

Chapter 2

Literary Review

2.1 Current Situation of China's steel enterprises

Steel is the basis of the national economy, to achieve a comprehensive well-off society is an essential material basis. 1949 founding of China's annual steel output was only 158,000 tons, after decades of development, in 1996 exceeded 100 million tons mark, in 2003 steel production over 200 million tons, ranking first in the world for several consecutive years, becoming real steel big country. Variety and quality of the steel, has gradually formed can smelting including high temperature alloy, precision alloy, including more than 1,000 kinds of steel, rolling and processing, including sheet, strip, tube, wire, wire and other various shapes 40000 varieties and specifications of steel. Chinese iron and steel enterprises decades of development process has made some achievements, mainly in: steel production growth has accelerated. According to the 2003-2004 annual report of China's steel industry research information provided by: 2001 Chinese-made steel 152,660,000 tons, 24.16 million tons more than in 2000, an increase of 15.8%; 2002 annual steel 182.25 million tons, an increase over the previous year 3122 million tons, up 20.67 percent; 2003 annual steel 222.34 million tons, 40.65 million tons more than last year, an increase of 22.38%; January 2004 -2 month cumulative production of steel 39.05 million tons, an increase of 39.05 million tons, an increase of 27.5% . . Thus, the Chinese iron and steel enterprises steel production growth momentum, growth has accelerated.

Years	2001	2002	2003	2004 (1-2)
Yield	152660000 t	182250000 t	222340000 t	39050000 t
Increase	24160000 t	31220000 t	40650000 t	39050000 t
Growth rate	15.8%	20.67%	22.38%	27.5%

2.11 technical level has improved significantly

In recent years, China's steel enterprises adhere to the transformation of old enterprises focused approach, through the transformation of medium-sized iron and steel enterprises to promote the steel industry capacity growth and structural optimization, improve the level of technical equipment. Such as open-hearth steel production has dropped 19.83% in 1990 to 1999 1.44%, 2000 was already all out; CC ratio from 22.3% to 76%, has now increased to 85%. Chinese iron and steel

enterprises have been built at this stage a number of international and domestic advanced level of production lines, Baosteel, Tianjin Seamless Steel, Zhujiang Steel and other projects has reached the international advanced level, shorten the gap with developed countries.

2.12 product structure adjustment quickly

At present, China needed steel varieties such as heavy rail, shipbuilding plate, container plate, tin plate, etc. can now be based on the domestic solution, galvanized plate, oil pipes and hot-rolled sheet, cold-rolled sheet and other varieties of production capacity and market share have greatly improved, significantly improved self-sufficiency rate of steel, has increased more than 90%. In addition, because the competitiveness of domestic steel products rising exports also increased in 2003, export volume reached 6.96 million tons, up 27.5 percent; exports of steel billet 1.47 million tons, an increase of 10%; timber blanks 843 total exports tons, an increase of 24.3%. In addition, according to statistics, China's steel products, about 50% -60% of the product already has a competitive international market, 30% of the products will also be further developed with the transformation of an international market competitiveness.

Years	Exports	Growth rate
2003	6960000 t	27.5%

2.13 technical and economic indicators improved significantly

Blast furnace utilization coefficient, key steel enterprises in 1999 was 2.0 tons of iron / cubic meter, compared with 1.79 in 1995 increased 11.73 percent; converter furnace, 1999 furnace key large and medium enterprises as 2715, more than 1995 of the 1081 increase in furnace 1634 furnace; small sections and wire rod rolling ratio in 1999 was 47%, in 2000 has increased to more than 50%, compared with 29% in 1995 an increase of 21 percentage points; fresh-water consumption from 1999 to 28.79m³ / t reduced to 2002 15.05m³ / t, water consumption per ton of steel industry from 1996 to 232m³ / t down to 2002 159m³ / t, water recycling rate increased from 82.01% to 90.87%; comparable energy consumption per ton of steel from 1990 year 0.997 tons of standard coal in 2002, down to 0.715 tons of standard coal in steel production increased by 1 times (from the 65.35 million tons increased to 127.64 million tons), based on the total energy consumption increased by only 31%; wastewater per ton emissions declined by 58%, the annual dust emissions decreased by 29%.

Years	Yield Increase	Increased energy consumption	Effluent decreased	Exhaust emissions decline
1990-2002	62290000 t	31%	58%	29%

2.14 effective organizational restructuring

Chinese iron and steel enterprises in addition to large enterprises in all major internal organizational integration, based on the iron and steel enterprises in 2003 there were several organizational restructuring. As August 2003, Nanjing Steel Group, Jinan Steel Union formally established to achieve a major shift in the operating mechanism; northeast old industrial base of Liaoning and Heilongjiang provinces Steel were the strategic restructuring of key industries, the formation of the country's largest steel production enterprise; Shanghai Baosteel Group Corporation and Wuhan Iron and Steel and Shougang Corporation, respectively, the company signed a strategic cooperation letter of intent to take the United Way through the enhanced ability to withstand market risk (the content of cooperation include: bulk raw materials such as iron ore joint procurement and integration of transport links , in order to reduce procurement and transportation costs; new products, new technologies and new techniques of joint research and development, in order to shorten the development cycle, reduce development costs; marketing cooperation to seek a more coordinated market allocation of resources, to avoid vicious competition). At present, the Chinese iron and steel enterprises through organizational restructuring, has set up a number of a certain international market competitiveness of large enterprise groups.

