

## **China Steel Industry Perspectives**

November 2017 Yuanpeng Li

### CHINA FINISHED STEEL DEMAND China's finished steel demand has already peaked out at 779mtpa in 2013, then declined gradually to 729mtpa in 2016



1 Mainland China 2 Unclassified construction, stock change, and others 3 Commercial, industrial, infrastructure, and rural residential construction

Last Modified 11/7/2017 11:53 AM China Standard Time

Printed 4/17/2017 5:02 PM

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### CHINA STEEL SUPPLY China's crude steel capacity has increased to ~1 bn tonne since 2013; production slowdown results in ~180mt capacity idling



1 Nameplate capacity, with corresponding utilization rate referred here 2 Excluding IF capacity and production

### CHINA STEEL SUPPLY Several approaches being adopted to remove outdated and inefficient capacity

Bankruptcy	<ul> <li>Sep 2015 – Songting steel, private steel mill in Hebei Province, officially bankrupted</li> <li>Mar 2016 - Shandong Huayuan Steel Co. bankrupted and auctioned its asset</li> </ul>	"To actively and steadily promote the survival of the fittest, we will clear the market through mergers and acquisitions, bankruptcy and liquidation." – XI Jinping, president of China, Dec 2015
Forced closures	<ul> <li>Local government announced targeted 151mt steel capacity reduction by 2020</li> <li>Leveraging rigid environmental and legal compliances, government shut down ~110mt IF capacity by the end of June 2017</li> </ul>	"Reduction of outdated and inefficient steel capacity is the prerequisite of industry restructuring and normalizing." – The State Council, May 2017
Environmental Compliance	<ul> <li>28 cities in North China (e.g. Hebei, Shandong, provinces) are requested to cut steel operations by 50% during Nov 15, 2017 – Mar 15, 2018</li> </ul>	"Capacity elimination in tandem with <b>tightening</b> <b>environment regulations</b> , help to facilitate restructuring of local steel industry." – CISA, July 2017
Funds for re- education	<ul> <li>Laid-off employees will be re-educated and re-deployed</li> <li>Central Govt set up Industrial Enterprises Structure Adjustment Special Funds (~Rmb 100bn)</li> </ul>	"for young, who have learning ability and are trainable, they could learn new technics and skills, and transfer to service industry, eg. express delivery." – <i>Ministry of Finance, Mar 2016</i>

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### CHINA STEEL SUPPLY Elimination volume in 2016 out-performed government target



2016 real elimination<sup>1</sup>, mt



### CHINA STEEL SUPPLY

# Complete elimination of 110mtpy IF capacity has been creating substantial impact on the industry climate



### CHINA STEEL SUPPLY **Due to IF closures, 2017 production of "CISA member mills" has grown faster than small private mills** — YoY,%



SOURCE: Mysteel; NBS



SOURCE: MEPS

McKinsey & Company

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### CHINA STEEL PROFITABILITY **Profitability improved significantly in 2017 as net margin increased from 1.1% in 2016 to 5.5% in July 2017**





# We expect the industry to be a bit balanced but with continues structural changes for upgrading

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Supply reform will continue, yet market tightness being offset by demand slowdown

Industry consolidation likely to improve for more cross region M&A

EAF could go at higher growth due to scrap availability

Export unlikely to grow but outbound investment could grow

CHINA FINISHED STEEL DEMAND

# A Going forward, China steel demand is expected to decline to 711mt in 2020 and 643mt in 2025

China<sup>1</sup> apparent finished steel demand by sector 2011-2025



1 Mainland China 2 Unclassified construction, stock change, and others 3 Commercial, industrial, infrastructure, and rural residential construction

CHINA FINISHED STEEL DEMAND

# Continuous decline in steel consumption is driven by decreasing demand in construction and machinery segments



1 Commercial, industrial, infrastructure, and rural residential construction

### CHINA STEEL SUPPLY Chinese government continues to push restructuring and capacity elimination of 150mt in 2016-2020

China crude steel capacity<sup>1</sup>, 2010-2020, Million tons



#### CHINA STEEL SUPPLY

# A Capacity elimination will be highly concentrated on Eastern and Coastal regions, especially Hebei province

China steel production by province, 2015	C Province 2	apacity <sup>1</sup> , C 015, mt 2	Over supply S 015, mt i	Shutdown plan, n 2016-20, mt	Last M
0-20 Mt		Private SOE			
20-50 Mt	Hebei	257	69	49	
	Jiangsu	124	14	18	117
>50 Mt	Shandong	76	10	15	11:5
	Liaoning	73	12	6	3 AM
Jilin	Shanxi	64	20	NA	China
	Henan	34	5	2	t Stan
Xinjiang	Hubei	33	3	6	dard .
Mongolia	Anhui	33	8	6	Time
Ninovio Shanvio	Xinjiang	32	20	1	
Qinghai	Inner Mongolia	32	13	NA	
GansuhaanxHenan Jiangsu	Sichuan	31	10	4	Printe
Tibet Anhui Shanghai	Guangdong	29	11	3	9d 4/1
Sichuan	Jiangxi	26	4	4	7/201
Hunan	Tianjin	26	5	9	7 5:02
Guizhou	Shanghai	26	8	4	2 PM
Yunnan Guangdong Taiwan	Hunan	24	5	1	China
Guangx Guangx Hong Kong	Guangxi	23	2	2	t Stan
Macau	Yunnan	22	8	5	Idard
Hainan	Zhejiang	22	6	2	Time
	Jilin	20	6	1	
<ul> <li>Eliminations will concentrate on Eastern and Coastal regions</li> </ul>	Fujian	20	4	5	
<ul> <li>Hebei province accounts for ~33% of the shutdown</li> <li>Small and universe mills are the leave multiple terrets of a</li> </ul>	Heilongjiang	13	7	3	
<ul> <li>Small and private mills are the key regulation targets, e.g.</li> <li>Oingquan Steel, Zongheng Steel in Heibei</li> </ul>	Gansu	12	4	3	
<ul> <li>While elimination from SOE mills is driven by replacement. e.g.</li> </ul>	Guizhou	6	1	2	
Shandong Steel, Baowu Steel	Qinghai	3	2	1	
	Total	475 1,050	// 24	3 151	

