



中国不锈钢的发展

The Development of China Stainless Steel

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1. 市场 Market
2. 产量 Production
3. 产能 Capacity
4. 讨论 Discussion

1. 市场 - 中国已成为消费大国

① 改革开放带来了经济的大发展，随着国力的增强及人民生活水平的提高，中国不锈钢的需求从很低水平的起步快速发展起来。

1. Market -China has become the big stainless steel consumption country

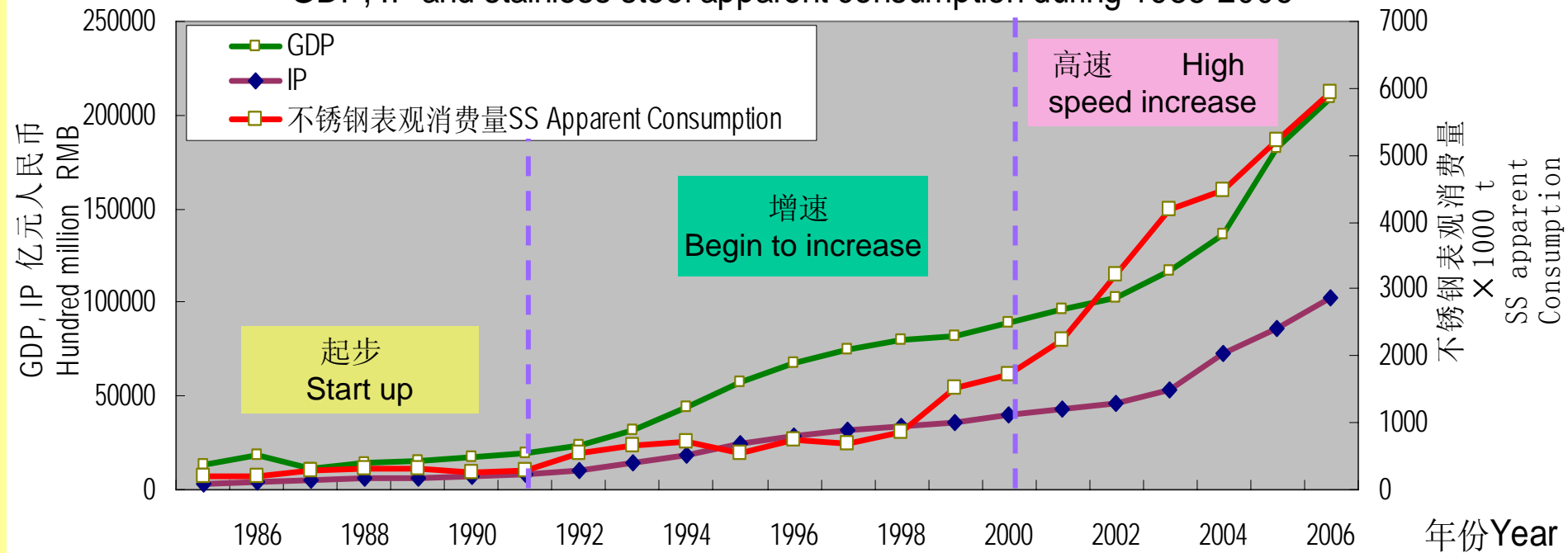
① The reform and opening up policy has brought about great development in Chinese economy. With the strengthening of national power and the increase of people's living level, the demand for stainless steel in China, starting from very low standard, now developed very rapidly.

1. 市场 Market

进入21世纪，随着GDP, IP的增长，不锈钢消费量高速提升（见图1），2002年最高增长率达到了42%。

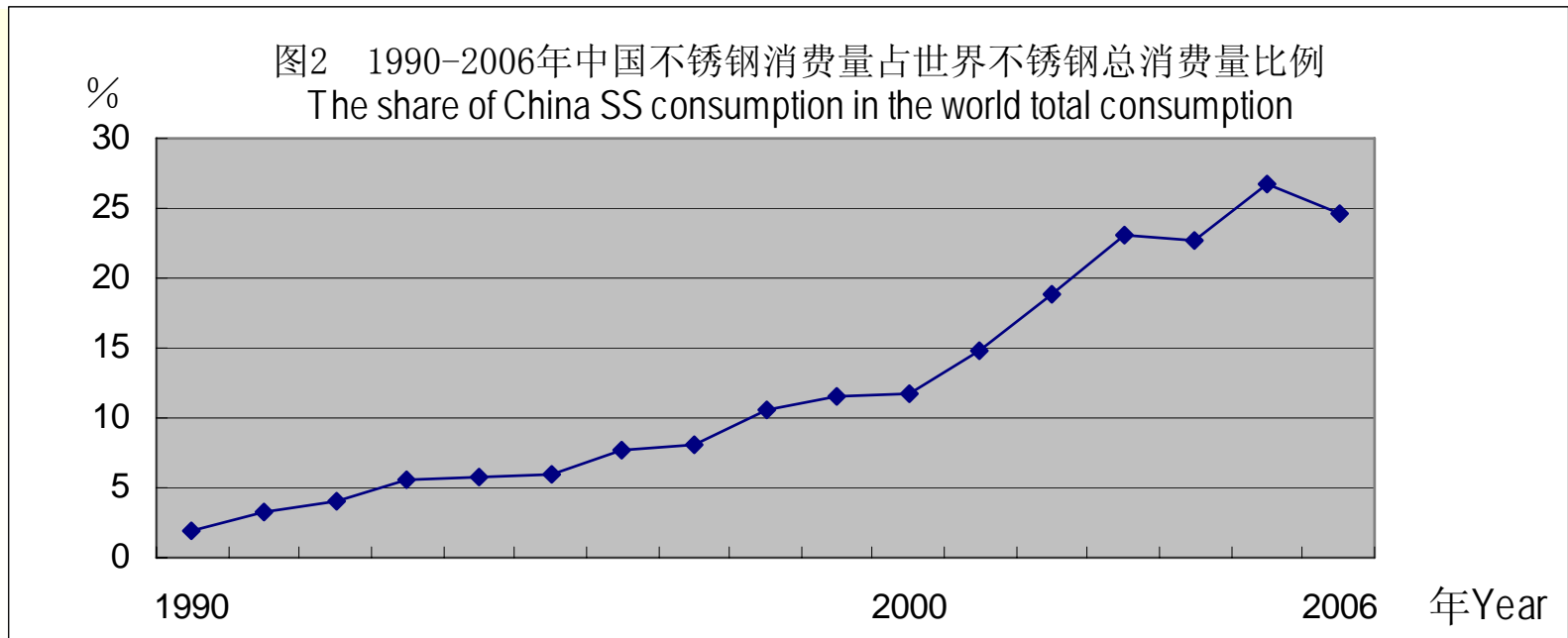
Entering into 21 century, with the growth of GDP and IP, the stainless steel apparent consumption grew at high speed with maximum growth rate reaching 42%.

图1 1985-2006年GDP(国民生产总值)、IP(工业增加值)和不锈钢表观消费量的比较
GDP, IP and stainless steel apparent consumption during 1985-2006



