans to increase low-cost supply.

Source: MMR

Western steel cos blame China for overcapacity crisis

Several leading western steel manufacturers alleged that China is the predominant global contributor to the problem of overcapacity that the world is currently facing. "The global steel industry is currently suffering from a crisis of overcapacity and the Chinese steel industry is the predominant global contributor to this problem," a group of nine US steel industry associations said in a statement. "Estimates from the OECD Steel Committee indicate that there is almost 700 million metric

tons of excess steel capacity globally today," the statement said. China's overwhelmingly state-owned and state-supported steel industry has an overcapacity ranging from 336 to 425 million metric tons and it is expected to grow in the coming years. "This situation, together with a declining steel consumption, has resulted in record levels of steel exports from China to the rest of the world in 2014 and which are on track to exceed 100 million metric tons this year," the statement said. The organisations include American Iron and Steel Institute, Steel Manufacturers Association, Canadian Steel Producers Association, CANACERO (Mexican steel association), Alacero (Latin American steel association), EUROFER (European steel association,) Instituto AcoBrasil (Brazil Steel Institute), Speciality Steel Industry of North America, and the Committee on Pipe and Tube Imports. "China has claimed that it should be automatically accorded treatment as if it were a market economy after the 15th anniversary of its accession to the World Trade Organisation (WTO) in December 2016. We disagree," the steel makers said. It is the view of steel producers in Europe and North and South America that China's Protocol of Accession to the WTO does not automatically require governments to treat imports from China as if they were from a market economy country as of December 2016, they said. Some provisions allow WTO members to treat China as a non-market economy country unless the government of China or Chinese producers can show that they operate under market economy conditions, the steel industry said. "Given the continuing significant role of the Chinese government in many key aspects of the Chinese economy, and especially in its state-owned and -controlled steel sector, there can be no question that China remains very much a non-market economy today," they said. "For the steel sector, recognition or treatment of China as a market economy at the end of 2016 would coincide with the peak of Chinese excess steelmaking capacity, and record level of exports to international markets, including the US, the EU, and Latin America," the statement said.

Source: Metaljunction

Indian Steel Scenario

Although steel demand has been projected to improve fast in the NDA regime, there has not been

any structural changes which will spur up demand. The winter months have begun and these are typically high production, high consumption months for the economy. There is hardly any new project that has been announced or has got financial closure. Both integrated steel plants as well as DRI-based industry have been under severe financial crisis due to sharp fall in steel prices.

The recent introduction of safe guard duty has partially helped steel plants producing HR coils. However, Chinese steel supplier have started offering CRFH material at prices which are lower than Indian cold rollers' cost of production leading to their closure.

Major importers are now booking cold rolled (full hard) coils almost at the same price they were shipping in HR coils before the duty was levied. Before the duty was levied, hot rolled coils was the preferred import consignment. The current trend will not only hit large integrated steel producers, such as Tata Steel, Essar Steel, and Sail, that produce HR coils, but also the stand alone re-rollers who were producing CR coils. Cold rolled steel is the first value addition to hot rolled coils produced by steel companies.

Chinese color coated steel makers are destroying Indian market. While the Indian domestic price line of various steel items has been impacted severely by flood of dirt cheap steel products, Indian color coated steel market has been totally destroyed over past 2 years. The price gap between Indian and Chinese PPGL makers is so huge that Indian PPGL offers no competition.

India's INR 15,000 crore seamless pipe industry is staring at a spectre of large scale job cuts and plant shutdowns due to dumping by China at rock bottom prices in the Indian market as China is facing anti-dumping and safeguard duties from countries like the US, the European Union, Canada, Indonesia, Brazil and Mexico and is saddled with a large inventory due to subdued demand back home resulting in China's steel seamless pipe producers to export products to India at low prices. Officials in the steel ministry said they were examining a proposal from the industry to extend safeguard duty on cold-rolled coils (CRC), galvanised products, wire rods and TOR steel. Taxes, Freight and the Cost of Capital Making Indian Steel Expensive.

World Steel Dynamics report has ranked India ahead of most countries, except those from the

CIS in terms of the cost curve. According to WSD data for January this year, production cost for hot-rolled coils in India was USD 349 a tonne, compared with USD 428 in China, USD 429 in South Korea, USD 448 in Japan and the global average of USD 418. For CIS countries, the cost was USD 305 a tonne (all figures are ex-works). Add to it the taxes, freight and the cost of capital, and the picture is not really rosy for domestic steel makers, Indian companies claim. For hot rolled coils, the ex-plat price is about Rs 27,000 a tonne, while the cost to the consumer, which includes freight and taxes, is Rs 32,000 a tonne. Producers in countries such as China are taking advantage of this huge addition to dump their produce in the Indian market.

Mr. Sushim Banerjee, Director General of the INSDAG said "Our internal freight rate is two-three times higher compared to China. Capital cost, too, are high. Most Chinese mills are state owned and avail of loans at one to two percent, compared to a market rate of 4.6 percent. Our market rate, on the other hand, is 10-12 percent," It is, therefore, unsurprising that China is selling at \$80 a tonne below its marginal cost, as it can afford to take a hit. Japan and South Korea, on other hand, are selling at \$150-160 below the domestic price."

Steel imports have increased from China, Korea and Japan. After much lobbying, a safeguard duty has been imposed by the government on hot rolled coils. Also, through the past few months, there have been two rounds of import duty increases.

Copper smelters to cut production

Nine large copper producers in China have agreed to cut refined metal production by more than 200,000 tonnes in 2016 from this year, an executive at one of the producers said. The agreement followed a meeting by the producers recently in Shanghai to discuss coordinated output cuts to support prices in Shanghai and the London Metal Exchange after prices plunged to their lowest in more than 6 years.

Source: Business Standard

POSCO Named World's Most Competitive Steelmaker for 6th Year

Posco has been named the world's most competitive steelmaker in a global industry report for the sixth consecutive year. In an annual assessment of 36 steelmakers worldwide, global

steel information service provider World Steel Dynamics gave POSCO the top mark of 7.91 points out of 10. The WSD report, which ranks the steelmakers based on 23 categories, gave top scores for POSCO in four segments, including technologies innovation and human resources. POSCO said the company was highly recognized for its efforts to expand sales of high-end products and boost its competitive by carrying out technology-based solution marketing.

U.S.-based minimill Nucor Corp. came next, followed by Japan's Nippon Steel & Sumitomo Metal Corp. and Brazil's Gerdau. Hyundai Steel Co., an affiliate of the world's No. 5 auto conglomerate, Hyundai Motor Group, finished ninth in the rankings, the second time it has done so since last year.

Source: Steel Tech

Steel safeguard duty will hurt: Industry majors

MNCs say the move goes against the spirit of ease of doing biz, Make in India campaigns.

Multi-national companies with interest in India such as Posco, Maruti Suzuki, Hyundai and ArcelorMittal Brasil, along with Indian industry, made a strong pitch against the imposition of a safeguard duty on steel. They argued the move would be counterproductive to the government's Make in India campaign and that it would impact foreign investments coming to India.

The public hearing called by the Director General of Safeguards (DG Safeguards) a few days back also saw participation from country delegations and embassy representatives. These included the European Union, Japan, China, the Ukraine, the Russian Federation, Taiwan and Brazil. India has a free trade pact with South Korea and Japan, under which the countries enjoy substantial duty benefits on steel imports.

