REPORT ON IRON ORE

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ABOUT IRON ORE:

Iron is a metallic element and composes about 5 percent of the Earth's crust. Mined right out of the ground, raw ore is mix of ore proper and loose earth called gangue. The ore proper can usually be separated by crushing the raw ore and simply washing away the lighter soil. When pure it is a dark, silvery-gray metal. It is a very reactive element and oxidizes very easily.

Iron in itself is not very strong and thereby to make it harder so that it could be appropriately used in purposes like construction, it is alloyed with a variety of elements. These materials vary and the prominent one's are, nickel and chromium.

USES:

Iron ore is the key raw material in making steel and 98 per cent of the iron ore extracted is used to make steel. Sectors like automobiles, construction are the major user industry of steel and thereby demand for steel from these sectors also determines the iron ore demand and prices.

MAKING PROCESS:

The recipe for making 1 ton of iron in a blast furnace calls for 1.75 tonnes of iron ore, 0.75 tonne of coke and quarter tonne of limestone. The fire consumes 4.5 metric tonnes of air. The temperature at the core of the blast furnace reaches nearly 3,000 degrees F (about 1,600 degrees C). In terms of process there are different ways like Bloomery process, Finery & Chafery and Blast Furnace.

SUBSTITUTE:

Iron ore does not have any direct substitute but its major user industry steel does. Steel faces competition from other metals like aluminium which are increasingly being used in industries like automobiles. It also substituted in favour of plastic and glass for containers. However on the positive side, metals like aluminium require huge quantities of electricity and thereby steel founds general favour. ***Very less scrap iron is recycled but recycling of steel is higher than any other metal.*** Though some steel is produced by recycling scrap, as of now, the total amount is considered insignificant.

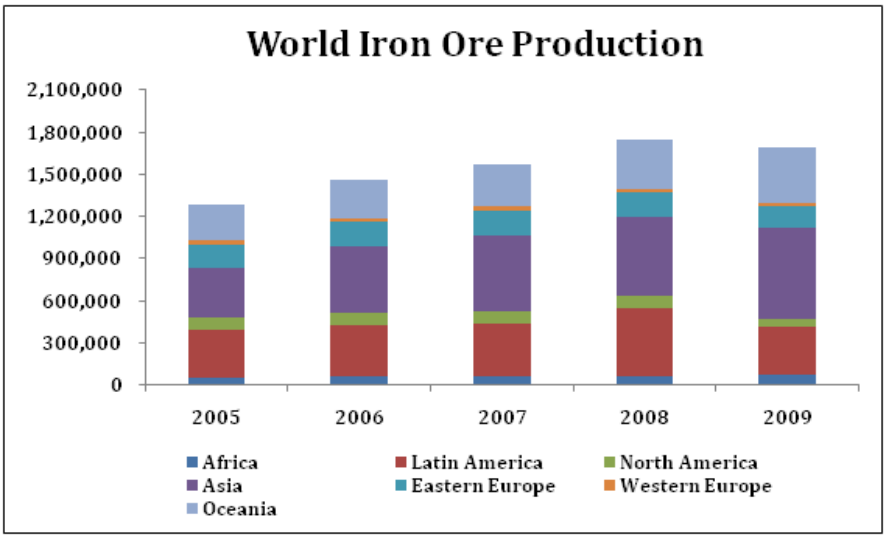
RESERVES:

Commercial reserves of iron ore average in a range of 25-65%. Ores with a 35% iron content, which is typical for U.S. ores, must be concentrated to 60-70% iron content through a process of either through crushing and roasting, magnetic separation, or chemical flotation.

It is estimated that worldwide there are 800 billion tons of iron ore resources, containing more than 230 billion tons of iron. Of this the United States has 110 billion tons of iron ore representing 27 billion tons of iron. To a certain extent concentration is there in the global export market. Globally there are nearly 50 countries producing iron ore, but one estimate shows that nearly 96 percent of this ore is produced only by 15 countries.

PRODUCTION:

In the year 2009, world iron ore production amounted to 1,691.15 million tonnes thereby marking decline of 3.2 percent over the previous year. The decline in production came in from America and Europe. America (both Latin America and North America) reported decline of 28.2 percent in production while Europe's output declined by 11.4 percent.



