

China Nickel 2005

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Agenda

- 2004 - Market overview
- Intensities of use
- Nickel outlook





2004 Market Overview



Consensus that 2004 was a strong year and growth will continue this year

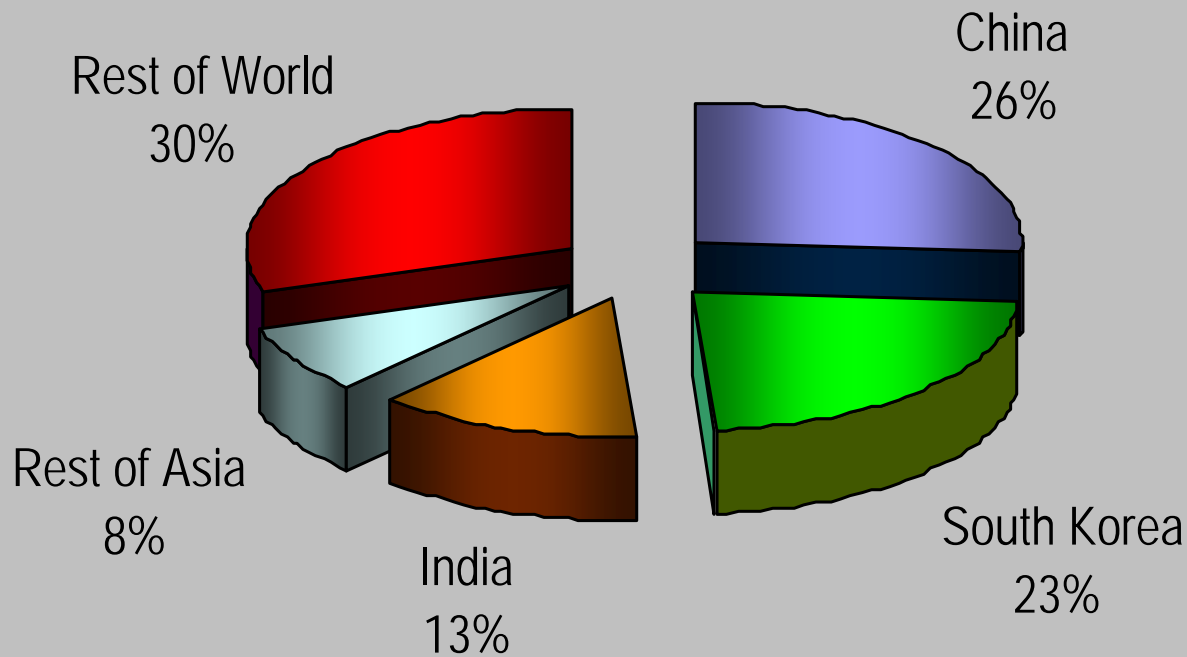
World stainless production forecasts:

	2003	%change	2004	%change	2005
BHPB SSM	22,667	7.4%	24,337	7.1%	26,065
Brook Hunt	22,869	8.2%	24,734	6.2%	26,270
Heinz Pariser	22,812	7.5%	24,523	6.5%	26,127

➤ Differences due to estimation of production numbers in regions where data is not readily available, for instance, Chinese private sector

