

CONFIDENTIAL

Challenges and Opportunities for Steel Producers in China

Presentation Materials

May 23, 2002

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EXECUTIVE SUMMARY

- Unlike other markets, China has huge growth opportunities in steel in the near future due to rapid economic development, particularly in high-end materials. Industry profitability however, has been poor and few producers have been able to earn their cost of capital. Substantial new investments will be needed to upgrade the industry and traditional government funding is constrained. As a result China is expected to be a net importer for the years to come.
- To achieve profitable growth going forward, consolidation is a necessary first step. The remaining domestic producers will have to achieve operational excellence and implement a focused growth strategy, leveraging international alliances where possible, to maintain competitive advantage over fast-encroaching multinationals. Ultimately, the leaders in China will be globally linked and focused around a few key steel hubs

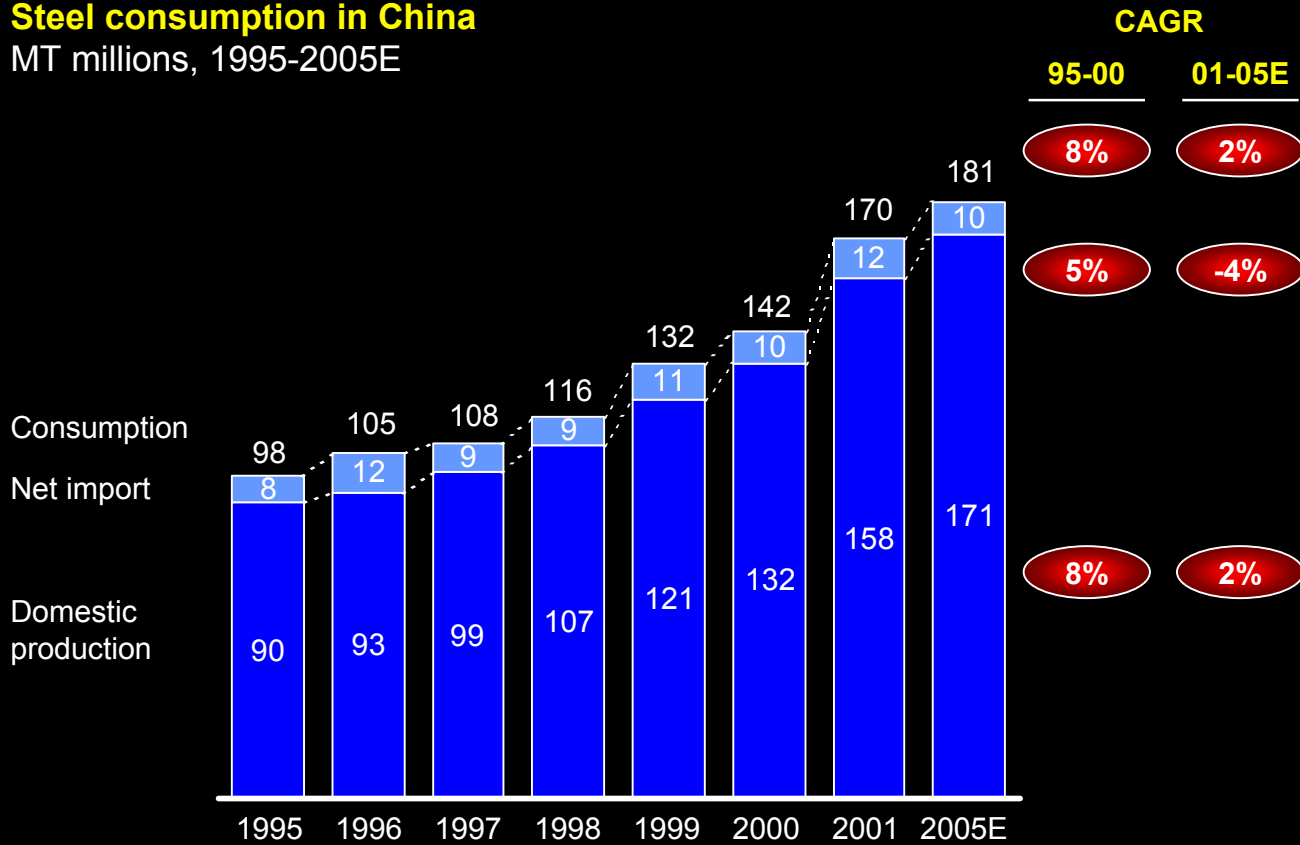
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STEEL DEMAND IN CHINA CONTINUES TO GROW AND IT IS APPROACHING 20% OF GLOBAL STEEL MARKET

Steel consumption in China

MT millions, 1995-2005E



ESTIMATE

- Growth in consumption will continue although at slower rate
- Import remains as a small % of total consumption
- Domestic production can generally keep up with demand except high value added products, e.g., automotive steel

Global consumption

648 655 697 693 713 769

3%

China as % of global

15% 16% 15% 17% 19% 18%

Source: China Steel Industry Statistics; China Metallurgical Mines Statistics; IISI; WBMS

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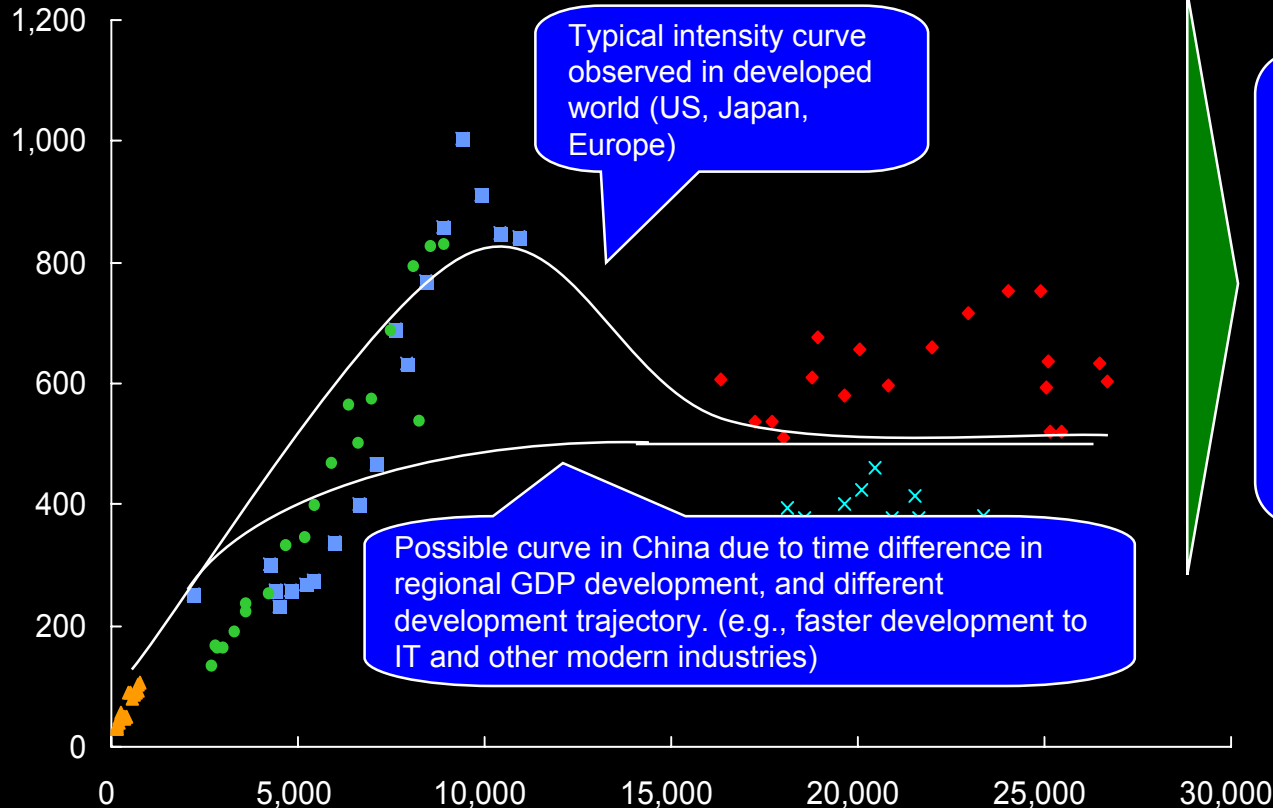
STRONG EXPECTED ECONOMIC DEVELOPMENT IN CHINA WILL DRIVE FINISHED STEEL GROWTH

