INTERNATIONAL CONFERENCE On Indian Metals Industry - Shaping the Next Decade

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on

Steel Growth Scenario For The Next Decade i.e. 2011-2020

Sushim Banerjee, Director General

Institute for Steel Development & Growth
52/1A Ballygunge Circular Road, Kolkata 700 019

World Growth pattern in 2005-2010

Real GDP growth (%)

Country/ Region	2005	2006	2007	2008	2009	2010	2011 (P)	2012 (P)
World	3.6	4.0	3.9	2.8	- 0.6	5.0	4.4	4.5
USA	3.1	2.7	2.1	0.0	(-) 2.6	2.8	3.0	2.7
Germany	3.8	3.0	2.7	1.0	(-) 4.7	3.6	2.2	2.0
Japan	1.9	2.0	2.3	(-) 1.2	(-) 6.3	4.3	1.6	1.8
Russia	5.7	7.3	8.1	5.2	(-) 7.9	3.7	4.5	4.4
Brazil	4.9	5.6	5.7	5.1	(-) 0.6	7.5	4.5	4.1
China	10.4	11.6	13.0	9.6	9.2	10.3	9.6	9.5
India	7.2	8.0	9.1	6.4	5.7	9.7	8.4	8.0

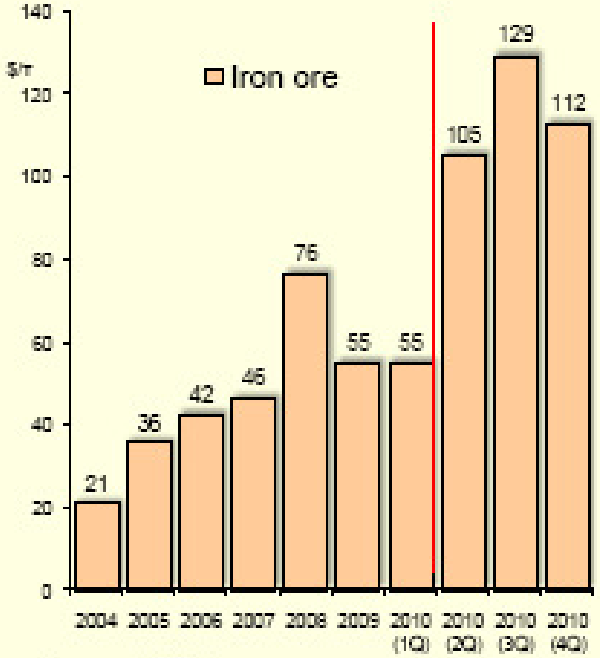
- **The underlining recovery in the developed world remains slow**
- **In China monetary tightening slowed down pace of growth. However, demand fundamentals remain robust. Exchange Rate disputes between China and USA may restrict trade flows**
- **The emerging economies like India exhibiting strong growth potential**

Source: Economist (for 2005/2006), IMF, Jan '11 (for 2007-11)

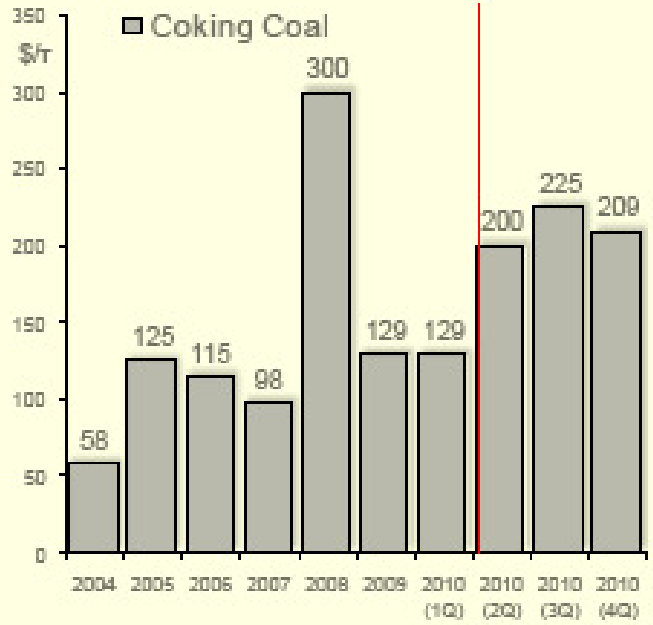
I. World steel market development

2. Increase of raw materials prices in 2010

Itabira fines, 64.2% Fe
$/t fob Brazil (to Asian market)



$/t fob Australia, Peak Downs

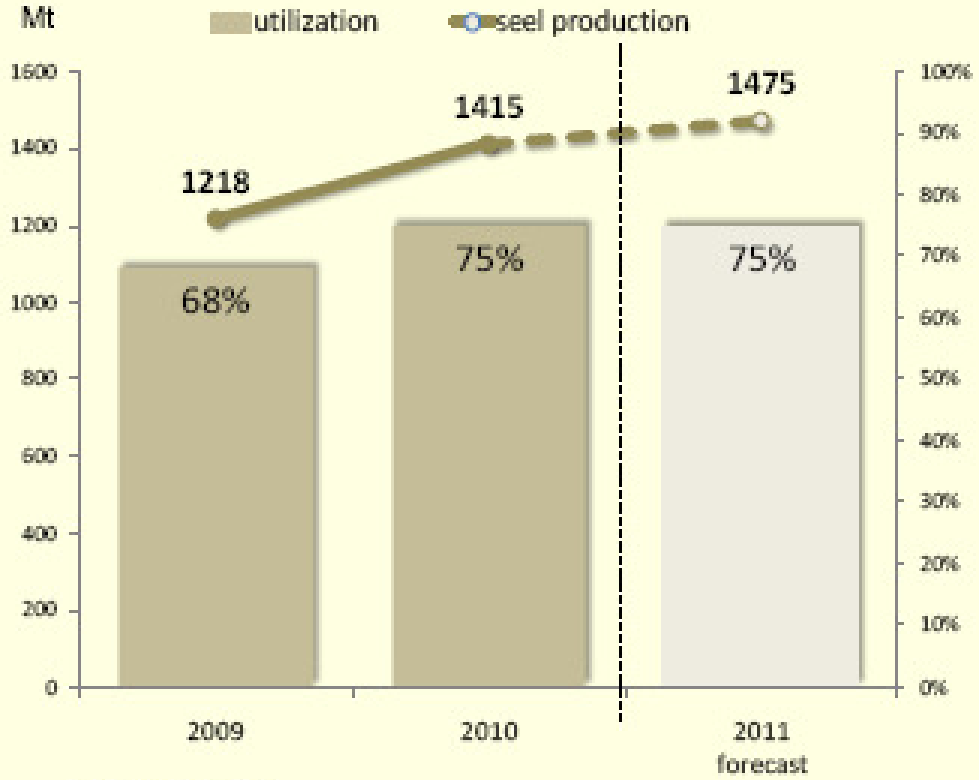


Source: UPE Co.