TOP PRODUCING NATIONS:

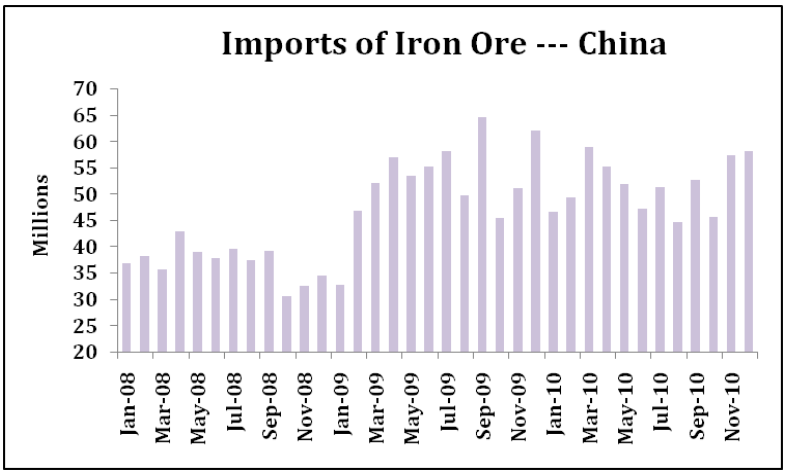
Australia is the largest producer of iron ore followed by China and Brazil. Other large producing nations are Russia and USA. Total production of Australia amounted to 393.9 million tonnes in 2009. It was closely followed by China with production of 340.9 million tonnes. However the sharp contrast between the Australia and China is that most of the Australia's produce is exported while China consumes its complete output and in fact imports to meet the deficit. China is the world's largest producer of steel, the major user industry of iron ore.

WORLD's TOP 10 IRON ORE PRODUCING COUNTRIES	
Country	**Production (in million tonnes)**
Australia	393.9
China	340.9
Brazil	302.5
India	257.4
Russian Federation	90.9
Ukraine	65.8
South Africa	55.4
Canada	33.0
Iran	28.5
United States	26.1

IMPORTS & EXPORTS:

China is the World's largest producer of steel with a share of more than 44 percent and thereby to meet its requirement it both imports and domestically produces iron ore. The influence of the China or demand prospects can be understood from the fact that despite being the second largest producer it is the top importer of iron ore. In the year 2010, Chinese total imports of iron ore amounted to 619 million tonnes thereby registering a modest decline of 1.5 percent over the previous year. However this should be looked with the fact that imports grew by 41.5 percent in 2009.

China is the world's largest consumer of iron ore at 800 million tonne. The bulk of the supply to China comes from Brazil and Australia. India accounts for only a fifth of China's imports.



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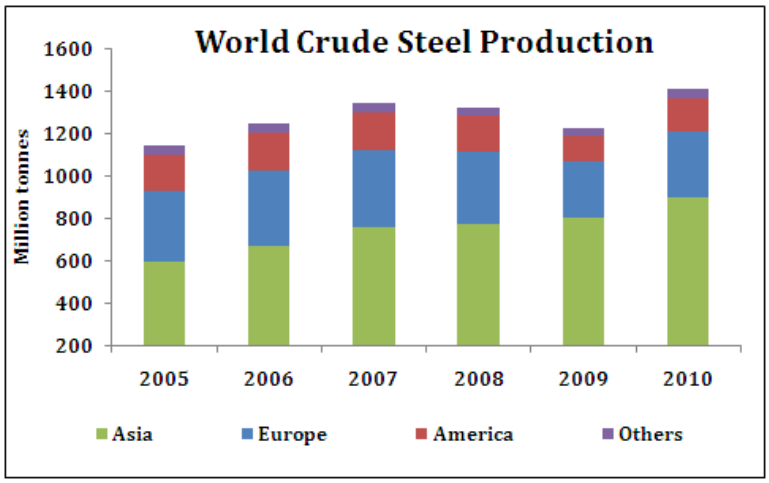
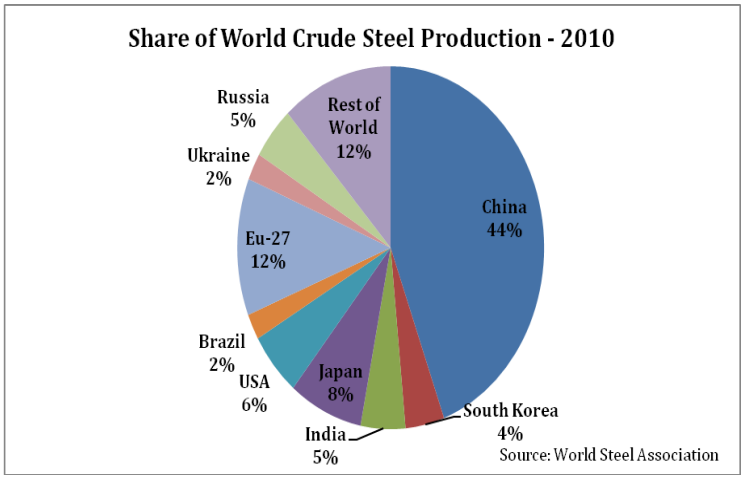