Steel intensity curve

1990-1999 data, in 1990 USD terms

Steel consumption

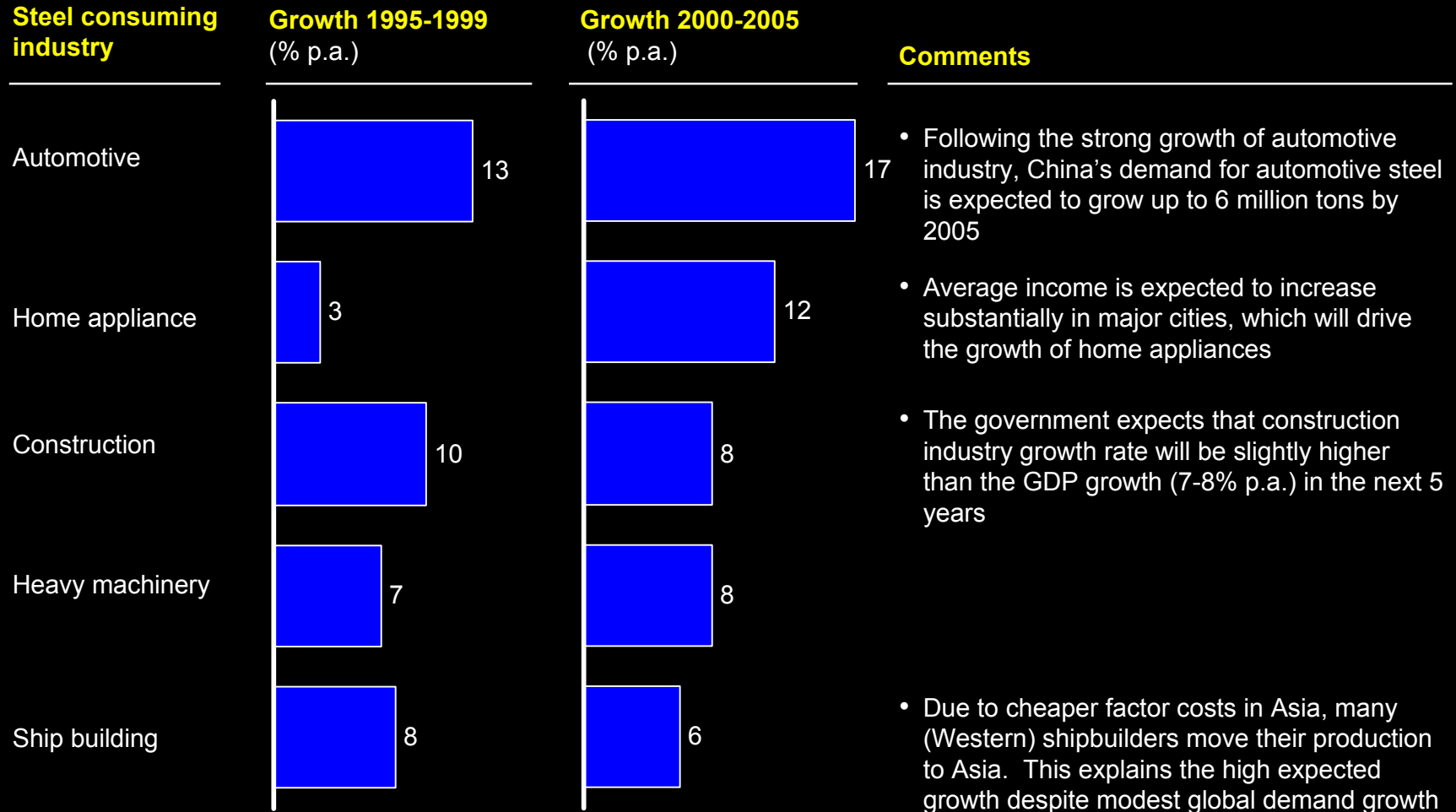
(Kg/capita)



- Taiwan
- Korea
- ▲ China
- × US
- ◆ Japan

- With an expected annual GDP growth from 2000 to 2005 of 7.5%, national finished steel consumption is expected to reach about 140kg/capita by 2005
- Such per capita steel consumption is equivalent to a national consumption of about 183m MT in 2005

STRONG EXPECTED GROWTH IN ALL MAJOR STEEL CONSUMING INDUSTRIES



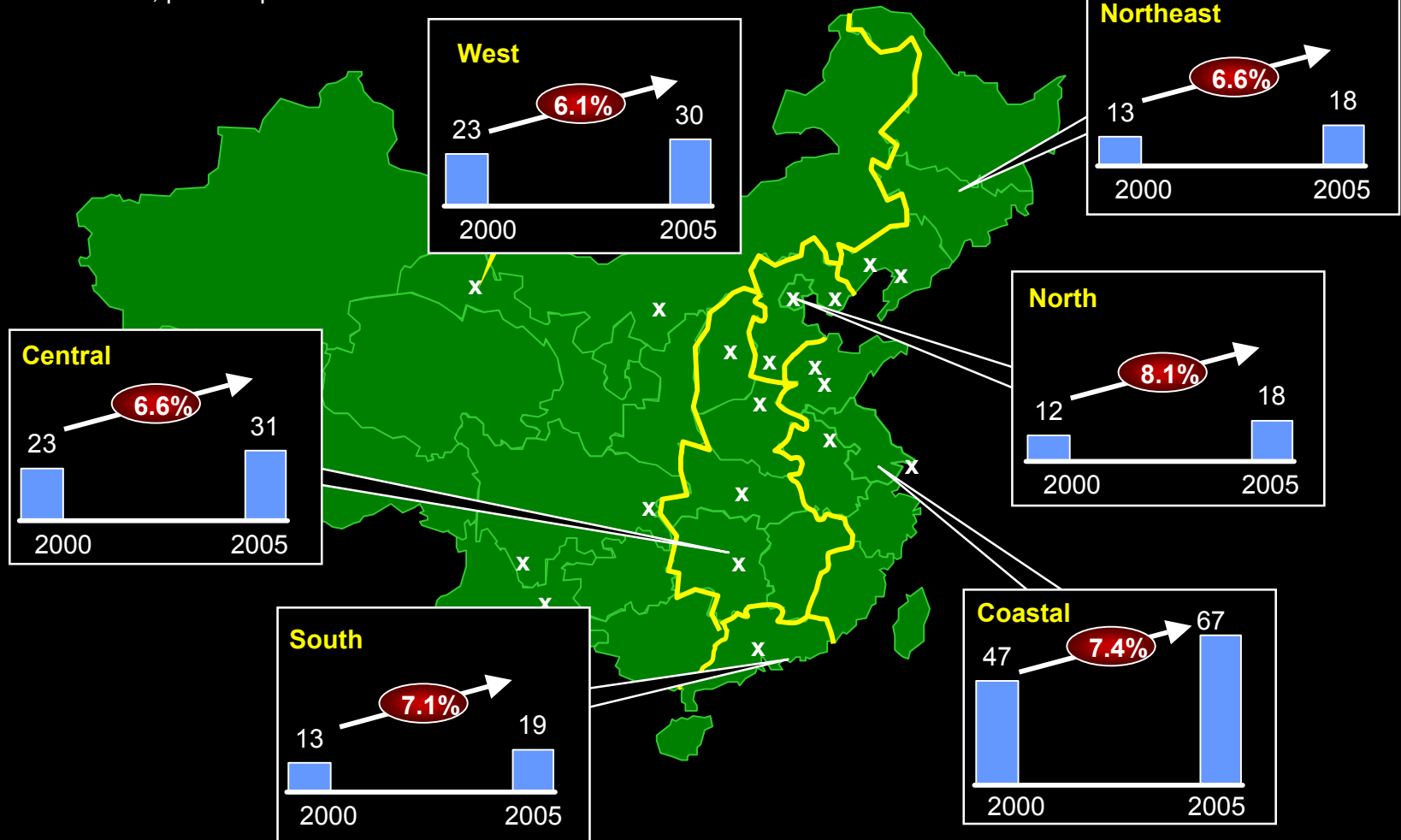
FINISHED STEEL DEMAND GROWTH IS EXPECTED TO BE STRONG IN ALL REGIONS

ESTIMATES

x Major steel mills

Regional finished steel demand growth

MT millions, percent p.a.

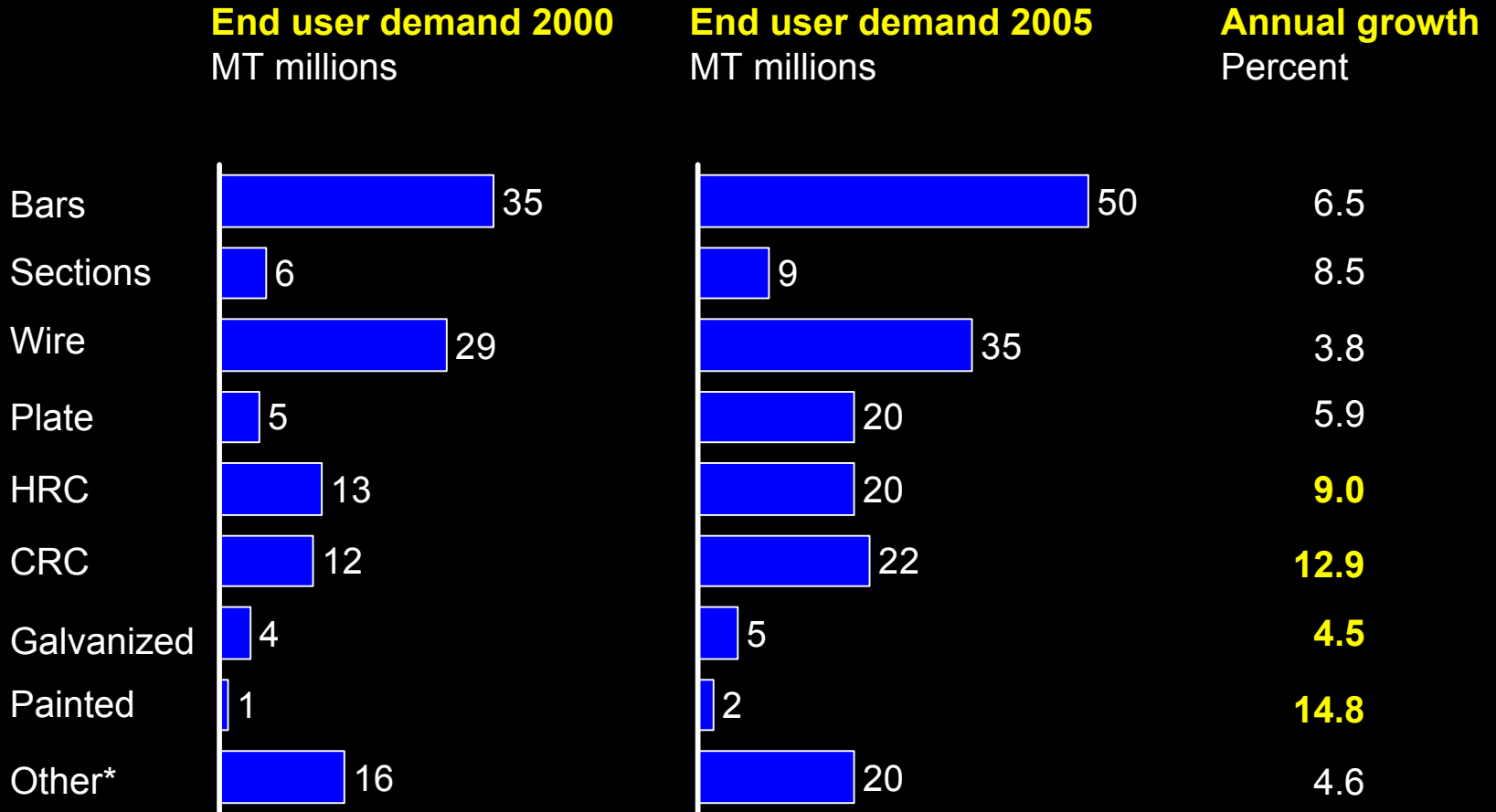


Source: China Iron & Steel Industry Yearbook 2000, McKinsey analysis

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FINISHED STEEL DEMAND GROWTH PRIMARILY IN HIGHER VALUE ADDED FLAT PRODUCTS

