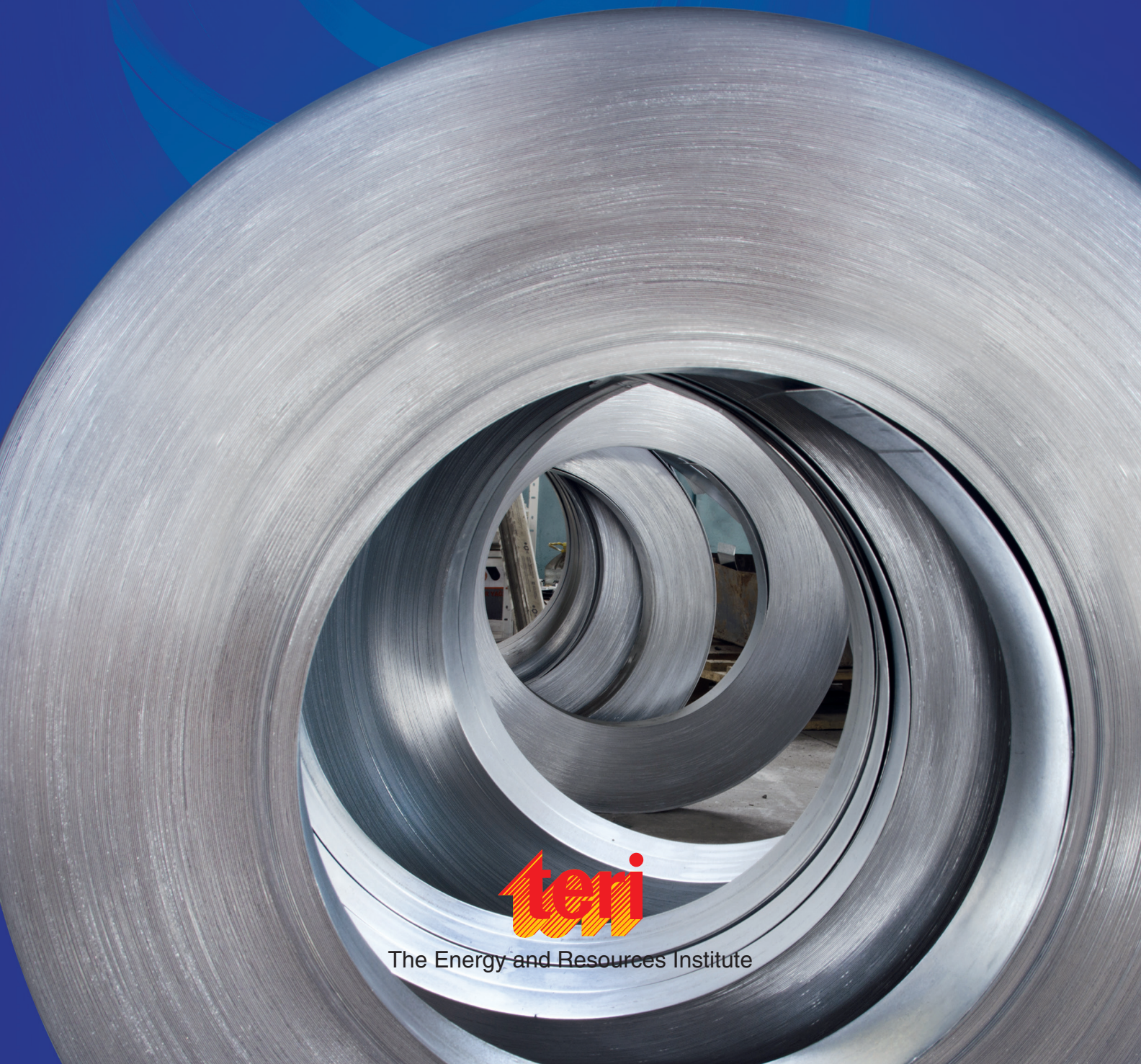
Growth of Steel Sector

Global and Indian Trends



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Introduction

Steel industry plays an important role in the economic development and strategic growth of a country. It is an essential input for most manufacturing activities and for building infrastructure necessary for economic development. Over the past decade, the steel industry has experienced an unprecedented expansion in production capacity with increased demand as many developing economies entered a metal-intensive stage of growth.

The steel sector in India is almost a century old and shows substantial economic importance due to rising demand by sectors such as infrastructure, real estate, and automobiles in domestic as well as international markets. The level of per capita consumption of steel is an important determinant of the socio-economic development of the country. Government has also taken various new initiatives to promote the steel industry in the country.

