Development of Iron & Steel Industry and Iron Ore Supply

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I. Development of Iron & Steel Industry in Recent Years
In 2011, China’s crude steel output is 683,265,000 tonnes, up by 8.9% on Y-o-Y basis.

Since 2000 crude steel output increased by 50 million tonnes annually on average.
There is obvious improvement in quality, the product varieties can now fully meet the needs of national economy development, some varieties which for a long time in the past depended on import have realized total domestic supply, process and technological equipment standard have achieved significant improvement, with R&D and manufacture ability at world advanced standard, capable of fully meeting and covering the needs of all sectors for industry upgrading and the demand for steel products.

- Steel rails for 350km/h and 380 km/h high speed railway have realized total domestic production;
- Domestically produced X80 pipeline steel is used to construct 4000 km Natural Gas Transmission from West to East Phase II Project;
- High grade oriented silicon steel is used to manufacture 500 KV above large transformers;
- High-end automobile sheet has achieved total domestic production.
Energy saving and emission reduction has made considerable progress, the energy consumption per tonne of steel has joined the ranks of world leading nations.
The unit emission volumes of major pollutants all dropped by over 40%; in some cases the reduction is up to 70%. The production environment of iron and steel enterprises has improved evidently, a large number of garden style factories have come into existence.
The percentage of top ten grew by nearly 15 percentage points compared with that in 2005. The number of 10 million tonnes grade enterprises reached 16, accounting for nearly 60% of national steel production.

(5) Industry concentration degree

Changes in the concentration degree of the iron and steel industry

- Steel output of Top 10
- Steel output of Top 4
- Percentage of Top 10
- Percentage of Top 4
In the next 5 years, the iron and steel industry must speed up the transformation of development mode, realize the transformation from focusing on scale expansion development to highlighting variety, quality and benefit, put more emphasis on product upgrading, energy saving & emission reduction, structure adjustment, and improvement of benefits.

1. Variety & quality: Attach equal importance to developing key varieties in key industries, and also improving the quality of products with massive volume and extensive coverage.
2. Energy saving & emission reduction: Carbon dioxide emission drops by 18%.
3. Industry layout: Construct Zhanjiang and Fangcheng steel plants, drive forward the relocation of urban steel plants.
4. Resource guarantee: Basically establish raw material and fuel guarantee system for iron and steel industry with jointly shared interest including iron ore, coal etc.
5. Technology innovation: Improve technology innovation system, R&D investment continues to grow.
6. Industry concentration degree: The concentration degree of top 10 iron and steel enterprises will rise to 60%.
II. Iron ore Supply and Market Changes
The fundamentals of the market and long term price trend are determined by supply and demand relation, but monopoly and speculation will also greatly influence price fluctuation within a certain period of time.

In the recent two to three years, the price trend in China’s iron ore market has deviated from the fundamentals of supply and demand relation, which brought concrete damage to China’s iron and steel enterprises.

The profit margin of iron and steel sales has dropped from 6.25% in 2005 to 2.42% in 2011.
In the contradiction of supply-demand relation, demand is the dominant aspect and decisive factor in the contradiction. Judging from the aspect of demand, the global economy remains sluggish, the domestic macro regulation policies to repress inflation, speed up structural adjustment has produced initial result, economic growth has slowed down, in September 2011 the growth in steel product market showed obvious decline, in some fields there was even suspension or shrinkage in market growth. Since September, the iron ore market also showed violent changes, import iron ore price slumped from up to USD200 to USD117, and recently it rebounded to USD135.
Judging from longer perspective, the global economy is slow in recovery, in short term it is difficult to walk out of the shadow of the financial crisis; during the “Twelfth Five Year Plan” period, China will implement a macro economic policy highlighting the transformation of development mode, and focusing on speeding up structural adjustment; it has clarified the objective to slow down the over-fast economic growth to appropriate level.

The prevailing opinion in the economics circle also agrees that, slightly tight macro economic environment will facilitate structure adjustment, with the slowdown in economic growth speed, the growing demand for steel products will also be affected, which will bring further impact on the demand for iron ore, so that the growth of import iron ore will slow down or even decline.
(1) Fundamentals of iron ore supply

- Judging from supply, in recent years due to sharp rise in iron ore price, the generous or even windfall profit level of mine enterprises stimulated huge amount of social capital flow to invest in iron ore mining field. According to collected data, at present excluding China, over 300 iron ore mining projects in more than 40 countries worldwide are under construction or in planning, the total investment amount involved might be higher than 100 billion USD, the estimated iron ore production capacity being developed will top 1.6 billion tonnes, in which a relatively reliable estimate puts the volume at 380 million tonnes of newly added production capacity in 2013.