ESTIMATES

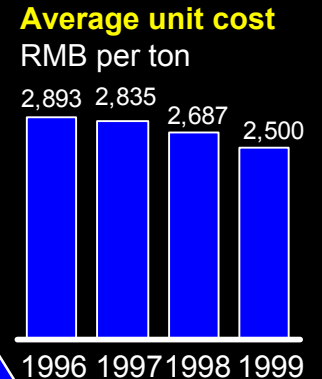
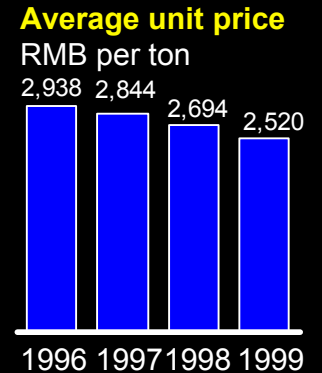
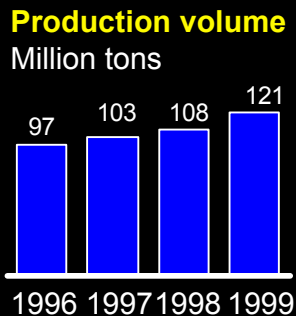
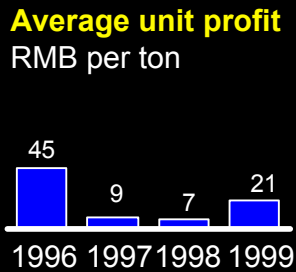
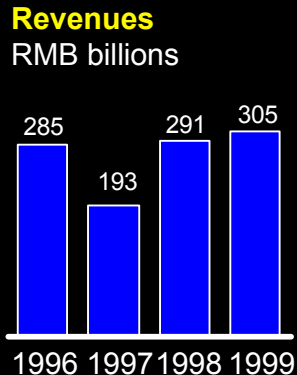
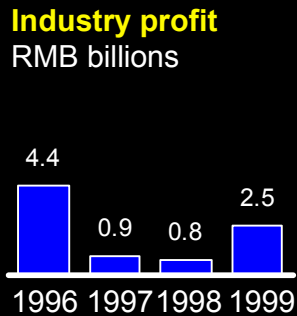
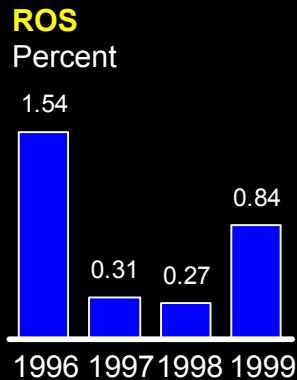


* Including specialty steels

Source: MIS research, McKinsey analysis

CHINESE STEEL PRODUCERS HAVE ACHIEVED LOW PROFITABILITY DESPITE HISTORICAL STRONG GROWTH...

Return on Sales
Percent

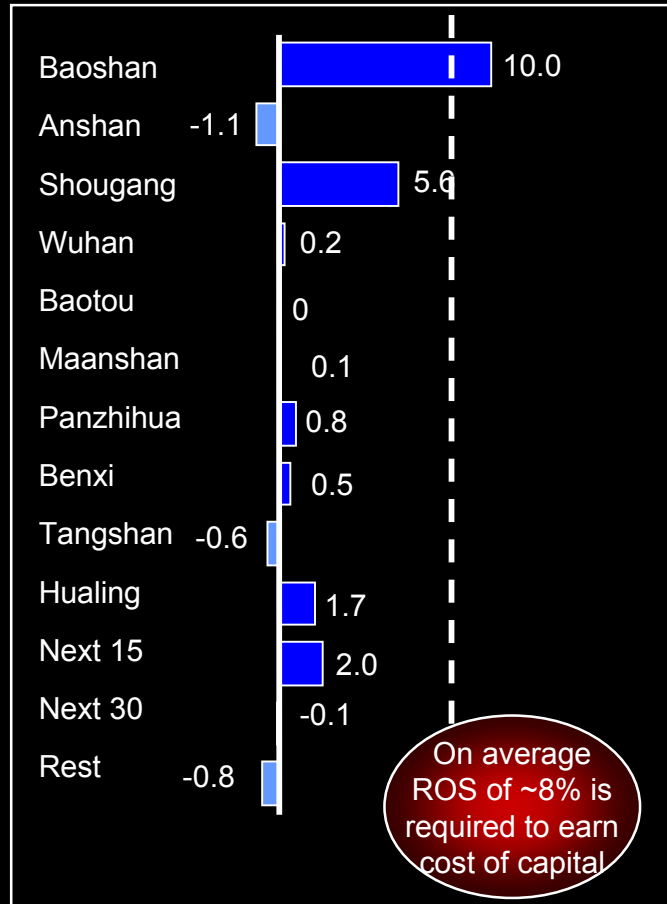


Low profitability driven by unfavorable cost structure, as price level is much higher, than, for example, in Europe and the USA