Posco and Hyundai argued the steel imported from South Korea is for captive use and not for domestic sale that could have an impact on the domestic steel companies.

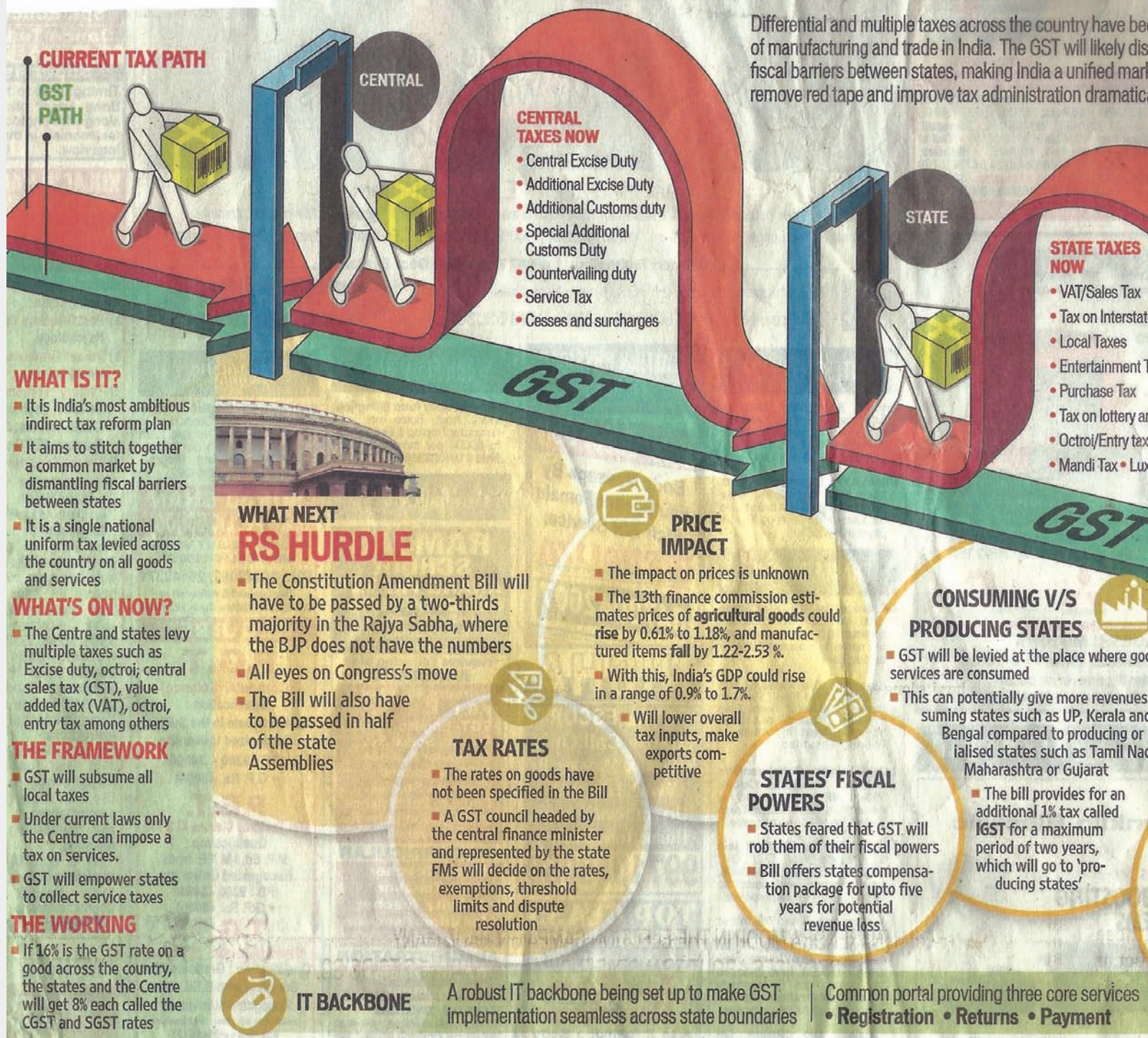
Posco contended it was forced to import from its parent company in South Korea as the local plants in India declined to supply steel products due to their own inability to produce the required quality and quantity.

A Great Seamless Success for Trade and

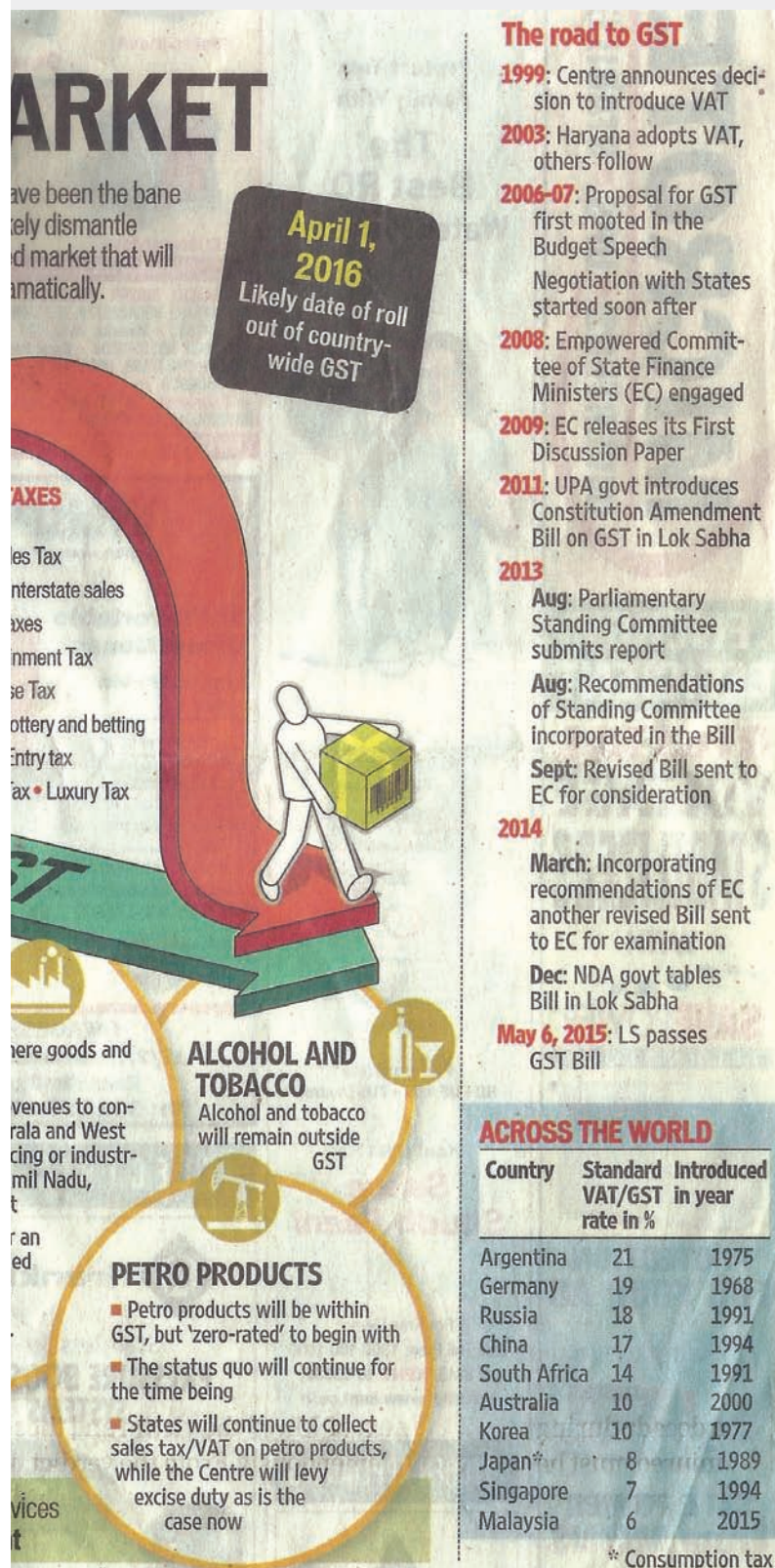
GOODS AND SERVICES TAX (GST)