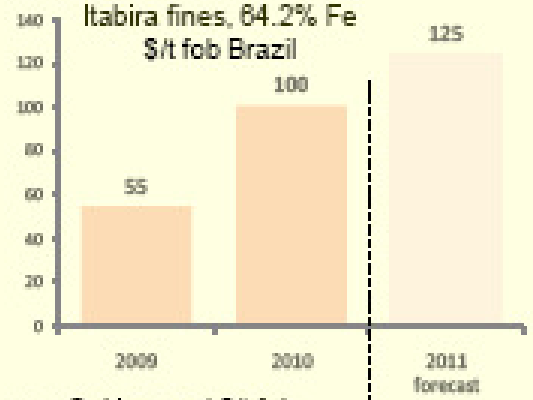
Record steel production and increased demand for raw materials have resulted in iron ore average price raise by **111%** and coking coal price raise by **64%** y-to-y in 2010

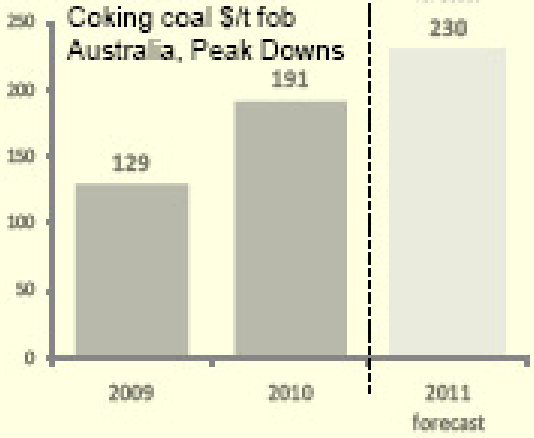
III. Glance at the market 2011

14. Further increase of steel production and price for raw materials



Source: UPE Co.





World steel production in 2011 will make up about 1475 mln. tons and thus beat 2010 year record by 60-70 mln. tons. Under the growing demand raw material prices will increase by 25% (iron ore) and +20% (coking coal)

Apparent Consumption:2008-2011 (MT)

Country	2008	2009	Y-O-Y%	2010 (P)	Y-O-Y%	2011 (P)	Y-O-Y%
China	434.7	542.4	24.8	578.7	6.7	5990	3.5
USA	98.4	57.4	(-) 39.8	78.7	32.95	86.1	9.4
Japan	78.0	52.8	(-) 32.3	62.9	19.1	62.0	(-) 1.4
S. Korea	58.6	45.4	(-) 22.5	52.9	16.4	54.4	2.8
India	51.4	55.3	7.5	59.9	8.2	68.0	13.6
Russia	35.4	24.8	(-) 30.1	32.4	30.8	35.8	10.5
Germany	42.4	28.0	(-) 34.0	35.1	25.2	36.7	4.8
Italy	33.1	18.2	(-)45.0	21.4	17.6	23.4	9.3
Spain	18.0	11.9	(-)34.0	13.5	13.9	13.2	(-) 2.1
Turkey	21.5	18.0	(-) 16.0	21.7	20.5	24.1	10.7
Brazil	24.0	18.6	(-)22.8	25.0	34.6	27.3	9.2
World	1205	1125	(-) 6.6	1272	13.1	1340	5.3

Source: WSA October, 2010

Forecasts

- According to worldsteel, apparent steel use would increase by 13.1% in 2010 and 5.3% in 2011 after -6.6% in 2009.
- According to Oxford Economics, steel using sectors could record a fast growth in 2011 and 2012, which would be a strong support to steel demand.

Yearly growth	2004-2008	2009	2010 f	2011 f	2012 f
Construction	2.0	-6.7	1.6	5.2	6.5
Motor vehicles	3.6	-20.7	25	6.4	6.9
Engineering and metal goods	5.1	-16.4	14.4	10.1	8.7
Steel-Weighed output	3.2	-12.0	9.4	**6.9**	**7.2**