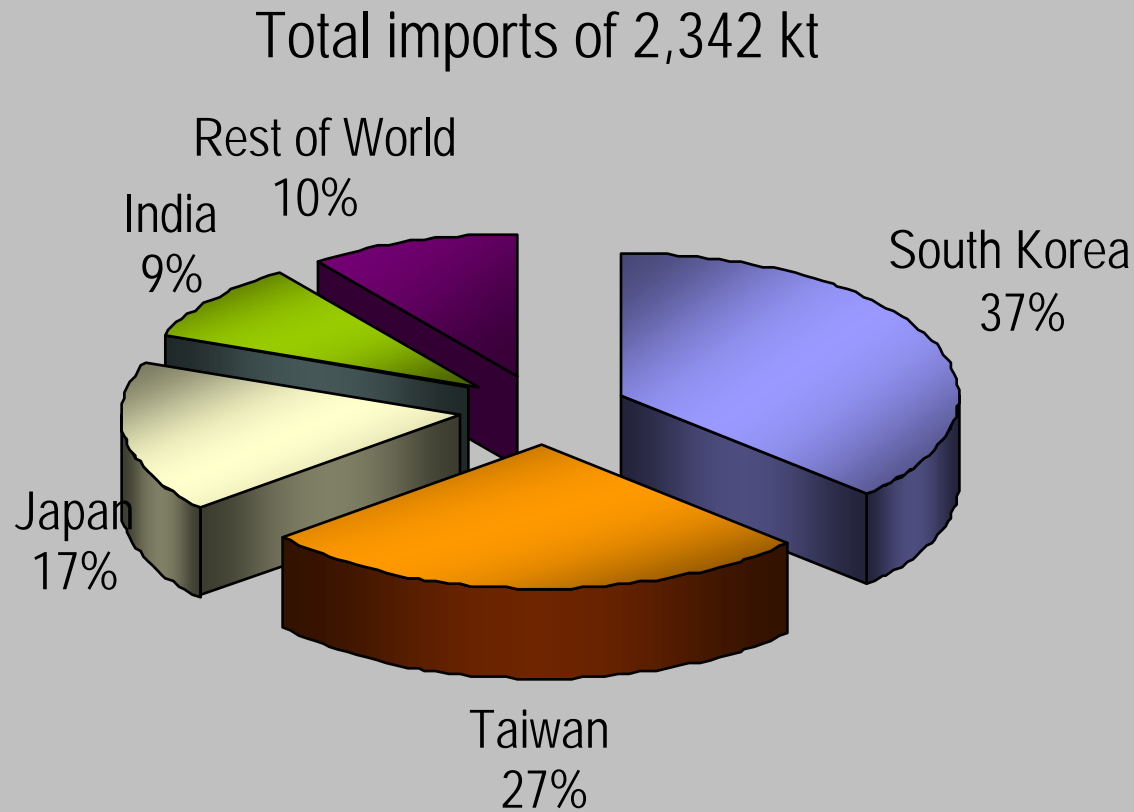
70% of global melting growth in 2004 took place in Asia