SHAPING A UNITED INDIA MARKET

Differential and multiple taxes across the country have been a major barrier to the growth of manufacturing and trade in India. The GST will likely dismantle fiscal barriers between states, making India a unified market. It will remove red tape and improve tax administration dramatically.



and Industry



Posco alone imported nearly 950,000 million tonnes of hot-rolled steel between May 2014 and September 2014, accounting for 30 percent of total imports of the raw material. If excluded from the total steel imports, there is no surge in steel imports, it argued.

In all, there were 29 presentations from Nippon Steel, Posco Maharashtra, Posco Korea, Mitsui, Hyundai Steel, Hyundai Motors, China iron and Steel Association, Federation of Industries of India, Federation of Association of Maharashtra, RKB global and Tube Products of India, among others.

DG Safeguard, Vinay Chhabra, asked interested parties to make written submissions. The government will take a final decision on the duty by February after hearing all interested parties.

In September, the government imposed a 20 percent safeguard duty for 200 days on the import of hot-rolled flat products of non-alloy and other alloy steel, in coils of a width of 600 mm or more. The decision was taken on the basis of preliminary findings and the recommendations of the DG Safeguards which comes under the revenue department of the finance ministry.

Nippon Steel argued the steel required for auto production should be exempt from safeguard duty as the domestic industry does not have the capability or the technology required for production. Tata Steel, Jindal Steel and Bhushan Steel supported the three petitioners – JSW Steel, Essar Steel and the Steel Authority of India.

"Hot-rolled coil is consumed as a basic raw material by many downstream engineering units in the country. Hence, the levy contradicted the government's initiatives like 'Make in India', ease of doing business and Sabka Saath, Sabka Vikas," H L Bhardwaj, secretary-general of India, argued in his presentation. He added the imports made before the safeguard duty notification but delivered later must be exempt from the levy.

The Federation of Association of Maharashtra noted the petitioners in the case, such as JSW and SAIL, have made profits.

Safeguard duty is allowed under World Trade Organization rules as a temporary measure for a specified period to check damage to a country's domestic industry from cheaper import. The market share of steel imports doubled from six percent to 12 percent in absolute terms between

2013-14 and 2015-16, preliminary findings showed. Japan, South Korea and China accounted for about half the iron and steel imports into India in the first six months of the financial year, worth about \$3 billion. Imports made up five percent of the country's total production of the under investigation steel products (hot-rolled coil) in the year to end-March 31, 2014.

Source: Business Standard

Steel prices react to Chinese exports deluging world market

Steelmakers all over the world are facing a crisis of low demand and very low prices, which leave either slender or no margin for producers. Let us consider the case of ArcelorMittal, the world's largest steel producer. In the third quarter of 2015, its year-on-year sales dropped to \$16 billion from \$20 billion, causing a net loss of \$711 million against a profit of \$22 million. This is in spite of the European part of the company, represented by erstwhile Arcelor, and the group's US and Canadian operations are mostly about products at top end of value chain requiring application of technology that is a close preserve of a few. If this is the condition of an industry leader then the torrid weather faced by those making commodity steel as in India is easily understandable. We have seen quite a few highly disquieting working of Indian steelmakers – both in the public and private sectors – in the September-ended quarter.

The global steel crisis is largely due to an overcapacity estimated at 600 million tonnes (mt) by the rich country club the Organisation for Economic Cooperation and Development (OECD). Worryingly for the global market, half of that excess capacity rests in China, which has its compulsions to make a lot more steel than it needs. How soon all that extra global capacity is going to go away depends on two things: First, China's progress in scrapping capacity that is uneconomic and environment damaging. It is common knowledge that the provincial governments in the country remain resistant to mill closure to protect jobs and score province-centred growth often to the point of angering Beijing. What is obvious is, the provinces are providing large dollops of subsidy to sustain steel production. Metal Bulletin says Chinese companies are found exporting steel

regularly at prices 10 percent below what they charge locally. This, according to The Economist, is the textbook definition of dumping. No wonder, then, Chinese steel products are from time-to-time attracting retaliatory duties and on occasions, anti-dumping imposts, too, in various parts of the world. In September, India put a 20 percent safeguard duty on imports of hot-rolled flat steel. The growing arrival of foreign-origin steel (not only from China) taking advantage of a liberal import duty regime here is cornering a significant share of Indian steel demand at local producers' expense.

Second, world economic growth, particularly in emerging nations, will have to be much stronger for better use of steel capacity. But steel demand in China, which fell to 711 mt in 2014, will further contract 3.5 percent this year and then by another two percent in 2016. But Chinese steel production in the first nine months of 2015 was down only 2.1 percent to 609 mt. The implication of trends in Chinese demand and production is disturbing for other steel producing countries. China's record steel export of 11.5 mt in September is a pointer to the country finishing 2015 with overseas sale of 110 mt against last year's 94 mt. The country is, therefore, set to export steel this year equal to what Japan, the world's second largest producer, makes annually. Low demand and surplus capacity have resulted in global steel capacity use sinking to 68-69 percent. In the context of the industry's high fixed costs, mills should run at least at 80 percent capacity to be able to use raw materials efficiently and retain pricing power. It's no surprise, then, that in recent periods, the fall in steel prices has been sharper than in raw materials, particularly iron ore. So the spread that steel producers are to earn is squeezed.

From ArcelorMittal to Tata Steel Europe, every steelmaker will, therefore, be heard complaining about damage to steel prices being caused by China. But producers such as Posco and Nippon Steel with large proportions of high-end steel in their portfolios requiring the use of very advanced technologies are not faring as badly as commodity steel makers. Is not there a lesson for major Indian steelmakers here? They should ideally make attempts to rope in steel companies in Japan and South Korea as joint venture partners with a flexible approach to equity ownership and sharing of management control to make electrical and high auto grade steels for which we are import-dependent. As we chase an ambitious capacity

of 300 mt in another 10 years, a focus area should ideally be to build competence to make steels for which we are technology-deficient.

Source: Business Standard

Railways sign Rs 2,500 crore pact for stainless steel freight wagons

Indian Railways recently signed an initial pact with rolling stock manufacturer SAIL-RITES Bengal Wagon Industry Ltd. (SRBWI) for procurement of high-class stainless steel freight wagons at a cost of Rs 2,500 crore over 10 years.

The joint venture between steel manufacturer SAIL and rail ministry's arm RITES was set up in 2011. The company operates a wagon factory at Kulti in West Bengal, from where the wagons will be supplied. "The pact includes a commitment for procuring 1,200 new and 300 refurbished wagons every year over a period of 10 years," Railway Board's Member-Mechanical Hemant Kumar said.

He added the factory at Kulti had been set up at a cost of Rs 120 crore and would be developed as a centre of excellence.

The assured offtake pact with the railways also envisages procurement and installation of equipment at the factory by RITES.