Steel is the major user industry of iron ore as nearly 98 percent of the iron ore produced is used in making steel. So the production of steel would provide insights into the usage and demand of iron ore. Also in production, iron ore and coking coal together constitutes close to 75 percent of total cost.

Asia continues to remain a dominant region in steel production. Within Asia production is further dominated by China and India. This is largely owing to strong demand for steel in these countries as they build infrastructure. Economies like India have been growing at a rapid pace but for them to sustain these growth rates in long term, they have to remove infrastructure bottlenecks. As these countries reorient there economies more towards domestic driven demand for consumer durables like automobiles is also strong.

YEAR 2010: In the year 2010, world steel production amounted to 1,414 million metric tonnes, a growth of 15 percent thereby marking a new record for total production. Strong growth was witnessed in output of US and Europe as these economies recovered from 2009 lows. Capacity utilization also rebounded by 1.1 percent to 73.8 percent from a year earlier.



China's steel production rose by 9.3 percent thereby reducing the nations share in total world production to 44.3 percent as against 46.7 percent in the prior month. India continued to remain fifth largest producer with a share of 5 percent and total production of 66.8 million tonnes.

WORLD's TOP 5 CRUDE STEEL PRODUCING NATIONS		
Country	2010 Production (Million Tonnes)	YoY Growth (%)
China	626.7	09.30
Japan	109.6	25.20
US	80.6	38.50
Russia	67.0	11.70
India	66.8	06.40

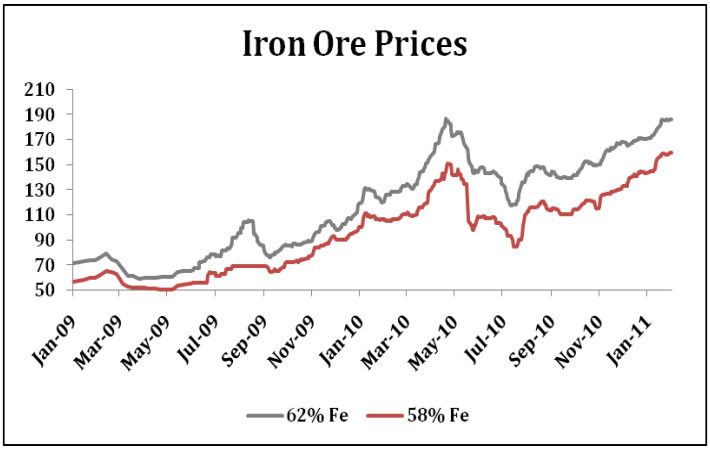
On the industry front, World's third largest steel maker, Posco received approval for its $12 billion project in India. The project which was proposed in 2005 was delayed owing to opposition from farmers and environmental clearance. However the clearance was given with additional 28 conditions. The proposed plant would have capacity of 12 million metric tonnes and the investment would be the single largest foreign investment.

PRICING: Iron ore prices are usually negotiated between the large miners and steel producers. The price decided by them serves as a benchmark which is followed by the rest of the industry. Traditionally this has been annual contracts. However in the recent past, this mechanism has broken as preference by participants towards short term mechanism increases.

World's top three iron ore miners, Vale, Rio Tinto and BHP Billiton have already abolished the annual pricing mechanism and are getting on to more market based or short term pricing system. Currently many suppliers from Brazil and Australia have resorted to quarterly pricing mechanism. However Indian prices are mostly spot based. Large suppliers have recently have indicated there intention to shift to indices like Metal Bulletin or Platts index for pricing.