Total growth of 1,670 kt



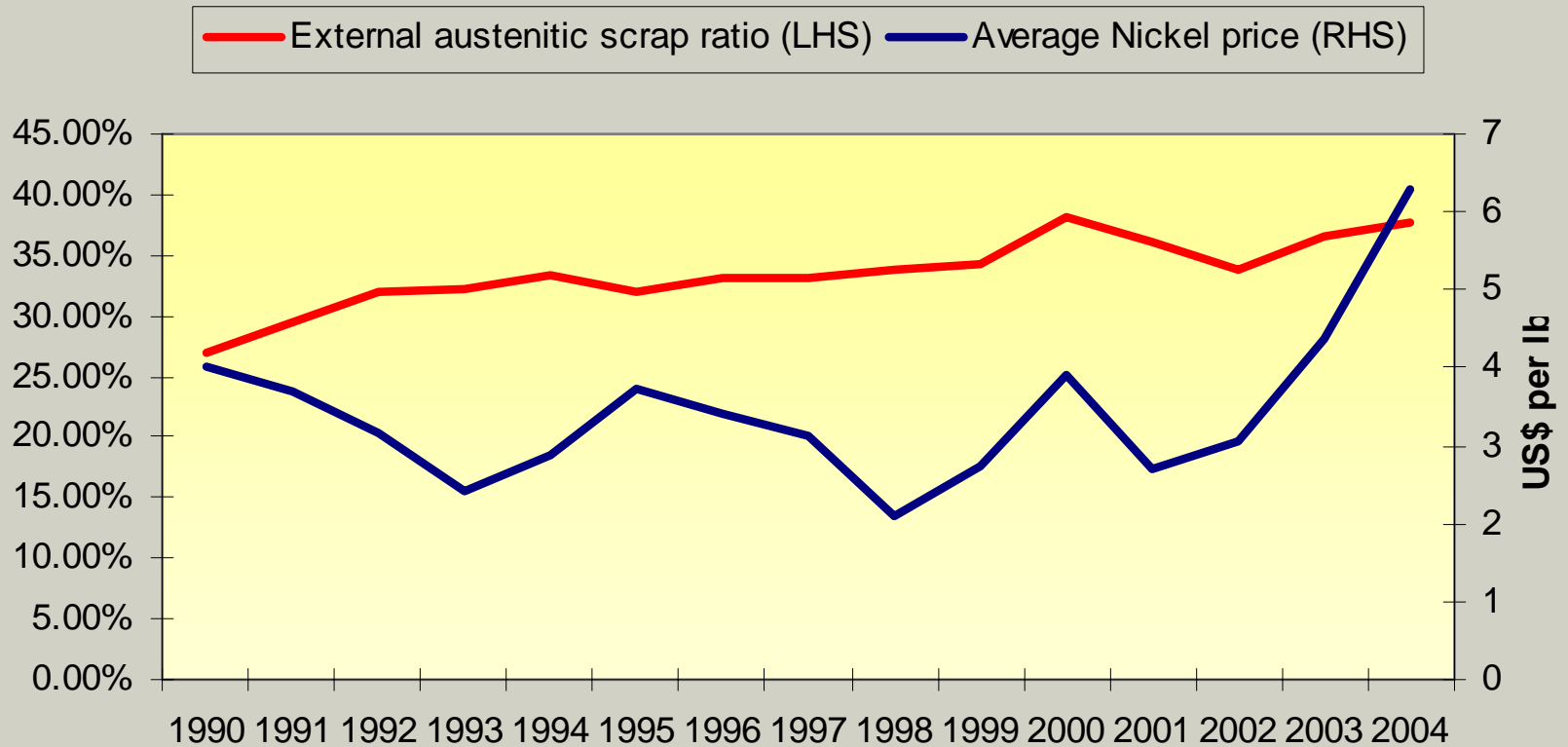
➤ In 2005, the growth will be further skewed towards China