Steel secretary Aruna Sundarajan, who was also present on the occasion, said the steel ministry was working on an ambitious plan to ramp up domestic steel-making capacity from 100 million tonnes (mt) to 300 mt over the next few years. The increased steel supply would cater to the railways' massive modernisation and expansion plan, she said.

Railway Board Chairman A K Mital said the assured supply of wagons over 10 years would help Indian Railways improve freight loading from 1.1 billion tonnes (bt) currently to 1.5 bt over the next five years. "This JV will give new wagons of increased capacity and better technology. Also, this factory will come up in an area (East) that contributes to a bulk of the loading," he said.

Source: Business Standard

Challenges and opportunities for the aluminium industry

Indian aluminium industry has embarked upon implementing a number of greenfield projects to increase production of aluminium at a rapid pace besides creating enormous employment opportunities to fulfil the mission of our Prime Minister – "Make in India".

Apart from its potentially large growing market, India is endowed with large deposits of high quality bauxite ore, power (coal) and formidable pool of manpower. The industry is forging ahead with rapid expansion in both primary metal and downstream sectors. With the robust economic growth in the country and changing life styles, the stage is set for an exponential growth in aluminium consumption in India. All the end-use sectors, such as transportation, electrical, construction and packaging have witnessed aggressive growth, which makes aluminium's future even brighter.

Indian aluminium industry, with its investments of around Rs 1.2 – 1.5 lakh crore, has employed almost 7.5 – 8 lakh and with this new expansions the employment to increase substantially. The demand for the wonder metal – aluminium, in India is also growing at double digits and will reach 3.5 million tonne from current levels of 2.8 million tonne due to the emerging applications in transportation, aerospace, packaging, building & construction.

However, currently, the industry is facing numerous challenges. Similar to all other industries, the aluminium industry has also been hit by the global slowdown, due to continuous increase in input prices & interest rates, slowdown in demand, low & delayed realisation, shortage of inputs etc. These factors are causing threat to the sustainability and the very existence of the entire industry. Exports by Indian aluminium industry have been unviable due to high product cost as compared to other competitors in the global markets especially from China and Middle East smelters.

Challenges

- Falling LME prices
- Rising cost of production
- Raw material availability
- Increased imports



A Tribute to Dr. S R Pramanik

Dr. S R Pramanik, a reputed metallurgist of the country and a very senior member of the Indian Institute of Metals, breathed his last at Kolkata on 29th November 2015 at the age of 89.

Dr. Pramanik was a student at Presidency College Kolkata and a gold medallist of 1950 batch in metallurgy at BE College, Shibpur. After completion of his metallurgical degree, Dr. Pramanik went to Germany where he obtained his PhD in Industrial Metallurgy from Aachen University, Germany. Dr. Pramanik, after his return from Germany, joined Rourkela Steel Plant and was the first recipient of National Metallurgist Day Award. Subsequent to his Rourkela tenure Dr. Pramanik joined Durgapur Steel Plant as Chief Metallurgist in 1964 where he worked for more than a decade. After his tenure at Durgapur Steel Plant, Dr. Pramanik joined Mecon, Ranchi as a Chief Metallurgical Advisor. He also worked as CEO of SAIL R&D Centre at Ranchi.

I had the privilege of working with Dr. Pramanik for several years and found him a highly technical and competent individual. He used to go deep into the details and had excellent analytical ability. He had the leadership attributes to identify the latent potential of officers working under him and used to tap the same optimally in the interest of the organization. Dr. Pramanik also worked as a Chief Editor and Advisor of IIM Metal News published from Kolkata. This position he held for several years. During his tenure the stature of Metal News grew as an excellent document of technical dissemination.

During my interaction with Dr. Pramanik for over a decade, I found him an excellent human being with the qualities of both head and heart. He was extremely hard working and very sincere in whatever responsibility he had undertaken. Dr. Pramanik is survived by his wife and a son who works as a software engineer.

His demise has created a void in the metallurgical fraternity. It has caused an irreparable loss to the metallurgical industry in general and IIM in particular. Our posterity in the metallurgical stream will miss him immensely.

I offer my sincere condolences to a brilliant metallurgist and the bereaved family and wish that his soul rests in peace.

S C Suri

Hon. Member, IIM

In the last 4 years ie since FY11, the imports have increased from 881kt in FY 11 to 1563 kt in FY15 @CACR-15%. These imports in the upstream are from Middle East and downstream are from China.

Middle East and China have huge surpluses. China gets many incentives from government like power tariff discounts, export rebate (15% to foil and 13% to rolled producers), freight reduction while Middle has an advantage of low power cost. Both the countries have a focus on India due to close proximity and India is a natural market for them. Middle East has a capacity of 5.6 million tonne and surplus of 3.2 million tonne with another 0.85 million tonne being added in next 5 years. China also has a huge capacity in primary metal and a substantial surplus in downstream. The rolled product production surplus is 1 million tonne and is expected to increase to 2.1 million tonne by 2019. With the devaluation of RMB, the Chinese companies' competitiveness has improved further and India has to protect itself from the surge in imports from these 2 countries. China due to its export rebate policy is exporting foil and rolled products to India.

The government firmly believes that the growth of the aluminium value chain in India will not only benefit the incumbents, but also benefit the communities at large by generating additional jobs and the government by generating additional revenues through taxes, etc. Being an eco-friendly "green" and recyclable metal, aluminium will also help in conserving energy and our natural resources.

It is imperative on the part of Indian aluminium industry to ensure accelerated growth in production of primary metal and associated downstream products so as to meet the principle challenges of aluminium industries. Aluminium usage and consumption in the country is very low as compared to global standard. Dependence on imported primary metal and scrap is not healthy for Indian aluminium industry to survive and grow, as global economic conditions as well as political reasons will affect such a situation as being dependent heavily on imports. Further, India having vast resources for production of primary metal should continue to produce more and more primary metal and be consumed within

the country for critical application sectors such as defence, aerospace, automobiles etc., where primary metal is generally preferred to scrap.

Therefore, the desired accelerated growth of aluminium industry both in terms of production and consumption will be one of the key drivers of growth of the nation's economy. In order to accomplish this goal, it is critical that the industry and Government work together to draw up a strategy to ensure that the growth of aluminium industry is well guided.

Aluminium Association of India (AAI), the apex body representing entire spectrum of Indian aluminium industry in the country, having close rapport with various ministries, having always enjoyed the ministry's patronage, support and guidance in all activities, will help industry to approach appropriate ministry to remove obstacles coming in the way of growth of the aluminium industry especially in primary metal industry as well as downstream sector. Besides this, AAI is also closely collaborating with various overseas associations and it is imperative on the part of aluminium industries to take advantage of this close association for developing downstream industries on the state-of-the-art technologies. AAI will assist Indian aluminium industry in establishing close collaboration with aluminium industries through International Aluminium Associations. Services of AAI are available to the members for exchange of technical information and also transfer of technology through collaborative efforts, as AAI has already signed MoU with Aluminium Association of America.

Aluminium Association of India (AAI) help the growth of Indian Aluminium Industry

By disseminating vital information on technological developments and on various applications of aluminium, all of which are significant to India vide National & International Seminar / Workshop / Conferences. By providing statistical / Techno-commercial information on aluminium to the members, Government etc. through print and electronic media. It also offers advice on technical problems, marketing issues. By forwarding large number of enquiries received from within country and abroad regarding various aluminium products.