CURRENT FEATURES IN GLOBAL STEEL MARKET

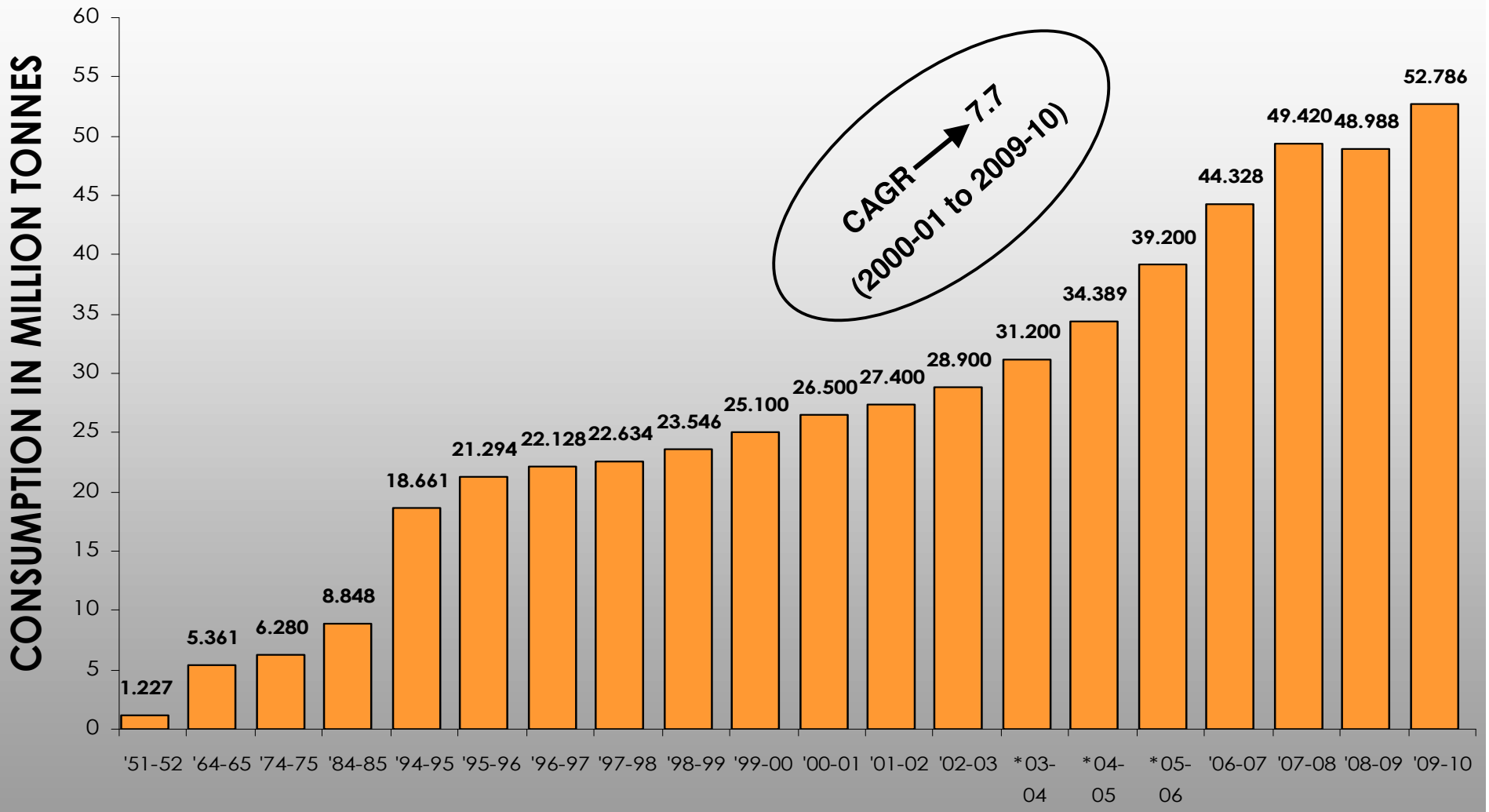
Global Economy projected to grow by 4.4 percent in 2010 after clocking 5.0 percent in 2010.

Subdued steel demand in EU, Japan and USA.

Restriction on real estate and restructuring of small scale polluting steel units accompanied by infrastructure build up of backward areas inside the coastal belt in China maintain a moderate growth in demand in China.

Rising trend in Finished Steel prices particularly in flat prices following rise in Coal and Iron Ore prices – more backed up by cost of raw materials rather than by effective demand.

Trend of Steel Consumption in India



Steel Consumption in India grew @ 7.7 percent annually in last decade against 4% annual growth in Global Steel Consumption

Source: JPC

Indian Steel:Demand Drivers

Construction (Infrastructure)

- Projects
- Transport of Petroleum/ Water
- TLT
- Rail tracks

Manufacturing

- Tube Making
- Wire drawing
- Fabrication
- Fastners
- Power plant equipment
- Agricultural implements
- Household appliances

Auto

- Commercial Vehicle
- Passenger cars
- Two wheelers
- Auto Components

Each of these segments has good potential to grow

SHIFTING PATTERN OF STEEL DEMAND

- PREFERENCE FOR A DURABLE, LIGHT AND AESTHETICALLY SOOTHING COMMODITY.
- CHALLENGE TO STEEL PRODUCERS TO SHIFT FROM A COMMODITY GRADE TO A NICHE GRADE IN EACH CATEGORY-PRODUCT DIFFERENTIATION / IMPROVEMENT.
- IMPROVED PROPERTIES LIKE HIGHER YIELD, HIGHER STRENGTH, HIGHER CORROSIVE RESISTANCE EQUIVALENT TO IMPORTED GRADE.
- TO MOVE UP THE VALUE CHAIN IN EACH CATEGORY FOR NEW AND EMERGING SEGMENTS.
- A CONTINUOUS EFFORT TO ADD VALUE AND OFFER CUSTOMISED PRODUCTS THROUGH PROCESSING/SERVICE CENTRES TO ELIMINATE ALL SECONDARY PROCESSING COSTS AT CUSTOMERS' END.
- FROM CRM TO CVM TO PARTNERS IN PROGRESS-IT ENABLED CUSTOMER-CENTRIC PROCESSES (ERP) - A PARADIGM SHIFT IN INDIAN STEEL MARKET.

STRUCTURE OF INDIAN ECONOMY
(% SHARE IN GDP)

Category	1980-81	2000-01	2006-07	2007-08	2008-09	2009-10 (QE)
Primary	38.1	23.9	18.1	18.0	17.2	14.6
Secondary	25.9	25.8	28.9	29.1	28.5	28.1
(Manufacturing)	13.8	15.3	16.1	16.1	15.6	15.9
(Construction)	6.6	5.8	8.2	8.4	8.6	7.9
Tertiary	36.0	50.3	53.0	52.9	54.3	57.3
Total	100	100	100	100	100	100
GDP Growth (%)	7.6	4.4	9.6	9.3	6.8	8.0
Capital Formation (% of GDP at Current Prices)			35.7	38.1	34.5	36.5
Domestic Saving (% of GDP at Current Prices)			34.6	36.9	32.2	33.7

1. Data for 2006-07 onwards based on 2004-05 prices as per revised estimates.
2. Stagnant share of Manufacturing and Secondary Sector in GDP
3. Share of Industry in GDP: China (59), S. Korea(44), Kazakhsthan (37)

Source: CSO

Investment in Infrastructure : Volume and Pattern

a)	Xth Plan (2002-03 to 2006-07)	:	$ 226.5 bn (₹9,06,074 cr)
b)	XIth Plan (2007-08 to 2011-12)	:	$ 514 bn (₹20,54,205 cr)
c)	Actual (2007-08 to 2009-10)	:	$ 196 bn (₹7,82,594 cr)
d)	Budget (2010-11)	:	$ 37.7 bn (₹1,73,000 cr) ~ 46% of total Plan exp.
e)	Current investment in infrastructure as % of GDP at 5.5% to reach more than 9% by 2011-12		
f)	Based on current norms, infrastructure investment of $ 514 bn is to generate steel demand for approx. 125 mt over a period of five years. Any shortfall would directly reduce the demand generation.		