1. 市场 Market

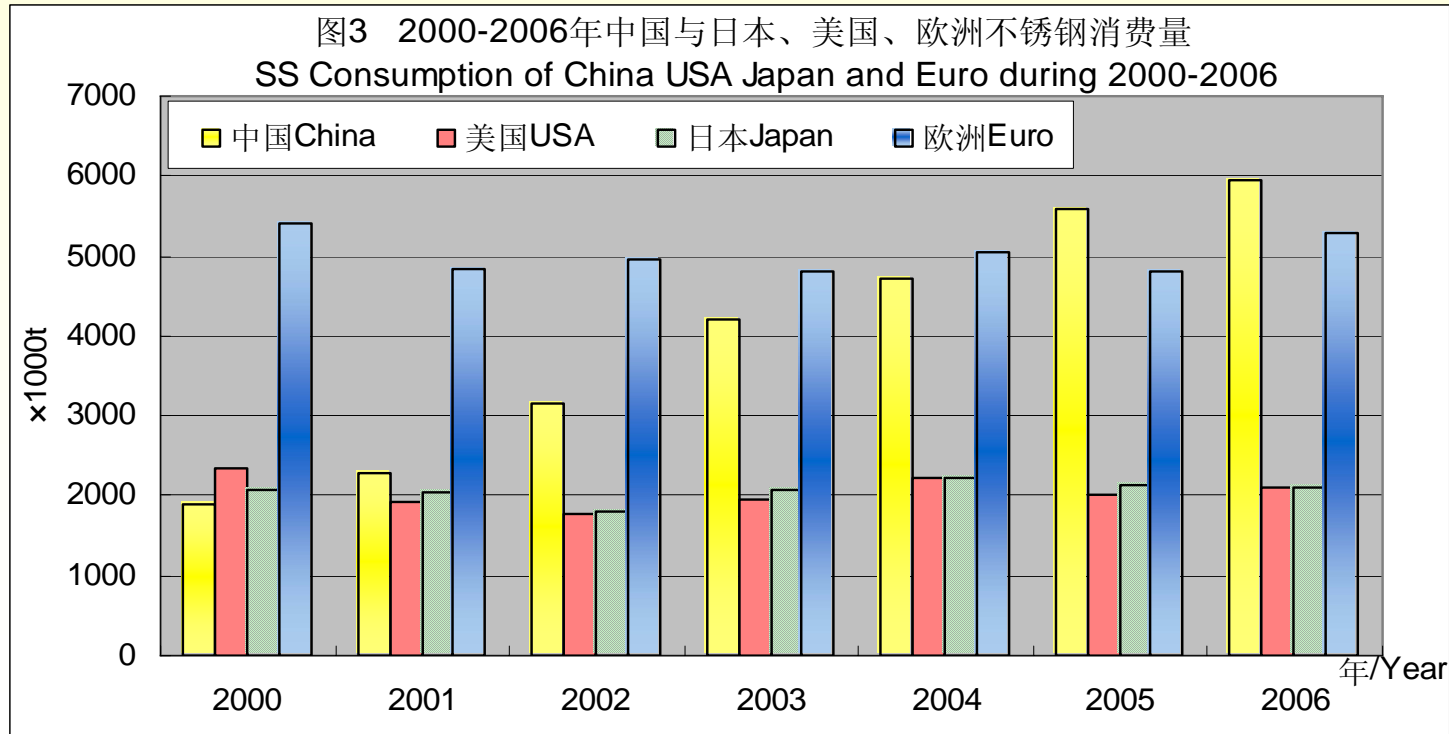
- ② 中国不锈钢表观消费量占全球总消费量比例由1990年1.9%，增到2006年24.7%（图2）为世界总消费量1/4，形成为世界最大的不锈钢消费市场。
- ② The share of China stainless steel apparent consumption in the world total Consumption increased to 24.7% in 2006 from 1.9% in 1990 and the consumption accounted for 1/4 of the world total. China has become the largest stainless steel consuming market in the world.



1. 市场 Market

③中国表观消费量2001年超过美国、日本，2003年超过美日之和，2005年超过了欧洲消费总量，2006年达到了595万吨，成为最大消费国。

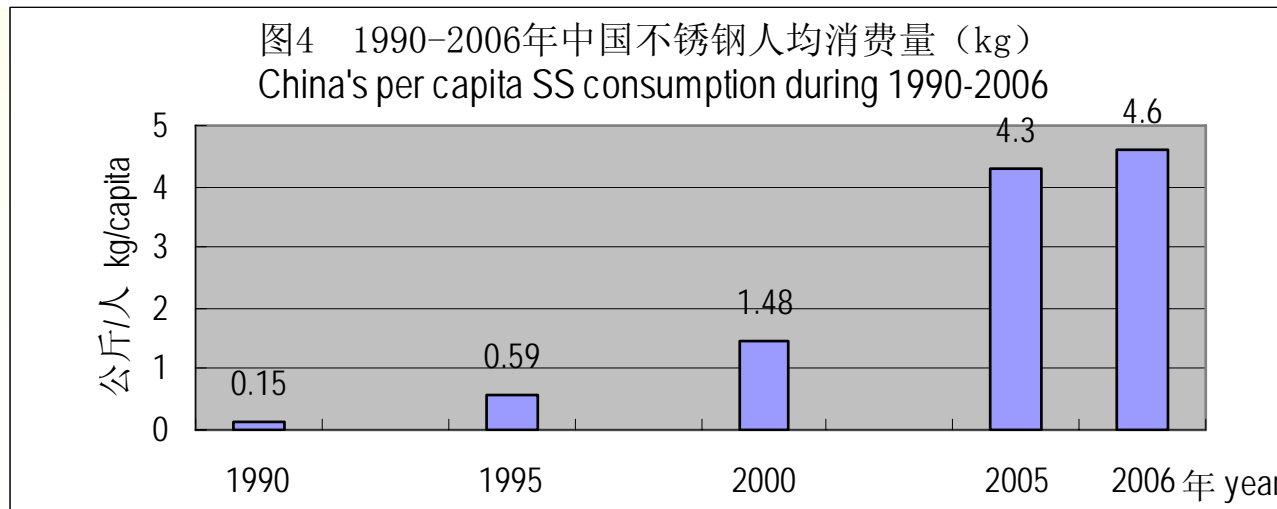
In 2001, China's stainless steel apparent consumption exceeded that of the U.S. and Japan; In 2003, China's consumption exceeded the sum of the U.S. and Japan; In 2005, it outnumbered the total consumption of Europe, in 2006, China's consumption reached 5.95 million tons, becoming the largest consuming country in the world.



1. 市场 Market

④ 不锈钢人均消费量由0.15kg (1990年)增加到4.6kg(2006年),增加近30倍,今年将达到5kg,人均消费水平已接近当前的世界平均水平。超过第三世界最富裕的南非(3.2kg),也赶上最老的资本主义国家英国(3.9kg)。

The per capita stainless steel consumption increased to 4.6kg in 2006 from 0.15kg in 1990, up nearly 30 times. It will reach 5kg this year and it has approached the current world average level, exceeding that of South Africa (3.2 kg) which is the richest country in the third world and that of the UK (3.9kg) which is the oldest capitalist country.

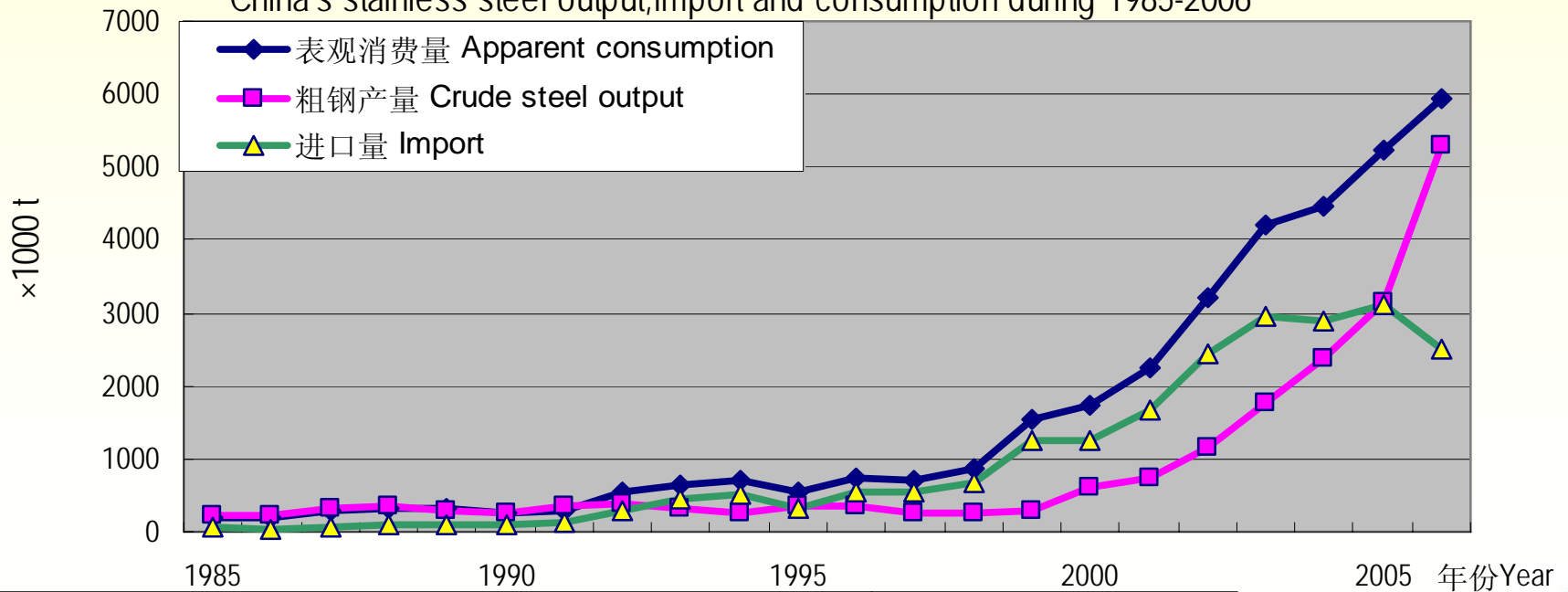


1. 市场 Market

⑤ 满足不断增长的需求,主要依靠进口,1999年中国超过美国成为最大不锈钢进口国,2005年进口量为313万吨占国内需求的60%,占世界总贸易量的1/5。

It mainly relied on import to meet the increasingly growing demand. In 1999, China outstripped the U.S. to become the largest stainless steel importing country. In 2005 the import was 3.13 million tons and accounted for 60% of the domestic demand and 1/5 of the world total trade volumes.