Mission

- To promote utilization and growth of aluminium and its varied applications like building packaging, transportation, power generation, aerospace, automobile, telecommunications, etc.
- To Create a common forum for aluminium industry and its constituents to formulate common policies and strategies maintain close liaison with Government departments, project and further the interests of aluminium production and distribution, build awareness on health, environment, safety and energy
- To enhance the role of aluminium in the national economy as an eco-friendly metal of unique properties.
- To disseminate knowledge on aluminium products, technologies, marketing, etc.
- To interface between the aluminium industries, government and institutions of higher learning, to promote the cause of aluminium.

Source: MMR

Centre to auction 12 copper mines by next year

To ensure supply of 10-15 mt of ore; mines in Rajasthan, Gujarat, Maharashtra identified.

The Centre plans to auction 12 copper mines in the next one year, in order to ensure ore supply of 10-15 million tonnes (mt).

Currently, only Hindustan Copper has a captive copper mine, while other companies import copper concentrate and convert them to copper cathode and rods.

Speaking at the India Copper Forum a few days back, Balvinder Kumar, Secretary (Ministry of Mines), said the Centre has identified five copper mines in Gujarat, three in Rajasthan and four in Maharashtra for auctioning.

Of these, he added, prospecting licence has been issued for two blocks in Maharashtra and one in Rajasthan, with 11 million tonne of copper ore to be auctioned by February. This would result

in supply of 10-15 million tonne of copper ore in India. In addition, another 15 coal blocks have been explored and will be auctioned within a year, he said.

Investment sought

"The Centre is keen to attract private investment in exploration, and will finalise the new National Exploration policy by January," said Kumar.

The Centre will have Rs 450-500 crore in the National Mineral Exploration Trust by next year-end. As per the new Mines and Mineral Development Act, mining companies have to contribute 2 percent of royalty to the Trust, for facilitating exploration.

"The Centre has identified a copper mine, with 26.3 million tonne reserves and trace of 1.3 to 1.5 mt of gold and silver at Alwar district in Rajasthan. This will be auctioned in one year. We have found mineral trace over 60,000 sq. km in Rajasthan, Madhya Pradesh and Jharkhand.

"Of this, 1.5 mt of copper reserve is established over 20,000 sq. km and more mineral ore can be extracted if the remaining area is explored," he said.

The Centre is also considering an amendment to the new Mines and Mineral Development Act, to allow transfer of captive mines in case there is an asset sale.

JP Group's bid to sell its two cement plants to UltraTech Cement and Birla Corp. has been delayed as the new Law does not allow transfer of limestone lease with the sale of asset.

"Though the amendment will not happen anytime soon, it is being discussed at various levels," said Kumar.

On the industry demand for anti-dumping duty on copper, Ravi Capoor, Joint Secretary (Ministry of Commerce and Industry), asked the industry to push for safeguard duty, as it was done in the case of steel. Going by import data, Capoor said there is a clear case for safeguard on copper plates and tubes. If the industry can bring up their case to the Centre, we will respond in two months, he added.

Apart from pressing for safeguard, the industry should also work on various quality and energy

ht
360°



BLACK MONEY

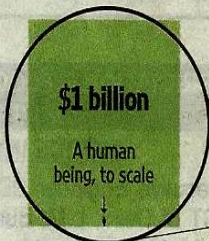
Looks at a topic from all angles

THE PARALLEL ECONOMY

Money turns black when it is not disclosed to the govt for evading taxes or due to its criminal origins. The size of the black economy is so huge that the govt passed a law in May with hopes of recovering at least some, if not all, of it. A lowdown on India's unaccounted economy and how it thrives

Black money in \$ bills

Stack of \$1 billion is made by arranging 250 rows of 40,000 \$100 bills stacked one over other



\$500bn

₹32 lakh cr Ex-CBI director AP Singh's estimate

\$462bn

₹29.6 lakh cr GFI estimate[#]

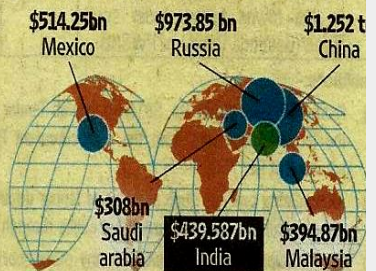
#from 1948-2008; *BJP task force gave an estimate ranging from \$500-\$1,400 billion in 2011

\$1.4tn

₹89.6 lakh cr BJP task force's upper estimate*

The height of the stack is more than the height of 2.5 Qutub Minars

COUNTRIES WITH LARGEST ILLEGAL CAPITAL FLIGHT DURING 2003-2012



PROMINENT TAX HAVENS USED FOR ROUTING BLACK MONEY

- Cayman Islands
 - Liechtenstein
 - Isle of Man
 - British Virgin Islands
 - Switzerland
 - Mauritius
- Source: Global Financial Integrity (GFI)

HOW THE DIRT GETS WASHED

PROPERTY DEALS

- 1 A house is sold for ₹20 crore
- 2 The buyer pays ₹10 crore in cheque and ₹10 crore in cash. The cheque is deposited in a bank and a sale deed for ₹10 crore is prepared for the property
- 3 ₹10 crore worth of cash received is unaccounted for, and hence **black money**

HAWALA

- 1 An Indian-resident wants to send ₹1 crore to someone in Dubai. He/she gives it to a hawala dealer in India
- 2 The hawala dealer calls a dealer in Dubai and gives him the receiver's details. Second hawala dealer completes the deal and settles the account with first hawala dealer later

WAYS IN WHICH GOVT CAN USE BLACK MONEY, IF RECOVERED

If hidden \$500 bn were to be disclosed and taxed at 60%, the govt would get ₹17.8 lakh crore as tax income

- 1 **Cash and jobs for the poor**
Directly transfer the recovered cash to millions of poor households of the country to lift them out of abject poverty, or offer guaranteed jobs to all members of millions of poor rural households for a full year

- 2 **A huge infra push**
Construct state-of-the-art super speciality hospitals with 4,000 beds in each of India's 640 districts, or build 178,000 km of national expressways at an average cost of ₹10 crore per km, fully funded by the government

- 3 **No tax for a year**
Offer a "zero-tax" year for all individuals and firms and still announce a budget to fund its expenses including expenditures such as salaries, financing of welfare schemes and top it all off by quadrupling wage payments

Stages of money laundering

- PLACEMENT** Introduce money into financial system through cash deposits in a bank account
- LAYERING** Move funds rapidly across accounts to disguise origin and obscure audit trail
- INTEGRATION** Bring funds into financial system through front companies, false invoicing

INDIA'S RURAL POOR

According to the socio-economic caste census 2011, the country isn't creating enough sustainable cities necessary to lift millions out of poverty