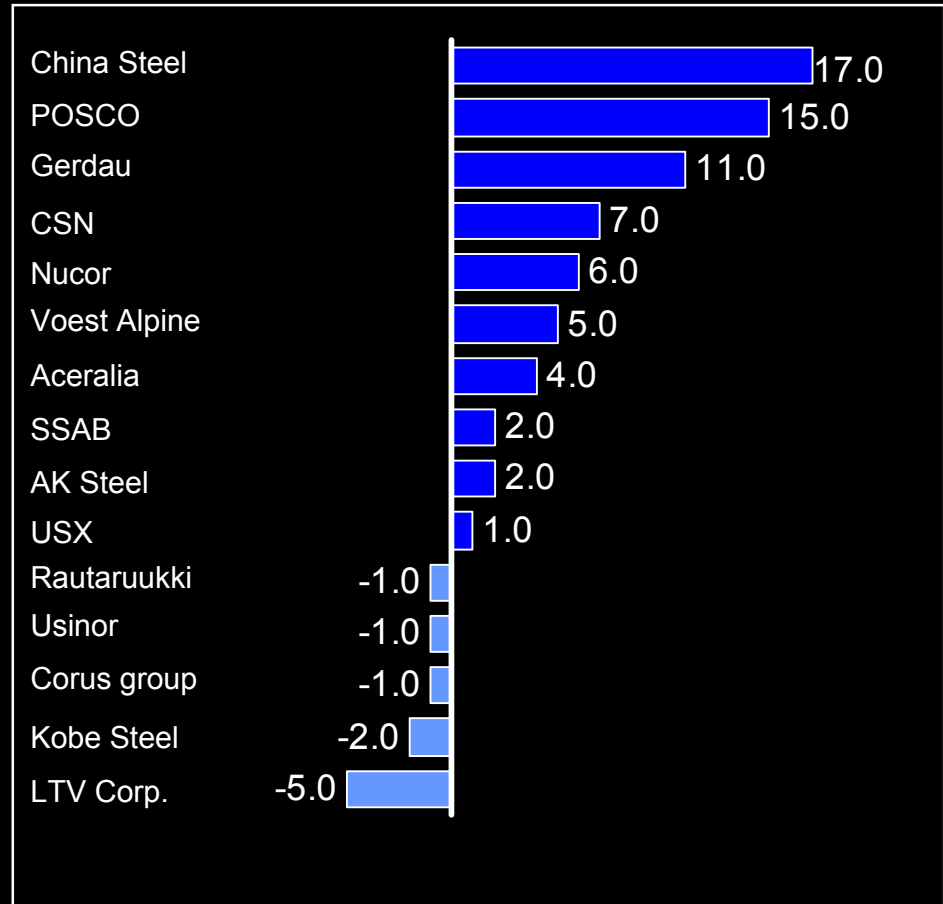
... AND EVEN LARGE PRODUCERS DO NOT EARN THEIR COST OF CAPITAL

■ Iron and Steel Group
■ Iron and Steel Co. Ltd. under the group

Return on sales 1999 of Chinese steel mills



Return on sales 1999 of international steel mills

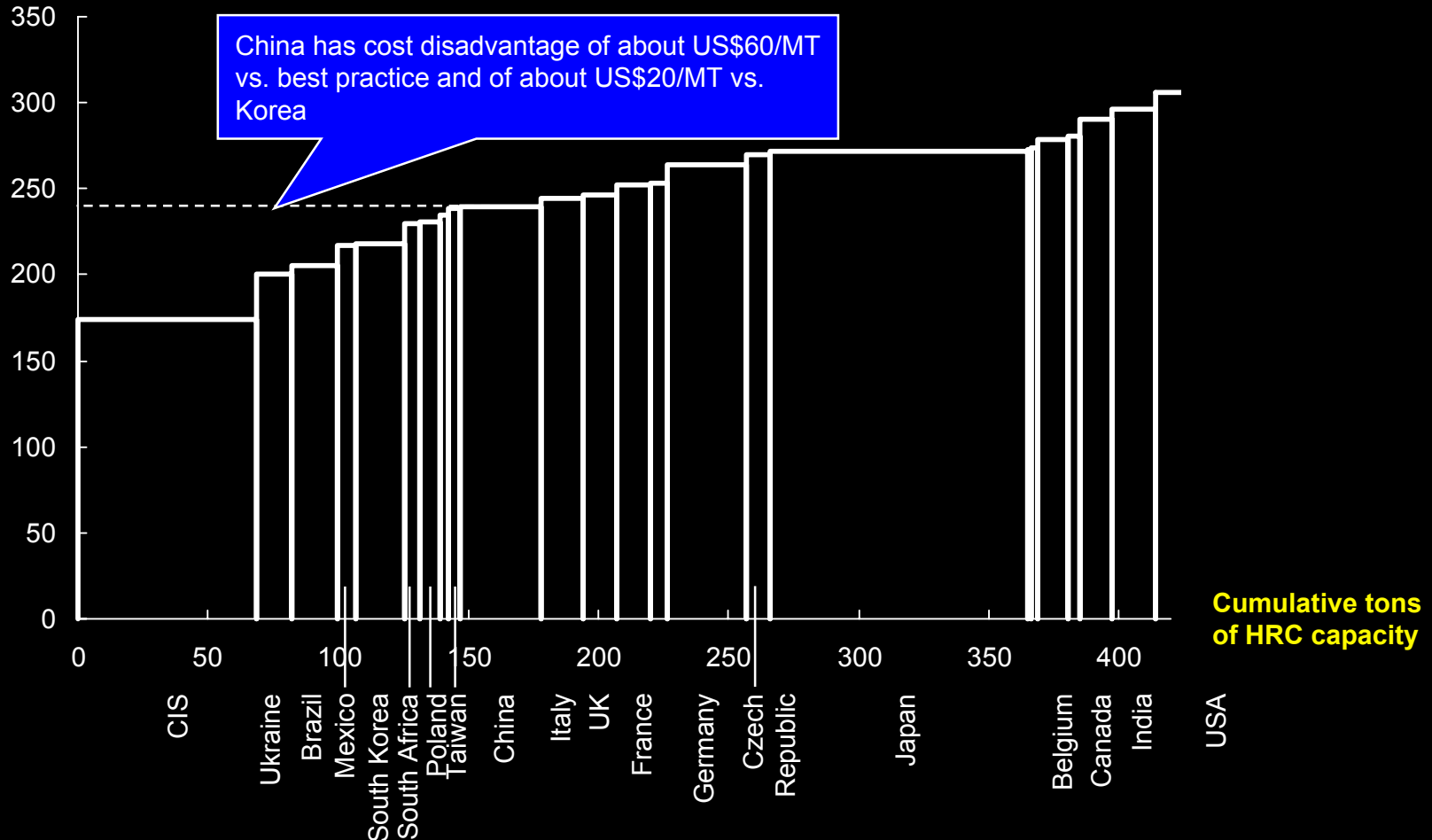


Source: Bloomberg, Global Vantage, McKinsey analysis

DESPITE FACTOR COST ADVANTAGES, CHINESE PRODUCERS HAVE A RELATIVELY WEAK COST STRUCTURE COMPARED TO BEST PRACTICE

Cash cost of major steel producing countries – 1999

HRC costs in US\$/MT

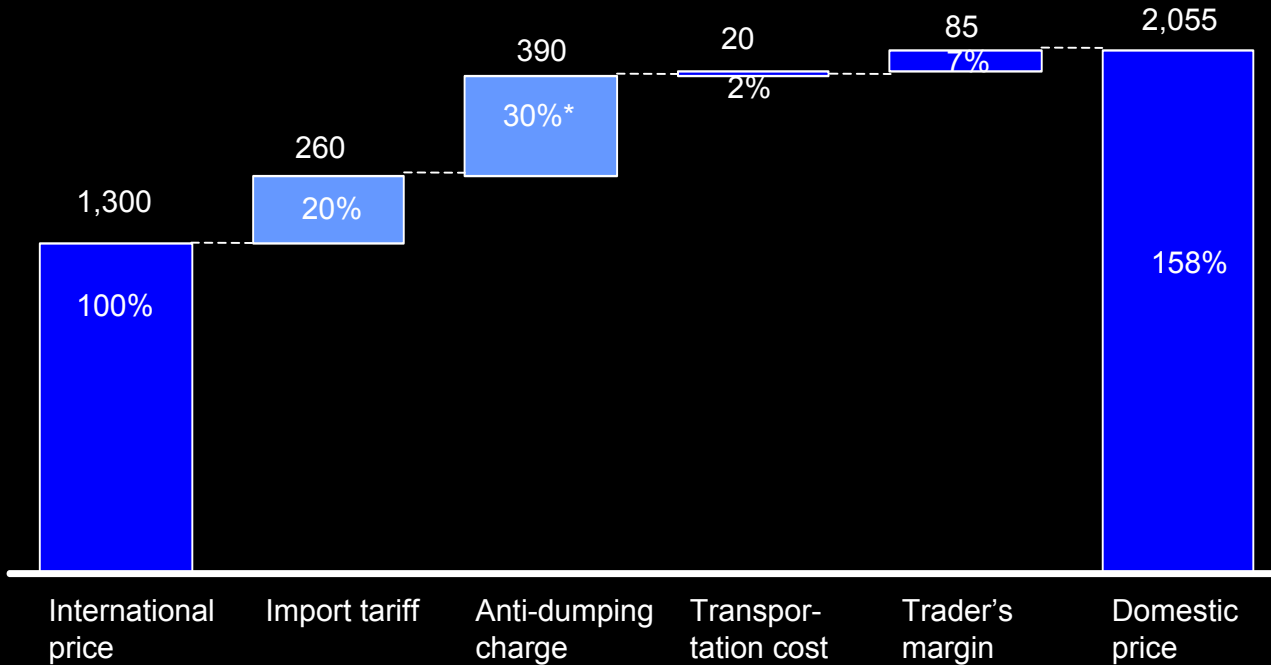


WTO-DRIVEN TARIFF REDUCTIONS COULD RAPIDLY AFFECT PRICING

EXAMPLE

Decreasing due to WTO

Price of 1mm cold rolled sheet, December 2001
USD/ton



* Varies from 4 to 58% based on importing price. Lower priced imports are charged more

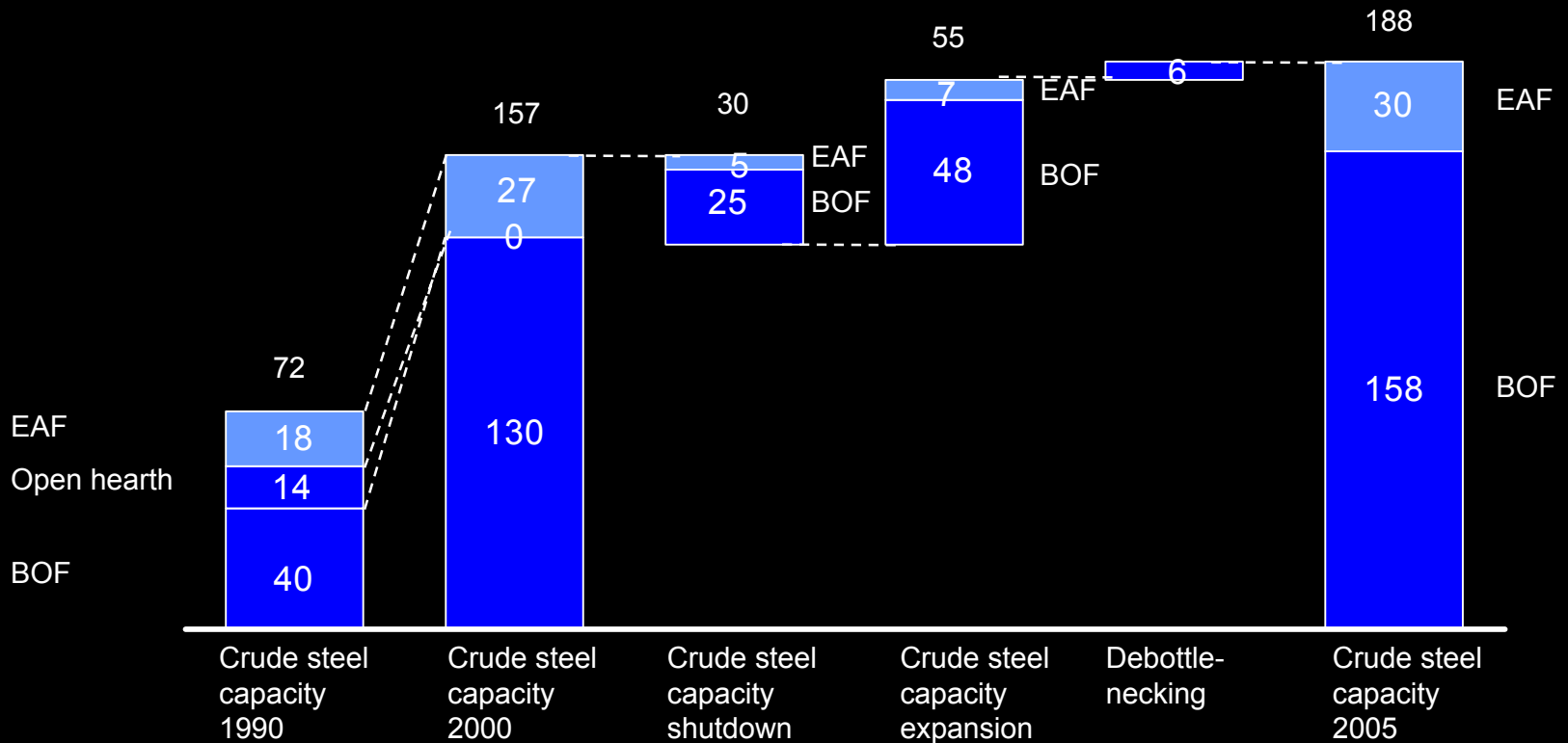
** Already reduced after WTO accession

Source: China Metals; the yearbook of nonferrous metals industry of China; team analysis