图5 1985-2006年中国不锈钢产量、进口量、消费量变化图
China's stainless steel output,import and consumption during 1985-2006



2. 产量 - 中国已成为不锈钢生产大国

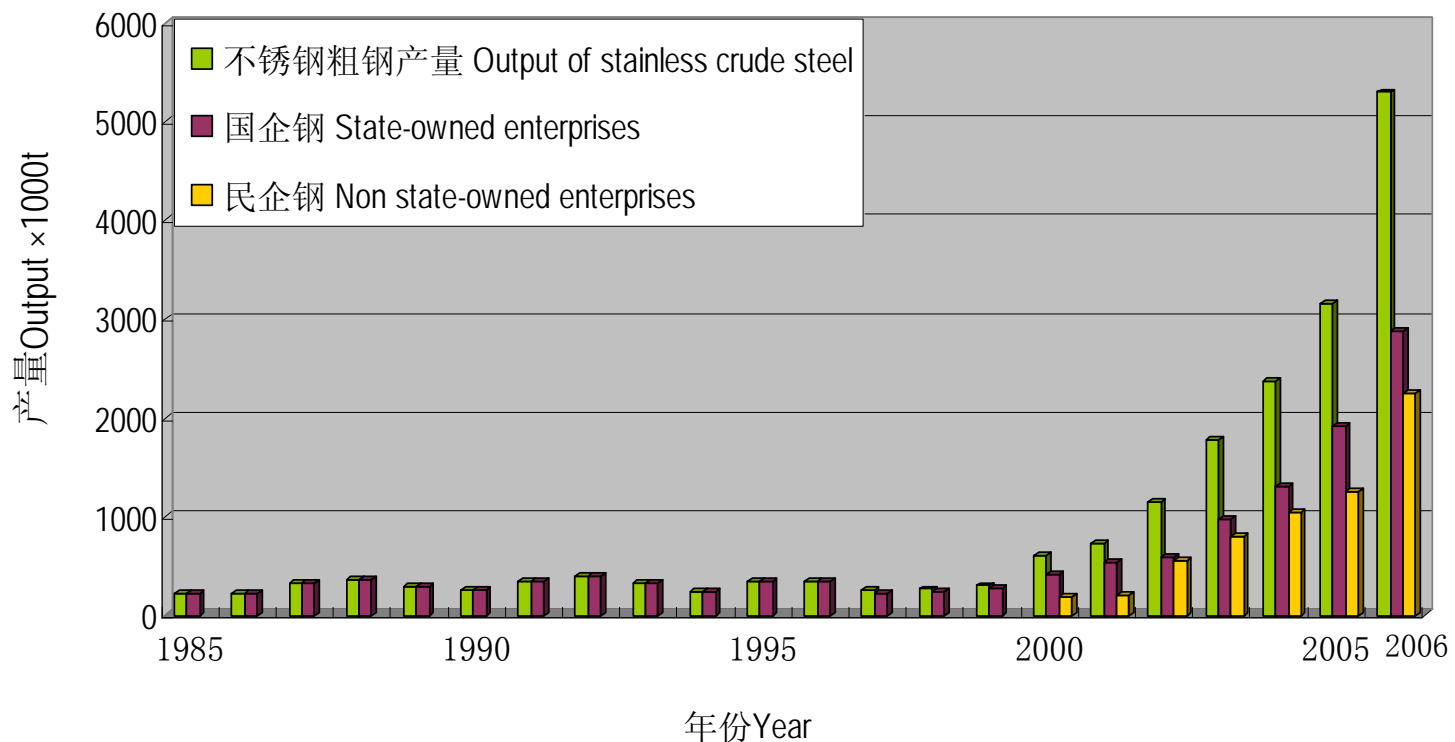
①中国不锈钢的需求多以民用为主，但产量不仅少且以长材为主，因此大量板材特别是冷轧板材的需求主要依靠进口。“九五”“十五”期间，国家采取了有效的政策和措施，调动三种所有制的积极性，加快投资，结束了不锈钢产量30万吨左右的十年徘徊，使不锈钢粗钢产量和产能均实现了快速的增长。

2. Production -- China has become the big stainless steel producing country

①The demand for stainless steel in China were mainly for non industrial use, and the production was less and major products were long products. During ninth five year – tenth five year period, the government took effective measures to arouse the enthusiasm of enterprises of three kinds of ownerships and speed up investment. The 10 year's stagnant of stainless steel production around 300,000 tons was concluded and rapid growth in both stainless steel crude and capacity was realized.

2. 产量 Production

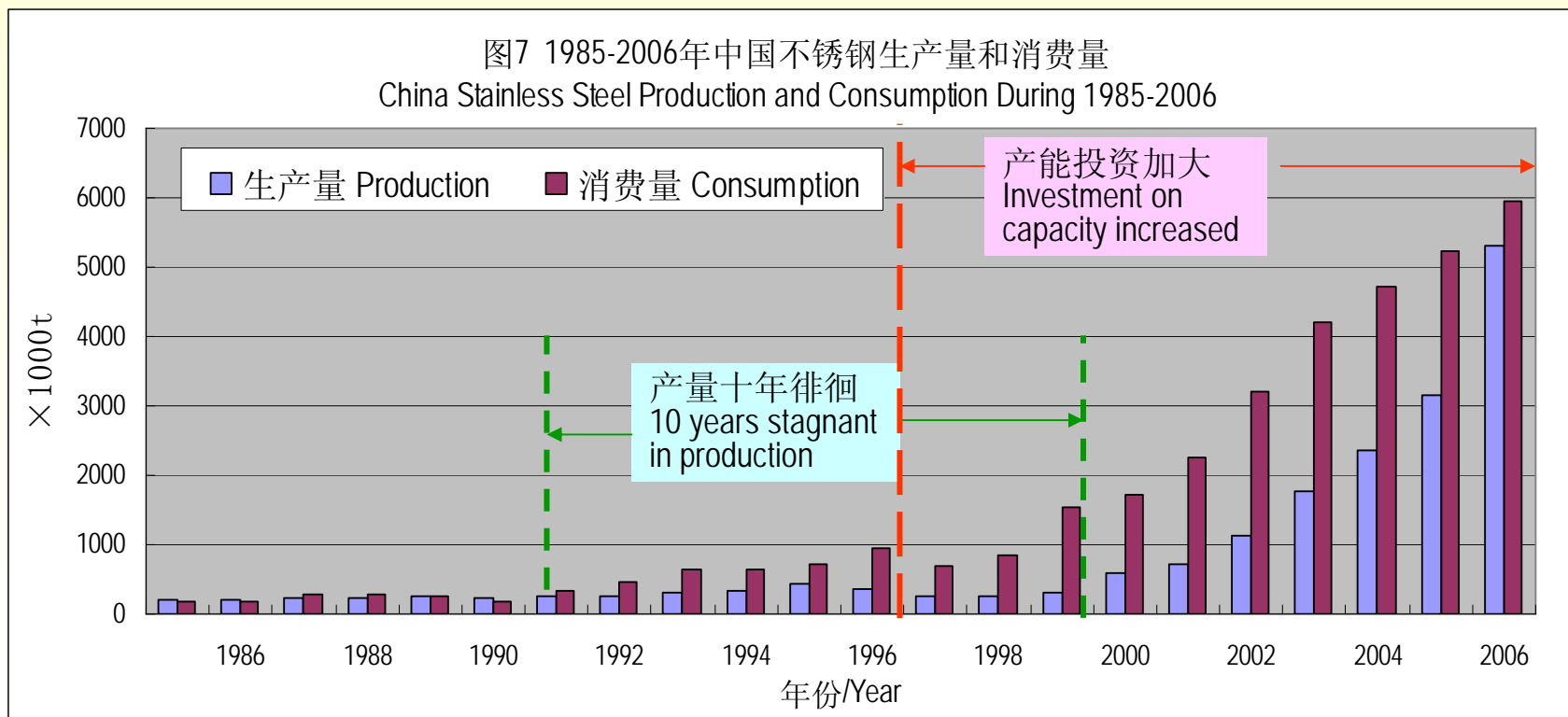
图6 1985-2006年中国不锈钢粗钢变化图
Output of stainless crude steel during 1985-2006