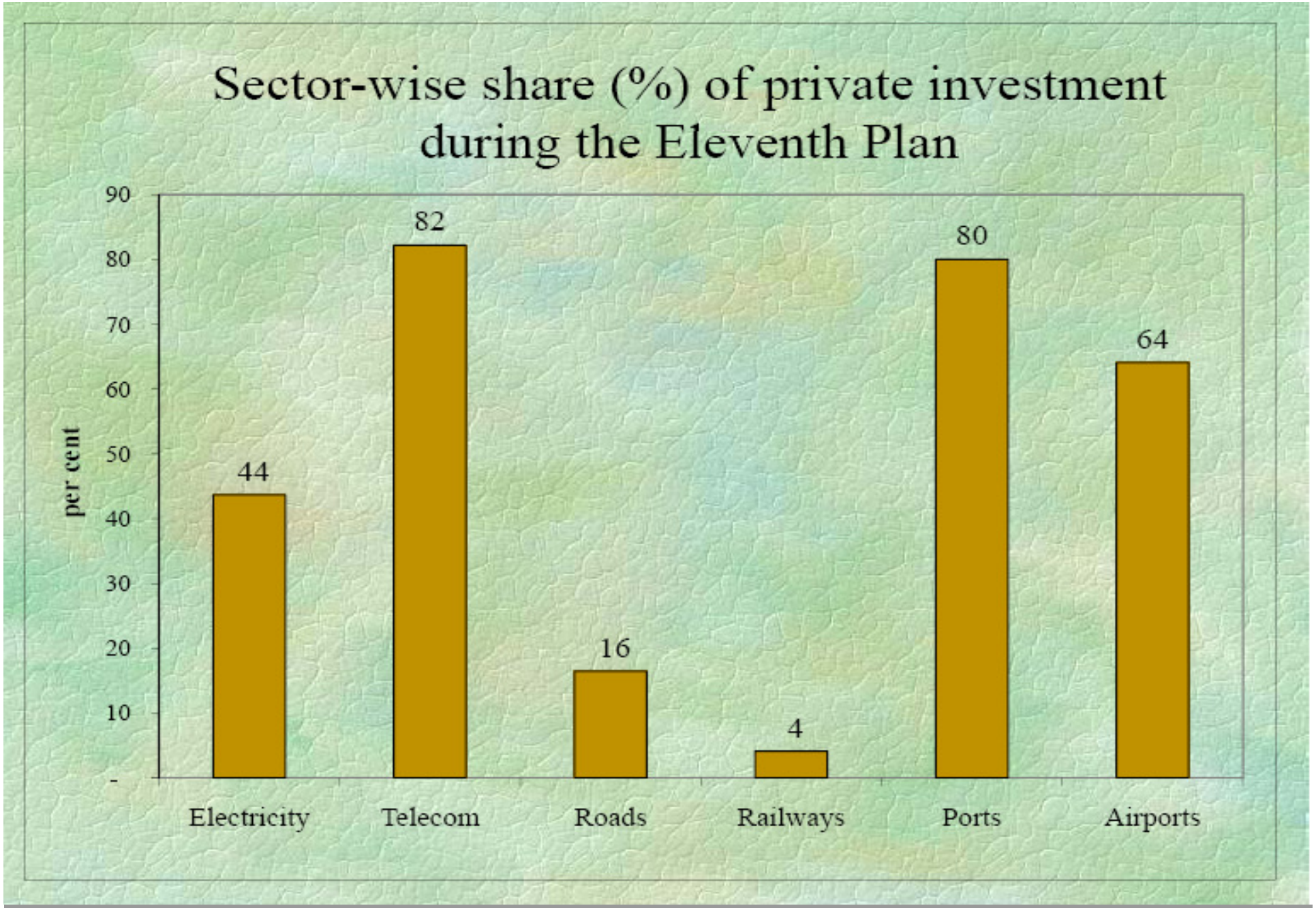
Investment in Infrastructure : Volume and Pattern

g)	Projected investment in infrastructure in XII Plan : $ 1025 bn (40,99,249 cr) at 2006-07 prices
h)	Public investment predominantly in non-commercial sector like rural roads and Private investment in commercial sectors e.g. roads, ports, airports, etc. and in power, container trains to generate competition. However, private investment confirmed to generation and limited presence in T&D.
i)	Private Capital in public projects via PPP route – Maximum in NHDP and also in State Roads, Airports and Ports
j)	Transparent, investor – friendly standardized documents with specific guidelines / safeguards on user charges / interest (REP for selection of Transmission Consultants & Financial Bids RFQ for pre-qualification of bidders).

Projected Investment in Infrastructure
(Revised)

(*at 2006-07 prices)*

	X Plan		XI Plan	
Sectors	**Rs. Crore**	**Share (%)**	**Rs. Crore**	**Share (%)**
Electricity (incl. NCE)	3,40,237	37.55	6,58,630	32.06
Roads and Brides	1,27,107	14.03	2,78,658	13.57
Telecommunication	1,01,889	11.25	3,45,134	16.80
Railways (incl. MRTS)	1,02,091	11.27	2,00,802	9.78
Irrigation (incl. Watershed)	1,06,743	11.78	2,46,234	11.99
Water Supply & Sanitation	60,108	6.63	1,11,689	5.44
Ports	22,997	2.54	40,647	1.98
Airports	6,893	0.76	36,138	1.76
Storage	5,643	0.62	8,966	0.44
Oil & Gas Pipelines	32,367	3.57	1,27,306	6.20
Total	**9,06,074**	**100**	**20,54,205**	**100**



Private investment is to reach Rs.2,08,413 crores by 2011-12

RECENT INTIATIVES IN INFRASTRUCTURE FINANCING

- ✓ ***Viability Gap Funding of PPP projects (20% of Capital Costs based on bidding).***
- ✓ ***270 projects with an investment of $ 54 bn cleared with a VGF commitment of $ 15 bn.***
- ✓ ***India Infrastructure Finance Company Limited (IIFCL) as a nodal agency for long term debt for viable projects (upto 20% of capital costs) – so far sanctioned US $ 5.3 bn for 125 rpojects***
- ✓ ***'Infrastructure NBFCs' as a separate category of NBFCs***
- ✓ ***Standing Committee on Infrastructure Finance***
- ✓ ***Tax Benefit upto Rs.20000 for investment in long term infrastructure bonds***
- ✓ ***BOT (Annuity) and BOT (Toll) methods for Highway PPP projects.***