China is already the world recognized steel big country, but not steel power. Although China's international status and steel industry competitiveness has increased, but with the world steel power such as Japan, South Korea, the United States and some European countries still relatively weak, both in the enterprise scale, product structure, product quality, energy consumption labor productivity or in the technical equipment, technological level, there are still significant gaps. Are:

2.15 Steel production available resources

According to the China Iron and Steel Industry Association, September 2003 release of "steel market demand forecasting and steel industry development strategy a number of recommendations," the report productivity research shows that Chinese iron and steel enterprises to take advantage of resources has been a shortage, especially iron ore. 2003, although the quantity of steel made in China exceeded 200 million tons, but the Chinese domestic iron ore supply and demand gap is growing, imports of iron ore every year more than 20% speed increase. It is predicted that in 2005 need to import 180 million tons of iron ore, by 2010 China will import 220 million tons of iron ore,

will account for 45% of total world trade around. This will in the international sourcing, domestic port transportation, ore prices and production safety and other aspects to the development of China's steel industry has brought more difficulties and uncertainties. At present, because of the rapid growth of China's steel production has resulted in iron ore, coke, coking coal and other raw fuel supply, skyrocketing prices and sea freight, electricity supply shortages in some areas, rail transport and port loading and unloading capacity is insufficient, restricting Chinese steel industry development have become increasingly prominent.

Years	Imports	Growth rate
2003	144000000 t	20%
2005	180000000 t	20%
2010	220000000 t	20%

2.16 The average level of technical equipment

the Chinese average unit capacity of existing technology and equipment of small, low level of technology, part of the production capacity and technology is not complete, making the production of high consumption, low efficiency, poor quality. At present, China's backward technology and equipment still larger proportion. The relevant statistics show that China has a total capacity of competitive equipment accounted for about 50%, while the remaining 50% of the capacity you need to transform and eliminated. Such as blast furnace, about 45 million tons of production capacity belongs behind, accounting for 35% of total capacity, of which about 30 million tons production capacity is 100 cubic meters below the small blast furnace, belonging to the deadline eliminated; steelmaking devices, there are about 12 million tons of converter belongs to the backward production capacity, production capacity now accounts for 12% of the converter, electric furnace is about 10 million tons of backward production capacity, accounting for 34% of furnace capacity, belong to the deadline for elimination ; rolling equipment, in addition to the new mill plate and hot rolled seamless steel pipe outside, with international advanced technical level of equipment is less than 50%, while at the domestic level and the general level of equipment behind more than 50%. In short Chinese iron and steel enterprises overall equipment level is uneven, both good Baosteel, Wuhan, there are poor private enterprises.

2.17 Quality and structural steel products

quality compared with other countries, China steel purity is low, higher levels of harmful gases and impurities, performance, uniformity, consistency is poor, visual quality and packaging of poor quality, and production standards relative low, can reach the international advanced standard steels physical quality of the relatively small number of products. Although in recent years the product structure adjustment faster, but there are still many deficiencies, such as iron and steel strip ratio was 42%, while in developed countries this ratio is 60% to 80%; sheet and high-tech and manufacturing high-end market Demand difference of 7 percentage points, to be imported.

2.18 Steel production specialization

Although Chinese steel products in specialized areas and some improvement (such as the use of IPO proceeds Baosteel investment hot galvanized and electro-galvanized production lines, auto sheet production equipment system improvement projects, additional heat rolled pickling plate finishing products and supporting the project, focusing on the production car panels, boards and other appliances with high-tech, high value-added products, to fill the Chinese high-grade sheet metal blank, so that in automotive steel, steel appliances, steel, container steel and oil pipes, etc., shows that the trend of specialization, has been formed to cold-rolled products, hot rolled coil, seamless steel tubes, high-speed wire rod and billets as the main product; Wuhan Steel shares is currently the cold rolled silicon steel products the most complete varieties, the largest manufacturing enterprises, but also Chinese cold rolled oriented silicon steel and high-grade cold-rolled non-oriented silicon steel sole manufacturing enterprises, mainly in its cold-rolled sheet, cold-rolled silicon steel sheet, galvanized sheet, color coated tin plate and other aspects of the formation of specialized trend), but overall, the Chinese iron and steel enterprises that are "universal type" factory, plates, tubes, rods, wire, profiles and so on production, product specialization degree low. Especially steel enterprises lack a clear product positioning and leading products, professional division of labor is not clear, the low level of production specialization, directly affect production costs, quality and efficiency, as well as iron and steel industry technological progress. Labor productivity: according to consumption per ton of hours worked, per ton of steel produced in developed countries need to manually when less than 5 hours / tonne, while the Chinese iron and steel enterprises average of up to 20 hours / tonne, the average labor productivity of workers employed equivalent America's seventh, especially in China's steel industry is the degree of concentration of the world's major steel-producing countries in the lowest, more than four times higher than in developed countries. Low labor productivity, Chinese steel companies the competitive advantage of low labor costs can not be reflected, together with other countries than Japan's energy consumption by 20%, and iron and steel products less competitive production costs.

2.19 Concentration of iron and steel enterprises aspects

China's iron and steel industry scattered layout, there are many scattered throughout the country districts and even towns, Shanghai Baosteel is China's largest production capacity in 2004 is expected to be 20 million tons, is also less than the world's largest steel company Acero annual output of 1/2. Currently China about 20,000 existing iron and steel enterprises, of which nearly 50 medium-sized enterprises with annual steel output average less than 200 tons, while the annual production of Japan's six steel companies reached 100 million tons, South Korea Pohang an annual steel reached 26 million tons, and its corporate concentration is much higher than China. In addition, according to the 2003-2004 Chinese steel industry research report shows: 2003 - 2005, Chinese iron and steel enterprises in large-scale blast furnace ironmaking Association member companies capacity increased by 35% instead of 78% growth in member companies, high- 43 percent of the member companies. 2003-2005, large-scale enterprise association member companies steelmaking capacity increased by 35% instead of 122% of member companies, 87 percent higher than the member companies. Low concentration iron and steel enterprises steel industry directly affects the adjustment of product structure, can not be formed to lead the market size and leading energy and reduce the degree of organization of the market, not suited to the development of iron and steel enterprises to monopolistic competition market structure and steel enterprises stable and healthy development.