243.9 million

Total number of households in India

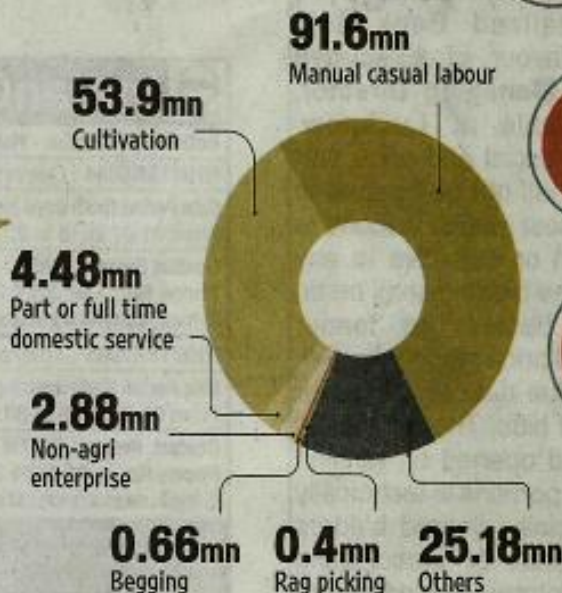
179.1 million

Total number of rural households in India

64.8 million

Total number of urban households in India

WORK PROFILE OF THE RURAL HOUSEHOLDS



Bottom of the pyramid

133.45 million

No. of rural households or **74.49%** of rural households, whose monthly income of highest earning household member is less than ₹5,000

19.77 million rural households own a refrigerator

122.45 million rural households which have a mobile phone

4.41 million rural households own a car

8.21 million rural households paying income or professional tax

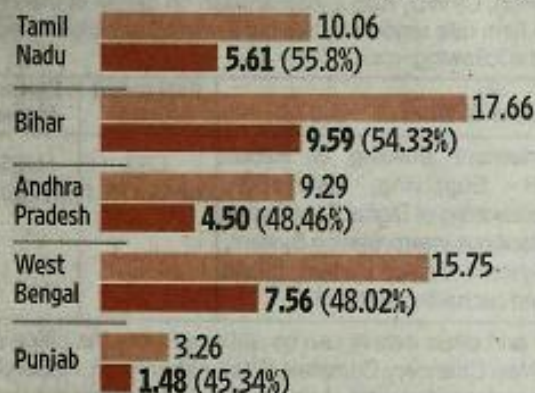
68.56 million

Rural landless households or **38.27%** of rural households

THE PECKING ORDER

States with highest %age of landless households

■ Total rural households ■ Landless rural households (Figures in million)



SCs/STs need more than job reservations

	SC	ST	All India
Rural households	33.06 mn	19.64 mn	179.1 mn
Landless rural households	54.67%	35.62%	38.27%
Households in govt jobs	3.96%	4.38%	5.0%
Households in pvt jobs	2.42%	1.48%	3.57%
Households with <₹5,000 monthly income	83.56%	86.57%	74.49%
Households which own a four-wheeler	0.83%	0.97%	2.46%
Households which own a refrigerator	6.49%	3.43%	11.04%

DEPRIVATION INDICATORS

- Households with 1 room having kucha walls and roof
- No member between 16 to 59 years of age
- Female head with no adult male member between 16 and 59 years of age
- No able-bodied adult member and no literate member above 25 years of age
- Scheduled caste, scheduled tribe and landless households
- Households with no literate adult above age 25 years
- Major income from manual labour

METHODOLOGY: The census was carried out across 640 districts. Excluded from being counted as poor: Households owning motorized vehicles, fishing boats; having Kisan Credit Card; households with a govt employee; households with non-agri firms; households with a member earning more than ₹10,000 p.m. **Counted as poor:** Those without shelter; manual scavengers; primitive tribal groups; bonded labour

efficiency standards, which the exporting countries are not meeting, and convince the Centre to notify them, he said.

Source: Hindu Business Line

Is India ready to take the mantle from China?

Yi zhu, in an email interaction with MMR, spoke about the nitty-gritty of China's metals industry and its impact on global and Indian metals sector.

Excerpts:

Q: In the event of Fed delaying rate hike how do you see the movement in the global metals market and its impact on Indian metals industry?

A: Fed's interest rate hike is likely to impact negatively on US dollar denominated metal prices. India's steel output keeps growing. Even though its steel output growth has slowed in the past three years, mainly due to delays in securing environmental clearances for projects. The country's Five-year Plan for 2012-2017 sets that capacity will rise to 142 million metric tonne by 2017, up more than 40% from 2014. And capacity is planned to be further increased to 300 million tonne by 2025.

To protect domestic producers, India has increased import taxes on steel products and imposed anti-dumping charges against Chinese steel mills. The country's steel imports jumped 29% in 2014 and China is the largest sourcing country due to cheaper prices. Indian steel producers have 37 million tonne of new capacity under construction or planned, according to Bloomberg intelligence analysis. That equals to 35% of capacity as of year-end 2014. The tally includes 14.5 million tonne due to come online by the end of 2016.

Indian steel producer can now import high-quality iron ore at about the same cost as lower-quality, domestic feedstock thanks to falling global prices. The situation is hurting Indian miners while boosting margins at the nation's steel mills. Iron ore prices have more than halved since the start of 2014, and touched a six-year low in the first half of this year. India has raised export duties on iron ore, motivated by concerns about the availability of the raw materials for its steelmakers. The country became a net-importer of iron ore

last July.

Q: Globally rising supply and weak demand have weighed on metal prices. Please give your views on this demand supply mismatch?

A: Rising supply and a slower demand growth in China have pressured metal prices. As China switched its economy from export-oriented to domestic-consumption, the growth rate decreases. As China's demand is the large contributor to the global markets, China's changing economy is having a massive impact on bulk commodity markets.

Metal prices may stay near depressed levels in 2016, based on consensus, as new supplies keep coming to market despite a lack of evidence that a recovery in demand is imminent. Until overcapacity is cut and demand picks up, metal prices are likely to remain subdued, and producers can expect narrowing profit margins.

Q: What are the key factors for stupendous rise in invisible stocks which led to distorting metal inventories?

A: The decline in Shanghai Future Exchanges' copper and lead inventories since late March do not necessarily mean demand is improving. Some inventories are now held at off-exchange warehouses and are considered "invisible stocks," as no official data on them is available. Bonded warehouses are one form of invisible stock. Metals can also be held in on-exchange deliverable formats, such as molten aluminium.

The rising use of such stocks reduces exchange inventories, while total distribution amounts may actually be growing.

Q: Please provide us an overview of investment in late-cycle commodities in the past few years and also present your outlook?

A: China is still increasing investments in late-cycle commodities such as base metals. This translates into continuing capacity expansion for aluminium and copper used in the latter stages of the construction cycle, while steel capacity has already peaked. China will probably add 3.9 million tonne and

800,000 tonne of capacity for aluminium and copper this year, according to BI analysis, whereas steel capacity will drop by 5 million tonne. China's investment in non-ferrous metal production has increased more than 12-fold from 2003 to 2014, and continues to rise this year.

Q: What is your opinion on China's investment plans in infra, railways and the One Belt, One Road Project. Would it boost the demand for metals?

A: According to a recent analysis by Bloomberg Intelligence, China's forthcoming plans to accelerate railway and other infrastructure projects have yet to translate into more demand for metals. Implementation of the projects may not have started, as metal producers are still waiting to receive orders. China's local governments, which usually match Beijing on infrastructure investments, may lack funds this year as tax proceeds and land sales decline. Demand may rise for metals once the construction starts on infrastructure and railway projects.

Q: Do you think India is ready to take the mantle from China?

A: China's demand for steel is retreating from the double-digit growth rates of the past 10 years, as Beijing tries to shift the economy to focus on domestic consumption rather than exports. The country may cut five million tonne of capacity this year.

Since China introduced its tougher environmental protection policies in 2013, capacity closures of steel mills have been accelerating in several regions. Local governments are determined to achieve capacity closure and pollution emission reduction targets, which are now key performance indicators, replacing previous GDP-focused measures. Producers that don't comply and those facing high cost for meeting the requirements will be under pressure to exit the market.