2. 产量 Production

2006年不锈钢粗钢产量530万吨。

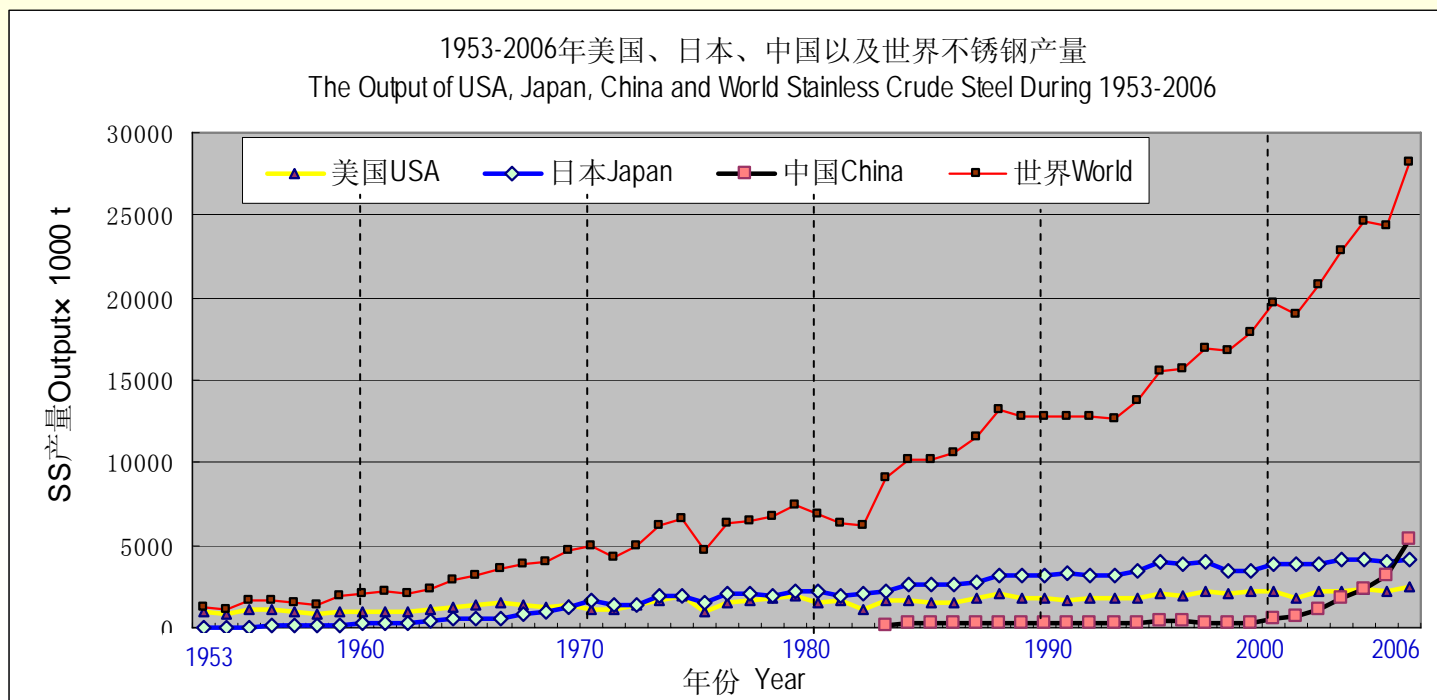
The production of stainless crude steel was 5.3 million tons in 2006.



2. 产量 Production

2006年不锈钢产量超过日本成为世界不锈钢第一生产大国。

The stainless steel output in 2006 exceeded that of Japan and China became the largest stainless steel producing country in the world .

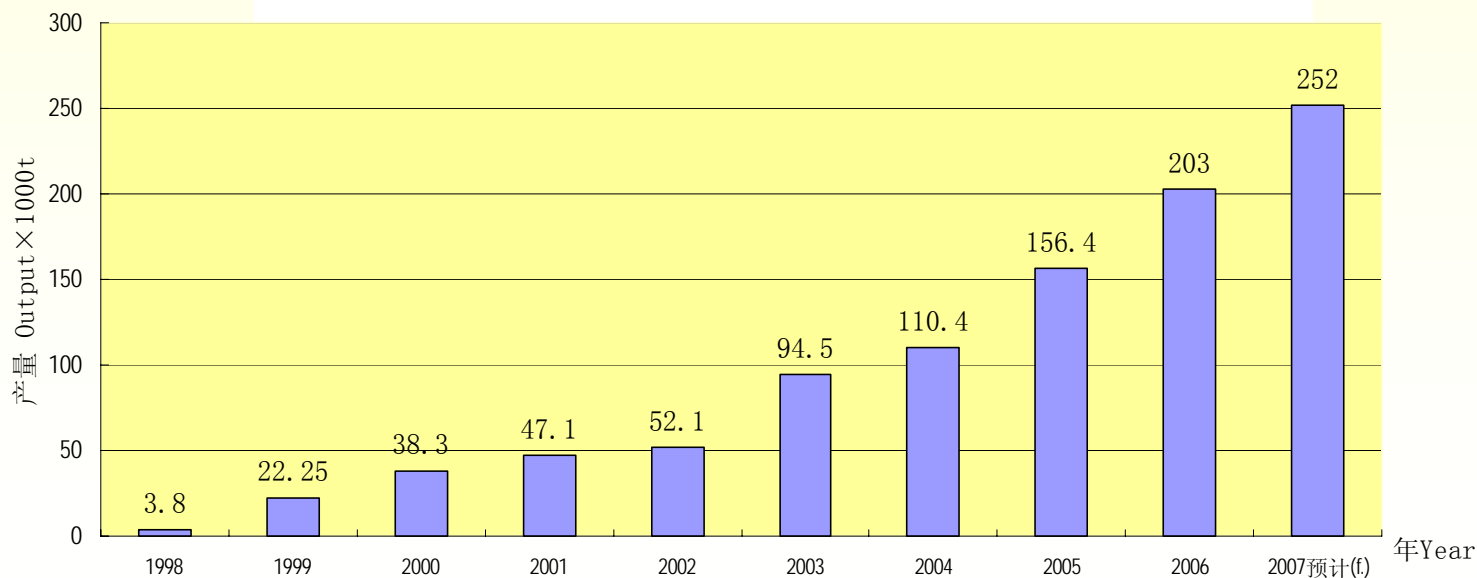


2. 产量 Production

②冷轧能力上来了。国家政策鼓励外资投资，宝新、SKS、ZPSS相继投资建立了冷轧厂，太钢也增加了冷轧能力，冷轧宽带产量快速增长，改变了长期依靠进口的局面。

Cold rolling capacity saw a big increase. The government encourage foreign investment. Baoxin, SKS and ZPSS invested to establish cold rolling mill one after another and TISCO also increased its cold rolling capacity. The production of cold rolled wide strip grew rapidly and the situation of relying on import for a long period of time Was changed.