Years	National Steel increased efficiency	Private mills increased efficiency	Gap	
2003-2005	35%	122%	87%	

2.2 Entering WTO

on China's steel enterprises are facing opportunities and challenges
China has joined the WTO, it must comply with the relevant WTO non-discrimination, market liberalization, fair trade and balance of rights and obligations of the basic principles, in accordance with WTO rules in its operating activities, which is bound to the development of China's steel industry have a significant impact. To the WTO, on the one hand to the Chinese iron and steel enterprises to provide a good opportunity for development, but also an enormous challenge.

2.21 Chinese iron and steel enterprises Opportunities

Can make full use of international resources and markets. Such as iron ore, China has proven iron ore reserves, 97.5% of lean ore, with an average iron content of 32.7%

(lower than the world average grade of 11%), and most of the iron ore reserves have been developed use. Iron ore, iron and steel production as supporting conditions, domestic iron ore production can not meet the growing needs of steel production, the need to increase imports supplement, such as the 2000 national iron ore production 240 million tons, 69.97 million tons of iron ore imports , in 2003 China's annual imports of 148.12 million tons of iron ore, an increase of 32.87%. Substantial growth in imports of iron ore, China imported iron ore production rose to 47.23 percent the proportion, increased 5.11 percentage points higher than last year. After joining the WTO, a large number of foreign iron ore and scrap resources to supplement domestic needs, steelmaking problem of insufficient resources can be mitigated, is conducive to China's steel enterprises to improve product quality and economic efficiency. In addition, after joining the WTO we can use to expand the international market, exports of ferroalloys and rope. China is the world's major exporter of ferroalloy second, the main export of ferrosilicon, iron and manganese alloy molybdenum metallurgical primary products, low labor costs and large export volume, making this feature with a labor-intensive products in the international community with a more strong competitive strength. Meanwhile, exports of metal products have advantages in wire rope, wire rope major domestic manufacturers such as Fasten, Xinhua shares, Ningxia Hengli other enterprises, whose main production equipment abroad, better product quality, the international market opening may contribute to the products for export.

Years	Imported ore 2000	Imported ore 2003	Increase	Increase in the proportion	Average growth
2000-2003	69970000 t	148120000 t	32.8%	47.23%	5.11%

2.22 Chinese iron

steel enterprises can promote technological progress and structural adjustment. After joining the WTO, developed technical barriers weakened, there is conducive to the introduction of foreign advanced technology and equipment to speed up the existing backward technology, the elimination of outdated equipment and production processes have survival value transformation, which will undoubtedly promote the Chinese steel industry transformation accelerates , iron and steel enterprises is conducive to scientific and technological progress. Meanwhile, in order to strengthen and foreign iron and steel enterprise competitiveness, promote Chinese iron and steel enterprises through the organizational structure and the adjustment of existing assets to achieve production of specialized steel products, China's steel production increased level of specialization.

2.23 Help steel companies to reduce costs

change the business model and improve the management level. After joining the WTO, the domestic and international markets to the direction of integration, the steel market prices will converge. There are statistics, currently the world steel output has reached 1 billion tons, the demand is only 800 million tons. Clearly global steel overcapacity, combined with the level of world steel enterprise technology continues to improve, the cost of steel production declined. In addition, after joining the WTO China's development of iron and steel enterprises will compete with the international steel market closely, this transformation industry and enterprise management business sense, to accelerate the transformation of traditional management model, as well as improve the management level has greatly facilitated effect.

2.24. Accelerate the process of reform of state-owned enterprises

After joining the WTO, will further promote the country's financial system, the reform of property rights system, thereby accelerating the state-owned steel enterprises clarity of property rights, and promote the process of demutualization restructuring, as well as the flow of capital between enterprises, joint investment and joint venture development , improving input and output efficiency, reduce business investment risk.

2.25 Steel market is conducive to the establishment of order and the capital markets

After joining the WTO is conducive to China steel market, establish a good import and export order, order flow, price of the order, the transaction order and the order of competition, and improve the steel market rules, suppress unfair competition in the steel market, and promote survival of the fittest. Meanwhile, foreign direct investment in China multinationals will increase into the finance, insurance industry will further open up the capital market further active, a variety of investment and financing methods and channels to further expand financing conditions will be improved, which will iron and steel enterprises strengthen capital operation, financing for development, reduce financing costs and achieve investment diversification to provide more opportunities.

2.26 Chinese iron and steel enterprises are facing challenges

1. Iron and steel enterprises in China trade policy and trade management system adversely affect

(1) non-tariff barriers: China, signed in 1992, "Sino-US Memorandum of Understanding on market access" in steel products has promised to cancel quotas and licenses, in principle, the use of any form of quantitative import restrictions. After joining the WTO, by administrative means to control the import and export trade practices would be difficult to enforce, steel imports will increase more, which is China's steel market have a greater impact.

(2) the right to trade: China from July 1, 1994 from the implementation of "imported goods Management Measures", the requirement for steel and other 12 kinds of commodities to be approved by management. Before joining the WTO, China has been approved for operation control of imports of steel products effective means. But China has promised to cancel within five years after accession to the WTO approved steel products business, which this year (2004) to cancel the approved steel products business, any right of foreign trade enterprises are engaged in steel trading, with the phasing out of the approved operation, steel imports will increase accordingly.