Whether India can take the steel torch from China depends on better regulations, power availability, and infrastructure improvements.

The availability of stable power supply may

be a key issue for Indian steel mills to expand capacity. Steel producers may face power constraints stemming from supply deficits and underdeveloped transmission lines. In addition, while the country is coal-resource rich, it relies on imported coking coal, the key fuel for steelmaking.

Japanese, Korean and Chinese steel companies have in India, while the major setback is a regulation maze. Posco scrapped its plan for a 12 million-tonne-a-year steel plant in Odisha state that was conceptualized in 2005 due to difficulties in acquiring land and iron ore mines. ArcelorMittal also canceled its plan to build a steel mill in Odisha.

Prime Minister Modi's government seeks to attract foreign investments and will have to prioritize finding a solution to these issues.

Q: How do you see Chinese overcapacity with rising exports hampering manufacturing industry in India?

A: To protect domestic producers, India, as mentioned above, has already raised import taxes on steel products and imposed anti-dumping charges against Chinese steel mills. The country's steel imports jumped 29% in 2014 and China is the largest sourcing country due to cheaper prices.

Q: Volatile risk environment has contained companies' ability to stay agile and opportunistic. Your comment please...

A: Metal price variability has been high and is likely to continue to be so. Historically, companies have managed this variability using cost pass-through, derivatives and cost cutting. These strategies are no longer sufficient to do the job. Companies need to think more broadly and strategically.

In addition, the current global business environment creates emerging risks – for metals producers that are potentially more significant than metal prices. In order to operate effectively in this environment, forward thinking companies need to define and assess their risks, develop broad sets of alternatives, apply multiple strategies in concert, be prepared to respond to unforeseen events and develop the agility to capitalize on opportunities as they present

themselves. Executives should understand that volatility is not always a problem.

A well-informed and prepared company can use economic dislocations to its advantage, locking in input costs or exchange rates at low levels in markets that have overreacted and oversold commodities or commodity linked currencies. Furthermore, in select cases, there are substantial upsides to naked exposure to the market; this can benefit a company if it has strong evidence to support such an overall strategy.

Q: How would China's move to promote yuan affect commodities trading business?

A: China's recent steps to promote its currency for greater global acceptance include setting up five offshore yuan centers, launching the Shanghai-Hong Kong Stock Connect, and widening the yuan-trading band. The rise of the currency in global markets may promote trading of yuan-denominated commodities and increase China's ability to influence prices. It may also help China's small-scale metal producers gain access to offshore-funding channels.

The yuan's rise in global markets may promote commodities trading denominated in China's currency, increasing its pricing power. While China is the largest importer and consumer of iron ore, copper ore, bauxite and other goods, it's a price taker, unable to set the terms because most commodities are still denominated in dollars. International commodity trading uses mostly overseas exchanges for benchmarks, and transactions are settled in dollars.

Q: What is your outlook on copper and iron ore surging supplies as new mines come on stream?

A: Indian steel producers can now import high-quality iron ore at about the same cost as lower-quality, domestic feedstock, thanks to falling global prices. The situation is hurting Indian miners while boosting margins at the nation's steel mills. Iron ore prices have more than halved since the start of 2014, and touched a six-year low in the first half of this year. India has raised export duties on iron ore, motivated by concerns about

the availability of the raw materials for its steelmakers. The country became a net-importer of iron ore last July.

New copper and iron ore mines may continue to come on stream. Copper miners are planning about 7.88 million tonne of new copper supply, or a 43.5% increase by 2020 into a global market that mined 18.1 million tonne in 2014. Large-scale iron ore producers are trying to cope with further price declines by raising output to lower unit costs and by improving operating efficiency at mines. Some high-cost iron ore mines have been pushed out of the market due to loss-making.

Q: Do you think that India's steel sector could emulate China's feat of double-digit growth of the past?

A: As Prime Minister Narendra Modi pushes for improvements in India's infrastructure and housing, the nation's steel consumption is set to accelerate. China's demand for steel, meanwhile, is retreating from the double-digit growth rates of the past 10 years as Beijing tries to shift the economy to focus on domestic consumption rather than exports.

China's steel capacity peaked last year as cuts finally take hold. The country may cut 5 million tonne of capacity this year, according to Bloomberg Intelligence analysis. That compares with net additions of 20 million tonne last year and 50 million tonne in 2013. China steel capacity increased sharply following the government's RMB 4 trillion, post-financial crisis stimulus package. The industry has almost no entry barriers due to the easy availability of technology and equipment, favourable financing rates, and support from local governments.

Source: MMR

Make in India

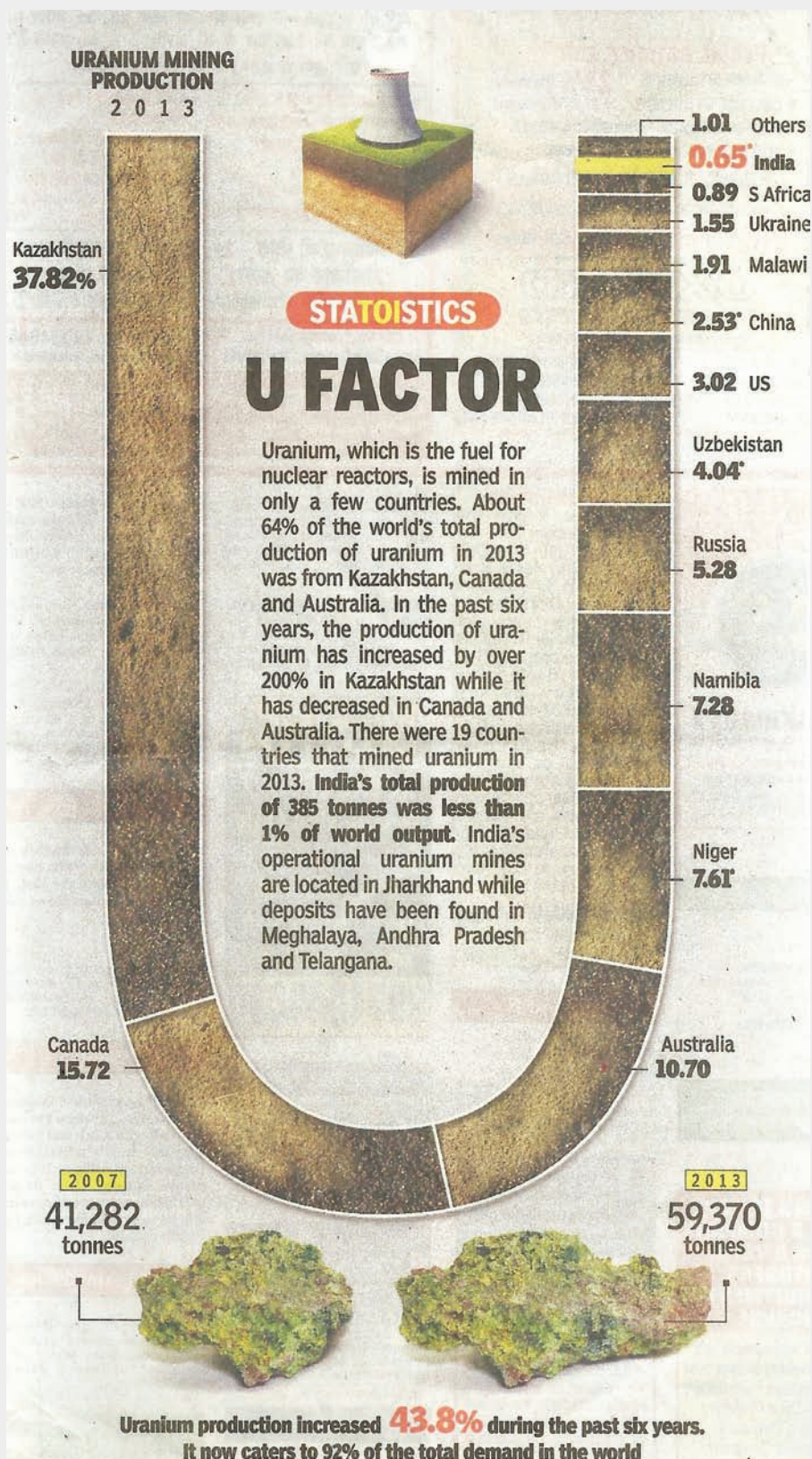
The 'Make in India' initiative was launched on September 25 last year. It is aimed at making India a global manufacturing hub and create millions of jobs. Under the programme, the Government has identified 25 key sectors in which India has the potential of becoming a world leader. Necessary steps have been announced to improve ease of doing business in the country and relax FDI norms in several sectors.