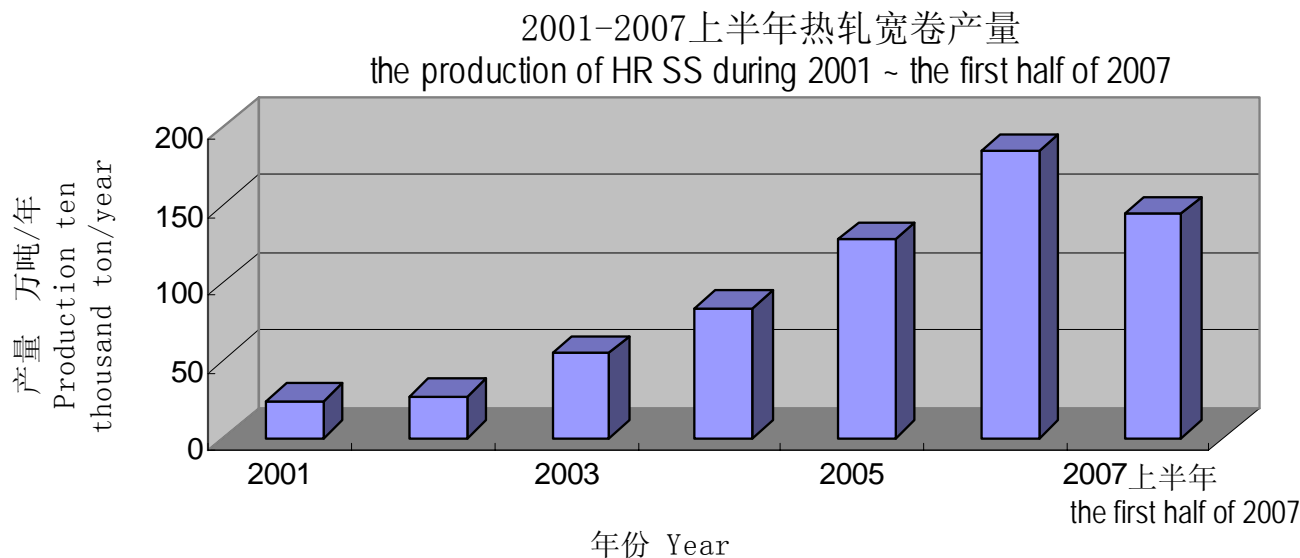
2000年-2007年(预计)冷轧宽带(宽度 $\geq 600\text{mm}$)产量
The Output of CR(in width $\geq 600\text{mm}$)Stainless Steel During 2000-2007 (forecast)



2. 产量 Production

③国家支持了太钢改造和宝钢上一项目以及酒钢项目，使热带（冶炼+热轧）产量增加，改变了市场紧缺的局面。2000-2006年热轧板带（除供冷轧坯料外）开始供应市场。

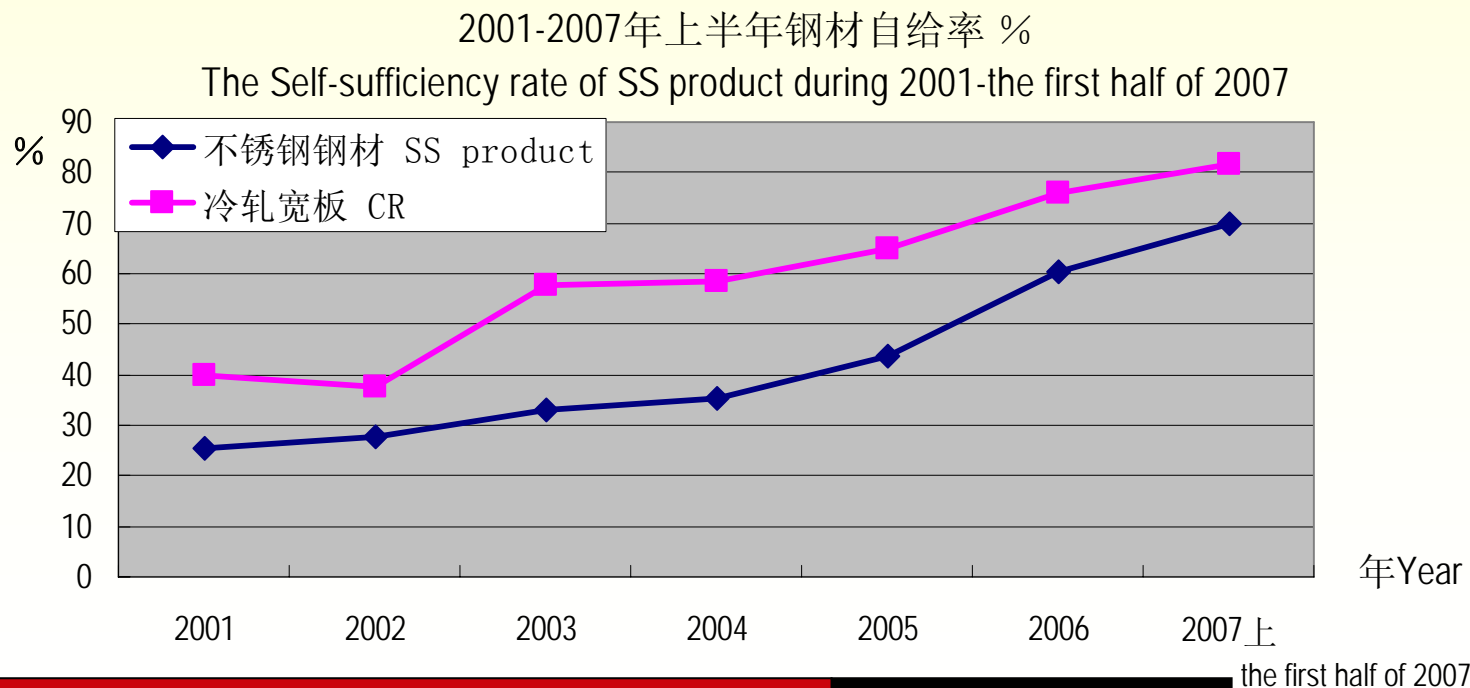
The country supported the projects of TISCO and Baosteel No. 1 plant as well as JiuGang, increasing the production of hot rolling strip (melting +hot rolling) and the shortage of supply was eased. In addition to serving as raw material for cold rolling production, hot rolled plates and strips were supplied to the market during 2000-2006.



2. 产量 Production

④不锈钢产量的提高，自给率逐年增长，2007年上半年达70%，基本实现了不锈钢钢材的自给(其中冷轧宽板达80%以上)。

The stainless steel output increased. The self-sufficiency rate increased year by year and it reached 70% in the first half of 2007. The self supporting of stainless steel product was basically realized (the rate is over 80% for cold rolled wide sheet).



3. 产能 - Capacity

①2006年建成的不锈钢粗钢生产能力已具备1000万吨的规模相当世界产能的1/3,预计2007年还有增加。

①The stainless crude steel capacity built in 2006 has reached 10 million tons, accounting for 1/3 of the world total capacity. It is estimated the capacity will still increase in 2007.

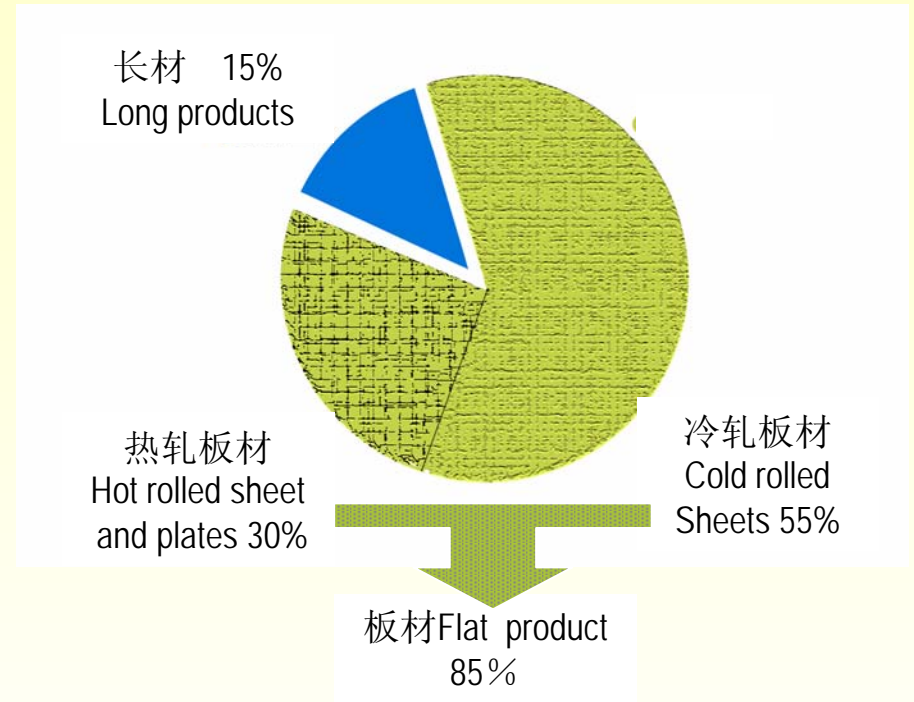
3. 产能 Capacity

②产品结构:

实现了以板材为主，板材比例增加到85%。在板材中又以冷板为主为55%。

②The product mix:

The major products are flat products and the ratio of flat products increased to 85%. The Major flat products are cold rolled sheet, accounting for 55%.



