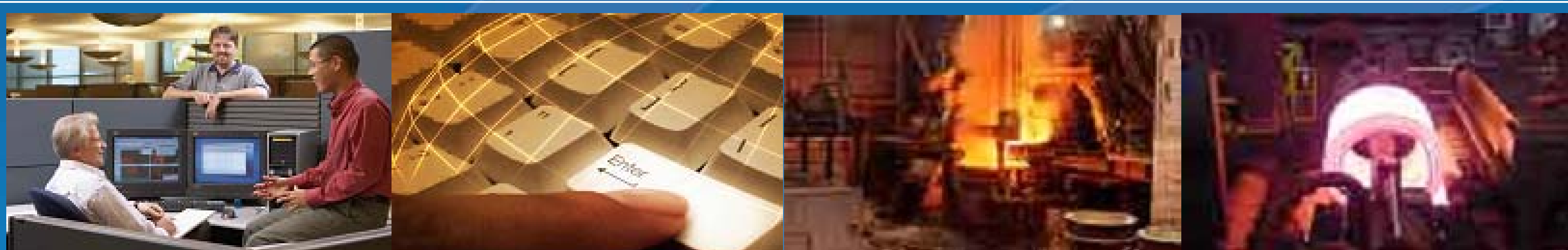
China Strategies for the Metals Industry II

The Outlook for the Chinese Stainless Steel Market and its Impact on the Industry

1st September 2003



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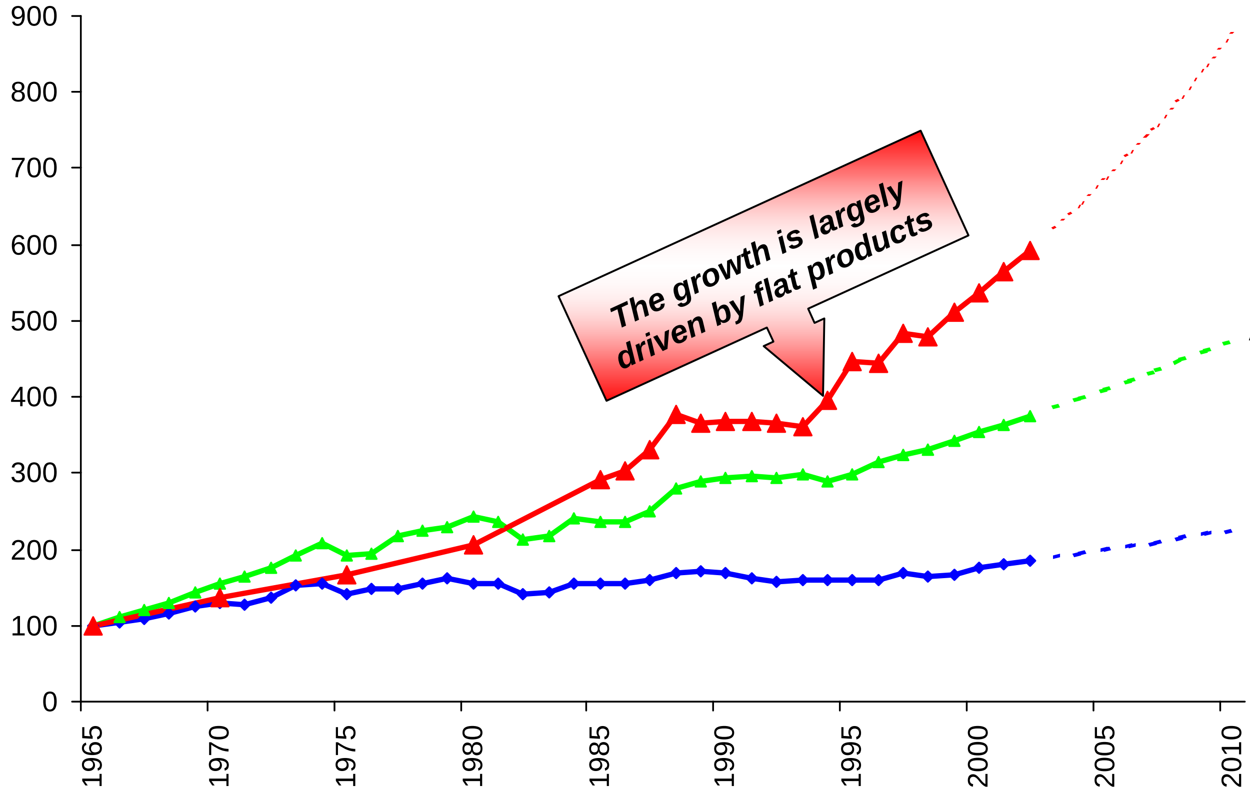
Growth in global production of stainless steel has been impressive in comparison to its primary competitors – this trend is expected to continue

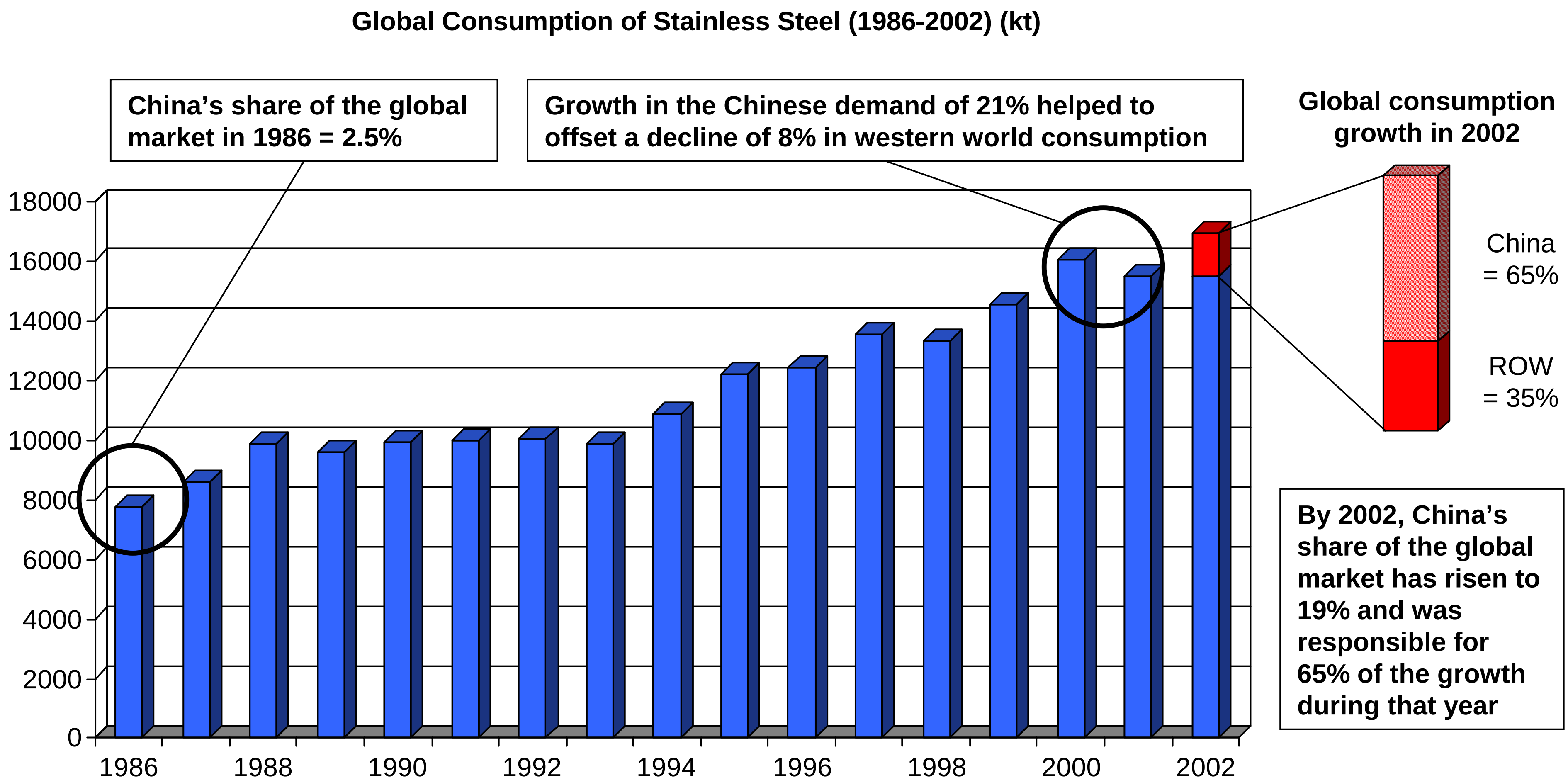
Indexed Total World Production (1965-2010)