(3) middle jacking: This is China's policy to encourage exports of steel, to ease the contradiction between supply and demand in the market and improve the variety and quality, and enhance the competitiveness of enterprises, improve enterprise efficiency of great significance. This policy will be difficult to re-present the continuation.

2.27 High quality

high value-added products are being seriously challenged Structural steel products in China behind the high-tech, high value-added products from the yield and quality are still difficult compared with Western countries, leading to increasing domestic market demand, the supply of domestic products to see off the situation. Mainly in wire rod, rebar, small timber, the general board, pipe and other products a serious oversupply, but the steel type, oil pipe, stainless steel, tool steel and other varieties of steel production shortage, but also need to import 7,000,000 tons per year or more. After joining the WTO, foreign influx of these products will be China, squeeze the Chinese market. Because foreign technology has matured, while China is in research and development stage, so in this respect would be competitive challenges. Involved in the iron and steel enterprises Wuhan Steel shares, Handan Iron and Steel, Angang, Benxi Iron and sheet metal.

2.28 Impact on Chinese steel enterprises

Currently China Special Steel Enterprises layout scattered, small scale, low degree of product specialization, backward technology and equipment, there is no scale advantages, the total price of steel products is higher than the international market. Steel developed countries total steel production accounts for about 15% -20%, while China accounted for only 5% -6%, Chinese imports of steel per year in nearly 1/4 steel. In addition, developed countries compared with the domestic steel products, with stable performance, long life, surface high dimensional accuracy, timely delivery and so on. In this situation, the domestic enterprises is difficult to compete with foreign counterparts, some inferior enterprises will be eliminated. Development momentum of China's steel is not optimistic, in a highly competitive market, face a more severe test.

2.29 Is not conducive to China's development of a shortage of variety.

Currently some Chinese steel products because they do not have the production capacity or of poor quality can not meet the domestic market demand, this part of the product is mainly dependent on imports. Imports in recent years are: galvanized sheet steel, oil well pipes, cold-rolled silicon steel, automotive and consumer durables industry with high-quality cold-rolled sheet, color TV with magnetic shielding steel, spring steel, large-diameter high-pressure boiler tubes, hydraulic cold drawn precision seamless, high-strength weldable plate, stainless steel and so on. After joining the WTO, this part of the market occupied by foreign manufacturers, is bound to hinder the development of Chinese enterprises such products. Involving listed companies TISCO, Xining Special Steel, Daye Special Steel, North over steel, stainless steel, etc. Pudong.

2.3 After joining the WTO China's iron and steel enterprises development

At present China's steel enterprises in the technology level, the average level of technical equipment, iron and steel product quality, product specialization of production, labor productivity, technical and economic indicators and steel enterprises to focus on other aspects of relatively low degree or lag, coupled with "WTO" after Chinese iron and steel enterprises, such as the iron and steel trade, high quality and high value-added products, steel companies and shortages variety of adverse effects. In the Chinese iron and steel enterprises in which the status quo and join WTO on Chinese steel companies enormous challenges in the context of China's steel enterprises in the competitive international market power in the world iron and steel enterprises to compete and gain competitive advantage and achieve steel power The goal, I believe that the following aspects should develop.

2.31 Accelerate the adjustment of the allocation of resources

optimize enterprise structure. Chinese steel companies faced difficulties and "WTO" after the negative impact of iron and steel enterprises, China's steel enterprises must take effective measures, through the strategic reorganization of state-owned assets, the formation of large, extra large steel enterprise groups in order to improve industrial concentration; guide enterprises in combination, merger formed the basis of a competitive specialization; improve steel industry restructuring, good relations to the full development of the industry technology projects, promote the upgrading of products, efforts to increase international market needs or domestic long-term dependence on imports of high value-added products as well as quality and quantity.

2.32 Walking variety

quality and efficiency of development. Competition in the international steel market mainly include variety, quality, cost and delivery and other aspects of the competition.

At present, these areas in terms of competition on the Chinese iron and steel enterprises are weak, especially in the variety and quality and quantity of competition, with the Western countries, there is still a certain gap between steel companies. Therefore, the future of China's steel enterprises in the varieties should focus on the development of cold-rolled sheet, galvanized sheet and coated shelves, stainless steel sheet, cold-rolled silicon steel sheet, hot-rolled sheet and other key currently imports large quantities of steel products, strict Control medium-sized timber, pipe, hot rolled narrow strip steel, tin plate and other varieties.

2.33 To promote scientific and technological progress

enhance the level of technical equipment and processes. After several years of technological innovation, China's steel industry made progress in the process, technology and equipment have improved to varying degrees. However, with the world's iron and steel enterprises in developed countries compared to Chinese steel industry technical equipment, technology level is still lagging behind, China has not yet few really modern, competitive process on the production line. As the level of technology and equipment and long-term process hovering at a low level, resulting in a waste of energy and resources, low product quality and poor efficiency. The face of "WTO" after the challenge, Chinese steel companies must quickly reverse this situation. First, to establish operational mechanisms to promote scientific and technological progress and evaluation index system, allowing companies to add efficiency factor in technological progress gradually expand; secondly to promote advanced and mature technology, optimize the production process, to encourage qualified enterprises to gradually achieve technology equipment Large-scale, continuous and automated; once again to the implementation of "clean production", the investment to energy saving, environmental protection and comprehensive utilization of resources tilted.