Global Scenario

Production

In 2014, the world crude steel production reached 1,661.5 million tonne (MT), which was an all-time high and showed a growth of 1.2% over that of 2013; however in first quarter of 2015, world crude steel production for the 65 countries reporting to the World Steel Association (WSA) was 138 MT, which is a 2.7% decrease from last year's first quarter at 141 MT. The steel industry worldwide maintained a compound annual growth rate of 3.65% during 2008–12 despite the fact that global economy was under terrific stress following the financial crisis and economic meltdown of 2008. Growth of Steel production was negative in the European Union (EU), North America, South America, and the Commonwealth of Independent States (CIS) in 2009. However, Asia, in particular China and India, and the Middle East showed positive growth in 2009. All major steel-producing countries and regions showed double-digit growth in 2010. Due to lower base effect, the EU and North America had higher growth rates from 2009 while Asia and the CIS recorded relatively lower growth (Source: WSA).

In 2003, around 971.02 million metric tons of crude steel were produced worldwide and it increased to 1,661.5MT by 2014, as shown below in Figure 1.

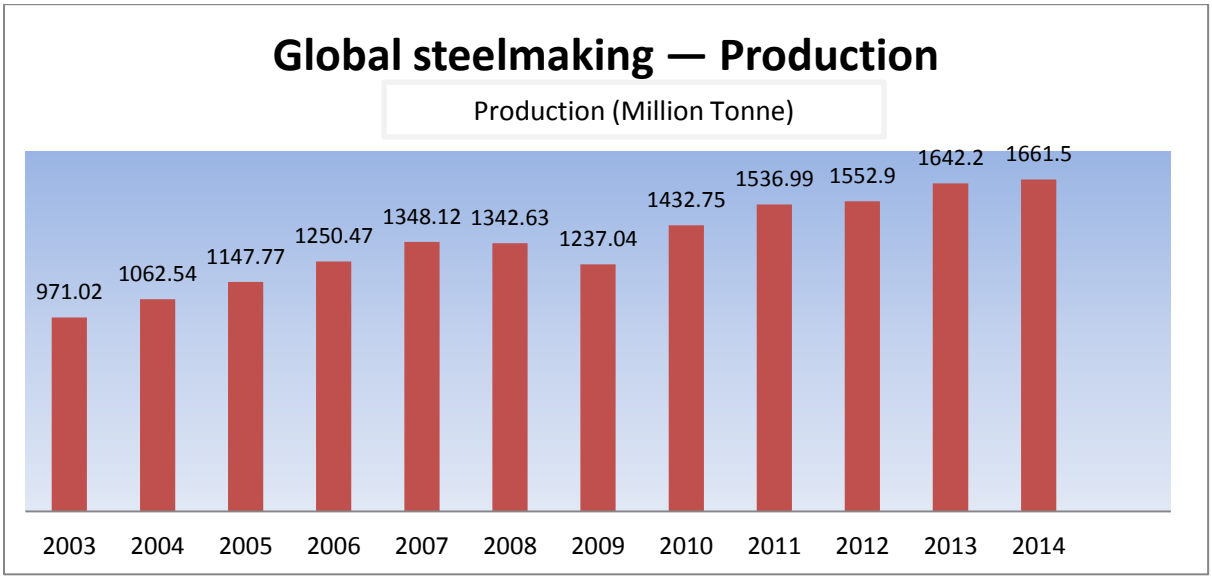

Figure 1: Worldwide Production of Crude Steel between 2003 and 2014
Source: Statista© 2015

Share of Steel-Producing Nations

In year 2014, Asia's annual production of crude steel was 1,132.3 MT, which is an increase of 1.4% compared to 2013. Nearly 67% of world crude steel production was accounted for by Asia. Top ten steel-producing countries approximately produced 83.3% of world steel production in 2014.China's share of world crude steel production was 49.7% in 2013, and in 2014, it slowed down to 49.5%, which is 0.2% decrease compared to 2013. Japan produced 110.7 MT in 2014, a 0.1% increase from 2013. South Korea's crude steel production was 71.0 MT in 2014, an increase of 7.5% compared to 2013.

The EU recorded an increase of 1.7% compared to 2013, producing 169.2 MT of crude steel in 2014. Germany produced 42.9 MT of crude steel in 2014, up by 0.7% over 2013. Italy produced 23.7 MT in 2014, a 1.4% decrease over 2013. France's crude steel production in 2014 was 16.1 MT, an increase of 2.9%. Spain produced 14.2 MT of crude steel in 2013, a decrease of 0.6% compared to 2013.

In 2014, crude steel production in North America was 121.2 MT, an increase of 2.0% from 2013. The USA produced 88.3 MT of crude steel, up by 1.7% compared to 2013 (Figure 2).