	CAGR (1965-2005)	World Production (2002)
Stainless Steel	4.9%	20mt
Aluminium	3.6%	35mt
Carbon Steel	1.7%	900mt

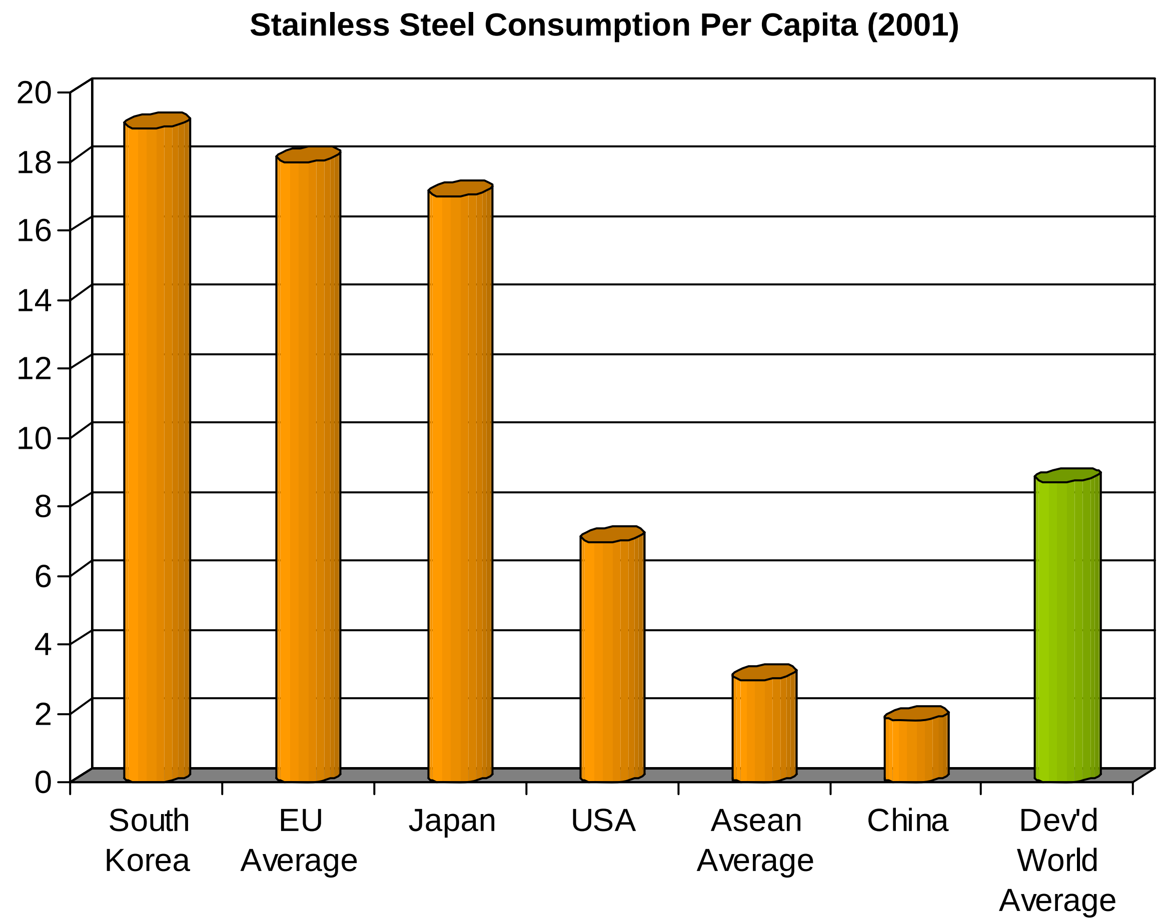
Source: INCO, Kaiser Engineering, IISI

In 2001 China became the single largest stainless steel market, but by 2002, it was already 50% larger than the U.S. and Japanese markets



Source: INCO, Hatch Beddows estimates

Despite already being the largest, the Chinese stainless steel market is still in its infancy