PRICE PERFORMANCE: Iron ore prices are on there way up since Jan 2009. The price of 62% Fe Iron ore has moved up from $70/Dry Metric Tonne CFR China to the current $185/tonne CFR China while the 58% Fe Iron Ore prices have moved from $50/Dry Metric Tonne CFR China to the current $160/tonne CFR China. Both lower productions along with strong demand have pushed the prices higher. Demand growth has continuously surprised on the positive side.

In the more recent month of January, iron ore prices continue to move higher on the back of strong demand from China and declining output owing to production disruption in Australia. 62% Fe Iron Ore prices moved higher by 9.1 percent to end the January month at $185.6/Dry Metric Tonne CFR China while the 58% Fe prices ended higher by 11 percent at $159.4/Dry Metric Tonne CFR China.



EXCHANGE RATE IMPACT: Iron ore price are based on international benchmark and thereby is denominated in US Dollar (USD). So the movement in the exchange rate USDINR would also influence the price of iron ore in rupee terms.

If the Indian rupee appreciates against the USD, then the price of iron ore in rupee terms will decline (assuming constant international price of iron ore). On the contrary, if Indian rupee depreciates, then the price in rupee terms would increase further.

Indian economy continues to grow above the 8 percent mark and remains on a strong footing for the long term. However the economy faces serious headwinds in the short term. Inflation remains a serious issue and this is being driven by both supply and demand side. Food inflation is in double digits and WPI inflation is at 8.5 percent. So RBI might continue to raise interest rates to tame inflationary expectations.

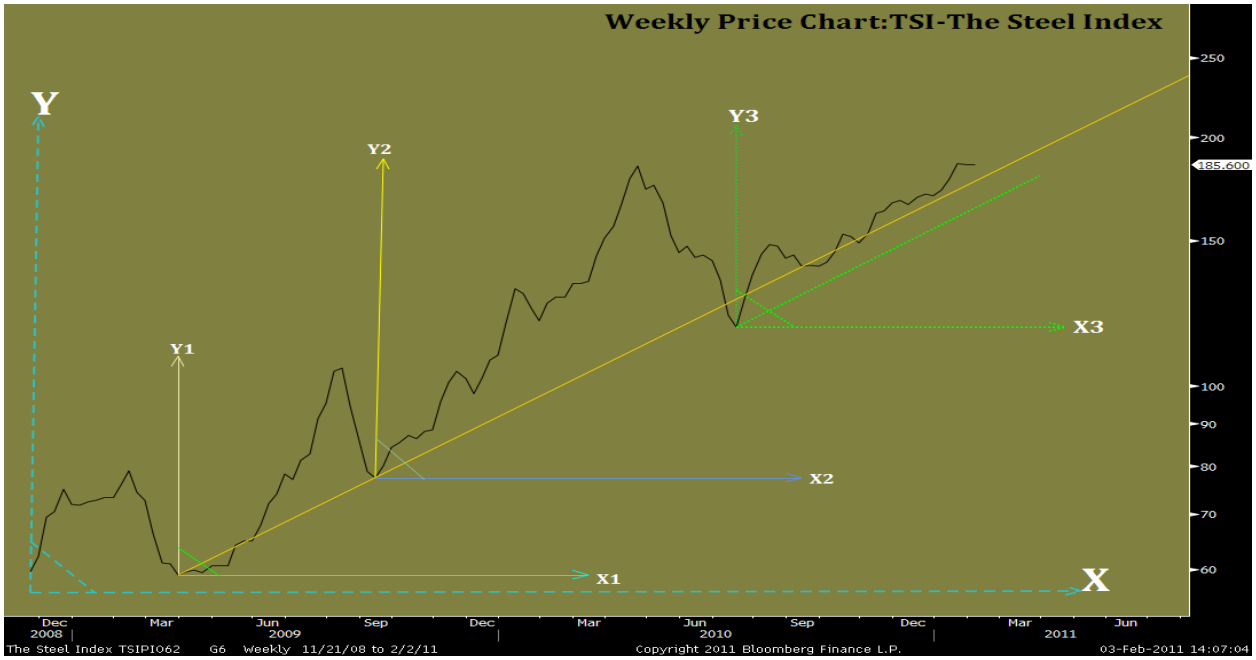
Oil prices are moving northwards and since Indian economy imports more than 70 percent of its oil requirement higher oil prices might worsen the current account deficit condition. After witnessing record inflows in the previous year, foreign flows might remain moderate this year.