- During the “Eleventh Five Year Plan” period, the state government clarified a group of key mine construction projects, during the “Twelfth Five Year Plan” period, it will further speed up the construction of a group of key mines, it is expected that by around 2016 China can develop 80 million tonnes of iron ore concentrate production capacity, in which in 2013 the industry can develop 30 - 35 million tonnes of production capacity, plus newly added capacity of other middle and small sized mines, meanwhile considering the disappearing capacity of old mines, it is estimated that in 2013 the domestic industry will newly add 70 million tonnes of production capacity for finished product of iron mine.
Domestic iron ore production increased from 4.20 million tonnes in 2005 to 1.33 billion tonnes, showing an average annual growth rate of 21%.
Domestic iron ore production continues to increase, since 2010 the iron ore foreign dependence began to decline.
The price showed an overall rising trend, in the whole year of last year the average CIF price was USD 163.84/t, for which the iron and steel industry paid an extra USD25 billion in foreign exchange.
In recent three months, iron ore price has declined to certain degree, in January this year it dropped to USD 136.5/t, but it is still nearly double that of the price in June 2009 when it is USD 68.1/t.
In 2011 the domestic pig iron output increased by 48.93 million tonnes than that in the previous year, domestic iron ore increased production by 283 million tonnes, up by 27.15% on Y-o-Y basis, which could at least meet the need to produce 65 million tonnes of pig iron, this example shows domestic increase of iron ore production can fully ensure production increase in the current year, with surplus to spare.

But the real case is in 2011 the import iron ore totaled 686 million tonnes, up by 68 million tonnes on Y-o-Y basis, also the average CIF price of import iron ore was USD163.84/t, up by 28.13% on Y-o-Y basis, the iron and steel industry paid an extra USD 25 billion in foreign exchange due to rise in the price of import iron ore.
In 2011, the number of countries from which China imported 1000 tonnes or more iron ore is 55, 25 more than that in 2005.

The percentage of Indian ore dropped by 14.3 percentage points; excluding Australia and Brazil, the percentage of other countries increased by 10.9 percentage points.
(6) Increase in the percentage of spot cargo

In 2011 import spot ore accounts for 72.3% in total volume, up by 16 percentage points from 56.4% in 2008.
In recent years, domestic iron ore mining capacity grew by 25% annually on average.

Assume 2-3 years as the construction cycle, mines constructed steadily since 2008 will gradually fulfill their capacity.
## Overseas ore supply ability

### Summary of iron ore export of countries worldwide (Unit: 100 million tonnes)

<table>
<thead>
<tr>
<th>S/N</th>
<th>Country</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Australia</td>
<td>2.39</td>
<td>2.48</td>
<td>2.686</td>
<td>3.089</td>
<td>3.63</td>
<td>4.03</td>
</tr>
<tr>
<td>2</td>
<td>Brazil</td>
<td>2.25</td>
<td>2.47</td>
<td>2.694</td>
<td>2.817</td>
<td>2.658</td>
<td>3.109</td>
</tr>
<tr>
<td>3</td>
<td>India</td>
<td>0.9</td>
<td>0.87</td>
<td>0.94</td>
<td>1.014</td>
<td>1.174</td>
<td>0.959</td>
</tr>
<tr>
<td>4</td>
<td>South Africa</td>
<td>0.27</td>
<td>0.26</td>
<td>0.3</td>
<td>0.32</td>
<td>0.446</td>
<td>0.48</td>
</tr>
<tr>
<td>5</td>
<td>Canada</td>
<td>0.27</td>
<td>0.27</td>
<td>0.28</td>
<td>0.28</td>
<td>0.31</td>
<td>0.36</td>
</tr>
<tr>
<td>6</td>
<td>Russia</td>
<td>0.18</td>
<td>0.24</td>
<td>0.32</td>
<td>0.25</td>
<td>0.2</td>
<td>0.22</td>
</tr>
<tr>
<td>7</td>
<td>Ukraine</td>
<td>0.2</td>
<td>0.2</td>
<td>0.21</td>
<td>0.23</td>
<td>0.27</td>
<td>0.32</td>
</tr>
<tr>
<td>8</td>
<td>Sweden</td>
<td>0.18</td>
<td>0.18</td>
<td>0.19</td>
<td>0.18</td>
<td>0.15</td>
<td>0.21</td>
</tr>
<tr>
<td>9</td>
<td>Kazakhstan</td>
<td>0.1</td>
<td>0.15</td>
<td>0.13</td>
<td>0.15</td>
<td>0.14</td>
<td>0.18</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td>7.52</td>
<td>8.03</td>
<td>8.55</td>
<td>9.09</td>
<td>9.61</td>
<td>10.7</td>
</tr>
</tbody>
</table>

- Major iron ore export countries worldwide include Australia, Brazil and India, the iron ore export of these three countries accounts for 74% of total global iron ore export volume.
It is estimated that in 2013 the newly increased iron ore production capacity worldwide is 380 million tonnes; judging from CIF cost, with consideration given to the impact of newly added resource tax, most CIF costs will be between USD70 ~ 80, a considerable part will be below USD70, an extremely few will be above USD90.
(9) Development of China’s ability in rights and interests of mine