ASSET BASE HAS BEEN AND AND WILL BE EXPANDED AND MODERNISED

ESTIMATES

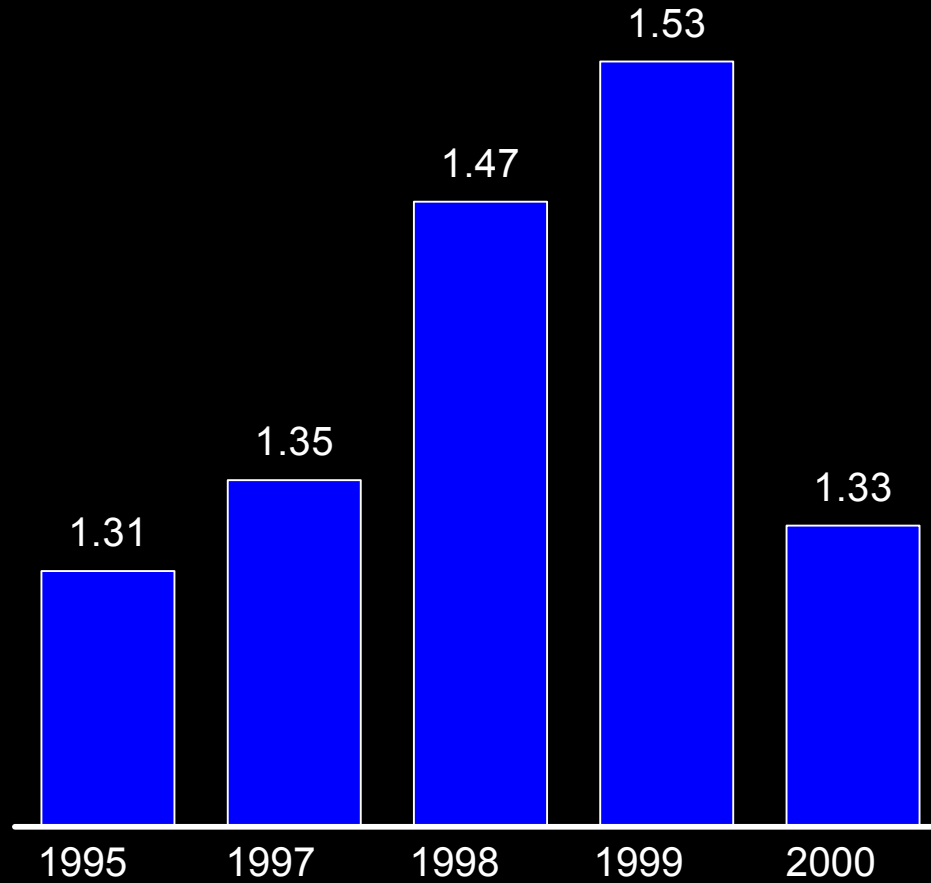
Crude steel capacity in China
MT millions



Source: China Iron and Steel statistics, McKinsey analysis

BUT MOST MILLS ARE HIGHLY LEVERAGED

Debt-equity ratios



FUNDS WILL INCREASINGLY HAVE TO BE ORGANIZED FROM OTHER SOURCES THAN THE GOVERNMENT

Sources of funding for mills

Type

Rationale/examples

Government

- Low interest rate loans for (approved) expansion projects
- Capacity expansion at competitive plants to substitute import (i.e., higher value added products) can be financially attractive.
- With delegation of responsibility to the provinces, the local government is likely to continue to assist competitive mills in attractive projects financially, also due to social reasons

Public

- Cash from domestic IPOs
- Cash from overseas IPOs
- Government plans to list large mills at domestic exchanges
- Baosteel plans listing at NYSE

International investors

- Joint ventures with foreign steel producers and/or equipment providers
- Private funds from foreign investors
- Capacity expansion at competitive plants to substitute import (i.e., higher value added products) can be financially attractive.
- Increased JV activity of foreign steel producers in China over past few years (e.g. POSCO, Thyssen)
- Equipment providers are prepared to enter equity deals for production equipment provision (e.g. Mannesmann-DEMAG, Danieli)
- Investment firms increasingly focus on deals with Chinese mills (e.g., McDonalds Investments)

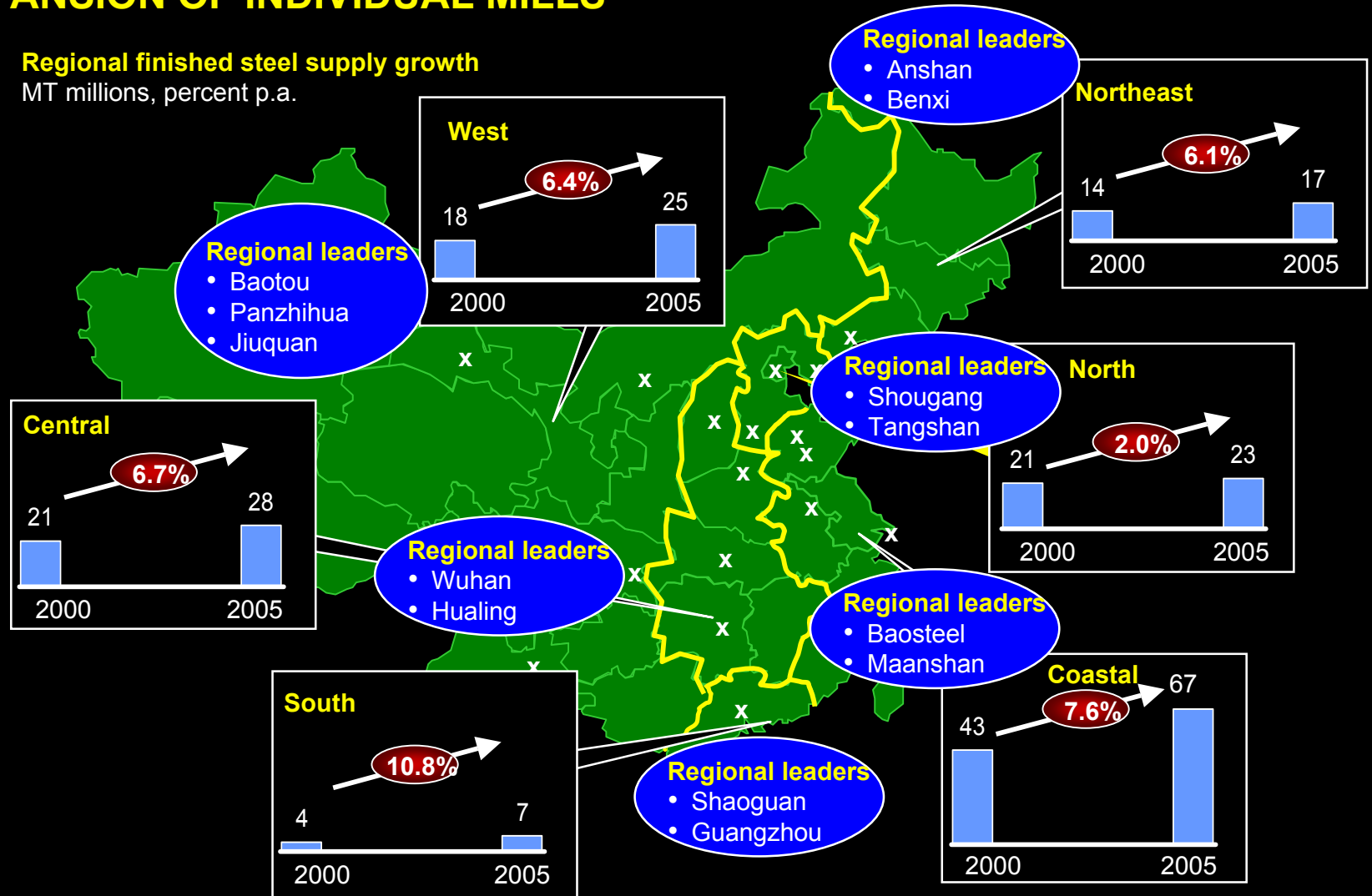
Source: Literature search, interviews

FINISHED STEEL SUPPLY GROWTH EXPECTED IN ALL REGIONS BUT REGIONAL DIFFERENCES PRIMARILY DRIVEN BY CAPACITY EXPANSION OF INDIVIDUAL MILLS

ESTIMATES

x Major steel mills

Regional finished steel supply growth
MT millions, percent p.a.



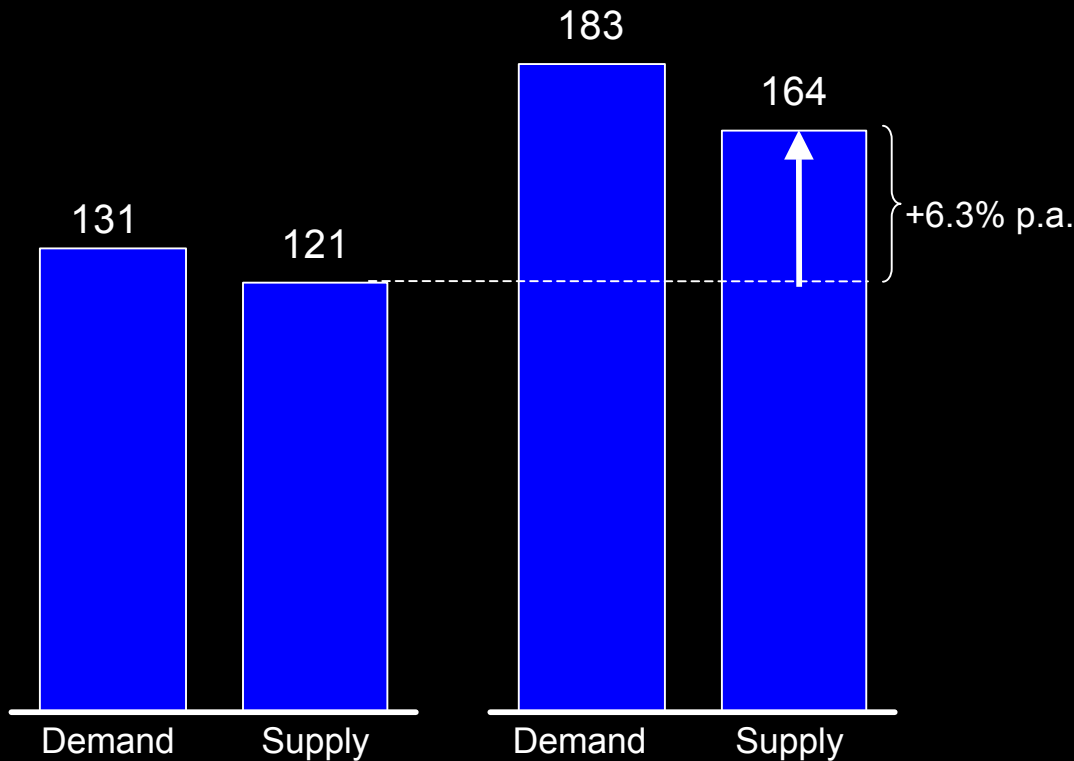
FINISHED STEEL SUPPLY IS EXPECTED TO GROW STRONGLY, BUT WILL NOT MEET DEMAND

Finished steel demand and supply development

MT millions

2000

2005



- Based on existing crude and finished steel capacity expansion plans, domestic finished steel supply is expected to reach 164m MT in 2005
- Such shortage in domestic supply will double finished steel imports, unless existing capacity expansion plans are adjusted
- Supply shortage is expected to be in flat products due to already existing excess capacity and lower growth in long products
- The expected supply shortage provides an opportunity for profitable growth for flat product suppliers