Thrust sectors include automobiles, chemicals, IT, pharma, textiles, ports, aviation, leather Tourism and hospitality, wellness, and railways are others. The documents will provide growth drivers, investment opportunities, sector-specific FDI, other policies & related agencies, while most sectors need Central Governmental clearance for FDI, the crucial tourism sector has been happily clubbed in the 'automatic investment' category. India has vastly under-used tourism potential, even though the country offers one of the most geographically diverse holiday options– the world's highest and longest mountain range of the Himalayas, a 7,517 km (4,671 mi) long coastline filled with seaside resorts and secluded beaches, the Ganges and coastal rivers, tropical and alpine forests, adventure sport hubs and ancient cities, including 30 World Heritage sites. Tourism in India, particularly domestic tourism, could see unprecedented growth thanks to a historic Indian governmental decision recently to open investment in railway infrastructure to 100% FDI under the 'Automatic' route.

A key 'Make in India' project is the Delhi-Mumbai Industrial Corridor (DMIC), with the 1,483 km long, high-capacity Dedicated Railway Freight Corridor (DFC) as its backbone. The project aims to develop 24 new manufacturing cities along the Delhi-Mumbai Industrial Corridor, with each city given high quality infrastructure – improved power and water supplies, efficient public transport and waste management systems.

With a year 2019 deadline, the first phase has seven cities being developed – two in Maharashtra and one each in the states of Rajasthan, Uttar Pradesh, Haryana,

Madhya Pradesh and Gujarat. The DMIC project, with the government of Japan as its partner, feeds significant nourishment to a geographically



crucial sector of India's economy. The DMIC states of Maharashtra, Rajasthan, Uttar Pradesh and Gujarat contribute 43% of India's GDP, over 40% of industries and industrial workers, and over 50% of India's industrial output and exports. The new DMIC cities are expected to cope with increased pressures of urbanization, and lead India's economic growth across the next two decades.

Japan features prominently in India's new development and investment drive, such as the Investor Facilitation Cell of Invest India, a crucial liaison component in the 'Make in India' initiative. Invest India is also a part of the Japan Plus initiative created to deepen economic ties between India and Japan, and to fast-track investment proposals between two of Asia's largest economies. Recently, Japan has announced \$15 billion low interest loan to India for a bullet train from Mumbai to Ahmadabad.

The Indian Railways, the world's eighth largest employer with 1.4 million people in its payroll, now estimates a record \$120 billion investment in the next five years for upgrading and expanding its network. Four hundred railway stations across India are due for an elaborate upgrade, through a transparent e-bidding process.

Foreign direct investment (FDI) into the country has witnessed a 31 percent increase during April-June period of this fiscal. First seven months of the landmark 'Make in India' initiative saw Foreign Direct Investment (FDI) soaring by 48% as per the report from Ministry of Commerce and Industry. Foreign Institutional Investors (FIIs) channelled a record \$40.92 billion into India from October 2014 to April 2015, an unprecedented 717% FDI upsurge in the year-on-year period.

India's Commerce Ministry said the record FDI upsurge indicated growing trust of global investors in the country's economy, and in latest reforms to cut red tape. "A number of regulations and procedures were either done away with or eased," said a Government of India update. Foreign investors have now shown unprecedented interest for investment in the manufacturing sector.

Source: Steel Tech

Way to Reduce Stress on the Job

For many people, corporate life can be a pressure cooker. Here are some simple techniques you can use to reduce stress and tension on the job.

Screening

Working alone, in long stretches, is far more practical – and productive – than working in the corporate environment, where your open door is an invitation for everyone to interrupt you, regardless of how busy you are. If you find these constant interruptions stressful, it may pay you to screen calls and visitors.

Unlisted Phone Number

Few things are as intrusive as a work-related phone call received at home. If you are bothered by too many such calls from subordinates or supervisors, consider getting an unlisted number. If company policy dictates that people at work must have access to your home number, you might want to buy a telephone answering machine.

Delegation

Do you have too much work to do? Delegate it. Don't think you're the only one who can do your work. You'd be surprised at what your co-workers can accomplish for you.

Deep Breathing

Psychologists have developed a number of relaxation techniques that can help reduce stress on the job. One of the most basic techniques is deep breathing. To practice it, sit in a comfortable position with your hands on your stomach. Inhale deeply and slowly. Let your stomach expand as much as possible. Hold your breath for five seconds. Then exhale slowly through pursed lips, as if whistling. Repeat the cycle three or four times.

Contributed by

Shri K L Mehrotra

Chairman – IIM-DC & Former CMD – MOIL

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Go Farther Than You Can See

Too many people expect little, ask for little, receive little and are content with little. Having a dream is not trying to believe something regardless of the evidence; dreaming is daring to do something regardless of the consequences. I sincerely believe that every one of us would accomplish many more things if we did not so automatically view them as impossible.

"Don't wait for all the lights to be green before you leave the house". Don't ever say that conditions are not perfect. This will always limit you. If you wait for conditions to be exactly right, you will never do anything.

Those who dare, do; those who dare not, do not. Don't do anything that doesn't require vision. "God made the world round so that we would never be able to see too far down the road." The person who dares for nothing need hope for nothing.

I really believe that the way to live your life is "outside of the box." The future belongs to those who can think unthinkable thoughts, see where no one is looking and take action before it's obvious.

Let your faith run ahead of your mind. Significant achievements have never been obtained by taking small risks on unimportant issues. "If you're hunting rabbits in tiger country, you must keep eye peeled for tigers, but when you are hunting tigers you can ignore the rabbits". Don't be distracted by the rabbits. Set your sights on "big game."

You have reached stagnation when all you ever exercise is caution. Sometimes you must press ahead despite the pounding fear in your head that says, "Turn back."

- Our destiny says to us, "Come to the edge."
- We say, "It's too high."
- Come to the edge."
- We say, "I might fall."
- "Come to the edge," Destiny says.
- And we stepped out.
- And it pushed us.
- And we flew.

This is the eighteenth of series of "Nuggets of truth" which are our sound food for soul. Get ready to blow the lid off our limited Thinking & create your recipe for happiness & success.

Compiled by Shri K L Mehrotra

Chairman – IIM-DC & Former, CMD – MOIL

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