90% of Chinese stainless imports in 2004 came from Asia



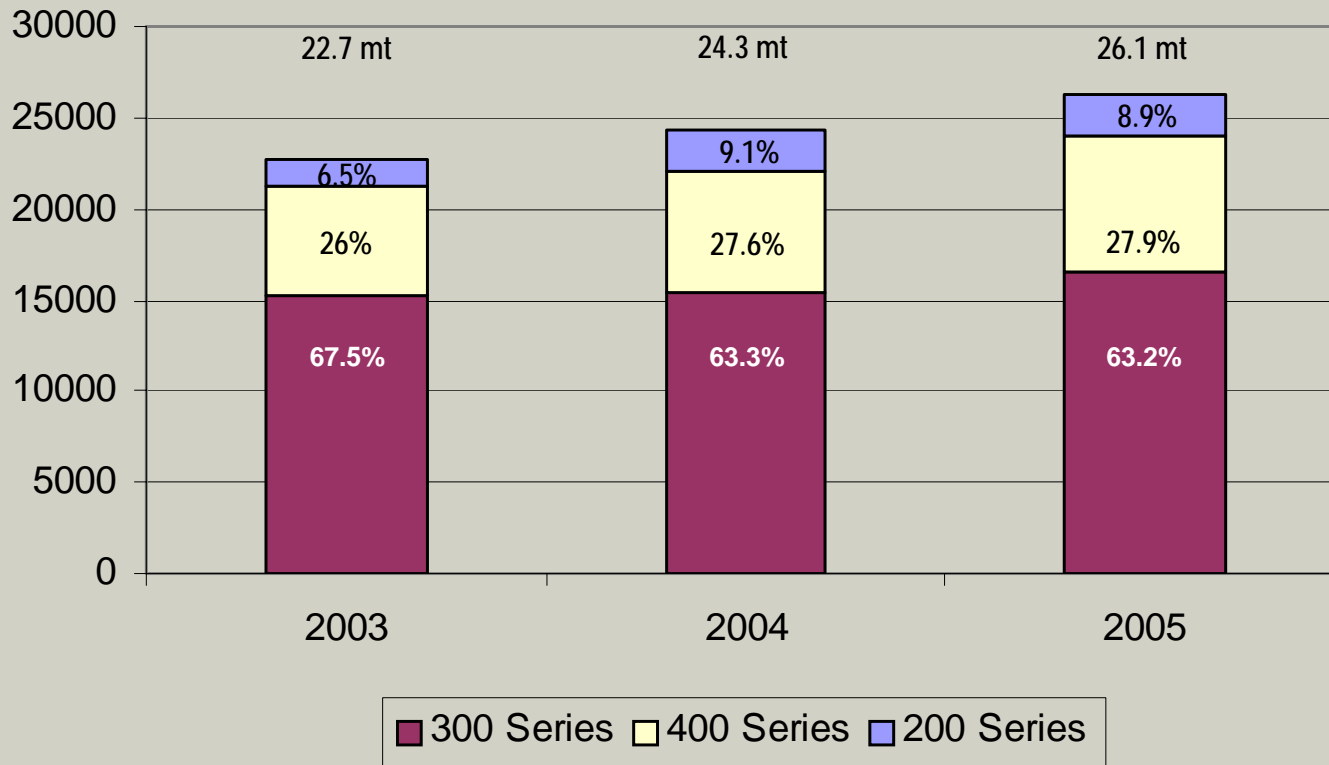
➤ Imports will slow as greater capacity comes online in China

External austenitic scrap ratio has climbed from 34% in 2002 to 38% in 2004.



Rapid penetration of 200 series in last two years

Production by Series



➤ Further “exponential” growth of 200 series is limited by application

2004 saw...

- A high growth in stainless melting production
- Accompanied with an even higher growth in
 - External scrap usage
 - Production of 200 series
- That led to a very modest growth in Nickel consumption (1.8%)
- But, even with such a limited growth in demand, the Nickel market remained very tight



Intensities of use



Chinese stainless consumption and intensity of use – broadly, three pillars of demand

2004 (4.6 Mt)



Industrial usage
35%

➤ **Industrial usage:** Chemicals, petro-chemicals, pharmaceuticals, food & beverage, pulp & paper, refining, power

➤ **Consumer durables:** Flatware, holloware, white goods

➤ **Construction:** Kitchen & bathroom fittings, decoration, elevator & escalator, city landscape