不锈钢的品种结构

The stainless steel product mix

3. 产能 Capacity

③投资结构：冷轧宽板以合资为主；
热轧宽带以国企为主；
以先进工艺及装备水平为主。

③The investment structure:

Cold rolled wide sheet – mainly joint venture ;

Hot rolled wide plate – mainly state owned enterprises;

The process and equipment are of advanced level.

	国营企业 state owned enterprises	合资企业 joint venture	民营企业 non-state owned enterprises
在冶炼产能1000万吨中的分配 % breakdown of smelting capacity of 10 million tons	57.5	16	26.5
在冷轧产能550万吨中的分配 % breakdown of cold rolling capacity of 5.5 million tons	32.7	45.5	21.8

3. 产能 Capacity

④ 2010年中国不锈钢产能与需求平衡的预测

进入21世纪，随着中国经济的发展，不锈钢消费量与总钢材消费量存在着1.5%的相关比值。

- ④ Forecast on the balance of China SS capacity and demand in 2010
Entering into 21 century, with the development of China's economy, the ratio between stainless steel consumption and total steel product consumption is 1.5%.

年 year	2001	2002	2003	2004	2005	2006	平均 average
总钢材表观消费量 × 1000t Apparent consumption for total steel products	170000	205000	256000	302000	350000	390000	
不锈钢表观消费量 × 1000t Stainless steel apparent consumption	2280	3160	4200	4470	5220	5950	
消费量比例 % ratio between the two consumption	1.35	1.54	1.64	1.48	1.49	1.53	1.50

3. 产能 Capacity

根据钢铁工业协会权威机构的中国“十一五”期间钢材需求宏观预测
(“十一五”前三年GDP年增长率9%，后两年7.5%)：

2010年GDP为27.29万亿元，钢材消费量为4.7亿吨，增速前三年是7.6%，后两年是6.8%。按钢材消费量的1.5%比例计算不锈钢消费量，2010年预测为785.8万吨,(即800万吨左右)。

According to the macro forecast by authoritative institution China iron and Steel Industrial Association on the demand for steel products during “eleventh five year plan” period (GDP growth is 9% in the first three year and 7.5% in the latter two years):

In 2010, GDP will reach 27290 billion Yuan. Steel product consumption will be 470 million tons with the increase rate being 7.6% for the first three year and 6.8% for the latter two years. It is predicted the stainless steel consumption will reach 7.858 million tons (about 8 million tons, which is calculated based on the ratio of 1.5% of the steel product consumption).

年 year	2006	2007	2008	2009	2010
不锈钢消费量预测 × 1000t stainless steel consumption forecast	5950	6402	6889	7357	7858

3. 产能 Capacity

估算**2010**年中国不锈钢的产量预计可达**900**万吨。其中太钢、张浦、联众新增产能将于今后**2~3**年内释放,民企重建产能也将于今后**3~4**年内释放。

It is forecast China's stainless steel production will reach 9 million tons in 2010. The newly added capacity in TISCO, ZPSS-POSCO and LISCO will be put into full operation in next 2-3 years. The rebuilt capacity of non-state owned enterprises will come into operation in 3-4 years.

年 year	2007	2008	2009	2010
产量估算 × 1000t Output estimation	7000	8000	8500	9000

3. 产能 Capacity

产能与需求发展相适应

2010年中国不锈钢表观消费量预计为800万吨，不锈钢产量将达900万吨，产品供求基本平衡，

The capacity matches the development of demand

It is forecast China's stainless steel apparent consumption will reach 8 million tons in 2010.

Stainless steel output will reach 9 million tons and the products supply and demand will be basically balanced.

4. 讨论 - 对几个问题的看法

4. Discussion – views on several issues

4. 讨论 Discussion

①什么是市场发展的动力？什么又是投资的推动力？

中国不锈钢发展的历史说明了经济发展是不锈钢市场发展的基本动力。有了市场需求，供需失衡，必然推动投资带动不锈钢工业的投入。前面的第1图已反映了GDP及IP的增长与不锈钢表观消费量增长的相关走向。

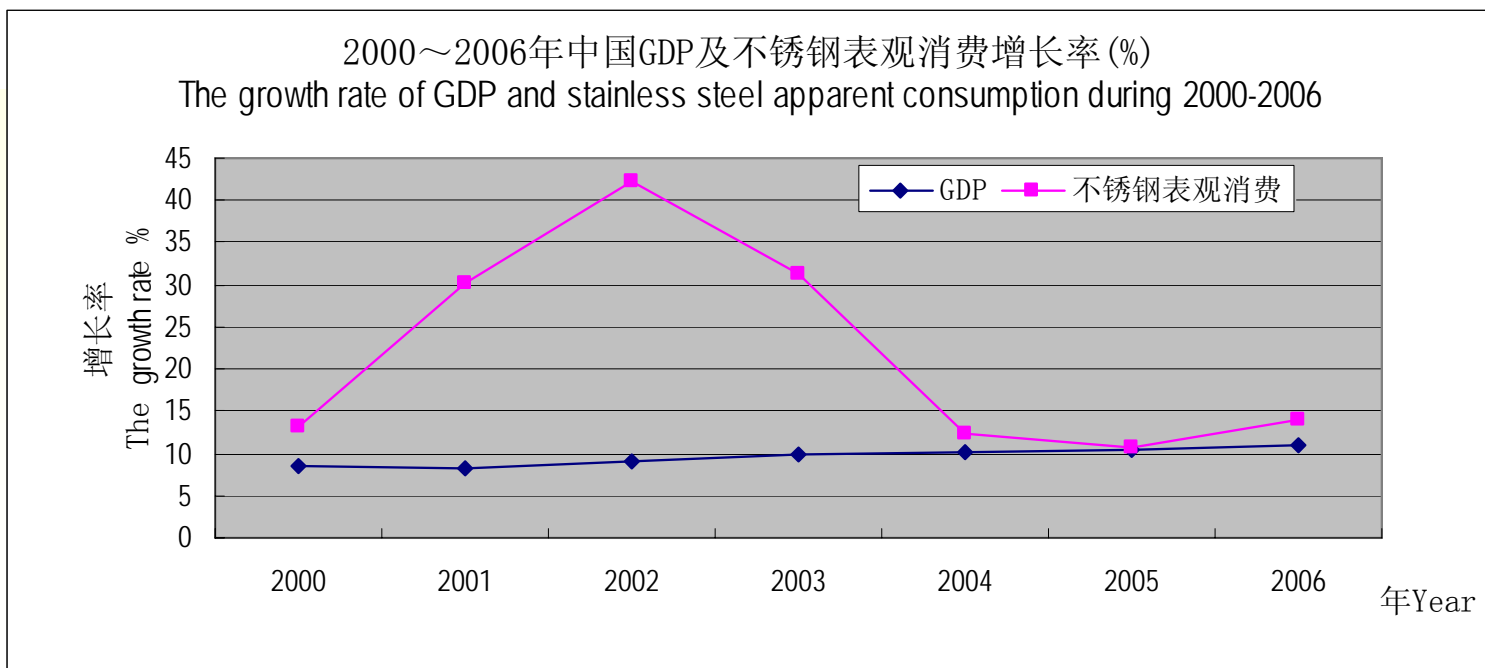
What is the driving force of the market development and what is the driving force of the investment?