PERCENTAGE GROWTH IN MAJOR INDL. SEGMENTS

Segments	Weight	←----------PERCENTAGE GROWTH DURING----------→							
		1994-95	1995-96	2005-06	2006-07	2007-08	2008-09	2009-10	April-Dec'10 (Apr – Dec '09)
ELECTRI-CITY	101.69	8.5	8.1	5.2	7.2	6.4	2.8	5.0	4.7 (5.7)
MANUFACT-URING	793.58	9.8	13.6	9.1	12.5	8.6	2.3	10.9	9.1 (8.9)
CAPITAL GOODS	92.57	24.8	17.9	15.8	18.2	16.5	7.0	19.2	16.7 (11.2)
CONSUMER DURABLES	53.65	10.2	36.1	15.3	9.2	(-) 1.0	4.4	26.1	21.4 (22.7)
TOTAL INDUSTRY	1000.00	8.4	12.7	8.2	11.6	8.1	2.4	10.4	8.6 (8.6)

Source: CSO

Growth of Manufacturing and Processing Industries

Category	Steel Items used	<----------% Growth in Production----------→			
		2006/ 07	2007/08	2008 /09	2009/10
Machinery & Equipments	Strls/Plates	14.2	9.3	8.8	21.0 [12.7]
Transport Equipment	Strls/Plates	15.0	2.8	2.5	24.4 [24.5]
Power & Dist. Transformer	CRGO	4.6	2.7	(-) 1.9	16.5 [2.2]
Complete Tractors	HRS/Strls	22.4	(-) 2.2	(-) 0.4	26.3 [21.0]
Refrigerators (domestic)	CRC/S	25.0	14.1	3.1	25.8 [12.6]
Bicycles	CR/Rounds	27.4	6.8	(-) 2.4	13.6 [13.8]
Passenger Cars	HR/CR	18.3	14.8	6.7	26.0 [28.7]
Two Wheelers	CR/Rounds	14.7	(-) 5.2	4.6	24.2 [27.2]
Commercial Vehicles	CRC/S/Plates	33.0	4.8	(-) 23.6	36.0 [41.0]
Drums & Barrels	CRC	17.0	3.3	(-) 21.4	42.7 [(-) 5.3]
LPG Cylinders	HRC	51.5	13.4	5.7	55.0 [16.6]
Washing Machines	CRC	11.3	11.5	8.1	26.4 [(-) 0.1]
Diesel Engines	Sheets/Plates/Strl	35.3	11.6	18.8	5.3 [14.5]
Material Handling Equip.	Plate/Sheets/Strls	115.5	(-) 17.2	(-) 3.5	22.9 [4.3]

[Figures in Brackets refer to April-Nov'10 period, other than Machinery & Equipments and Transport Equipment for which figures pertain to April – Dec'10 period]

DEMAND SCENARIO

Macro determinants of steel demand in India:-

a)GDP, b)Fixed Capital formation, c) Industrial output, d) Mfg output.

i)For 1 pc GDP growth, GFCF to grow by 1.51 pc, steel consumption to grow by 1.11 pc.

ii) For 1 pc growth in Ind. Prod, Mfg output to grow by 0.93 pc & steel consumption to grow by 1.33 pc.

Recent performance (% growth)

Year	GDP	GFCF	IIP	IIPMFG	Steel [MT]
2006-07	9.7	13.8	11.6	12.5	13.1 [44.3]
2007-08	9.0	16.2	8.5	9.0	11.5 [49.4]
2008-09	6.7	1.5	2.4	2.3	(-) 1.2 [48.8]
2009-10	8.0	7.3	10.4	10.9	7.8 [52.8]

Projection of Steel Demand based on Macro-Economic Variables

Year	Projected Growth rate (%)					Steel Consumption (Mill. T)
	GDP	GFCF	IIP	IIP Mfg.	Steel Consumption	
2010-11	8.0-8.6	12.1-12.8	10.0-11.0	11.0-12.0	11.1-12.0	58.7-59.1
2011-12	8.5-9.0	12.8-13.6	10.5-11.0	11.5-12.0	11.7-12.3	65.8-66.1
2014-15	8.5-9.0	12.8-13.6	10.5-11.5	12.0-12.5	11.8-12.6	92.2-94.2
2016-17	9.0-9.5	13.6-14.3	10.5-11.5	12.0-12.5	12.1-12.9	117.1-118.8
2019-20 (S-1)	9.5-10.0	14.3-15.1	11.5-12.0	12.0-12.5	12.7-13.3	169.8-171.6
2019-20 (S-2)	8.5-9.0	12.8-13.6	10.5-11.0	11.5-12.0	11.7-12.3	164.5-167.1

IIP & IIPMfg assumed higher than derived from past relationship based on current pattern.

STEEL CONSUMPTION TREND : 2009-2011

Sector	Steel Weights	Primary Macro Influencing Factors	Consumption in 2009	Projected Growth Rates (%) 2010	Projection Growth Rate (%) in 2011	Estimated Consumption in 2010 (MT)	Estimated Consumption in 2011 (MT)
Construction	63	GFCF	32.5	11.8	13	36.3	41.0
Domestic Appliances	4	GDP / PFCE	2.1	15.0	20.0	2.4	2.9
Machinery & Equipment	20	IIPMfg	10.3	15	18	11.8	13.9
Auto	8	IIP/PFCE	4.1	12.8	12.3	4.6	5.2
Other Transport	2.5	IIP	1.3	8	12	1.4	1.6
Others	2.5	GDP/ GFCF	1.3	9	11	1.4	1.6
Total	100		51.6			57.9	66.2

Note :

1. PFCE : Private Final consumption Expenditure

2. Projected Growth Rates for Construction and Auto Sectors are as per Short Range forecast by WSA

Test on Assumption : 2010-11

	GDP	GFCF	IIP	IIP Mfg.
Projected Growth Rate	8.0 – 8.6	12.1 – 12.8	10.0 – 11.0	11.0 – 12.0
Actual in HI	8.9	14.9		
Actual in April – Oct. '10			10.3	9.0

- Higher growth in GFCF to positively impact steel demand in construction
- Marginally lower growth in manufacturing may be made up in subsequent months as recent surveys on corporate sectoral sentiment and PMI movements have proved
- Steel consumption growth during April – December 2010 at 9 percent marginally lower than projected growth of 11-12 percent and may reach around 58 MT.