Source: McKinsey analysis

EXECUTIVE SUMMARY

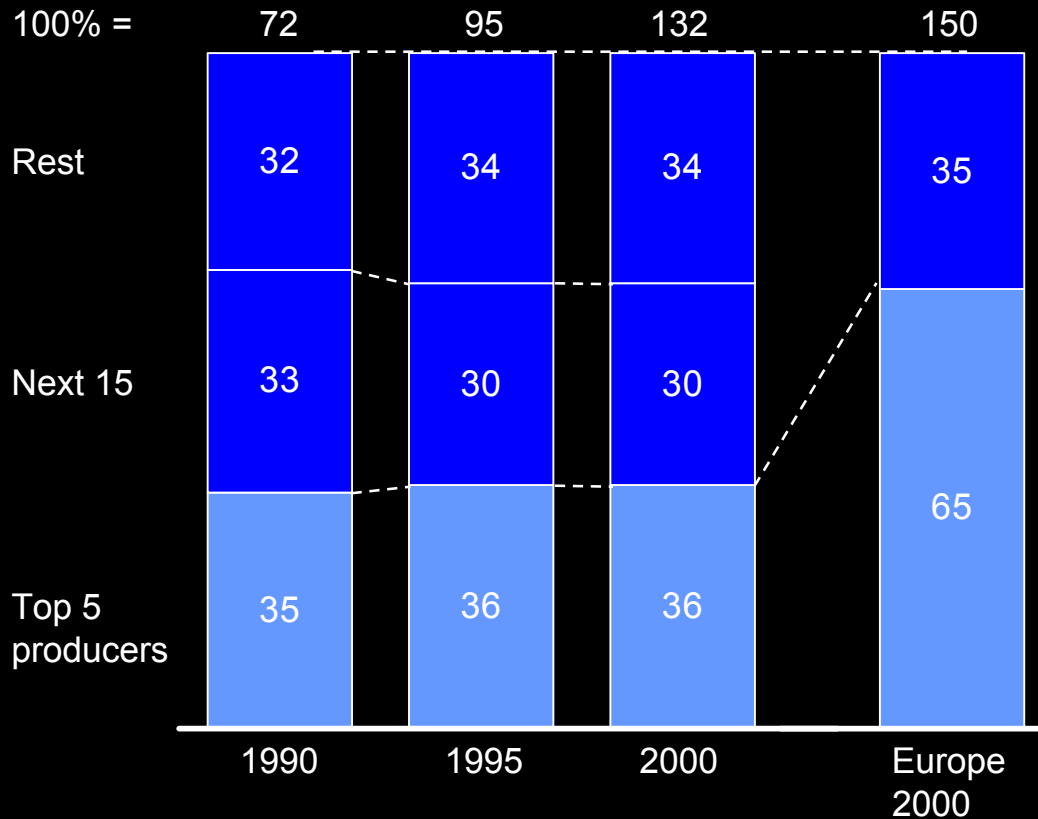
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INDUSTRY CONSOLIDATION WILL HELP STRONG PRODUCERS TO ACHIEVE SCALE AND BETTER UTILIZE THEIR ASSETS

Crude steel production by tier

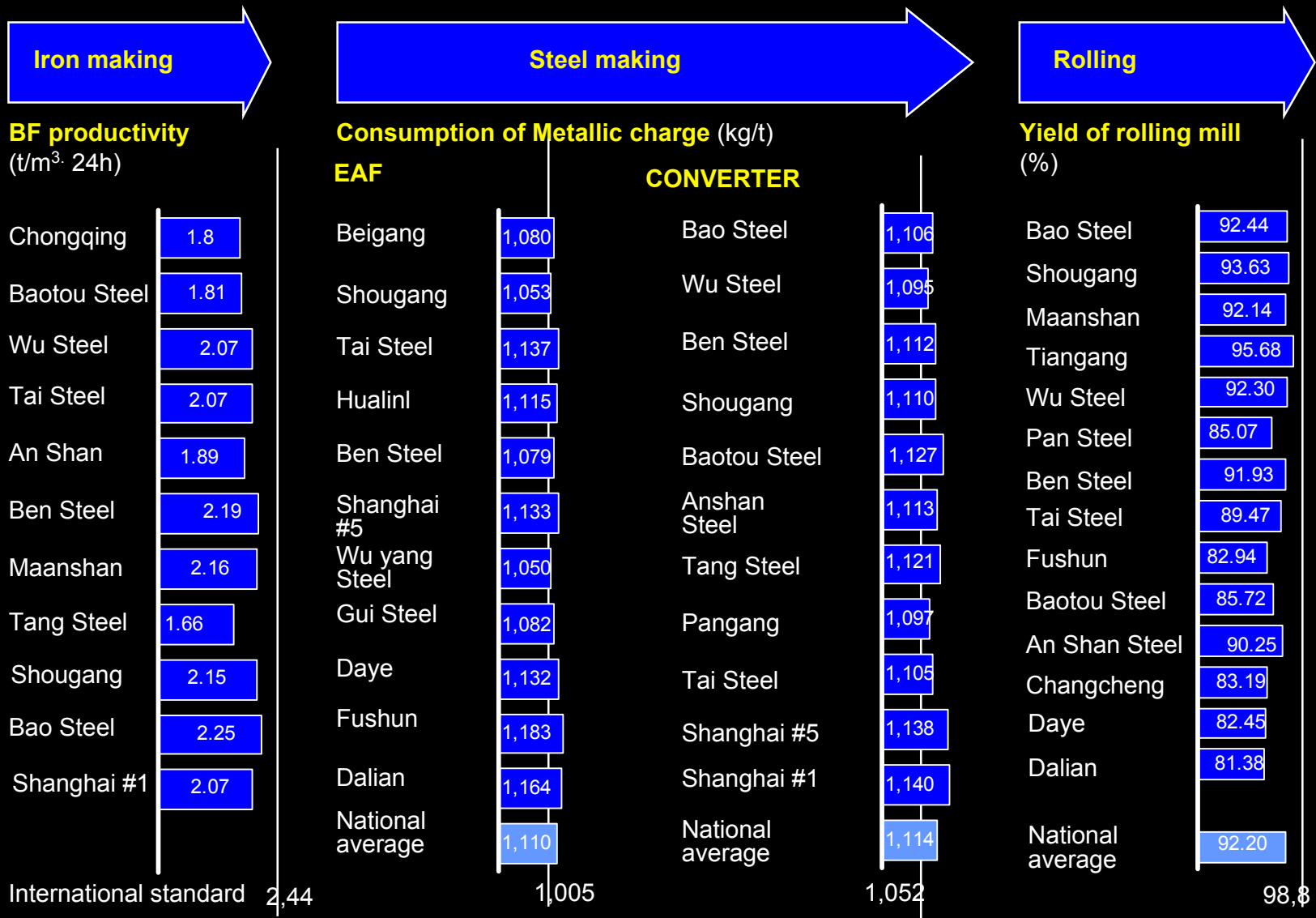
MT millions



- Compared to more mature markets, the Chinese steel industry is still relatively fragmented
- However, the government has clearly stated in the 10th 5-year plan its intention to drive consolidation and create five regional leaders (Anshan-Benxi, Shougang-Tangshan, Baosteel, Wuhan, Panzhihua)
- Such consolidation will allow these regional leaders to benefit from scale economies, channel their investments, and increase asset utilization through specialization of individual plants/mills

Source: China Iron and Steel statistics, interviews, McKinsey analysis

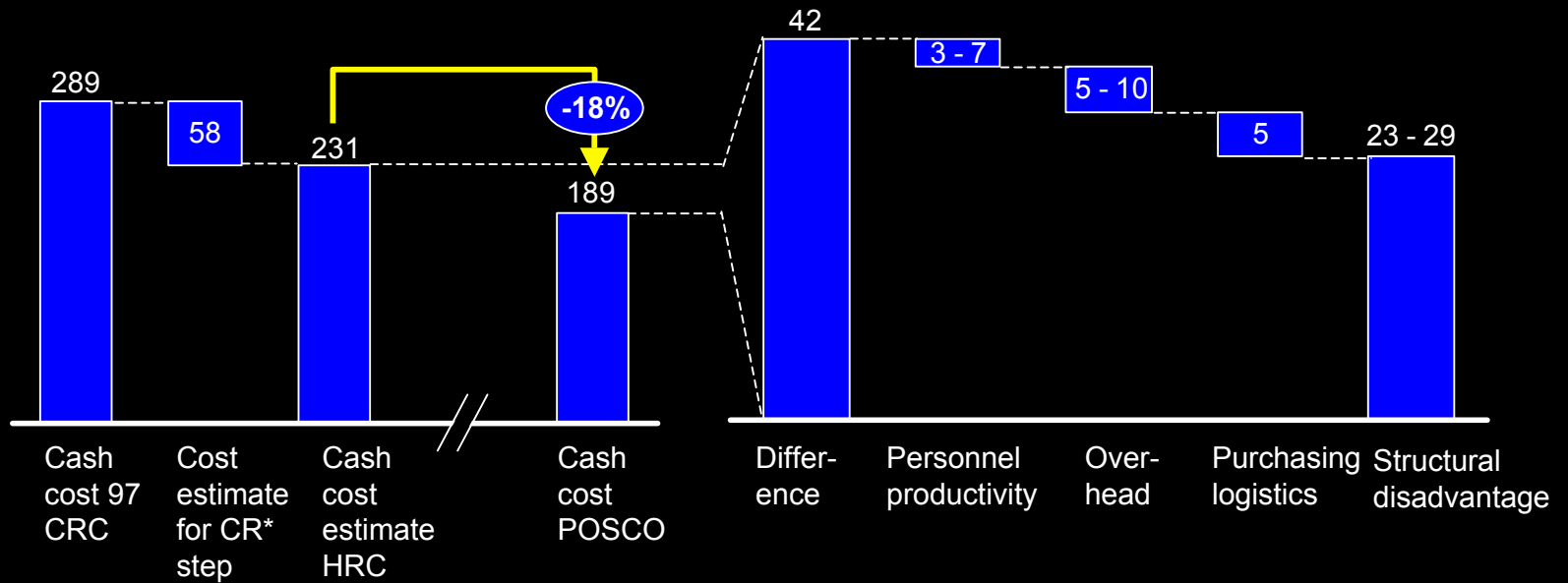
LARGEST PRODUCERS HAVE MOST EFFICIENT PLANTS 2000