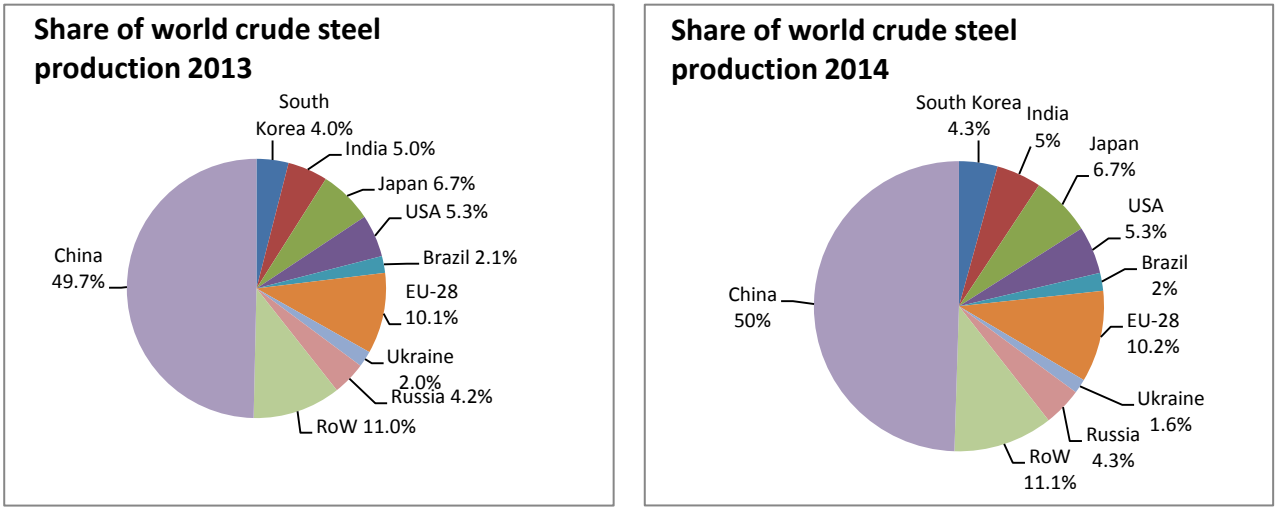

Figure 2: Share of Steel-Producing Nations in 2014 and 2013
Source**:** WSA

Among top ten crude steel-producing countries, China remained the world's largest crude steel producer in 2014 (823 MT) followed by Japan (110.7 MT), the USA (88.3 MT), and India (83.2 MT) at the fourth position, as shown below (Table 1)

Top 10 Steel-Producing Countries				
Rank	Country	2014 (MT)	2013 (MT)	Percentage of change in 2014 on 2013
1	China	822.7	815.4	0.9
2	Japan	110.7	110.6	0.1
3	United States	88.3	86.9	1.7
4	India	83.2	81.3	2.3
5	South Korea	71.0	66.1	7.5
6	Russia	70.7	68.9	2.6
7	Germany	42.9	42.6	0.7
8	Turkey	34.0	34.7	–1.8
9	Brazil	33.9	34.2	–0.7
10	Ukraine	27.2	32.8	–17.1

Table 1: Top Ten Crude Steel-Producing Countries of the World in 2013–2014
Source: WSA

Consumption and Demand

Over a period of time, steel consumption has increased manifold. In 2015, global demand of crude steel is expected to be approximately 1,647 MT.

The statistic below represents global consumption of crude steel from 2004 to 2014, including a forecast through 2016, which shows clear growth in global steel consumption from 2010The global steel industry has been on a roller coaster since 2007.In 2009, due to financial crisis, the booming steel market of 2004–07 rapidly declined. The extreme lows of 2009 were, however followed by steady recovery in demand and associated production as well as a re-stocking period. During 2010, global demand for crude steel bounced back to surpass the 2008 levels as investment by governments of major economies in infrastructure and other steel-intensive projects increased. Global consumption of crude steel in 2004 was recorded at 1,072 MT, and it increased to 1,614 MT by 2014 and further expected to increase in 2015-16, as shown below in Figure 3.