Domestic Crude Steel Availability Projection: 2012-13

Producer	Existing Capacity 2009-10	Capacity by 2012-13
SAIL	12.84	21.40
RINL	2.9	6.3
Tata Steel	6.8	13.0 [3.0]
Essar	4.6	14.5 [6.0]
JSW Steel Ltd.	6.6	11.0
Jindal Steel & Power Ltd.	2.4	10.45 [3.25]
Ispat Industries Ltd.	3.6	4.2
Bhusan Power & Steel	1.2	2.8
Bhusan Steel	0.8	3.0
Other & Secondary steel	31.0	34.2
Total	72.74	120.85 [12.25]

[ ] -Greenfield expansion *Source: MOS*

PROJECTED DEMAND AVAILABILITY SCENERIO (MT) : 2019-20

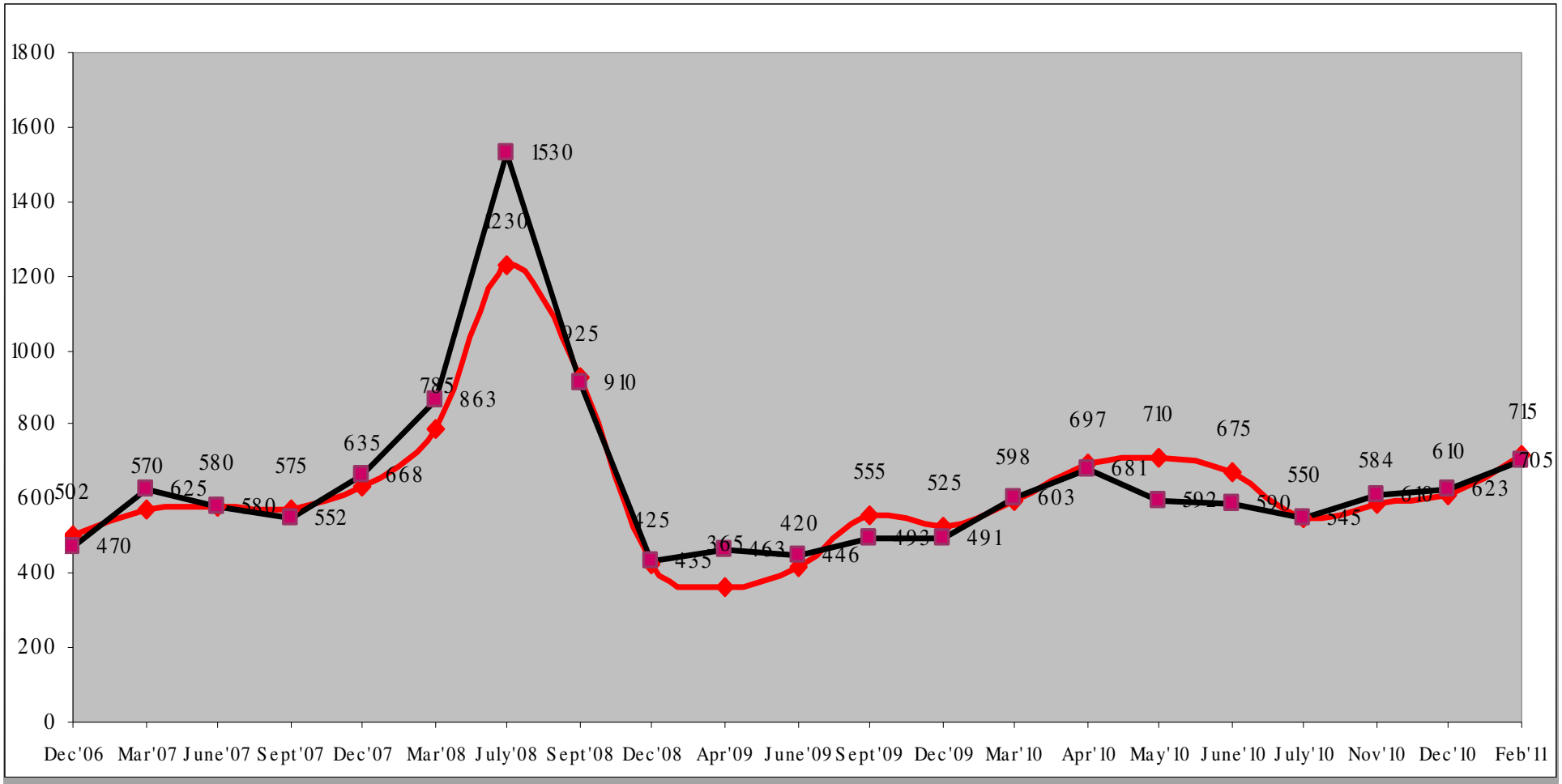
Category	2012-13	Green field Expansion (2012-13 to 2019-20)		2019-2020		Remarks
		S-I	S-II	S-I	S-II	
Finished Steel Demand	74			171	166	
Projected Capacity (Crude Steel)	110	120	100	230	210	POSCO/ Arcellor Mittal with main producers, & few others
Projected Availability (Crude Steel)	105	84	70	180	172	95% capacity utilisation
Projected Availability (Finished Steel)	95			162	155	90% conversion
Gap(-)/ Surplus(+) (%)	(+)21			(-) 9	(-)11**	

•70% actualisation of the incremental capacity, 95% capacity utilization and 90% conversion ratio

* As against 133 MT assumed by other sources.