On the other hand, US economic data continues to indicate improving economic conditions. The economy grew by 3.2 percent in the fourth quarter of 2010 as against 2.6 percent in the prior quarter. This might support the US dollar. Overall, given the strong headwinds for Indian economy and improving economic conditions of US, Indian rupee might depreciate.

OULOOK: China's iron ore imports in the month of December rose by 1.2 percent (MoM) to 58.08 million tonnes. This is the highest level in nine months. Furthermore, Orissa, India's top iron ore producing state stopped 23 iron ore mines from operating as they did not submit the proof of clearances. Supplies from India have already been tight due to ban on shipments from Karnataka. Railways' hiking the freight rate by 50 percent to 1500/tonne is only adding to the cost.

Overall, price or iron ore is expected to continue to move higher given the positive drivers from both supply and demand side. On the supply side, challenging weather conditions in top producing nations like Australia and Brazil is leading to decline in output while demand continues to remain in China. The risk factor for higher price however remains that if the higher price of steel deters demand then it might even impact the iron ore prices.

TECHNICAL ANALYSIS:



62 Fe Iron Ore:

This commodity has moved all the way from $60 to $186 with a gain of 214.21 per cent in 22 months. The price trend has been bullish with no signs of any reversal. However, there has been correction after every rise. The weekly chart suggests market has witnessed three phases of stretch onto the higher side. The price behavior also suggest at every rise market takes a correction till 61.8%. However, in the latest stretch the correction is yet to be seen as prices have not completed its upside stretch. Going by the chart, it is understood that Iron ore has still potential to move higher having an immediate resistance at $200 and then $210 levels. The prior two stretch (move) suggests that prices have gone up till 63.75 GANN angle degree. Current price trend proposes market is hovering near 45 degree angle and if it is needed to move higher as it can have a potential to test the historically witnessed 63.75 degree. In this regard price can move higher with a higher momentum.

As discussed above if market moves up till $200 and then $210 then a correction can be expected with a major supports at $180 and then $150 levels. However, it is too early to say that market may take correction at around $210 as the basic wave principle suggests prices can make an extension. In this regard the stretch can prolong till $240/250 levels.

Outlook: We continue to remain bullish on this commodity and recommend taking long at lower levels.

Major Supports: $180 and $150 **Major Resistances:** $210 and $240

Recommendation: (MCX): Buy in the range of ₹7100-7200 targeting 7700 then 8000 with stop loss below 6800

Recommendation: (ICEX): Buy in the range of ₹7850-7950 targeting 8800 then 9200 with stop loss below 7200

LAUNCH OF IRON ORE FUTURES IN INDIA:

Forward Market Commission has given approval to launch iron ore futures and thereby World's first Exchange traded iron ore futures contract was launched in India. Both MCX and ICEX launched the iron ore contract on 29th January.

CONTRACT SPECIFICATIONS:

PARTICULARS	MCX	ICEX
Contract Size	100 DMT (Dry Metric Tonne)	100 DMT (Dry Metric Tonne)
One Rupee Movement	Rs.100	Rs.100
Contracts Available	Feb, Mar, Apr	Mar, Apr, May
Price Quote	Iron ore 62 CFR (China Inclusive of all duties, taxes and other levies as applicable in India.)	Ex. Chennai -Free On Board (FOB)
Initial Margin	8% or SPAN whichever is higher	8%
Delivery Option	Both Options	Both Options

For detailed contract specifications Click on the link below:

MCX – Iron Ore Contract Specifications

ICEX - Iron Ore Contract Specifications

KEY TERMS:

DMT – Dry Metric Tonne: A **dry metric ton** or **dry tonne** has the same mass value, but the material has been dried to decrease the moisture level.

Pig Iron - **Pig iron** is the intermediate product of smelting iron ore with a high-carbon fuel such as coke, usually with limestone as a flux. Charcoal and anthracite have also been used as fuel. Pig iron has very high carbon content, typically 3.5–4.5%, which makes it very brittle and not useful directly as a material except for limited applications.

Sponge Iron - **Sponge iron** is produced from direct reduction of iron ore (in the form of lumps, pellets or fines) by a reducing gas produced from natural gas or coal. The reducing gas is a mixture majority of Hydrogen (H_2) and Carbon Monoxide (CO) which acts as reducing agent. This process of directly reducing the iron ore in solid form by reducing gases is called **direct reduction and thereby sponge iron is also called Direct-reduced iron** (**DRI**)

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