2.34 Iron and steel enterprises have to be centralization

specialization and joint direction. Due to the current Chinese iron and steel enterprises have low level of specialization, firm size is too small, fragmented nature of investment, leading to poor economic performance of China's steel enterprises, lack of competitiveness. Especially the "WTO", facing fierce competitive situation, the weakness of China's steel enterprises become more prominent. Therefore, the future of China's steel enterprises to accelerate the formation of enterprise groups, walking centralization, specialization and joint development of the road, the composition of China's steel industry, "joint fleet" or "aircraft carrier", in order to achieve short-term rapid expansion of production capacity, to achieve a reasonable economies of scale, with high-quality products and advanced technology. The face of strong foreign competitors, who accounted for 99% of total national steel industry where SMEs only take the joint operation of the road, in order to form a larger economies of scale and a strong competitive strength. Specific measures are: optimization of regional structure

and improve the steel industry concentration; optimize the organizational structure, and guide enterprises in combination, merger formed on the basis of competitive specialization; optimization process structure, stressing the steel industry-wide technology projects; optimize the industrial structure, eliminate backward production capacity, promote industrial transformation and upgrading, address market demand, imports and more high-value-added products localization issues.

2.35 Improve product quality

production of high value-added products. As China's steel enterprises with high added value product yield and quality behind the future of China's steel enterprises should adhere to scientific and technological progress and technological innovation, and constantly improve the technological level of equipment and technical operational level, vigorously develop high value-added products; while using the introduction, digestion, homemade phase combination of measures, boldly develop high value-added products absorb foreign advanced technology and advanced management methods to improve localization, changing Chinese steel enterprises shortage of high value-added products and the development of varieties of steel.

2.36 To "green manufacturing" direction

Chinese steel industry has not completely get rid of the extensive mode of development of the steel industry on the environment seriously polluted. "Green Manufacturing" emphasizes considering resources, energy consumption and environmental impact of modern manufacturing model, the goal is to make our products from the design, manufacture, packaging, transport and use to scrap the entire life cycle process with minimum negative impact on the environment, maximum utilization of resources and make corporate economic, environmental and social benefits while improving. Therefore, it is not just clean production, but also embodies the idea of eco-industry and recycling economy idea that 3R-"reduction (Reduce), reuse (Reuse), recycling (Recycle)". December 27, 1999, China Metallurgical Industry Bureau issued a "State Bureau of Metallurgical Industry regarding the development of metallurgical industry, cleaner production pilot work notice" (rule of the hair [1999] No. 521) documents explicitly put forward the metallurgical industry to go sustainable development path, to achieve economic and environmental benefits of unity. Currently, the Shougang Corporation, Shanghai Baosteel Group, Anshan Iron and Steel Group Company, Wuhan Iron and Steel Group Corporation and other enterprises have been "clean production" direction. In recent years, such as Wuhan Iron and proposed a "variety, quality, environment, efficiency," the development of ideas, the development of production, while increasing investment in environmental protection efforts, has invested 1.42 billion yuan for environmental management, and built a number of sewage treatment, dust control and noise control facilities to continuously improve the environmental quality of WISCO. Faced with the challenge of joining the WTO and the world's steel industry development of the

new rules, the Chinese iron and steel enterprises must follow the principles of sustainable development, the protection of the environment in an important position, relying on scientific and technological progress and technological innovation to further strengthen environmental governance, emphasizing the scientific development. The enterprise for sustainable development and environmental protection combine to achieve corporate economic, social and environmental benefits of coordination and optimization.

2.4 financial crisis, China's steel industry challenges and opportunities

2.41 serious challenge

2008, China's steel industry is running like riding on a roller coaster. First half sales booming, prices Rise, a record high level of iron and steel production and profits. By the international financial crisis and the various internal and external causes Factors influence from the beginning of August, a rapid decline in market prices, especially from September onwards, steel Industry operation changed dramatically, steel prices plummeted, the significant downturn in steel production, steel exports minus Less, which not only makes many rely on exports of steel to steel companies for profit loss, while surface The rapid reduction of downstream demand, the entire steel industry is facing severe challenges. The trip of the year Industry situation has undergone such a dramatic change in the history of China's steel industry is almost never had. Coupled with In the ability to control the upstream raw material resources obvious change has not yet occurred, the Chinese steel industry has experienced several Years of "prosperity", the Institute will face the direction of development worthy of our serious consideration.

2.42 Export situation of tremendous changes

It is obvious that the U.S. subprime mortgage crisis triggered by the global financial crisis, the impact of an entity after severe Economy, China's exports dropped significantly. As China direct and indirect exports of crude steel equivalent steel products have been Accounting for about 23% of steel production, the export situation of China's steel market upheaval that substantially lower demand Drop. January 2009 released by China Customs import and export value of 1,418 billion U.S. dollars, down 29%, of which exports of 90.45 billion U.S. dollars, down 17.5 percent. Despite the January effect by the Lunar New Year holidays,

But for Chinese steel demand, exports (including indirect exports and direct exports) are the next year the number of Drop. Chinese steel exports 1.91 million tons, down 53.8%. China's foreign trade exports rose from 2008 November has been three consecutive months of negative growth. Although the Chinese government from August 2008 since even

Continued four times raised the export tax rebate rate, but the steel-related products and consumer exports are still declining.

2.43 Industry Perspective

Machinery industry - in 2008, China Machinery Industry scale industrial added value growth over the previous year 17.1%, the growth rate dropped 7 percent, the export delivery value dropped by 15.2 percentage points. 5 machinery mainly Products, in addition to power generation, cement equipment, concrete machinery, construction and investment-related products, Production of many products have emerged in varying degrees of growth year on year monthly decline or fall, or even agriculture Mechanical products also dropped a lot. If there is no "agricultural countryside" stimulus policy support, probably next fall

Even greater degree. Automotive industry has become a pillar industry of China's economic development, consumption of steel, steel grade varieties Requirements are increasingly affected. 2008 Car production 9.62 million, an increase of 6.5 percent year on year decline 16.4 percentage points; car production 5.33 million, an increase of 7.8% year on year, down 17.2 percentage points. Automobile exports showed a rising trend in recent years, in 2008, an increase of 11.1%, compared with 2007 growth rate down 67.85 percent. Worrying is automobile exports have been a single month for five consecutive months fell. 6 Container industry is affected by trade a greater impact in the industry. To November 2008, China's container production growth Parcels plummeted 80.1 percent year on year, on container steel had a tremendous impact.