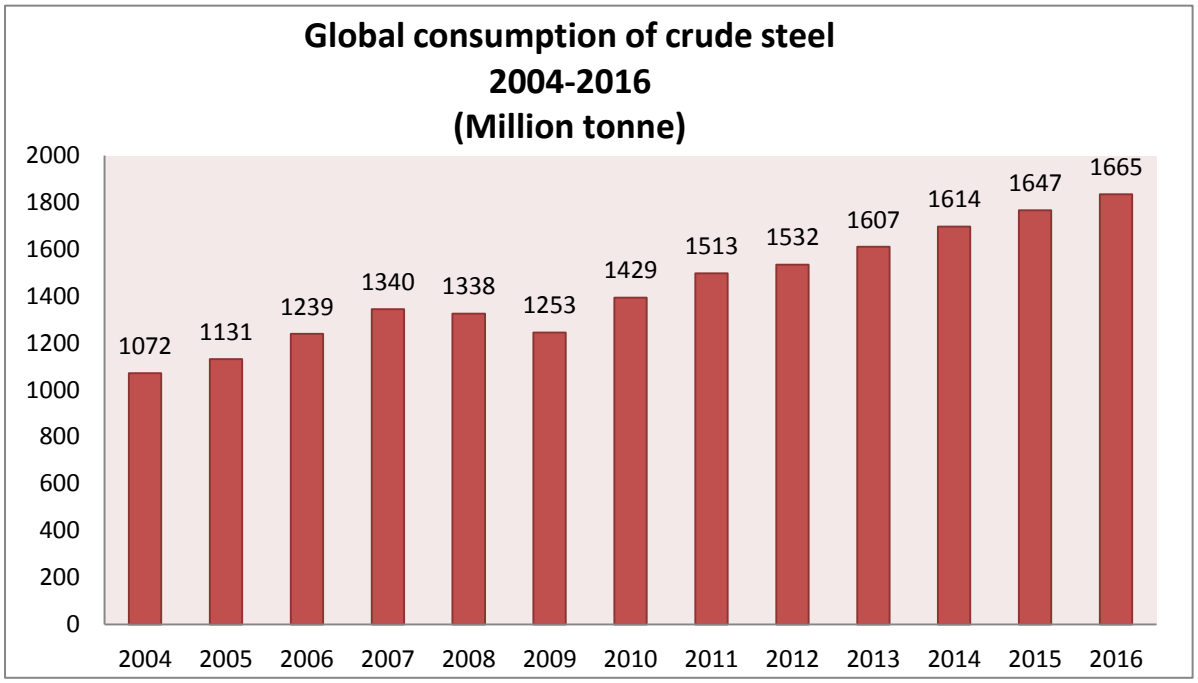

Figure 3: Global Consumption of Crude Steel from 2004 to 2014, including a Forecast through 2016
Source: Statista© 2015

Apparent Steel Use and Global Breakdown

Further in its short range outlook of 2015–16, WSA revised the data and forecasts that global apparent steel use will increase by 0.5% to 1,544 MT in 2015 following growth of 0.6% in 2014. In 2016, it has been forecast that world steel demand will grow by 1.4% and will reach 1,565 MT.

The outlook for the steel industry suggests slow growth for global steel demand in 2015. Chinese steel demand in 2014 saw negative growth for the first time since 1995 due to the government's rebalancing efforts that had a major impact on the real estate market. This situation is likely to remain unchanged in the short term, and Chinese steel use will continue to record negative growth of 0.5% in both 2015 and 2016.

Apparent steel use growth estimates for 2015 were revised downward not only in China but in every county of the world, with negative growth expected now in the CIS (–7.3%), NAFTA (–0.9%), and Central and South America (–3.4%). In addition, 2015 steel consumption growth in the EU was revised downward from 2.9% to 2.1% (Table 2).

Apparent Steel Use (ASU) Short-Range Outlook for Apparent Steel Use, Finished Steel Products (2014–16)						
(f: forecast)						
Regions	ASU (MT)			Year-over-year growth rates (%)		
	2014	2015 (f)	2016 (f)	2014	2015 (f)	2016 (f)
EU (28)	146.8	149.9	154.1	4.5	2.1	2.8
Other Europe	37	38	38.5	0.2	2.8	1.4
CIS	56.5	52.4	52.2	–4.9	–7.3	–0.3
NAFTA	144.6	143.3	145.1	11.3	–0.9	1.3
Central and South America	48.1	46.5	48.1	–3.9	–3.4	3.4
Africa	36.9	39.6	41.5	4.2	7.4	4.9
Middle East	51.9	53.3	55.6	3.7	2.8	4.2
Asia and Oceania	1,015.6	1,021.5	1,030.4	–1.0	0.6	0.9
World	1,537.3	1,544.4	1,565.5	0.6	0.5	1.4
Developed Economies	411.9	412.6	420.3	6.2	0.2	1.8
Emerging and developing Economies	1,125.5	1,131.8	1,145.2	–1.3	0.6	1.2
China	710.8	707.2	703.7	–3.3	–0.5	–0.5
BRIC	853.9	850.1	852.6	–2.9	–0.4	0.3
MENA	70.1	172.9	76.3	5.0	4.1	4.7
Emerging and Developing Economies, excluding China	414.7	424.5	441.5	2.3	2.4	4.0
World, excluding China	826.6	837.2	861.8	4.2	1.3	2.9