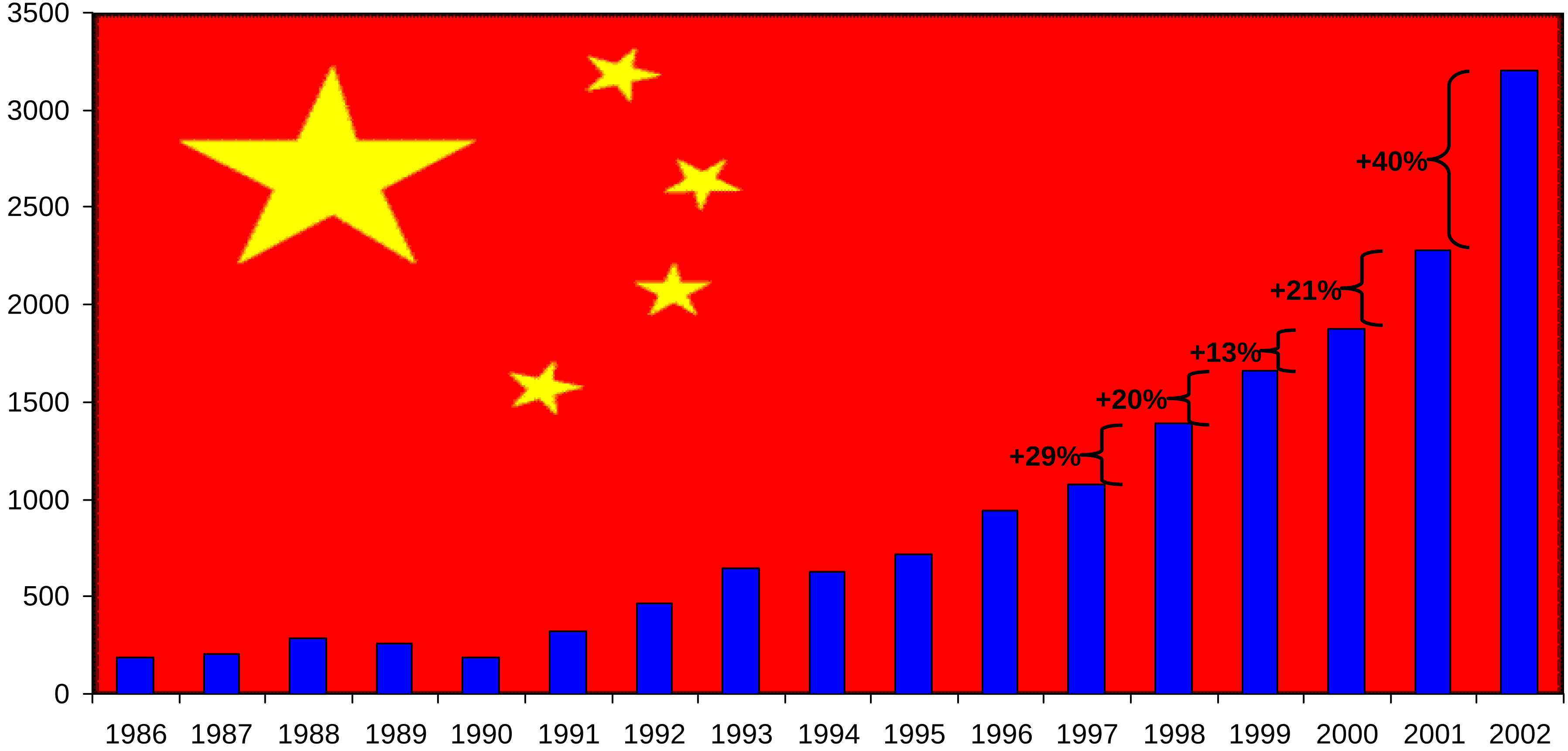


- Per capita consumption currently in the same league as Mexico, Brazil and India
- In Asia, Taiwan is highest at 30kg/person
- In Europe, Italy is highest at 24kg/person
- Chinese pop. = 1.3billion
- At developed world average, market size → 11.3mt

Source: INCO, Hatch Beddows analysis

China has been the most consistent and spectacular growth market…

Chinese Finished Stainless Steel Consumption 1986-2002, (kt)



Source: INCO, Hatch Beddows analysis

…but not necessary the most predictable!

Year	Actual Consumption (kt)	Consensus Forecast for 2005 (kt)
1995	717	1,200
1996	941	1,400
1997	1,080	1,700
1998	1,391	2,000
1999	1,663	2,200
2000	1,879	2,500
2001	2,282	2,900
2002	3,200	4,000

Source: INCO, Hatch Beddows analysis, historic forecasts from investment banks, industry analysts and central governments

The Chinese market surprises all with it appetite for stainless steel

A key question with a simple answer…

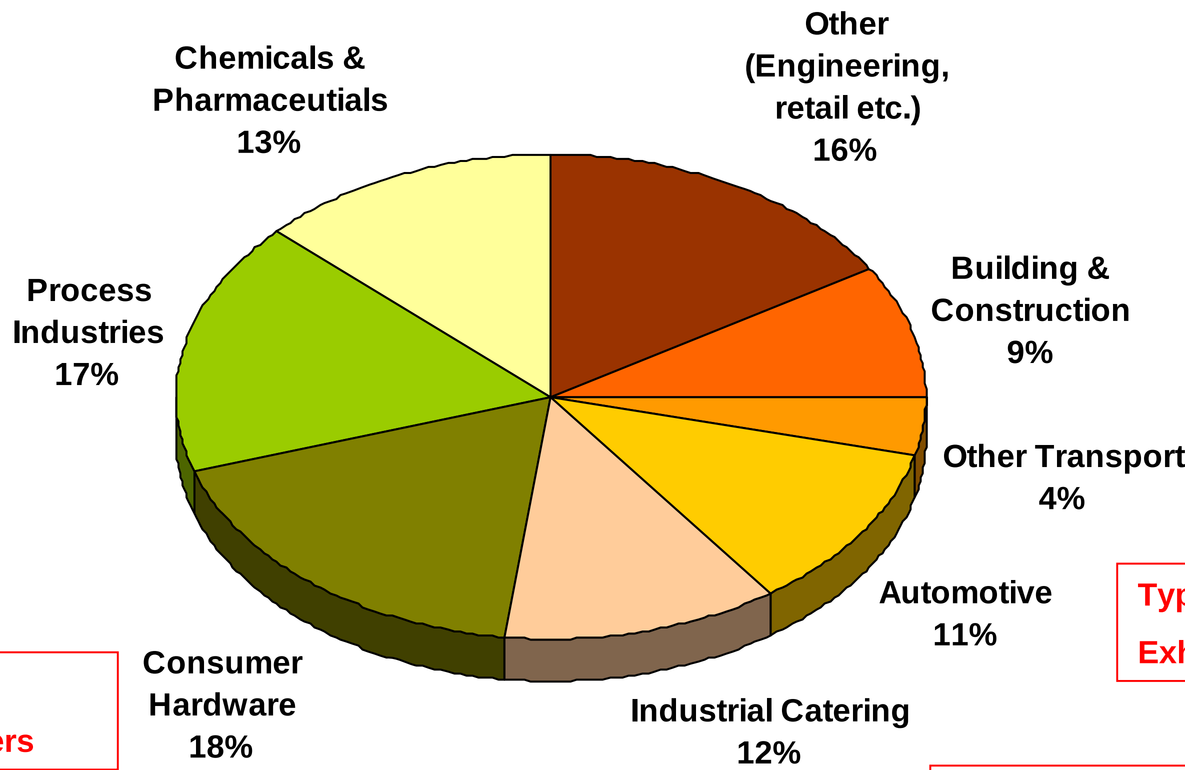
Q: Why have we consistently underestimated the Chinese demand growth?

A: We don't have a sufficiently good understanding of the local market!

BUT, SO WHAT?