Source: China Steel Statistics 2000

EVEN AT THE BEST MILLS THERE IS SIGNIFICANT COST REDUCTION POTENTIAL

USD per ton HRC



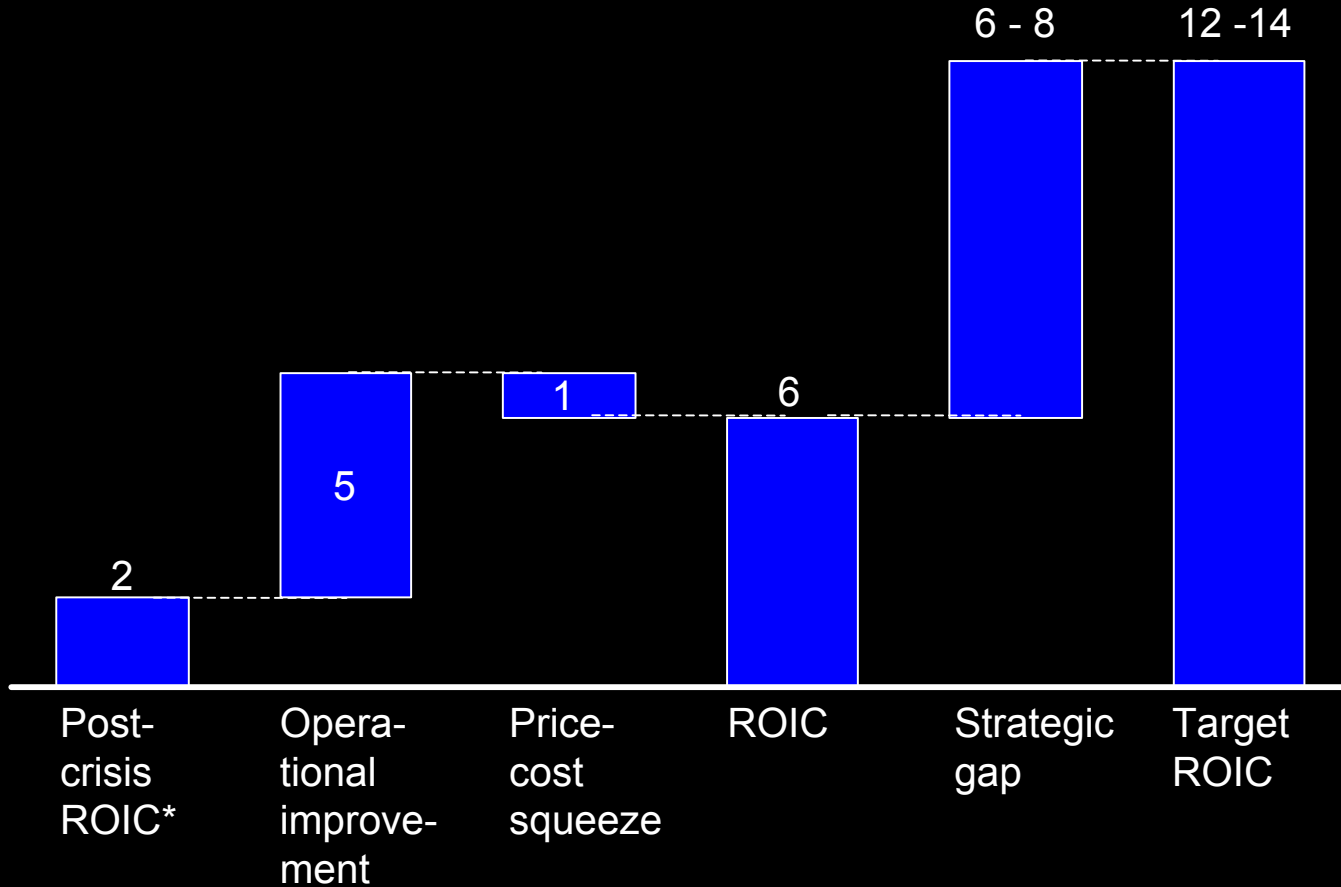
Leading Chinese producer

* Based on average cost estimates from Pain Webber; Euroconsult

Source: Company reports; World Steel Dynamics; McKinsey estimate

OPERATIONAL IMPROVEMENT IS NECESSARY BUT NOT SUFFICIENT

Percent

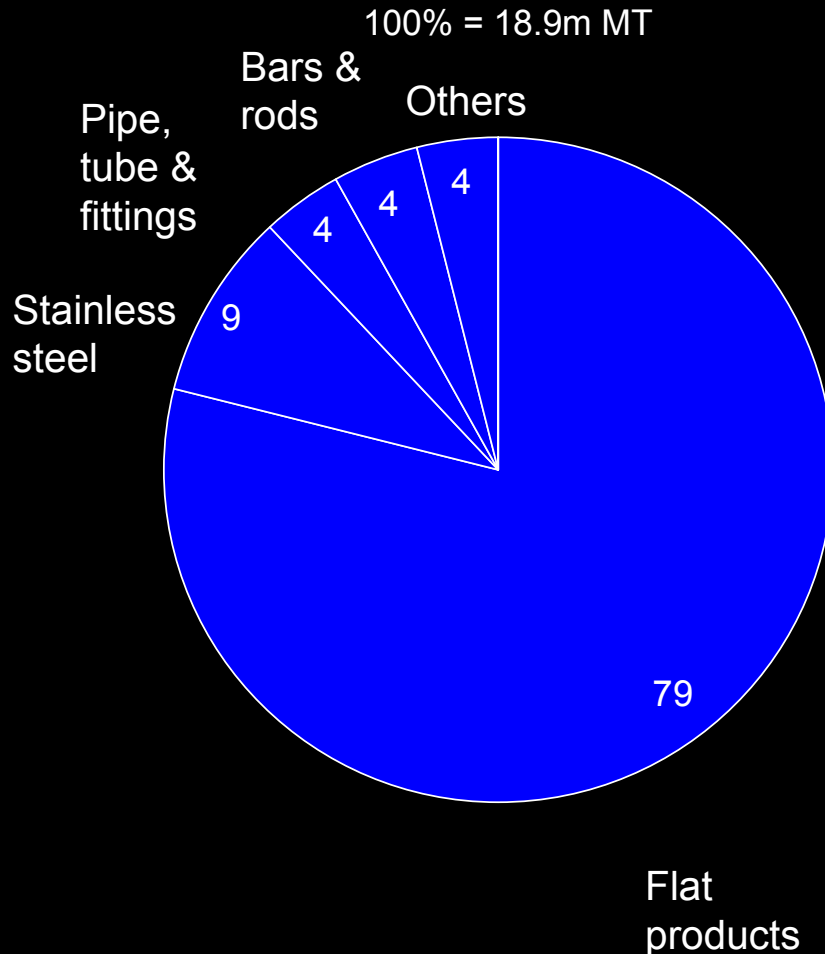


* Based on average Asia assumptions, see earlier slide

Source: McKinsey

MOVING TO HIGH-VALUE PRODUCTS IS ONE STRATEGY FOR CHINESE PRODUCERS

China steel imports by product – 2001



- The majority of imports is in high value-added flat products
- Imports are driven by
 - Lack/insufficient of domestic production capacity
 - Inadequate product quality of domestic suppliers (this is particularly true for the automotive sector)
- By building higher value steel production capacity and focussing on quality improvements, domestic producers have the opportunity to substitute imports and capture value