Table 2: Apparent Steel Use from 2013 to 2015
Source: WSA

Among top ten apparent steel-using countries, China is number one with 710.8 MT, followed by the USA with 106.9 MT. India is at third position as the largest apparent steel-consuming country with 75.3 MT utilization followed by Japan and South Korea (Table 3)

Top Ten Steel Using Countries in 2014						
	Million tonnes (MT)			Year-over-year growth rates (in percentage)		
Countries	2014	2015 (f)	2016 (f)	2014	2015 (f)	2016 (f)
China	710.8	707.2	703.7	–3.3	–0.5	–0.5
United States	106.9	106.5	107.2	11.7	–0.4	0.7
India	75.3	80.0	85.8	2.2	6.2	7.3
Japan	67.5	65.9	66.6	3.5	–2.4	1.1
South Korea	55.4	56.9	58.0	7.0	2.7	2.0
Russia	43.1	40.2	39.6	–1.4	–6.7	–1.6
Germany	39.2	39.8	40.7	3.0	1.5	2.3
Turkey	30.7	31.7	32.0	–1.8	3.0	1.1
Brazil	24.6	22.7	23.4	–6.8	–7.8	3.1
Mexico	22.5	23.1	24.0	11.7	2.6	3.9

Table 3: Short-Range Outlook for Apparent Steel Use, Finished Steel Products (2014–2016)
Source: WSA

Global Trade in Steel

Exporters

Of the large steel-producing nations, China continued to export more steel and is now by far the largest exporter in the world. China exported 88.6MT of steel products in 2014, a rise of 53% over 2013; Japan is on second place with 40.9 6MT of steel products, a fall of –3% as compared to 2013, as listed in Table 4.

The EU exported an increased amount as internal demand fell and a weak Euro made their exports more competitive. South Korea, Russia, and Turkey also showed large increases in their exports of steel.

Top Steel Exporters (million tonnes)				
Position 2014		2013	2014	Percentage of change in 2014 on 2013
1	China	57.8	88.6	53
2	Japan	42.1	40.9	-3
3	EU28	35.2	35.5	1
4	S Korea	28.1	31.1	11
5	Russia	23.5	27.7	18
6	Ukraine	24.6	21.4	-13
7	Turkey	17.0	15.6	-8
8	Taiwan	11.3	11.8	5
9	USA	11.8	11.2	-5
10	Brazil	8.0	9.7	21

Table 4: Top Ten Steel Exporters
Source: ISSB

Importers

Over the years, the USA has emerged as the biggest steel importer globally; the USA imported 38% more in 2014 compared to 2013 as the economy started to recover after the downturn. China and South Korea continued to position themselves more as net exporters as higher domestic production led to a fall in imports. Steel imports by the EU28 rose by 13% as compared to 2013. Apart from the USA, other major steel importers are Thailand, Canada, Mexico, Indonesia, and Turkey in 2014. India also emerged as one of the biggest importer of steel in 2014 with 29% increase as compared to 2013 as shown in Table 5.

Top Steel Importers (million tonnes)				
Position 2014		2013	2014	Percentage of change 2014 on 2013
1	USA	28.6	39.4	38
2	EU28	26.9	30.4	13
3	S Korea	18.5	21.8	18
4	Thailand	15.6	14.8	-5
5	China	14.4	14.5	1
6	Turkey	14.3	13.2	-8
7	Indonesia	12	10.7	-11
8	Canada	8.5	9.8	16
9	India	7.1	9.2	29
10	Mexico	7.8	8.8	12

Table 5: Top Ten Steel Importers
Source: ISSB

Domestic Scenario—India

India has surpassed the USA to become the third-largest steel producer in the world with a production of 14.56 MT in first two months of the year 2015. For the past five years, India has been the fourth largest steel producer, behind China, Japan, and the USA. India is also the largest producer of direct-reduced iron or sponge iron.

As per WSA (World Steel Association) forecast, India's outlook is improving in 2015. The structural reforms and improving confidence will support a further 6% growth in Indian steel demand. Elevated inflation and fiscal consolidation however remain key downside risks to the outlook. The steel sector contributes nearly 2% of the country's Gross Domestic Product (GDP) and employs over six lakh people.

Demand

Steel demand in India will grow in single digit in 2015 buoyed by government's infrastructure spending, according to rating agency Moody's Investor Services (Source: Press Trust of India). In 2014, India's steel consumption was calculated as 75.3 MT up 2.2% from the previous year 73.6 MT. WSA, whose members contribute 85% of the global steel production, sees "increased optimism" about India and forecasts India's steel use to go up to 80 MT in 2015 and further to 85.8 MT in 2016.