** Gap may go up to more than 30 mt subject to lower capacity installation than indicated above

GLOBAL PRICE MOVEMENT- FINISHED STEEL

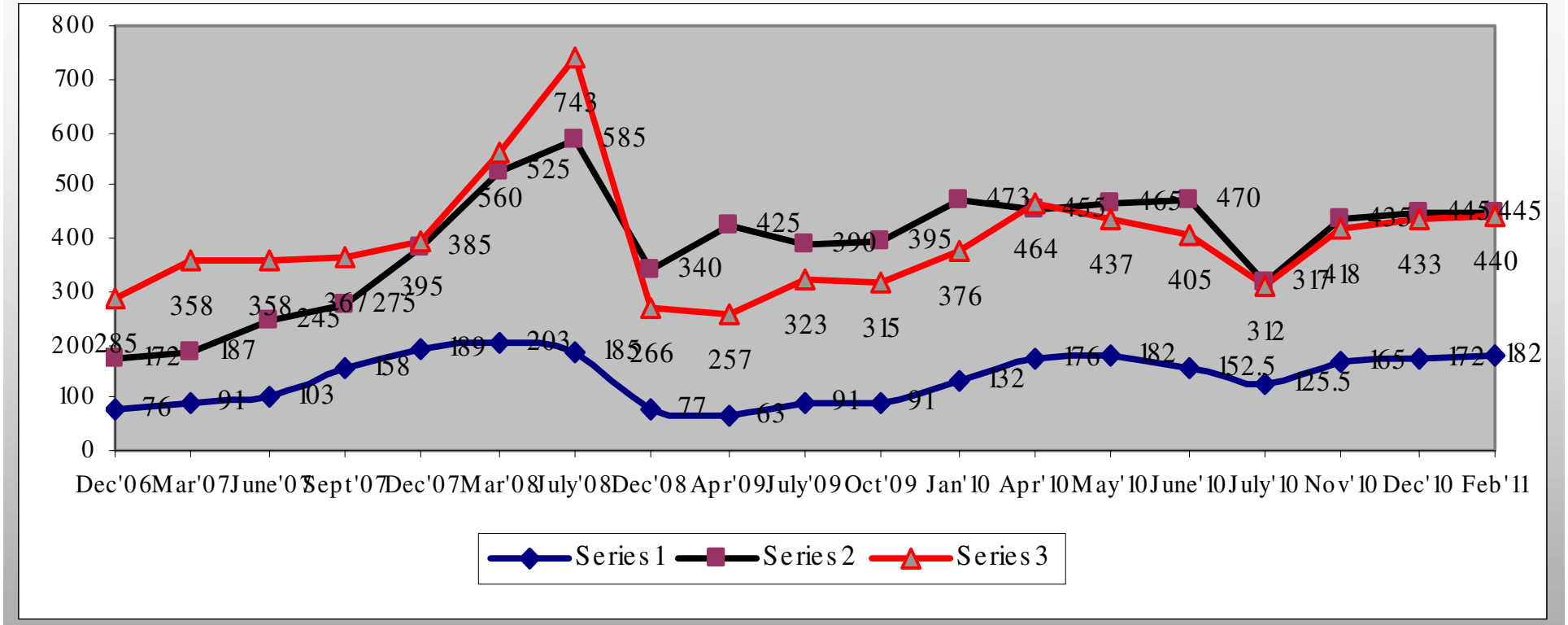


	Sept 07-July 08	July 08-Apr'09	Apr'09-Feb'11
HRC	114%	-70%	96%
Rebars	177%	-70%	52%

Source: HRC: Russia Black Sea Export FOB($/T)

Source: Rebars: Turkey Export FOB($/T)

GLOBAL PRICE MOVEMENT- RAW MATERIALS



Item	Sept 07-July 08	July 08-Apr'09	Apr'09-Feb'11
Iron Ore	11%	-66%	189%
Melting scrap	102%	-65%	71%
Coke	148%	-27%	5%

Source : SBB - India Iron Ore: China CFR; Coke: China; Export (FOB) Melting Scrap: East Asia Import HMS(80:20)

Routes of Steel Production in India

(MT)

Route	2006-07	2007-08	2008-09	2009-10
BF - BOF	22.2	22.4	22.8	29.2
EAF	13.3	20.8	25.7	15.6
IF	15.3	10.7	10.9	20.1
Total Crude Steel Production	50.8	53.9	58.4	64.9
Total Crude Steel Capacity	56.8	59.8	66.3	72.9
Capacity Utilization (%)	89	90	88	89
Share of BF (%)	44	42	39	45
EAF (%)	26	39	44	24
IF (%)	30	19	17	31
Currently India has approximately 70 BFs, 40 MBFs, 350 EAFs and 970 IFs of Varying Capacity				

A bird's eye view of Technology Requirement

Category	Quality Constraints of Domestic Availability	Technology Requirement
<u>Raw Materials</u>		
a) Iron Ore	- Low Grade Ore (>55% Fe)	- Beneficiation Technology – lower cost off grades from 55-55% to 45% Fe content
	- High Gangue Content (High Silica & Alumina – 5-6%)	- More pelletisation and sintering (small capacity plants) for agglomeration of fines
	- Large Volume of fines / slimes during mining (10 mt annually with 50-60% Fe)	- Alternative technologies like FINEX (POSCO – 1.5 mt in 2007), Hismelt (Rio Tinto – Nucor Mitsubishi – 0.8 mt in 2005), ITMK-3 (Kobe – 25000 t) Corex (Siemens – VAI Austria – 1.5 mt in 1980's)
b) Coking Coal	- High ash content (19-20%)	- More use of CDI/PCI
	- Inconsistent quality	- High use of automation / control
	- Low volatile quality	- Enhancing performance of existing ovens / batteries

B F COMPARISON

	Global	India
HM Prod. / TPD	13000 - 14000	8600
Coke Rate Kg/t hrs	270	400 - 420
Campaign Life (years)	> 15	10
BF productivity T/Cum/d	> 2.5	2.3
Furnace Volume Cum	5800	4019
Equipment Utilization %	> 98	< 95
Lowest Hot Blast Temperature	1200 – 1250^{0}c	1000^{0}c

Routes of Steel Production in India

Category	Quality Constraints of Domestic Availability	Technology Requirement
Raw Materials		
c) Steel making	(1) BF – BOF – 45% - Slag & Sludge in steel making Limited use of sinter and pellet	- Waste recycling and zero waste disposal -100% continuous casting -Pre-treatment of HM - Top & Bottom Blowing practices - Slag splashing
	(2) EAF – 24% - High Electricity and electrode consumption	- Thin slab / thin strip casting, near shape casting and beam blank and wire rod
	(3) IF – 31% - High sulpher, high phosphorus and high inclusions - Use nearly 80% of sponge iron and only 20% of shredded scrap	- Secondary Refining Practices - UNDP GEF Steel Project (to facilitate ; productions of low phos steel) - L1 Automation System
d) Rolling Mills	- Old and obsolete technology	- Hot charging of slabs, compact strip processing - New finishing lines like galvanizing and colour coating etc. for higher productivity & yield, reduced energy consumption and production for high strength steel with superior finish and dimensional accuracy - New technology to reduce Co_2 emission and energy consumption - New technologies to develop Advanced High Strength Steel for sectors like Auto, Construction