The use of stainless steel is increasingly diverse

Stainless Steel Consumption by End Use Sector



Typical application:

Exhaust system

Typical application:

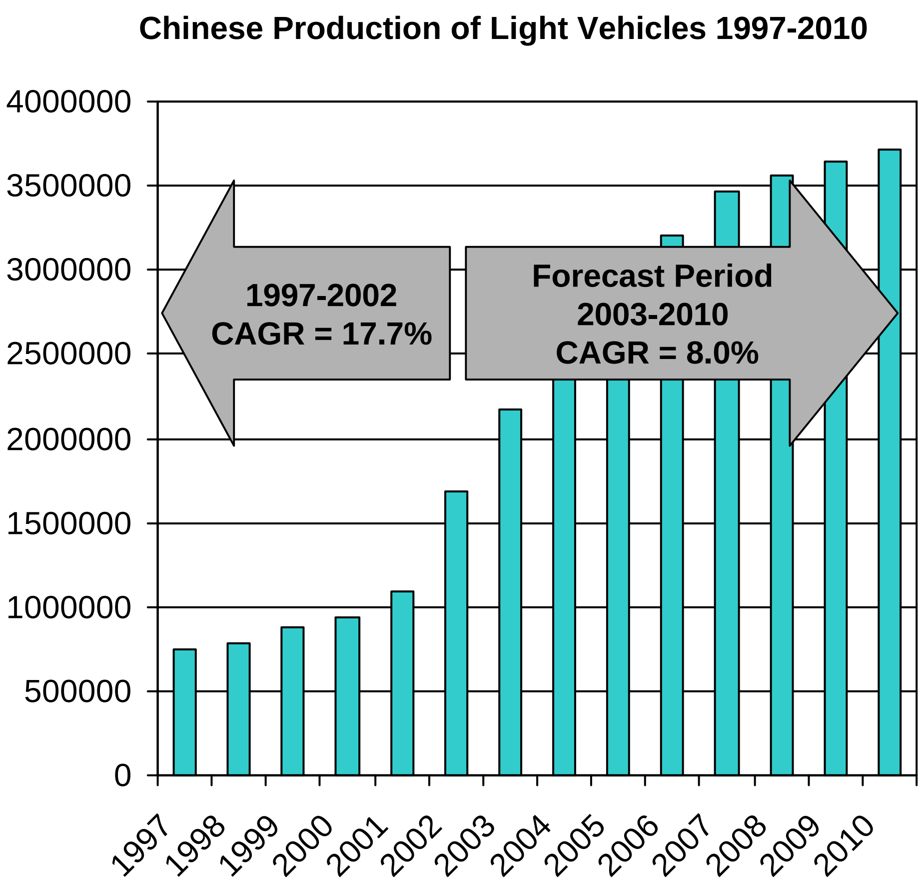
White goods - Washers

Typical application:

Fast food / Restaurant kitchens

Source: Hatch Beddows

China is the fastest growing automotive production hub, has the fastest growing auto consumer market and will have the largest driving population by 2010



Source: JD Power

- It is forecast that there will be over 35m vehicles on the road in China by 2008
- Domestic production of new vehicles will reach 3.5m units
- New and replacement exhaust system requirement circa 12m units a year
- High penetration of stainless steel
- Neglecting exports market, demand for stainless steel for this application alone would be around 300kt!

As demand (domestic/exports) and productivity increases in China, production of appliances has been rising significantly

Examples of Stainless Steel-content Consumer Products

Production (Millions units)	**1990**	**1995**	**2001**
Washing machines	6.6	9.5	14.4
Household refrigerators / freezers	6.0	15.0	26.3
Domestic air-conditioning units	0.24	6.8	18.3

- Export to the US and European doubled
- Produces half of the world's air-conditioning units
- Low labour cost plus the advances in technology secures China's medium term future as the leading producer of white and brown goods
- China is also manifesting itself as a leader in latest appliance technology.

Source: China Statistics Yearbook 2002

Urbanisation and rising living standard is creating a furry of activities in the food and beverage sector

- Since China opened up its market, there are now
  - 850 KFC's + 200 p/y
  - 550 McDonald's + 100 p/y
  - 110 Pizza Huts
  - East Hope recently announced 10,000 new outlet by 2010
  - …
- Supermarkets, Sandwich shops, Café, Restaurants…
- Regulations permit franchising in 2005
- SARS

Watch Sector

Plus some 'non-traditional' mass applications we don't see in the west…

Aesthetic attractiveness of stainless steel will further expand its usage

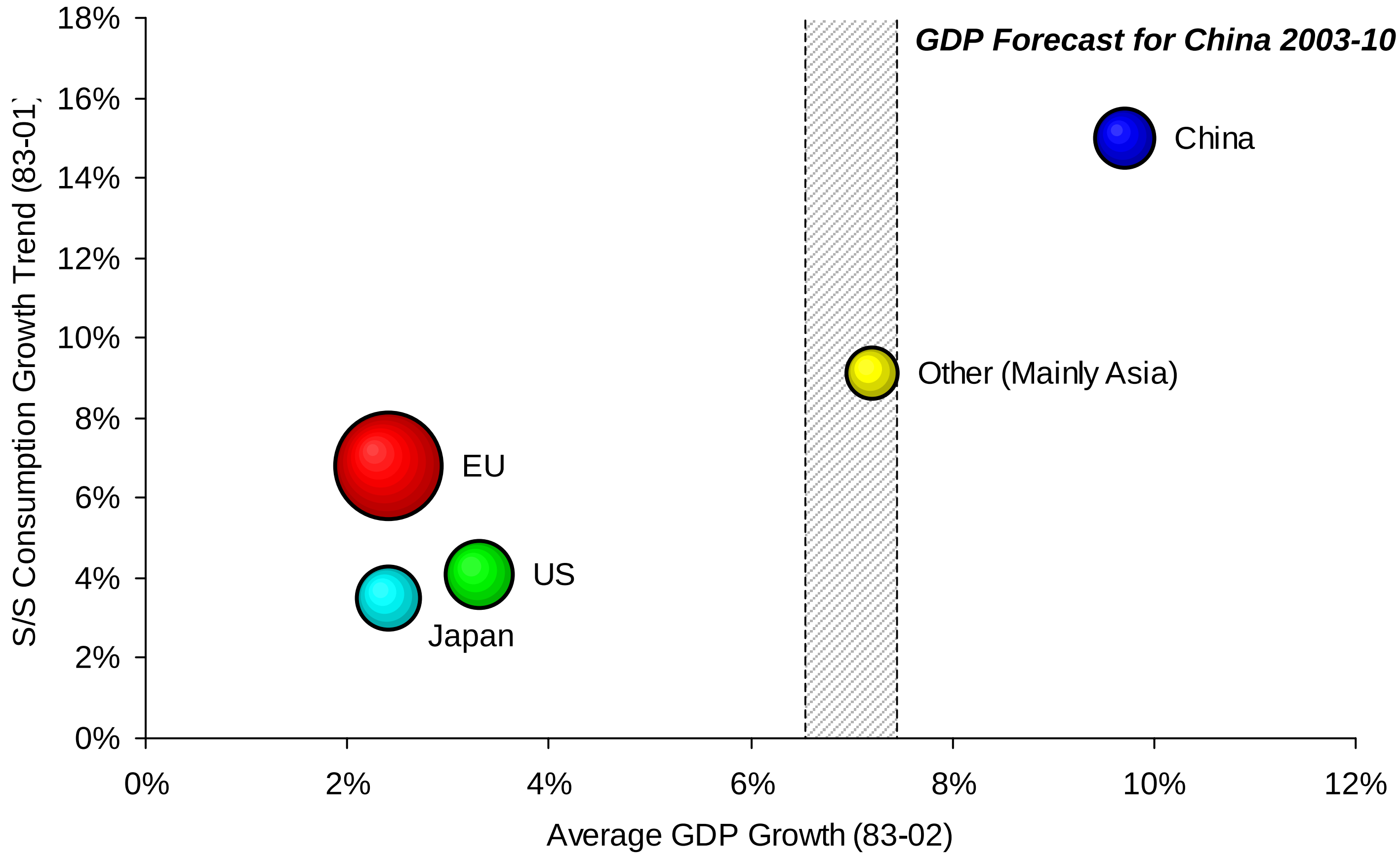
Platinum	**Gold**	**Stainless Steel**
		
GBP £14,950.00	**GBP £ 8,750.00**	**GBP £ 3,750.00**

There is no question about whether the Chinese market will grow, it's just the case of how fast…