The history of China's stainless steel development shows that economic development is the basic driving force for the development of stainless steel market. The market demand and the imbalance between supply and demand are bound to promote investment on stainless steel industry. Fig.1 shows the increase of stainless steel apparent consumption vs. the growth of GDP and IP

4. 讨论 Discussion

有人认为GDP的增长与不锈钢表观消费量增长的相关系数为1~2.5,这是可参考的数值.下图为GDP及不锈钢表观消费量年增长率的比较。

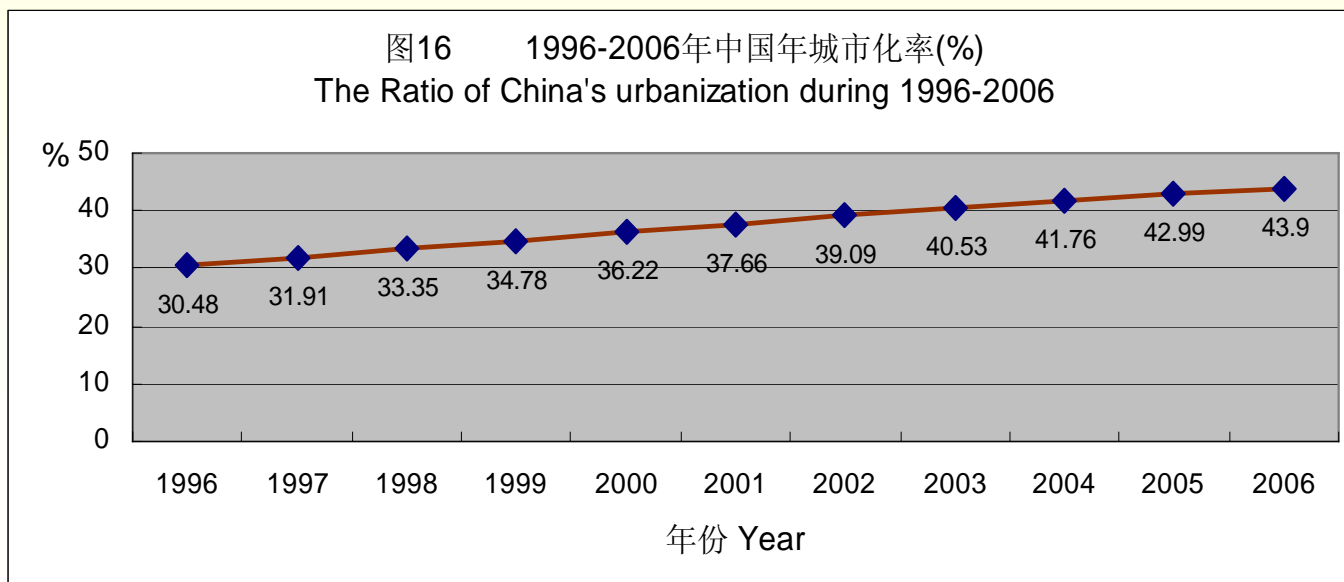
Some think the Correlation coefficient between GDP growth and stainless steel apparent consumption growth is 1-2.5, which is a value can be referred to. The following diagram shows the comparison of growth rate between stainless steel Apparent consumption and GDP.



4. 讨论 Discussion

城市化的发展，也是不锈钢市场发展的影响因素。不锈钢作为长寿命消费品在一些民用市场达到饱和后，城市化率的提高，城市人口增加及其家庭和住房是需求持久增长的推动力。世界先进国家城市化率达到80%，中国最近10年增长了13%年均1.3%，今后20年中国城市化率可达70%。

The urbanization is also a factor affecting the development of stainless steel market. Stainless steel, as a long service life consumer goods, after it become saturated in some civil market, the increase of urbanization rate and city population and the demand for housing are the driving force for sustainable growth. The urbanization rate is 80% for developed countries and it increased by 13% to 1.3% in the recent 10 years for China. In the next 20 years China's urbanization rate will reach 70%.



4. 讨论 Discussion

② 不锈钢需求的潜在市场在哪里？

- 经济快速发展的国家(GDP增长大于世界平均为7% ~ 10%):除中国外有印度, 俄罗斯和巴西称为金砖四国。

② Where is the potential market for the stainless steel demand?

- Countries with rapid economic development (GDP growth 7% ~ 10%, greater than the world average) : In addition to China, there are India, Russia and Brazil and these countries are referred to as Golden Brick (BRIC)

4. 讨论 Discussion

印度：是人口众多经济快速发展的国家，也是不锈钢消费的潜在市场。
近年GDP增长率为9%。预测不锈钢消费量增长率12.3%（见表）。

India: is a country with huge population and rapid economic development and is also potential market for stainless steel consumption. GDP growth is 9% in recent years. It is predicted the stainless steel consumption will increase at the rate of 12.3%.

印度预计消费量 **Projected Consumption in India** × 1000 t

Year 年	Flat 板材	Long 长材	Total 总计
2005	1,000.8	153.0	1,153.8
2010	1,685	373	2,058
2015	3,185	900	4,085
Growth 增长	11.5%	17.5%	12.3%

Source : ISSDA Market Research 2005

4. 讨论 Discussion

俄罗斯：前独联体苏联是世界上不锈钢消费和生产大国。

1993年解体后，经济下降，不锈钢消费量降到**20**万吨左右。

Russia: The former Soviet Union (CIS) was the largest stainless steel consuming and producing country. After its break up in 1993, the economy decreased and the stainless steel consumption reduced to 200,000 tons.

1990~1993年前独联体苏联不锈钢生产量与消费量的变化

The change of stainless steel production and consumption of CIS during 1990-1993

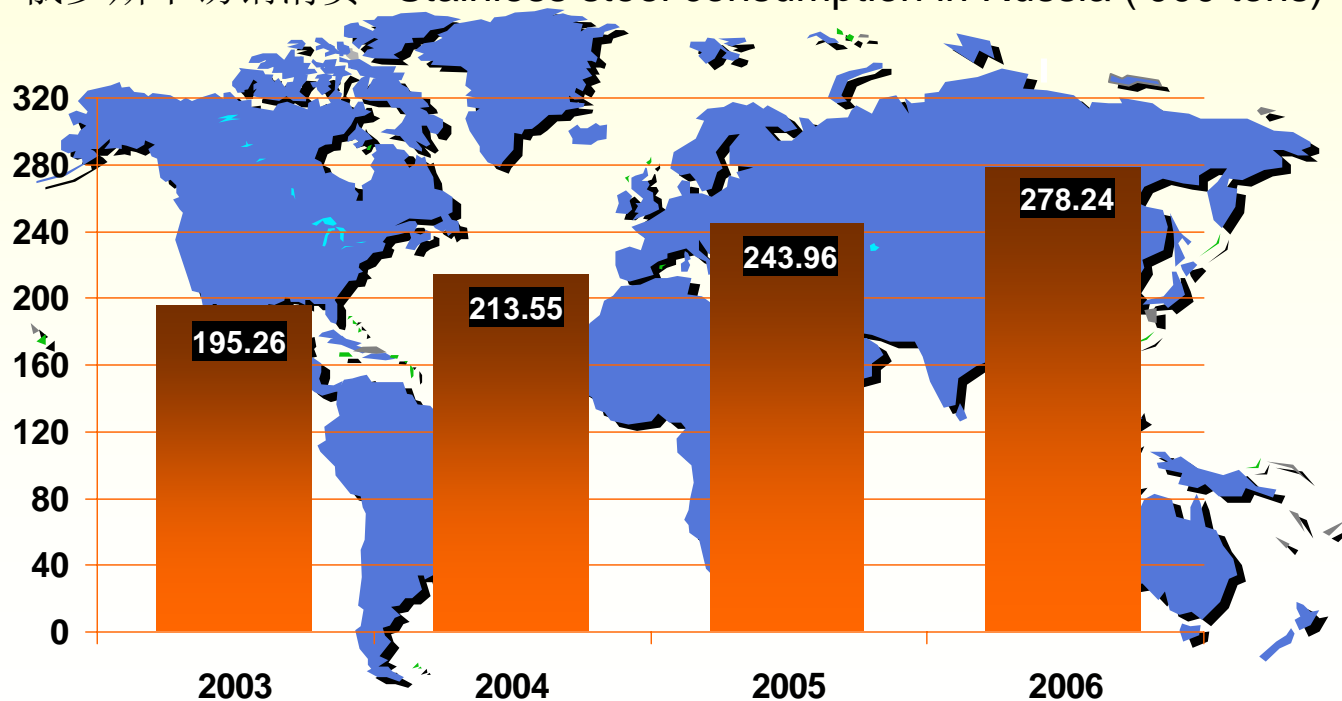
年 Year	1990	1991	1992	1993
不锈钢生产量 × 1000t Stainless steel output	1790	1600	1260	550
不锈钢消费量 × 1000t Stainless steel consumption	1210	1100	865	380

4. 讨论 Discussion

直到普京上任，经济恢复并快速发展。因俄罗斯原有设备老化，需求的不锈钢板材及长材依靠大量进口。

The economy recovered and developed rapidly after Vladimir Putin took office. Because the original equipment was old the stainless steel flat and long products the country demanded relied on import in large quantities.