2.44 steel price roller coaster

2008 half of the domestic steel prices increased month by month, the end of June reached its highest point, the composite steel price index

Number rose to 161.47 points, compared with the beginning of 125.12 points, up 36.35 points, or 29.05%. But with After gradual overall decline in steel prices, particularly violent downward trend in October, down, extensive coverage, November End domestic market composite steel price index fell to 102.3 points, the highest point of the end of June fell 59.17 Points, or 36.64%, over the previous year's 118.99 points down 14.03%. Steel prices plummeted to make iron and steel enterprises from profit to loss for the month, June profit was 178.30 Billion, to September profit of only 3.221 billion yuan, 5.835 billion yuan loss in October, November deficit Loss of 12.78 billion yuan, despite a slight rebound in prices in December, but still failed to reverse the form of loss-making enterprises Potential loss of 29.122 billion yuan month, a total of 44 loss-making enterprises, the loss 61.97%. Although before 2008, China's steel market volatility adjustment also appeared, but like this because violence Down led to industry losses occur several months of continuity that in recent years there have been no's. Currently, this global financial crisis to Chinese steel companies with a heavy blow to the surface, Is affected from both exports and domestic demand impact, but what really makes the industry is facing a huge crisis Incentives within the industry comes from the structural constraints. Irrational industrial structure,

concentration Low, the lack of effective regulation of market mechanisms and the limitations of corporate governance standards, etc., because these internal factors are the amplification factor of the crisis affecting the dominant force in the steel industry. Although in the past few years, China's steel industry has made development, showing a boom, but these are also obscuring some of the structural, The critical contradictions or problems. In the current financial crisis, these problems or conflicts have been lost the cover and directly exposed.

Steel Price List

2008 6	Prices	Prices up	Price inflation
	161.47	36.35%	29.05%
2008 11	Prices	Prices down	Price drop rate
	102.3	36.64%	14.03%

Enterprise 44, the loss 61.97%.

Years	October	October November	Dec
the loss	58.35 million yuan	127.8 million yuan	291.22million

2.45 Industry Opportunities

Electricity industry - the next two to three years will be the scale of construction of 110 kV and above lines 260,000 km, KVA transformer capacity of 1.35 billion. The planned total investment will reach 1.1 trillion yuan. 31 Railway industry - in 2009 exceeded 50 billion yuan will seek capital investment plans to complete cast Owned \$ 600 billion. According to the plan, in 2009, the state will approve the new railway mileage of 10,000 kilometers left Right, the investment scale 1 trillion yuan; 2010, the state approved Jiangzai new railway mileage 10,000 km, investment Scale of 1 trillion yuan. Planning objectives will enable the new adjustment of railway construction in China seven years earlier than originally planned, 2013 to complete the construction of 120,000 km objectives, investment will expand to \$ 600 billion / year, was the original plan

2.46 times the annual increase steel consumption of about 900 million tons.

2.47 real estate industry

through more than three years, an increase of more than 200 million sets of low-rent housing, more than 400 million sets Affordable housing, with a total investment could reach 9,000 billion yuan, an annual investment of nearly 600 billion to spur Million. 33 Energy Sector - State Department approved a total investment of 95.5 billion yuan in Guangdong Yangjiang nuclear power engineering and Zhejiang Qinshan Nuclear Power Plant Expansion Project, and approved a total investment of 93 billion yuan 34 East Gas Pipeline Project East workers Away. During the same time there will be a number of energy infrastructure projects under construction, including Chengdu million-ton oil refining Factory.

2.48 Water Sector

-four quarters of the central government will add 20 billion yuan 35 to accelerate construction of water infrastructure.

2.49 transportation industry

the fourth quarter of transport infrastructure projects 10 billion yuan, and strive to the next two years Traffic annual investment in fixed assets reached 1 trillion yuan level. Speed transport facilities Accelerate, in addition to directly stimulating the growth in consumer demand for construction steel for construction machinery demand will also increase, Will drive such as construction machinery, heavy trucks and other machinery demand, which is bound to boost machinery steel consumption growth Plus. Chinese construction machinery in the amount of 35% -40% for infrastructure.