New Technologies

- To cater to changing requirement of critical sectors like Construction, Infrastructure, Automobile, Oil & Gas, Consumer Durables, Defence, Railways, Space Aircraft, Nuclear Power, etc.
- New Grades of steel being developed like :
  - Steel Chemistry C – 0.04% or > 0.36%
  - Steel alloy addition : Cr, Mo, Cu, Nb, V, Ti, etc
  - Processed through VAD, VOD, RH degasser
  - Having hard microstructures, Bainite, Martensite, etc.
  - Products having low impact values, low core loss, corrosion resistant, seismic resistant, etc.
- High Performance Structural Steels:-

a. An optimised balance of strength, weldability, Toughness, ductility, corrosion resistance & Formability

b. Cost-effective, steel weight reduced by 25 percent:- overall 16 percent cost reduction in Fabrication and erection

- Fire Resistant Steel (addition of Cr,Mo,Nb, high Yield strength at elevated temperature- reduction in cost of fire protection

New Grades of Steel : Examples

- A few examples are :
  - Quenched Tempered Plate for Gun Carriage
- DMR 249 Grade “B” Q&T for Aircraft Carrier
- Roof / rock bolt Fe 600 TMT Rebars for Mines and Tunnel
- Thin Gauge High Strength HR Coil for high strength LPG
- Customized CR products for electrolytic precipitator
- Nitrovan Steel Plates for ATM Chest
- Cr – V 110 UTA Rails for high speed rails
- API X 80 / 100 Grade HR Coil and Pipes for Oil & Gas Sector
- CRGO Silicon Steel for Electric Transformers

<u>VARIOUS SHAPES</u>

- Wide Flange & Parallel Flange Sections
- Cold Formed Structural Sections
- Hollow Structural Tubes
- High Tensile Wire Ropes

Segment specific Steels – Automobile

High strength steels for automotive applications :

- Dual phase steel
- TRIP steel
- AHSS Grade
- Nano Steel
- Ultra fine grain steel

Segment specific Steels – Automobile

In current year Maruti Suzuki requires 620000 tonnes of Auto grade steel sheets alone and the demand is growing at 20% p.a.

Major expectations of Auto makers from Indian suppliers include :

- Defect free supplies
- Consistency in surface quality
- Close dimensional tolerance
- Unblemished packaging
- Short ordering lead time
- 100% conformity with schedules of customers

More availability of ultra high strength steel in tune with safety regulations (AIS : 098 / 099 / 100 to be implemented from October 2012)

New Technologies

- Hydrogen based steelmaking leading to substantial reduction in Co_2 emissions : POSCO

- Ultra low Co_2 steel making (ULCOS) – Carbon dioxide capture and storage (CCS) in EU through “Break through Technology”

STEEL INDIA'S GLOBAL JOURNEY

Risk Elements

- **Management of Economic policies : Exit Strategy, pace of regulatory reform to ensure financial stability and to continue the growth process, rising imports under free & fair trade.**
- **Consumption led growth in steel not to falter on supply constraints**
- **Use of raw materials for value addition within the country**
- **Mining leases / ownership / scouting abroad (MMDR) and Land Acquisition (R&R) deals to be mutually beneficial and acceptable**
- **Steel capacity enhancement to lead to Massive load on transport infrastructure. Need for National Integrated logistics policy**

STEEL INDIA'S GLOBAL JOURNEY

Risk Elements

- Technology transfer on a large scale –
  - Iron making : FINEX, HISMELT, COREX, ITBK-3, CDI
  - Steel making : Thin slab casting, Thin strip processing
  - Rolling mills : Secondary Refining, CRGO Steel, API X-100, Bake Hardened Steel, AHSS, TRIP Steel
  - Critical segments to be Partners in Progress in Product Development
  - ULCOS (Ultra low Co_2) steel making : Breakthrough Technology & Hydrogen based steel making to reduce Co_2 emission (POSCO)

- To make Indian steel globally competitive and preferred source of supply

- Quality awareness to be the inherent process of activities by both the consumers and suppliers

STEEL INDIA'S GLOBAL JOURNEY

Risk Elements

- Merger, Acquisition and Consolidation to take route in India
- Thrust on Retail Marketing – Make Steel available in Rural and Semi Urban Areas
- Active promotion of use of steel in actual construction – Steel Concrete Composite Construction – Steel fabrication and erection technology
  - Awareness programme
  - Teaching and Training programme
- Steel intensity per index of Industrial Production has gone up more than 6% during the last decade.
- Integrated approach by Govt, industry and all stakeholders to make Indian steel a top class global player in the next decade

INSDAG ACTIVITIES :
Research, Design and Knowledge Dissemination

- Working on Cost effective Steel Intensive Design Options
- Revision/Updating of Steel Based Codes & Standards
- To Train the Trainers, Students & Professionals
- Consultancy Service to Demonstrate Concepts
- Promoting steel usage through Professional / Student Award Schemes
- Acquire / Disseminate Knowledge on Best Practices
- Create Awareness to Potential Users about Benefits
- Provide Thrust for Steel Construction and fabrication in rural Sector

CURRENT FEATURES OF COMPETITIVE STRATEGY

- Pricing aspect – diminishing importance compared to servicing aspect
- Price fluctuations in raw materials (iron ore, coal, etc.) to be taken care of by securitisation of sources of supply – joint venture with mining companies and other major users in India and abroad
- Joint venture / Equity participation in good rolling mills at major consumption points (Arcelor Mittal with Uttam Galva, JFE with JSW, POSCO and Kobe with SAIL, Sumitomo with Bhusan Steel, Nippon Steel with Tata)
- Service centres at major consumption points to deliver tailor made steel to critical sectors (JSW Severfield, Essar, Tata Steel Processing & Distribution Ltd and Tata Bluescope (Embossed and profiled sheet), POSCO and Hyundai service centres)


Thank You!