俄罗斯不锈钢消费 Stainless steel consumption in Russia ('000 tons)

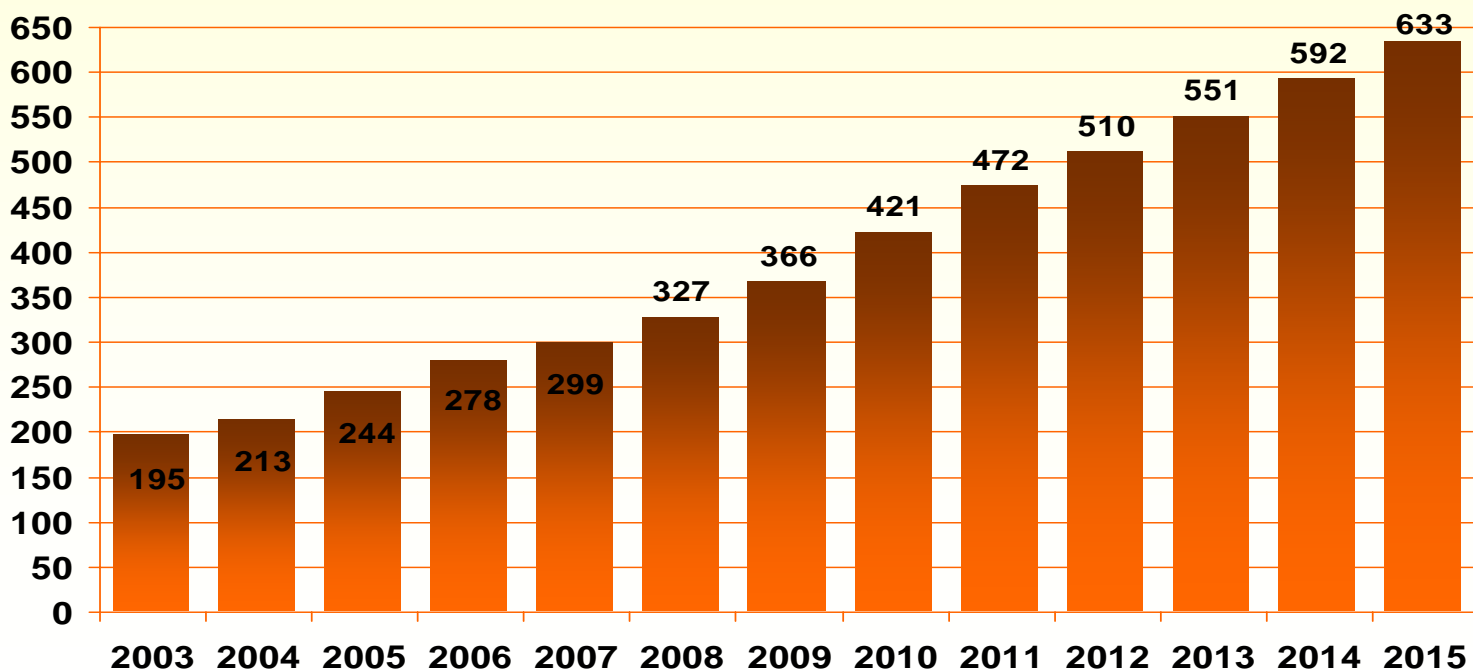


4. 讨论 Discussion

从2007~2015年消费预测看出，不锈钢消费量将增长到63万吨，不锈钢需求的市场前景看好。

According to the consumption forecast for 2007-2015, the stainless steel consumption will increase to 630,000 tons and the market prospect for stainless steel demand is good.

俄罗斯不锈钢消费预测 Forecast of stainless steel consumption in Russia ('000 tons)



4. Discussion

巴西：虽经济发展较快，但不锈钢消费市场发展相对缓慢，人均年消费量多年未增保持在**1.4kg**，不锈钢消费增长率在近年中只有**2003**年达到了**23%**，其余仅为**0~4%**。

Brazil: Although the economy developed rapidly, the stainless steel market developed relatively slow with the average per capita consumption remaining at 1.4kg for many years. The growth rate of SS consumption was only 0-4% except that it reached 23% in 2003.

1999~2006年经济发展较快国家的不锈钢人均年消费量比较 (kg)

The comparison of average per capita consumption of stainless steel in countries with rapid economic development during 1999-2006

国家country \ 年year	1999	2000	2001	2002	2003	2004	2005
中国 China	1.3	1.4	1.8	2.5	3.2	3.6	4.3
印度 India	0.6	0.7	0.7	0.8	0.8	1.0	1.1
俄罗斯 Russia					1.1	1.9	1.8
巴西 Brazil	1.2	1.2	1.4	1.4	1.4	1.4	1.4

4. 讨论 Discussion

- 近期有五国VISTA为越南，印尼，南非，土耳其，阿根廷是新兴的经济发展国家。其中人口多、发展快的越南和印尼两国是值得关注的 stainless steel 消费潜在市场。
- Recently Vietnam, Indonesia, South Africa, Turkey and Argentina have become the rising economic powers. Among them, Vietnam and Indonesia with big population and rapid growth are noteworthy potential market for stainless steel consumption

4. 讨论 Discussion

③设备建设与更新的投资潜力在哪里？

- 德、法、意、西、比、芬（欧洲的主要不锈钢生产国）和日本（亚洲不锈钢生产大国）设备均相对陈旧，每个国家的不锈钢产品供大于求，是世界的主要出口国，设备有待更新，但是否投资决定于市场。

③ Where is the potential for the investment on equipment construction and renewal?

The major stainless steel producing countries in Europe such as Germany, France, Italy, Spain, Belgium, Finland and Asian big stainless steel producer Japan have relative old equipment and the supply of stainless steel product exceeds demand and they are the major exporting countries in the world. Their equipment remain to be renewed but investment relies on the market.

4. 讨论 Discussion

- 美国的不锈钢生产厂多为老厂，设备均超30~40年，但近几年有外资投入，如西班牙投建的北美NAS新厂及克虏伯在北美也将投建**100万吨**能力的新厂。美国是不锈钢消费大国仍具一定设备更新的潜力。
- The stainless steel plant in the U.S. are mostly old factories and the equipment have been used for 30-40 years. But in recent years there are foreign investment in North America such as new NAS plant invested by Spain and new plant of 1 million capacity invested by krupp Stainless. The U.S. is a big consuming country and it still has the equipment renewal potential.

4. 讨论 Discussion

- 俄罗斯近年经济恢复并快速增长，不锈钢消费市场也在增长，具有设备更新与设备新建的投资潜力。
- Russia recently see the recovery and rapid growth of its economy and the stainless steel consumption market is also growing. It has the potential for investment on equipment renewal and construction.

4. 讨论Discussion

- 中国主要的不锈钢生产设备为近5~10年的新装备，2010年预计产品供求基本平衡，但中国仍有投资的项目如下：
本溪80万吨（冶炼，连铸，冷轧机）；漳州72~75万吨（冶炼，连铸，热轧机，冷轧机）；昆钢60万吨（冶炼，连铸，冷轧）；太钢与宝钢的冷轧RAP线；天管的两台冷轧机；民企中400~800mm窄热带需要配备HAP线以及冷轧机或冷连轧机。
- China's major stainless steel production equipment are new equipment of recent 5-10 years. The balance between supply and demand could be anticipated in 2010. But China still has the following invested projects: Benxi 800,000 tons (melting, continuous casting, cold rolling mill); Zhangzhou 720000-750000 tons (melting, continuous casting, hot rolling mill and cold rolling mill); Kungang 600,000 tons (melting, continuous casting, cold rolling); Cold rolling RAP lines of TISCO and Baosteel; Two cold rolling mill of Tianguan; HAP line, cold rolling mill and cold concaster needed for 400 ~ 800mm hot strip project of non state owned enterprises

4. 讨论 Discussion

- 亚洲除日本，中国及已具有较新设备的南韩，泰国及中国的台湾省外，经济快速增长的印度、越南、印尼等国都将是投资主要潜力。
- In Asia, in addition to Japan, China and countries and area which have relatively new equipment such as South Korean, Thailand and China Taiwan, India, Vietnam and Indonesia which have rapid economic growth will be the major potential countries for investment.

谢谢

Thank you for your attention !