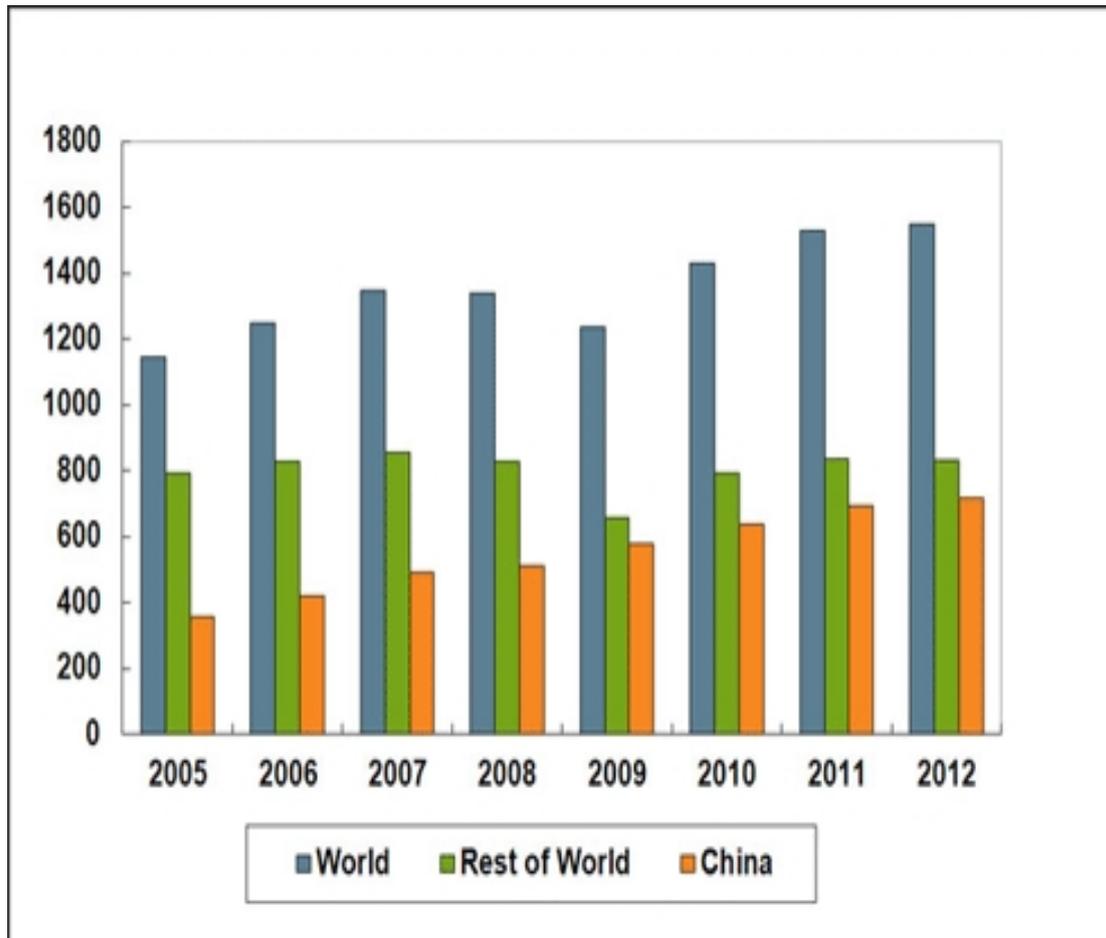
2.5 Chinese steel industry and the world steel industry

World Steel Association on January 22 released in 2012 global steel production statistics. Chinese mainland in 2012 crude steel production 716 million tons, accounting for 46.3% of global steel production.

Statistics show that in 2012 global crude steel production growth in the doldrums, production was 1,547,800,000 tons, compared with last year's 1.529 billion tons increased by only 1.2%. Among them, 62 members of the World Steel Association, crude steel production amounted to 15.17945 million tons, accounting for 98.1 percent of global production.

Slow growth that the global economy downturn have a negative impact on the steel industry. Since 2012, the global economic growth is weak, the multinational real estate and construction machinery downstream production, building shopping malls industry downturn in demand, coupled with the global shipbuilding industry is experiencing a rare winter for many years, resulting in weak demand for steel market,

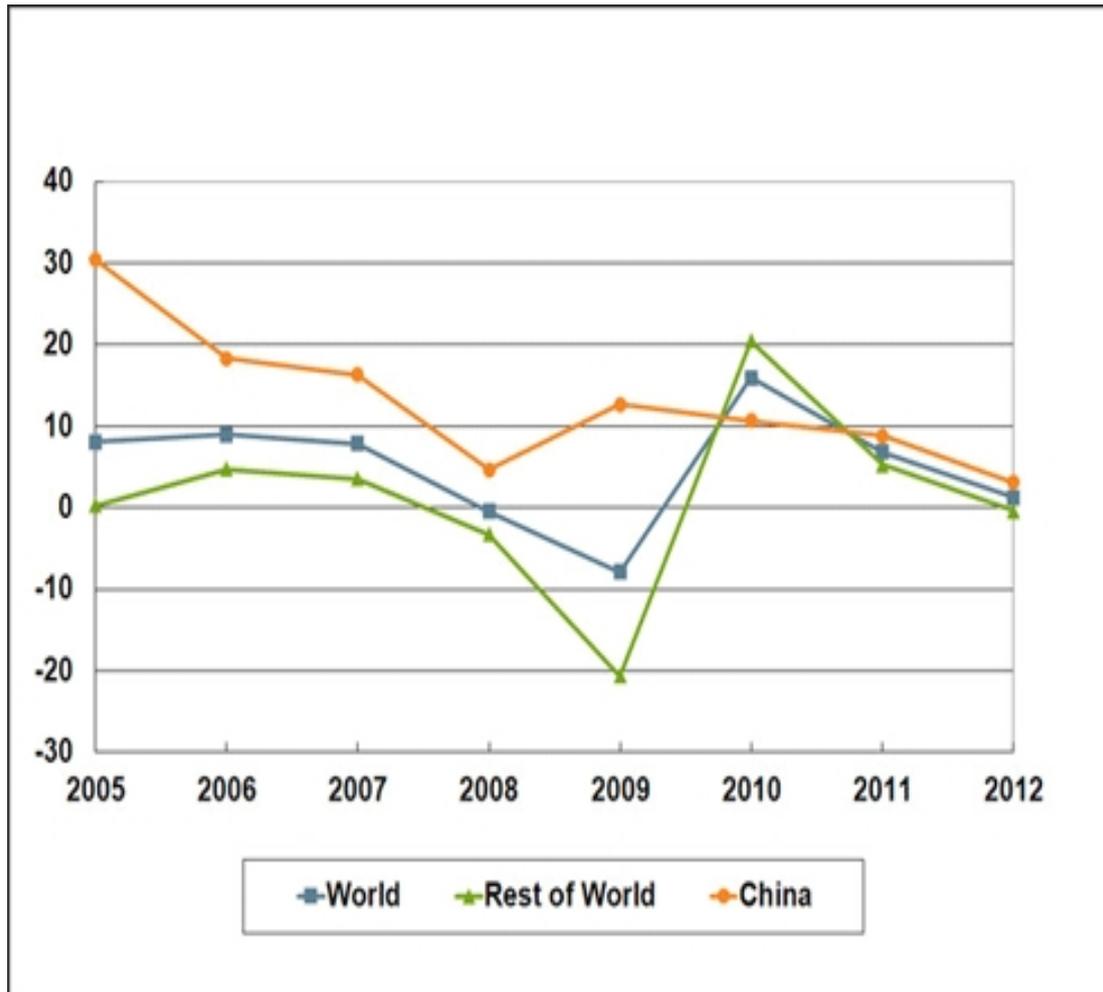
growth is weak.