- China…
- …has massive domestic consumer and industrial markets
- …is already the world's powerhouse for consumer and industrial goods
- …is no longer just a imitators but an innovator
- …is leap-frogging many other developing countries
- …has taken a quantum leap in its consumer tastes and behaviour
- …has lots of people, and those people like stainless steel

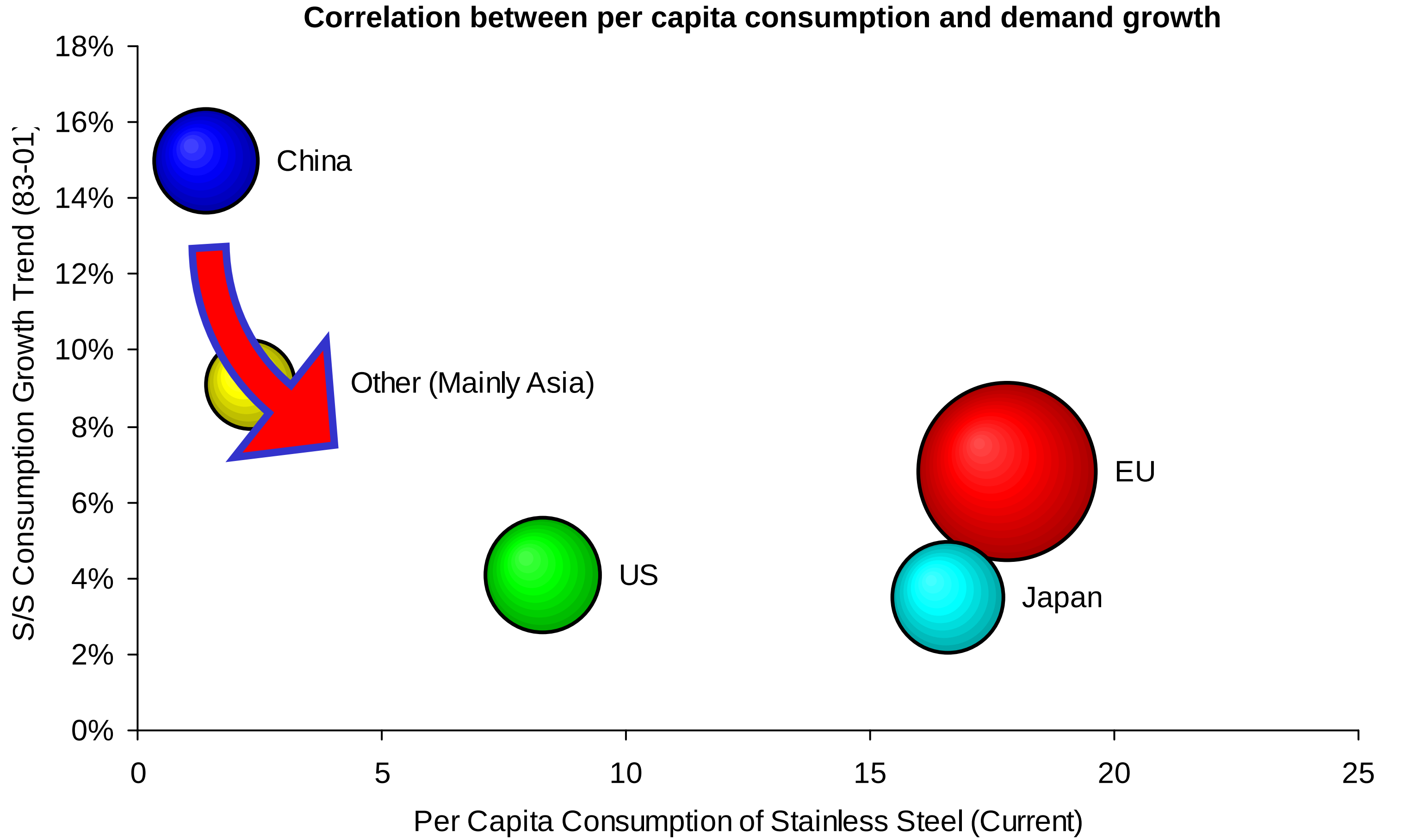
Despite the economic achievement of late, there is ample room for the Chinese economy to grow…

Correlation between GDP Growth and Stainless Steel Consumption



Source: EIU, Euro monitor, Hatch Beddows analysis

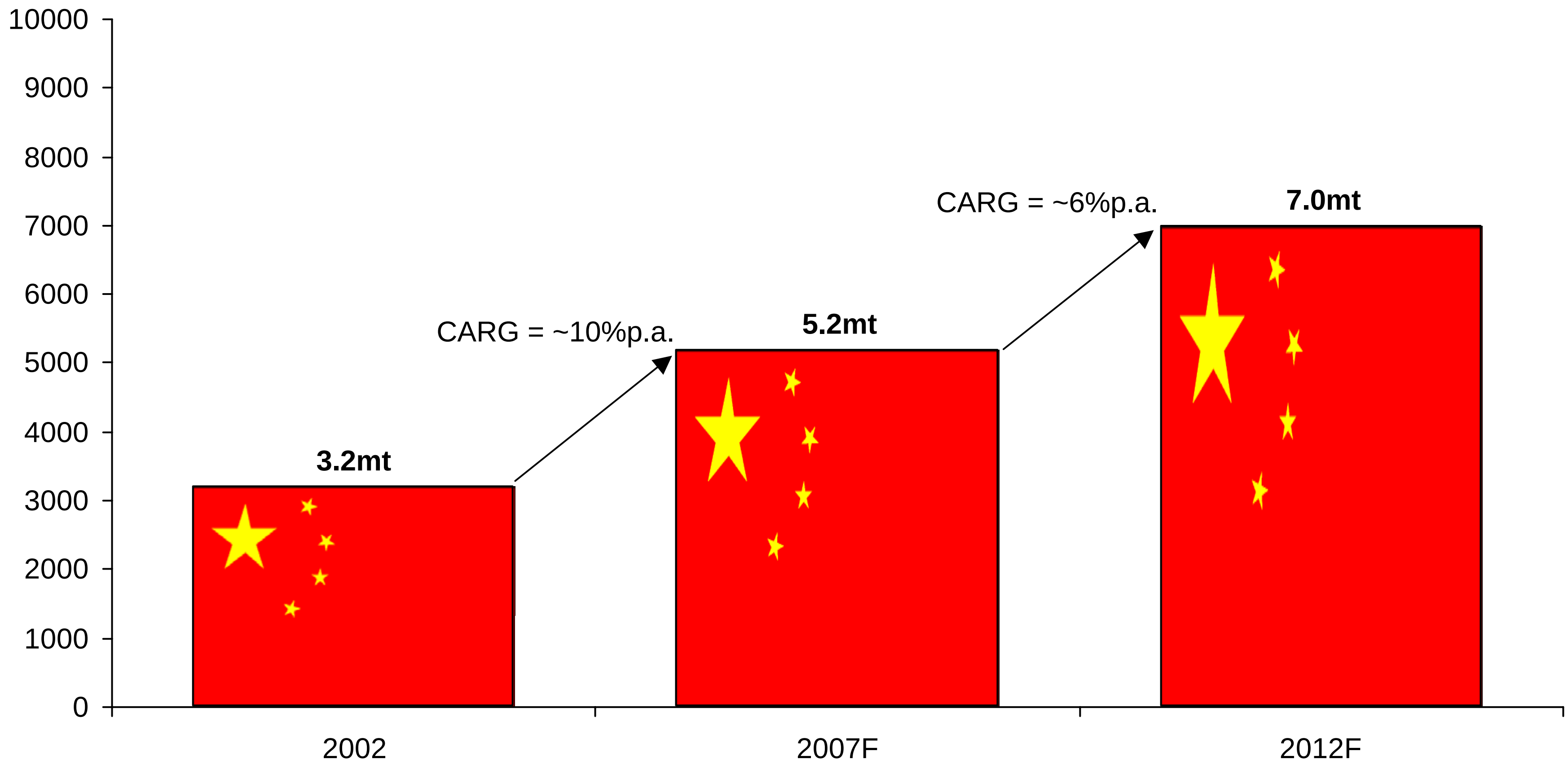
There exist a clear and distinct correlation between growth in consumption and the level of stainless steel intensity