CHINESE MILLS SHOULD TRY TO SERVE THE MANY CHINESE COMPANIES BUILDING AN OVERSEAS PRESENCE




























EXAMPLES

-  Factory
-  Logistic center
-  R&D
-  Sales office

Overseas presence

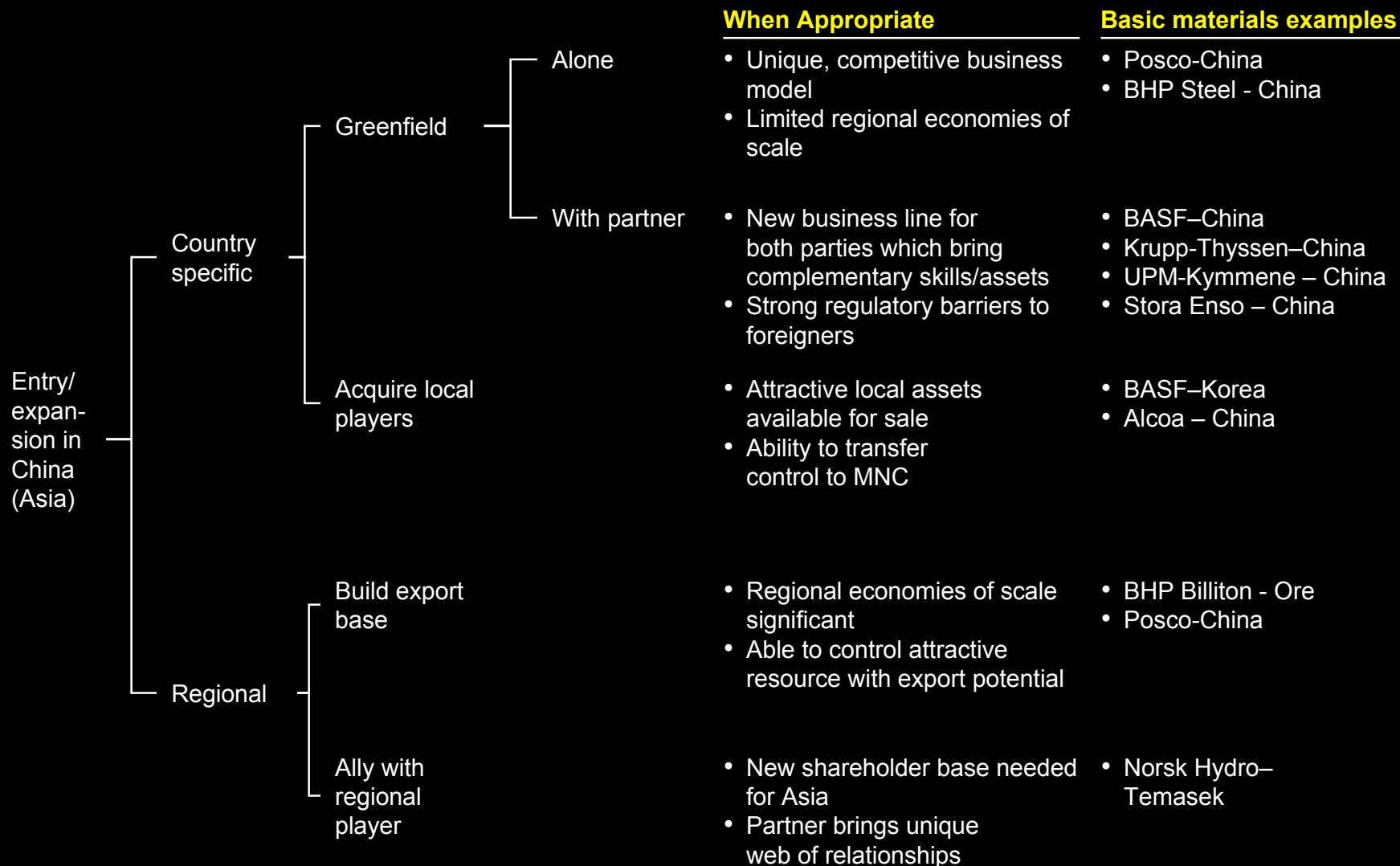
Company N. America Europe Asia S. America Others

Core overseas products

						<ul style="list-style-type: none"> • Refrigerators • Washing machines
						<ul style="list-style-type: none"> • TVs
						<ul style="list-style-type: none"> • Air-conditioners
						<ul style="list-style-type: none"> • Refrigerators
						<ul style="list-style-type: none"> • TVs
						<ul style="list-style-type: none"> • Small appliances • Air-conditioners

Source: Annual reports; company websites; literature search; McKinsey analysis

FOR MNCs THE RIGHT ENTRY/EXPANSION STRATEGY CAN DIFFER GREATLY BY INDUSTRY/COMPANY



THYSSEN KRUPP'S LATEST JOINT VENTURES ARE CONSOLIDATING ITS LEADING POSITION IN THE STAINLESS MARKET IN CHINA



Strategic intent

- Focus on high value, high growth stainless steel market, replacing import
- Joint venture with controlling shares for speedy entry and government support
- Multiple joint ventures, total 9 in China and increasing in size and investment

Investment method:

- Joint venture
- Joint venture

Company name & deal structure:

- | | | |
|----------------------------------|---------------------------------|-----|
| • Shanghai Krupp Stainless Steel | • Thyssen Krupp | 50% |
| Thyssen Krupp | Shanghai Pudong Iron and Steel* | 50% |
| 60% | | |
| 40% | | |

Location:

- Shanghai
- Dalian

Accumulative investment:

- \$1.43 billion by 2007
- \$295 million initial investment, 1998
- \$180 million, 2001

Products/services:

- 72,000 ton cold-rolling mill
- Galvanized steel production

Expansion plan & other:

- Hot rolled strip mill and a cold rolled strip mill with combined annual capacity of 440,000 ton
- 360 employees

* A unit of Shanghai Bao Steel Group Corp.

POSCO IS MOVING AGGRESSIVELY TO LEVERAGE EXPORT BASE AND BUILD PROFITABLE DOWNSTREAM BUSINESSES



Strategic intent

- Focus on high growth downstream segments
- Expand export base
- Strategically positioned locations
- Joint venture with majority or controlling shares for speedy entry

Investment method:

Company name & deal structure:

Location:

Accumulative investment:

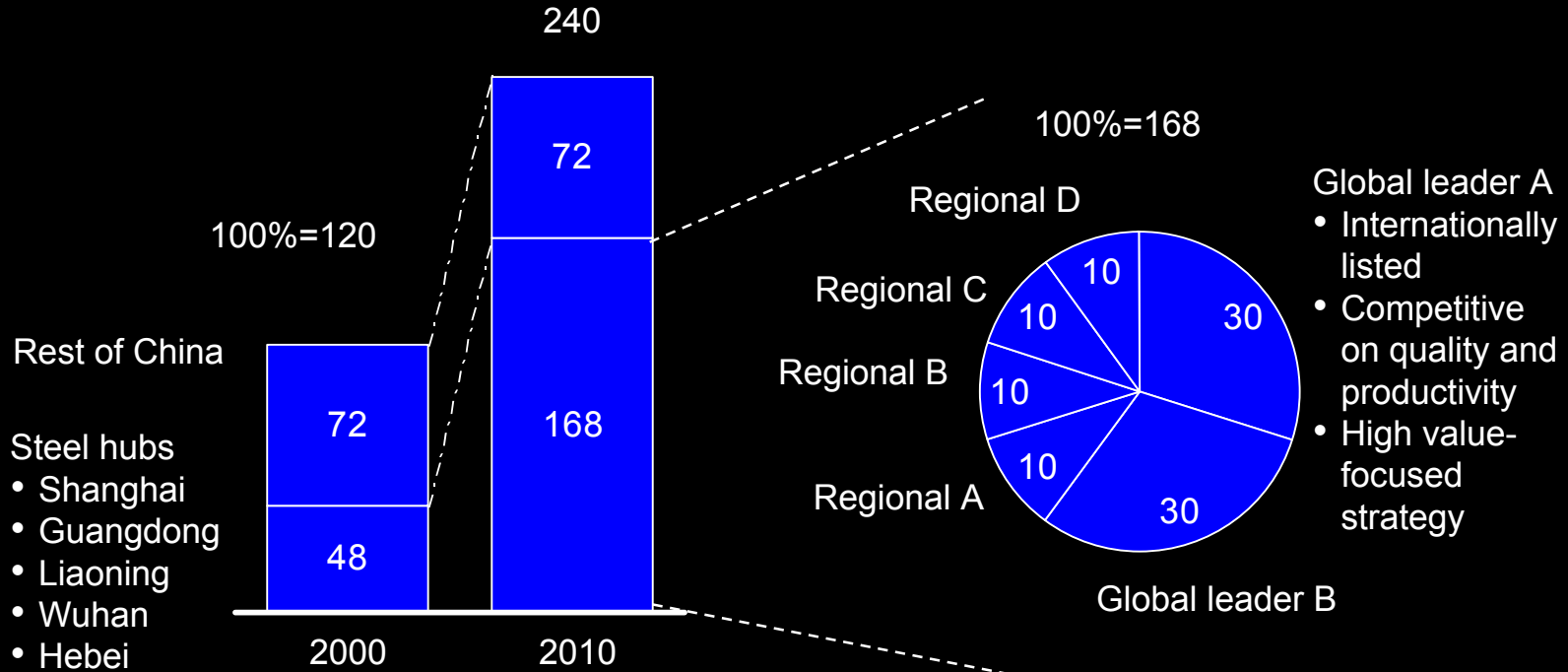
Products & services:

Expansion plan:

- | | | |
|---|--|--|
| <ul style="list-style-type: none"> • Joint venture | <ul style="list-style-type: none"> • Joint venture | <ul style="list-style-type: none"> • Joint venture |
| <ul style="list-style-type: none"> • Dalian Posco
Posco 40%
SK Corp. 15%
Posteel 15%
China National Ferrous Metal Material Corp. 30% | <ul style="list-style-type: none"> • Shunde Pohang Coated Steel
Posco, Posteel, Samsung 79%
Guangdong Invest. Corp. 21% | <ul style="list-style-type: none"> • Zhangjiangang Pohang Stainless Steel
Posco 80%
Jiangsu Shagang Group 20% |
| <ul style="list-style-type: none"> • Dalian city | <ul style="list-style-type: none"> • Guangdong province | <ul style="list-style-type: none"> • Jiangsu province |
| <ul style="list-style-type: none"> • \$55 million | <ul style="list-style-type: none"> • \$30 million | <ul style="list-style-type: none"> • \$416 million |
| <ul style="list-style-type: none"> • Galvanizing plant, 50,000 ton pre-painting line, 1998 | <ul style="list-style-type: none"> • 100,000 ton hot-dip galvanizing facility, 1998 | <ul style="list-style-type: none"> • 110,000 ton stainless cold rolling plant, 1999 |
| <ul style="list-style-type: none"> • New 100,000 ton facility, mid 2002 | <ul style="list-style-type: none"> • 50,000 ton pre-paintly line • 100,000 ton electrical sheet facility | <ul style="list-style-type: none"> • 170,000 ton, 2003 |

VISION OF FUTURE CHINESE STEEL INDUSTRY

mt



Source: McKinsey analysis

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