Global steel production in 2005-2012

2012, mainland China's crude steel production was 716,542,000 tons, an increase of 3.1%, the proportion of total world output 46.3%, compared with 2011 increased by 0.9 percentage points. If coupled with Taiwan's steel production, the ratio will increase, reaching 47.6%. Although China's steel output growth slowed compared with previous years, but the overall growth rate is still higher than the global average level product, showing China market is relatively good level of development.

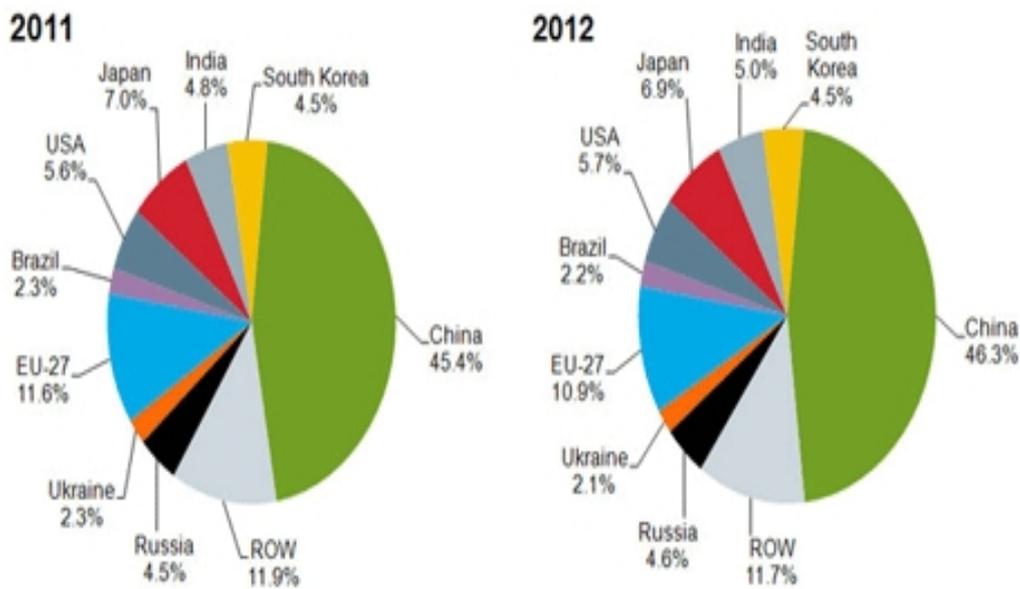
China produced nearly half of the world's crude steel, while in volume terms, and even China's steel output individual provinces have reached or exceeded the level of the major developed countries in Europe and America.



Global steel production growth in 2005-2012

An annual output of 164 million tons of steel in Hebei Province 2012 more than the global steel production in Japan more than a second at least 50 million tons, is 1.8 times the U.S. national output, India's 2.1 times, 2.33 times in Russia, Germany, 3.85 times, and the EU steel production in the 27 countries considerable sum. China has four provinces of steel production exceeded that of Germany, there are 14 provinces and cities in steel production over France, the production of more than 19 provinces and cities in the UK.

Crude steel production in the second to tenth place followed by Japan, the U.S., India, Russia, South Korea, Germany, Turkey, Brazil, Ukraine, yields were 107,235,000 tons, 88.598 million tons, 76.72 million tons (estimated value), 70608000 tons, 69,321,000 tons, 42,661,000 tons, 35,885,000 tons, 34,682,000 tons, 32,911,000 tons.



Countries in the proportion of global steel production

Sub-regional perspective, the European steel production fell the most serious: the 2012 European steel production 320.6 million tons, down 2.7%, of which EU27 169.4 million tons, down 4.7%. Severe by the EU sovereign debt crisis, many other European countries, steel production declined. German crude steel production 42.7 million tons, representing a decrease of 3.7%; Ukrainian crude steel production 32.9 million tons, down 6.9%; Italian production of 27.2 million tons, down 5.2%; French production 15.6 million tons, down 1.1%; Spanish production 13600000 tons, plummeted 12.1%.

In addition, production of 111.3 million tons of CIS member states, down 1.2%; North America 121.9 million tons, up 2.5%; South America, 46.9 million tons, down 3.0%; Africa, 15.7 million tons, an increase of 0.3%; Middle East 24.2 million tons, an increase of 5.3%; Asia 1,012,700,000 tons, an increase of 2.6%; Oceania 5.8 million tons, down 19.9%.