➤ 70% of stainless steel consumption is for domestic market

➤ Consumer durables is the main sector that is supplying overseas markets

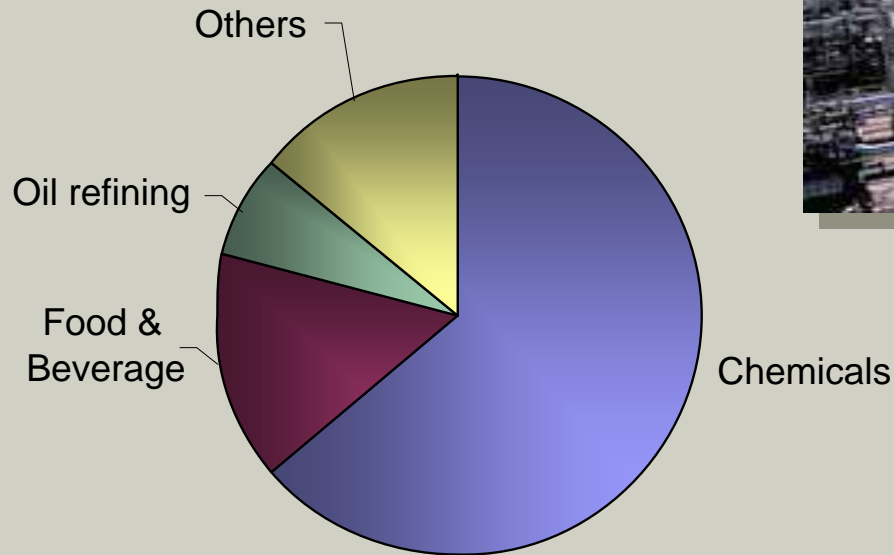
Consumer durables
34%



Construction
24%

Industrial use. 200 series is unsuitable for many industrial applications

2004 (1.58 Mt)



Key area is Chemicals

➤ Growth driven by sectors like textile and clothing end-use industries

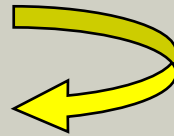
Substitution to 200 series limited by application

➤ Instances of 200 series being fraudulently sold as 300 series have instigated a negative reaction

Construction – 200 series is very suitable for certain applications



Pudong, Shanghai 1990



Key growth driver is urbanization

- Expected to grow from 38% in 2004 to 65% in 2025
- Increasing quality of construction

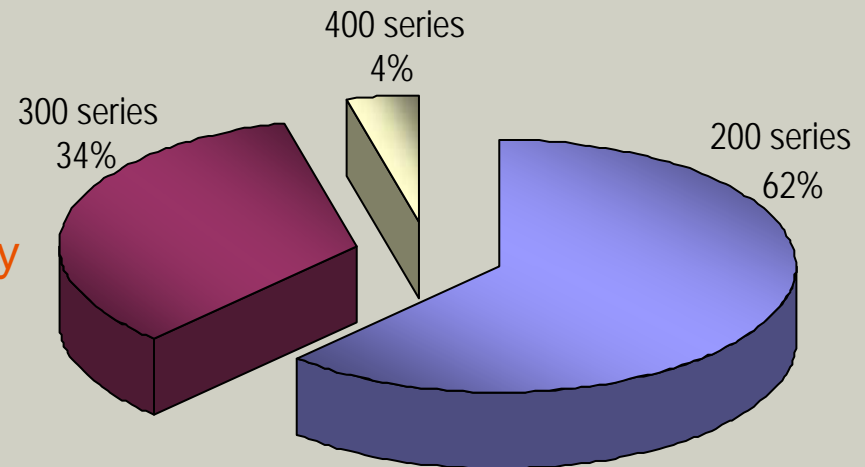


Pudong, Shanghai 2000

Substitution to 200 series has already taken place

- Stability in 200 series total share
- Potential upside to greater 300 series usage exists

2004 (1.05 Mt)