Source: EIU, Euro monitor, Hatch Beddows analysis

Underpinned by robust economic growth, China will continue to be the epicentre of stainless steel growth

Hatch Beddows Application-Based Forecast for Chinese Stainless Steel Market Growth



Source: Hatch Beddows analysis

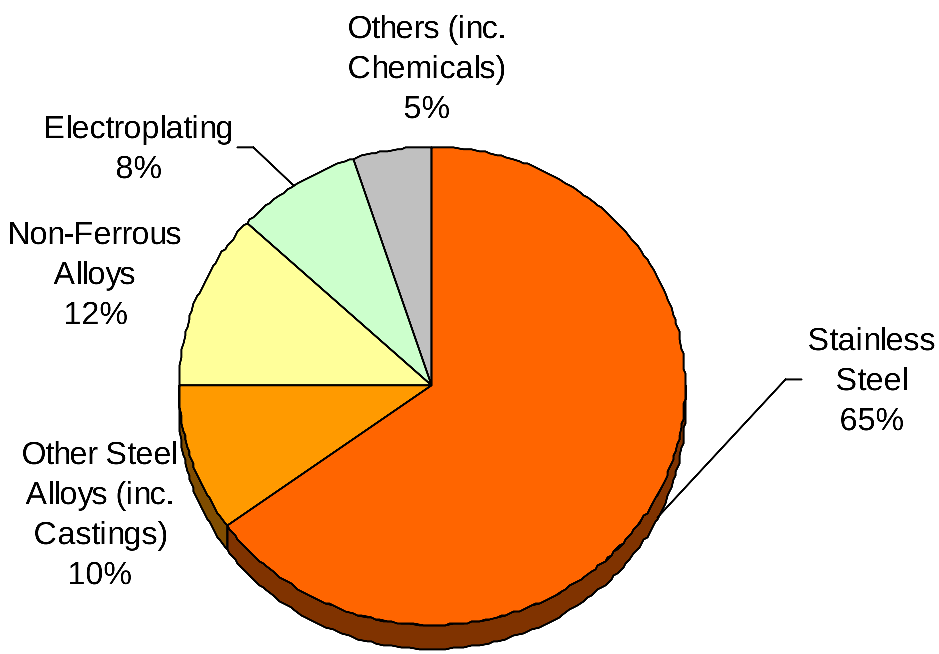
So what is the problem?

1.Nickel Shortage

2. S/S Supply Overshoot

Too much stainless steel too little nickel?

Breakdown of Primary Nickel First Use

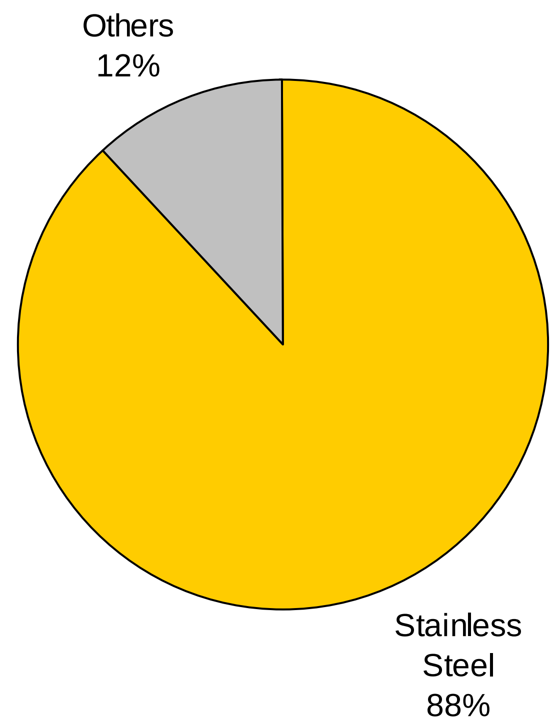


TOTAL (2002) = 1.07mt

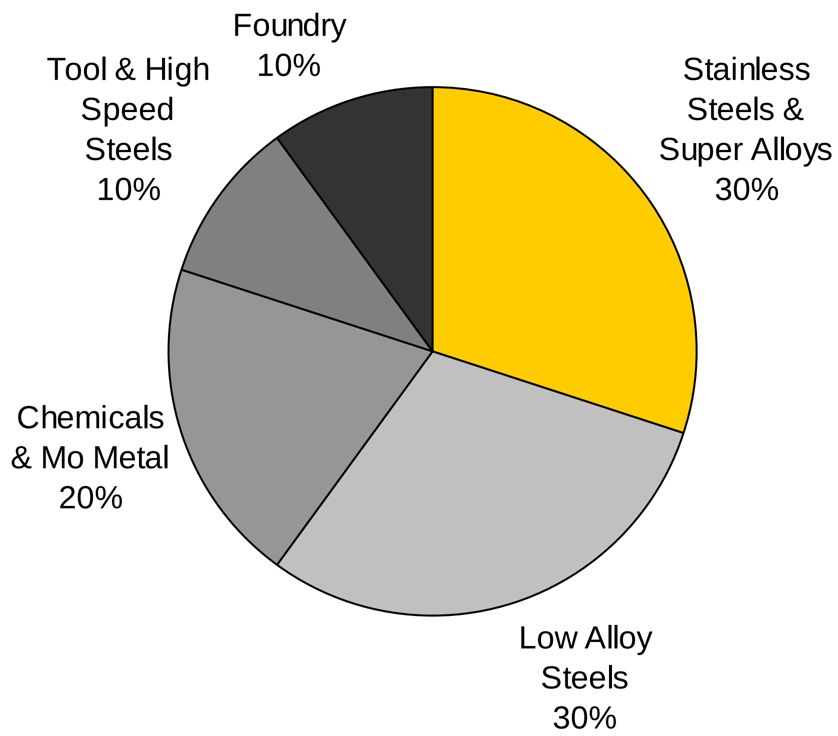
- Demand for stainless steel is growing, so is the reliance of nickel on stainless
- More recently:
  - Poor PAL project performance
  - Inco strike
- Longer term:
  - No new source of supply for the next 3-4 years
- Stainless steel scrap supply limited
- Will nickel prices hit $13,000/t as it did in 1989?