Since 1987 when Sinosteel Corporation constructed Channar Plant in Australia in the form of investment cooperation, over the past ten-plus years, Chinese enterprises have invested and constructed a group of overseas iron ore mining cooperation projects; according to incomplete statistics, by the end of 2010 Chinese enterprises’ overseas ability in rights and interests of mine has reached 150 million t/a, in 2011 it is expected to newly add 30 million tonnes of rights and interests of mine. In the future China’s iron ore foreign dependence will be further reduced.
(10) Trend analysis

- Overall speaking, iron ore has gradually developed a situation of supply exceeding demand, iron ore price has entered a declining path, the recent fast downturn in iron ore price is a clear signal. As the effects of China’s macro regulation and control measures continue to emerge, it is possible that iron ore price will face further decline. When we communicated with some overseas iron and steel enterprises and iron ore manufacturers, they also agree with our analysis.

- In the future, the overall iron ore price will present a declining trend, however, under the impact of multiple factors such as the increase in iron ore mining cost, and resource tax, iron ore price will receive certain support after dropping to certain level.

- This year iron ore price will present an overall declining trend amid fluctuation, but the range of the fluctuation will be greatly narrowed in comparison with last year, namely between USD110~130/t, if domestic iron and steel market continues to shrink, import iron ore price might fall below USD 110 /t.
III. Thoughts on Safeguarding Iron Ore Supply and Standardizing Iron Ore Market
1. Improve iron ore and steel scrap supply ability

- Geological prospecting conditions
- Development of deeply buried ore
- Development of low grade ore
- Strengthen the construction of key mines
- Development of rights and interests of mine
- Recycling and reuse of steel scrap
(1) Improve iron ore and steel scrap supply ability

- For domestic iron ore geological prospecting work, speed up the construction of key mine bases, so as to develop production capacity as soon as possible, put forward certain requirements on the reclamation and environmental protection of middle and small sized mines, and intensify efforts in the study on rational utilization of low grade iron ore.

- Strengthen international cooperation, establish stable iron ore supply base, study and follow up changes in international iron ore market and mine projects, properly grasp the investment timing and investment tempo, including acquisition and share holding.

- Fully take advantage of domestic steel scrap resources, strengthen the establishment and improvement of steel scrap recycling system, speed up the pace to draft corresponding industry policy and management measures, standardize market order, develop a batch of large enterprises and bases for the recycling, processing, and reuse of steel scrap with nationwide coverage.
2. Standardize iron ore market order

- Improve import iron ore agency system
- Improve China’s iron ore price index
- Set up iron ore spot trading platform
China’s import iron ore pricing mechanism has changed from the long established traditional annual pricing approach to quarterly pricing, monthly pricing and spot pricing, the standard base unit of prices adopts the index method. However, the openness, fairness and transparency of some widely used indexes have received widespread challenge from iron and steel enterprises and traders in countries and regions including China, countries in Europe, Japan and South Korea.

China is the world’s largest iron ore importer, and also the largest iron ore spot market. Establishing China Iron Ore Spot Trading Platform, fully bringing out the price discovery role of the market, and developing an iron ore price formation mechanism with credibility, will facilitate to reduce man-made violent fluctuation in iron ore price triggered by deliberate vicious speculation, and promote the formation of fair, impartial, rational and transparent international pricing mechanism for bulk mineral products.
China Iron And Steel Industry Association, China Chamber Of Commerce Of Metals, Minerals & Chemicals Importers And Exporters and China Beijing International Mining Exchange have jointly initiated and established China Iron Ore Spot Trading Platform.

This Platform kicked off formally in Beijing on January 16, 2012, at present it has received extensive response from domestic and overseas iron and steel enterprises, iron ore producers and iron ore traders.
China Iron Ore Spot Trading Platform observes the following principles:

- Abide by state laws and regulations, voluntarily receive supervision from related government departments;
- Operate in an independent and standard manner and according to market laws, establish standardized corporate governance structure, enforce manager responsibility system under the leadership of the board of directors;
- Adhere to spot trading principle, only engage in businesses related to iron ore spot trading, and not develop futures, swap and other financial derivative businesses;
- Adhere to opening up principle, welcome domestic and overseas iron and steel manufacturers, iron ore producers and traders to join us for cooperation.
Conclusion

• The development of iron and steel industry and the supply of iron ore depends on each other. Setting up market-oriented, open and transparent iron ore price discovery mechanism is crucial for the continual steady development of both the iron and steel industry and the mine enterprises.

• We are willing to strengthen cooperation with global iron ore suppliers and traders, seek mutual benefits for win-win, further standardize the market, make joint efforts to minimize violent price fluctuation in the iron ore market, and develop stable iron ore price mechanism.