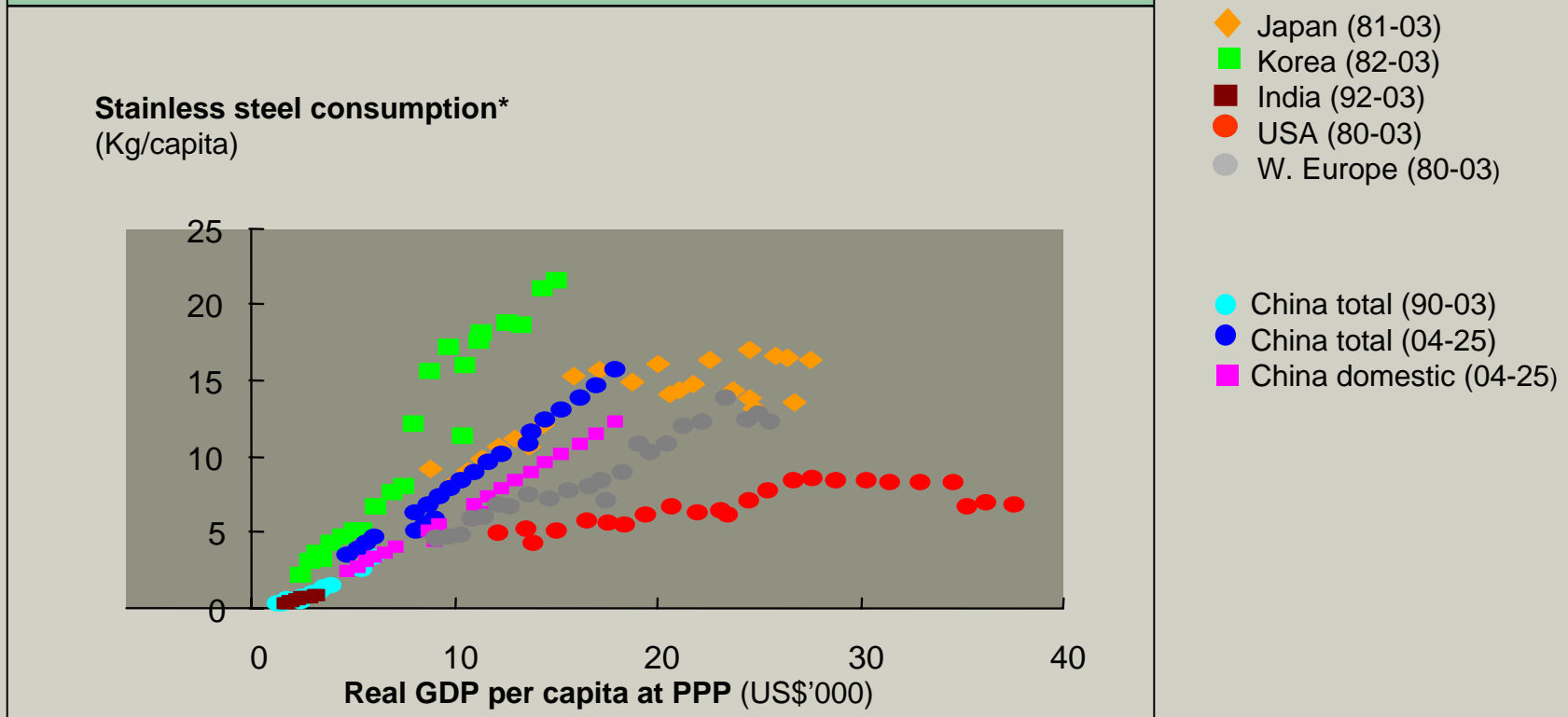
200 series has not been the panacea as earlier hoped

- Processing of these grades is more difficult
- Mechanical parameters are not met
- Corrosion problems
- Contamination of austenitic stainless scrap
- And strong competition from small induction based furnaces makes these grades unattractive for large mills



China's stainless steel consumption shows higher usage intensity than other earlier developing economies

At real GDP per capita at PPP basis, SS consumption in China is in line with Japan but higher than W. Europe and USA



*SS consumption in Taiwan and Korea are much higher, probably due to their export-driven SS end-use sectors