As per the report of the Working Group on Steel for the 12th Five Year Plan, there exist many factors that carry the potential of raising the per capita steel consumption in the country; currently it is 52 kg and is well below the world average of 203 kg. The contributing factors leading to large increase in steel consumption will be an estimated infrastructure investment of nearly a trillion dollars, a projected growth of manufacturing from current 8% to 11–12%, increase in urban population to 600 million by 2030 from the current level of 400 million, emergence of the rural market for steel currently consuming around 10 kg per annum buoyed by projects like Bharat Nirman, PradhanMantri Gram SadakYojana, Rajiv Gandhi AwaasYojana, among others.

Memorandum of Understandings (MoUs) Signed

In order to meet the growing demand, 301 MoUs have been signed with various states for a planned capacity of around 488.66 MT by 2019–20. According to it, major proposed investments are in the states of Odisha, Jharkhand, Karnataka, Chhattisgarh, and West Bengal.

The break-up of 301 MoUs signed by various State Governments are given in Table 6.

State	No. of MoUs signed	Approximate capacity (in million tonnes per annum)
Orissa	63	81.16
Jharkhand	49	105.11
Chhattisgarh	76	60
West Bengal	16	39.40
Karnataka	57	173
Andhra Pradesh	18	11.79
Other States	22	18.20
Total	301	488.66

Table 6: MoUs Signed by Various State Governments
Source: Annual Report of Ministry of Steel, 2013-2014

Steel Capacity in Country

The proposed steel capacity addition in the country is likely to result in an investment of Rs 5–10 lakh crore by 2020. Per capita consumption of steel in the country has risen from 45 kg in 2008–09 to 52 kg in 2014. Some of the major investments in the Indian steel industry both from private and government sector include:

- JSW Steel has announced to add capacity to make its plant in Karnataka the largest at 20 MT by 2022.

- Tata Steel has planned to commission 3 MT of capacity in its Odisha plant and plans to add another 3 MT at the plant in near future.

- The Government of India is aiming to scale up steel production in the country to 300 MT by 2025 from 87.67 MT in 2013-14.

- The Ministry of Steel has announced to invest in modernization and expansion of steel plants of Steel Authority of India Limited (SAIL) and Rashtriya Ispat Nigam Limited (RINL) in various states to enhance the crude steel production capacity in the current phase from 12.84 MTPA to 21.4 MTPA and from 3 MTPA to 6.3 MTPA respectively.

Production

- India produced 7.07 MT of steel in January 2015, reporting the fourth highest production level globally, which was 1.7% higher than the country's steel production in the same month last year.

- The National Steel Policy 2005, at the time of its release, had envisaged steel production to reach 110 MT by 2019–20. However based on the assessment of the current on-going projects, both in greenfield and brownfield, the Working Group on Steel for the 12th Five Year Plan has projected that domestic crude steel capacity in the county is likely to be 140 MT by 2016–17 and has the potential to reach 149 MT if all requirements are adequately met.

- In 2013–14, production for sale of total finished steel (alloy + non-alloy) was 87.67 MT and in 2014–15, production for sale of total finished steel (alloy + non-alloy) was 91.46 MT, a growth of 4.3% over 2013–14.

- Production for sale of Pig Iron in 2014–15 was 9.7 MT, a growth of 22% over 2013–14.
- India is the largest producer of sponge iron in the world with the coal-based route accounting for 90% of total sponge iron production in the country.
- Data on production for sale of pig iron, sponge iron, and total finished steel (alloy + non-alloy) for last five years is given below in Table 7, which show a positive growth trends.

Indian Steel Industry : Production for Sale (in MT)					
Category	2010–2011	2011–2012	2012–2013	2013–2014	2014–2015
Pig iron	5.68	5.371	6.870	7.950	9.694
Sponge iron	25.08	19.63	14.33	18.20	20.38
Total finished steel (alloy + non-alloy)	68.62	75.70	81.68	87.67	91.46

Table 7: Production for Sale (in MT) from 2010–15
Source: Joint Plant Committee

Imports

Iron and steel are freely importable as per the extant policy. Advanced Licencing Scheme allows duty free import of raw materials from export. According to the Joint Plant Committee, a statistical body under the ministry of steel, in fiscal 2015, India imported 9.3 MT of finished steel, 71.1% higher from a year ago. Data on import of total finished steel (alloy + non-alloy) is given below in Table 8 for last five years.

Indian Steel Industry : Imports (in MT)					
Category	2010–11	2011–12	2012–13	2013–14	2014–15
Total finished steel (alloy + non-alloy)	6.66	6.86	7.93	5.45	9.32

Table 8: Imports (in MT) from 2010 to 2015
Source: Joint Plant Committee

Exports

Iron and steel are freely exportable as per the extant policy. Advanced Licencing Scheme applies duty free import of raw materials for exports. Data on export of total finished steel (alloy + non-alloy) is given in Table (9) for last five years show a slight decrease in export of total finished steel from the country in 2014–15 in comparison with 2013–14.