Nickel is not alone in counting on the growth of stainless steel

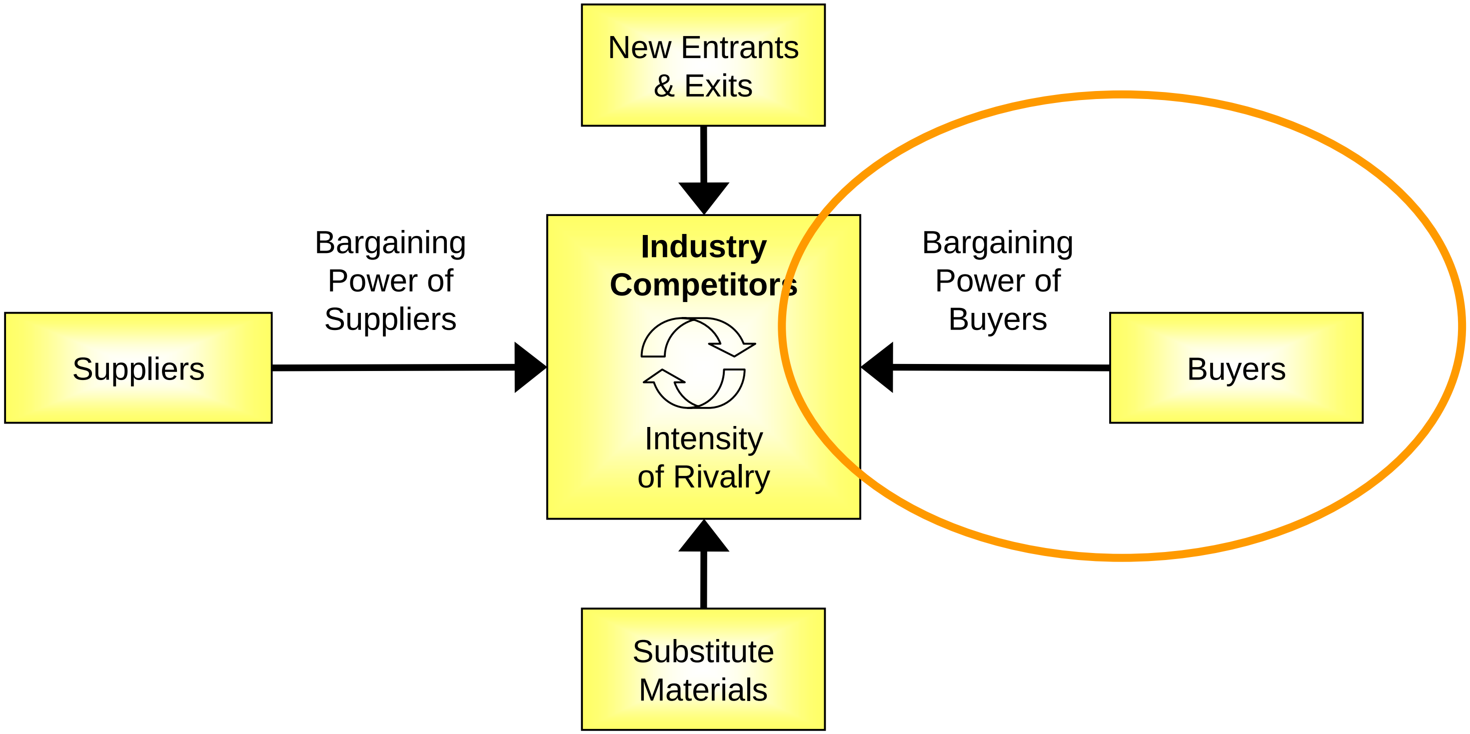
Ferro-Chrome



Molybdenum



A new set of industry dynamics could be immanent



Are we going to see vertical integration of nickel and stainless steel producers?

So What is the problem?