Source: JFK; Global Insight; country custom yearbook and steel associations

China's development is well timed for greater stainless steel usage



Big Ben Clock Tower, London

Built 1858



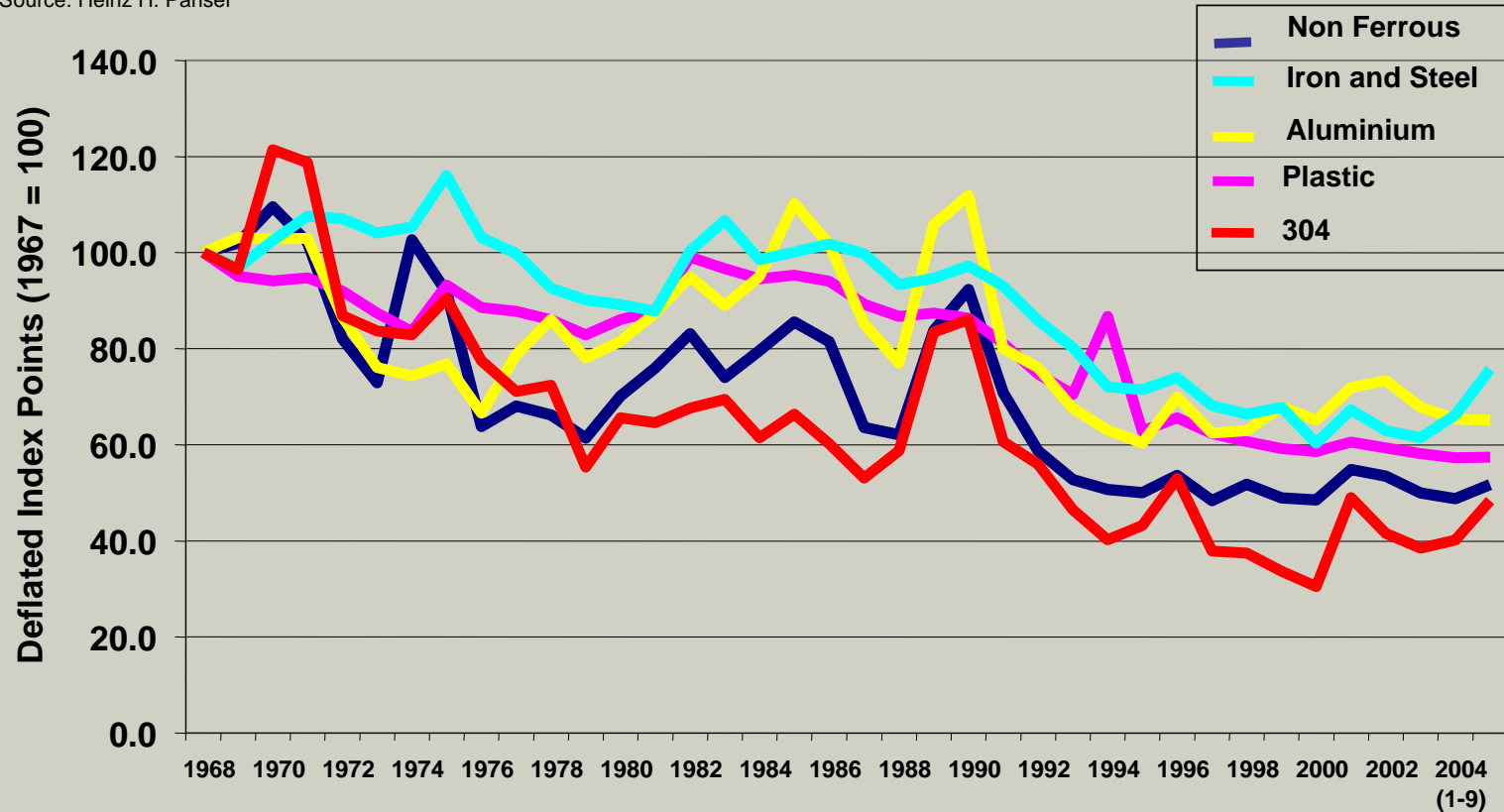
Jin Mao Tower, Shanghai

Built 1998

304 is good value for money

Price Competitiveness of 304 in Germany

Source: Heinz H. Pariser



Taking inflation into account, 304 is priced at half of the 1967 level



Conclusion

Nickel market is in structural tightness

➤ Nickel demand remains robust

- 300 series remains the workhorse of the stainless industry because of “core” applications
- Strong growth in the aerospace industry and land-based turbines
- Hybrid electric vehicles provide a positive development for long-term growth

➤ Real constraints to supply

- No major technological revolution anticipated
- Capital costs are high

Nickel demand is, however, sufficiently elastic to avoid a prolonged period of high prices. Nickel bearing stainless steels remain cost-competitive against alternatives in their core applications.





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