Indian Steel Industry : Exports (in MT)					
Category	2010–11	2011–12	2012–13	2013–14	2014–15
Total finished steel (alloy + non-alloy)	3.64	4.59	5.37	5.98	5.59

Table 9: Exports (in MT) from 2010 to 2015
Source: Joint Plant Committee

Opportunities for Growth of Iron and Steel in Private Sector

The New Industrial Policy Regime

The New Industrial Policy opened up the Indian iron and steel industry for private investment by (a) removing it from the list of industries reserved for public sector and (b) exempting it from compulsory licensing. Imports of foreign technology as well as foreign direct investment (FDI) are now freely permitted up to certain limits under an automatic route. The Ministry of Steel plays the role of a facilitator, providing broad directions and assistance to the new as well as existing steel plants in the liberalized scenario. Table 10 shows a list of major private sector steel producers in the country that are already in the process of capacity expansion and adding new capacities.

Major Steel Producer in the Country					
Sl.no	Investor	Existing capacity	Brownfield Proposed Expansion capacity upto 2017-18	Greenfield Proposed capacity	Total Capacity
1	Tata Steel Limited	9.70		23.50	33.20
2	Essar Steel Limited	10.00		6.00	16.00
3	JSW Steel Limited	14.30	27.00	20.00	47.00
4	Jindal Steel & Power Limited	3.25	11.95	19.80	31.75
5	Bhushan Steel Limited	5.60	7.34	..	7.34
6	Bhushan Power & Steel Ltd.	2.80	..	0.50	3.30
7	Monnet Ispat & Energy Ltd.,	1.80	3.00	3.00	6.00
8	Electrosteel Steel Ltd.	2.51	..	..	2.51
9	Visa Steel Ltd.	0.50	2.50	3.75	6.25
10	Posco India Project	..	..	12.00	12.00
11	Arcelor Mittal India	..	..	12.00	12.00

Table 9: Major Steel Producers in the Country
Source**:** Ministry of Steel

Energy Efficiency measure in Indian Steel Industries

In India, the iron and steel sector is one of the most energy-intensive manufacturing industry, consuming about 25% of the total industrial energy consumption, which was 449.27Mtoe (million tonne of oil equivalent) in the year 2009. In 2014 India's total energy consumption was reported at 872 Mtoe by Global Energy Statistical Yearbook 2015. Energy consumption in most of the integrated steel plants in India is generally high at 6–6.5 Giga Calorie per tonne of crude steel as compared to 4.5–5.5 in steel plants abroad. The higher rate of energy consumption is mainly due to obsolete technologies including problems in retrofitting modern technologies in old plants; old shop floor and operating practices; poor quality of raw material viz. high ash coal/coke, high alumina iron ore; etc. The energy consumption in Indian steel plants is, however, gradually reducing because of technological upgradation, utilization of waste heats, use of better quality inputs, etc. Major steel industries are themselves addressing the energy and environment issues by adopting technological upgradation/modernization and/or diffusion of energy efficient and environment friendly technologies in the plants. Government is also facilitating improvement in the energy and environment scenario in this sector through various

forums/mechanism such as Clean Development Mechanism (CDM), UNDP & Ministry of Steel an Energy Efficiency Improvement namely UNDP-GEF Steel Project (UNDP-AUSAID-MOS Steel Project), Global Superior Energy Performance Partnership (GSEP),National Action Plan on Climate Change, etc. With rapid technological improvements, the energy intensity for steel production should come down. Though, specific efforts need to be made to achieve this objective.

Government Initiatives:

Major initiatives taken by the Ministry of Steel in year 2014–15 are:

- Recently, government hiked import duty on steel imports from China and South East Asia. Duty on flat products of steel was revised upwards from 7.5% to 10%. On long products of steel, duty has been raised from 5% to 7.5%. It is a major relief to domestic stainless steel industry that is reeling under severe under-utilization of capacity.

- To ensure easy availability of raw material in domestic market at reasonable prices, export duty on iron ore at 30 % and export duty on iron ore pellet at 5% were imposed. Export of iron ore fell from 117.37 MT in 2009–10 to 12.24 MT in 2013–14. The reserves of crude iron ore in the India as of 2014 (Source: Statista @2015) were estimated to be approximately 8.1 billion metric tons and of iron at 5.1 billion metric tons. In view of the projected increasing steel demand in the country, these resources are best utilized for steel production in the country rather than being exported.

- Ministry of Steel has been awarded the ISO 9001:2008 certificate. It has become the first Ministry under the Central Government to be awarded such a certificate.