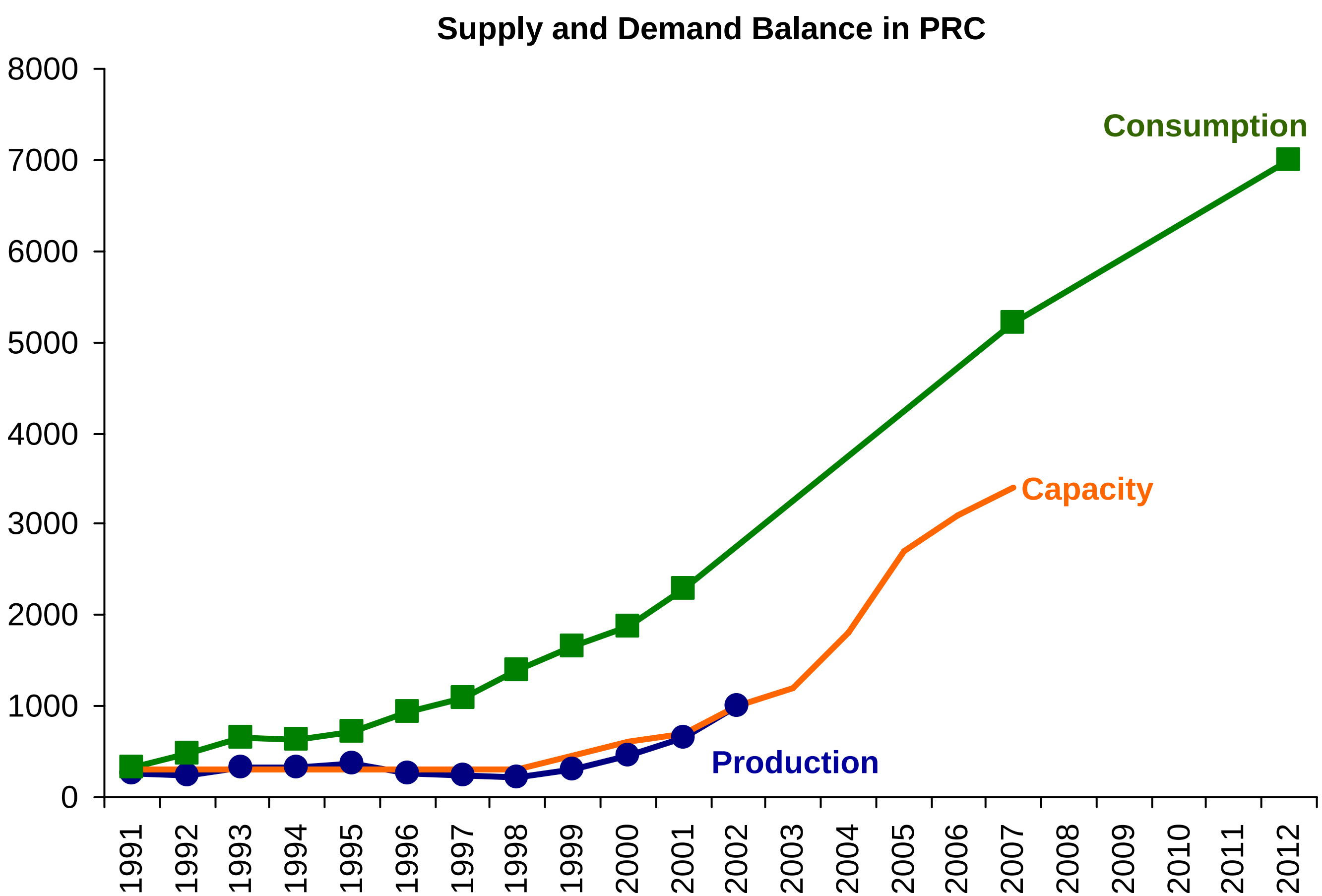
1. Nickel Shortage

2. S/S Supply Overshoot

There is no shortage of investment in stainless steel within China

Examples of confirmed new plants / capacity addition in China		
Company	**Capacity**	**Start Date**
Posco (ZPSS)	New 140kt CR Plant in Zhangjiagang	2003
SKS	Expansion of 220kt CRC	2004
Shanxi Taigang (Taiyuan)	Upgrade melting capacity from 500kt to 1Mt	2004
Nanjing Ganglian	Relocate J&L's 200kt CR plant to Jiangsu	2004
Yusco	New CR plant – 300kt	2004/5
Baosteel	700kt melting and HRC	2005
Yicheng	300kt plate	2005
Posco	New 150kt CR plant in QingDao	2005
Jiuquan Iron and Steel Group	New 600kt melt shop	2005
Ningbo Baoxin	Increase CR from 160kt to 600kt	2005/6
Yangzi Special Steel (Walsin Lihwa)	New 400kt CR plant	2006
Shanxi Taigang (Taiyuan)	Upgrade melting capacity from 1Mt to 2Mt	2007

Supply is growing (much) faster than demand…resulting in the shrinkage of the imports gap

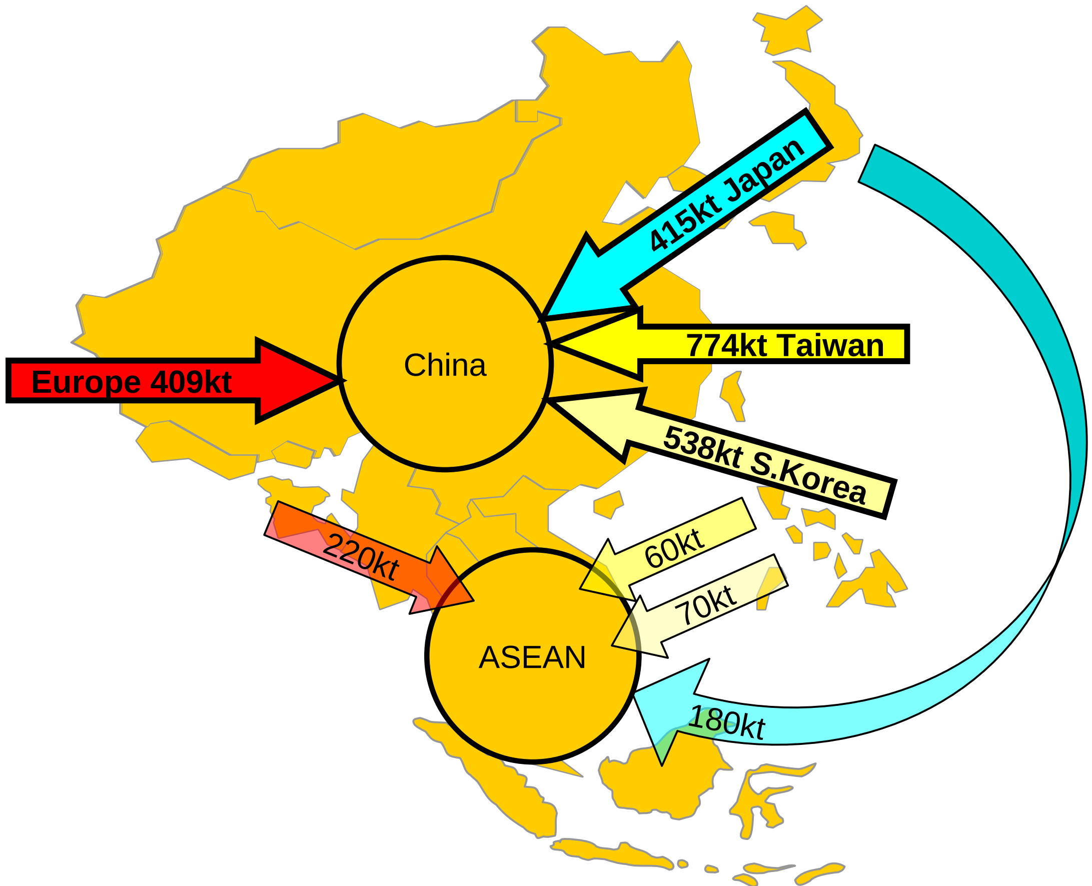


Source: Inco, Hatch Beddows research

China is currently the destination for more than 20% of total world exports

Principal Trade Flows in Asia-Pacific 2001

From Europe to China	
Semis	3kt
HRC	147kt
Long	7kt
CR	231kt
Other	21kt



From Japan to China	
Semis	15kt
HRC	85kt
Long	25kt
CR	262kt
Other	29kt

From Taiwan to China	
Semis	21kt
HRC	289kt
Long	44kt
CR	385kt
Other	36kt

From S.Korea to China	
Semis	13kt
HRC	307kt
Long	37kt
CR	166kt
Other	14kt

Source: Inco 2002

Note: Europe include West, East and Central European countries

Note: ASEAN include Indonesia, Malaysia, Singapore, Thailand

The 64 million dollar question…will the domestic supply in China over-spill and flood the global market?

- China is determined to become less reliant on foreign supplies for it stainless steel demand, possibly to the point of self-sufficiency
- Foreign firms (e.g. TK, Posco) has leaped to seize the opportunity, with the 'get in there before it's too late' mentality
- Other markets are stagnant
- The stainless steel industry suffers from slow reaction
  - High capital intensiveness, equipment, location, environment
- Chinese carbon steel industry

China is CRITICAL to the future health of the stainless steel industry

Conclusions

- The stainless steel industry is going through the most exciting period since the 1960s
- According to the strategic fundamentals, China (and South East Asia) offer attractive opportunities for stainless steel suppliers
  - but careful consideration must be given to the exact nature of the opportunities and then approaches designed to create maximum value
- The vision for the future should build on the lessons of recent international experience in the stainless and carbon steel industry
- The challenge is to build an industry structure in Asia capable of creating value in the future, but first and foremost, we must understand the markets
- Insufficient understanding of the market + slow reaction = Very high risk investment decisions

The risk is to perpetuate the past
The opportunity is to turn growth into value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