- Process of drafting of the 'New National Steel Policy' to replace the existing National Steel Policy, 2005, for development of steel industry with the focus on achieving the targeted production of 300 MT per annum of steel is underway.

- A Task Force has been set up to identify the R&D and technology development needs of the country in the Iron and Steel sector and also to evolve a suitable institutional mechanism.

- Ministry of Steel is actively engaged in fast tracking decisions or resolution of issues of steel sector projects, which are delayed, in association with the Project Monitoring Group constituted by the Cabinet Committee on Investment.

- Inter-Ministerial Group meetings under the Chairmanship of Secretary (Steel) are being held regularly to sort out infrastructure constraints of Steel industry and other related raw material issues.

- Steps have been taken for raw material securitization through MoUs, Memorandum of Agreements, and Letter of Intents with Afghanistan, Japan, Brazil, Uruguay, Tanzania, Zimbabwe, Canada, and Poland.

- Under the Steel Development Fund(SDF) assisted scheme, 83 projects have been approved so far with total cost of Rs.696.27 crore with SDF assistance of Rs.389.36 crore. Under the Plan Fund Scheme, nine R&D projects have been approved with a total cost of Rs.125.20 crore involving Plan Fund of Rs.89.22 crore.

- Ministry of Steel implemented an energy efficiency improvement project in selective Re-Rolling Mills in India in collaboration with UNDP and GEF.

- E-Requisition, Stock, and Inventory Management System, Officer on Tour Information System, E-Submission and Approval System, Knowledge Management System, and Steel management information system have been made operational on Ministry via Intranet Portal.

Future Outlook

Economic Growth prospectus of India

Steel consumption significantly depends on the overall performance of the economy (GDP) and more specifically on investments made in immovable resources such as housing; infrastructure like railways, ports, roads, airports, etc.

The GDP growth in India stood in the region of about 5% in Financial Year 2014 (FY14) on account of stalled investment against the backdrop of tightening policies, widening trade and fiscal deficit, high inflation, and weak FDI inflows. Further, FY14 was also a year of subdued activity for steel using sectors in particular the auto segment. It is expected that the next fiscal will continue to remain a challenging year for the automotive sector if interest rates remain high. During the FY 2014–15, the renewed focus on infrastructure viz development of smart cities, ports, PradhanMantri Gram SadakYojna, power plants, plan for doubling pipeline grid, metro for tier 2 cities, industrial corridor, incentives for housing, and revival of SEZ, etc. will go a long way to consolidate growth, giving a flip to the steel sector, which has faced stagnant demand of late.

Further, in the General Budget for 2014–15, a host of measures inter alia ,opening up of more sectors for FDI, plans to accelerate manufacturing growth, and facilitating investments, would give a push to the economy. The GDP growth for fiscal 2014–15 has been projected in the range of 5.4%to 5.7%, with the subsequent achievement of 7%–8% in the next three to four years (Figure 4).

Figure 4: India GDP Annual Growth Rate (Quarterly Figures)
Source: www.tradingeconomics.com

As reported by the Ministry of Statistics and Programme Implementation, the GDP in India expanded at the rate of 7.50%in the first quarter of 2015 over the same quarter of the previous year.

As indicated earlier, the per capita steel consumption in India is only about 52 kg as against world consumption of 203 kg. It is obvious that there is a huge scope for expansion of steel consumption in the country. The figure for the last three years indicates that Steel-GDP coefficient is about 0.6. In other words, 8% annual growth of GDP in the coming years will mean a growth rate of 4.8% of steel consumption in the country.

While the Steel-GDP coefficient may come down in the coming years because of greater efficiency and modernization of machineries, steel consumption is likely to grow at a rapid pace in view of number of factors. The share of manufacturing in our total GDP is only about 27% as against about 47% in China. The share of manufacturing is certain to increase in the coming years because of Prime Minister's 'Make in India' mission and also the expected large investment on infrastructure, utilities, and other manufacturing. This points out to huge growth in steel consumption in the country and a substantial increase in the per capita consumption from the present level of 52 kg.

Concluding Remarks

As can been seen from the preceding discussion, world's steel production and consumption had registered a steady growth over the last 10 years excepting during 2009, apparently because of a sudden decline in consumption and production following the conclusion of the Olympic events in China. The growth rates, however, have not been even and they have been more striking in the Asian countries particularly in China and in India. While Chinese economy is passing through what is recalled rebalancing, the prospects of growth in consumption and production in India are very bright in the context of the new initiatives that had been taken by the government. However, the efficiency of production of per unit steel in India is lower compared to a number of other developed countries. Improvements can obviously be possible by better housekeeping and appropriate mechanization. This will be a challenge that will have to be faced because of market forces as also due to allied autonomous reasons.

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