1 BOF+EAF capacity

SOURCE: McKinsey Crude Steel Capacity Database; CISA; McKinsey





SOURCE: CISA; McKinsey BMI China Steel Demand Model Q3 2017

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#### CHINA STEEL CONSOLIDATION

# B To meet central government expectation on 60% of consolidation, strong support from local government on M&A is needed



CHINA STEEL CONSOLIDATION

# B The prevailance of regional and cross-regional consolidation can be expected in the medium to long term

#### Government consolidation plan<sup>1</sup> for 2025

 To foster 3-4 steel groups with capacity of ~80mtpy and 6-8 steel group with capacity of 40mtpy

## 3-steps approach will be adopted to realize the 2025 plan, :

- Step 1 (2016-2018): Shutdown obsolete steel capacity and develop model example for consolidation (Baosteel – WISCO)
- Step 2 (2018-2020): Optimize consolidation policy and compliances
- Step 3 (2020-2025): Facilitate consolidation progress to a grander level

## Regional consolidation to # of companies:

 Shanxi province – to foster 5 steel hubs with capacity 10mtpy by 2020

## Regional consolidation to reduce # of companies:

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Hebei province – by 2020 to foster 2 large national steel groups (Hebei Steel and Shougang), 3 provincial steel groups (based in Qian'an, Fengnan, Wu'an Cities) and 10 local steel companies

## Cross-regional consolidation led by large steel groups

BAOSTEEL

- Baosteel WISCO (~80mtpy)
- Baosteel announced to expand scale to ~100mtpy by further M&A in the future

1 Central government guideline for consolidation and disposal of mothballed capacity

#### **CHINA SCRAP**

# China scrap will grow stably over next decade, driven by strong generation in obsolete scrap



1 for the future 70% of available obsolete scrap is assumed to be recycled, For home and prompt scrap a 100% recycling efficiency is assumed

#### SOURCE: Worldsteel; McKinsey Analysis

#### CHINA SCRAP

### Surplus of scrap in China is likely to occur as scrap supply will exceed the demand even while assuming high usage rates in EAF and BOF

ROUNDED NUMBERS

#### Scrap supply

- **Crude production** (as a result of steel demand and net trades) to decline by ~70 mmt in next 10 years
- Typical life cycles and collection rates for different end use sectors of steel
- Obsolete scrap recycling efficiency of ~70%



Net exports to decline to ~70mmt in 2025 from ~100mmt in 2015

Steel demand to

next 10 years

- Maximized EAF crude steel production ~70 mmt (capacity ~75 mmt in 2016)
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#### **CHINA SCRAP**

# Different scenarios could be considered by which China's future scrap supply demand mismatch gets balanced

#### China scrap supply demand balance 2025E mmt



Will there be **as much obsolete scrap available** and **enough incentives** in China to collect and recycle the scrap? How will scrap **recycling industry** evolve and what prices are needed to make the industry **profitable**?



2

Will **current BOF and EAF players** be able to **use more scrap** up to the standards typically observed in developed regions or above by applying new technologies?



To what extend is the country ready to allow the steel industry to make the **switch from BOF to EAF** and hence closing more BF-BOF capacity while investing in new EAF facilities?



If not all collected scrap can be consumed locally, what measures will be put in place to support or discourage the exports of scrap from China? Will it distort global trade of scrap, and iron ore market?

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**CHINA SCRAP** Beyond the current capacity closure plans a significant switch from BOF to EAF is needed to accumulate the scrap

ROUNDED NUMBERS

EAF share, Percent

Б

## China crude steel capacity assessment mmt

**Current estimates** 

992

 $\mathbf{C}\mathbf{C}$ 

Additional needs 

BOF

EAF

	133	29	888		865
917	<ul> <li>Capacity de 13<sup>th</sup> Five Ye plan</li> <li>Capacity ad announced projects</li> </ul>	acity decrease based on Five Year elimination acity additions covering punced (replacement) acts	813	<ul> <li>113 90</li> <li>Rethink capex plans when blast furnaces are up for reline</li> <li>Install new "EAFs" with latest technology to allow flexible RM input</li> </ul>	700
75			75		165
2016	Closures	Addition	2025E		2025E
8			9		21

#### SOURCE: McKinsey Analysis

### CHINA SCRAP Increasing surplus due to lacking the ability to absorb collected scrap could distort global scrap trade and iron ore market



SOURCE: McKinsey Analysis

CHINA STEEL EXPORT

# Export of Rod & bar products reduced significantly in 2017 due to IF elimination, Asia markets still the biggest destination for China steels





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SOURCE: Mysteel; NBS

CHINA STEEL EXPORT

# Strong exports are not expected to be sustainable over the long term

#### China finished steel export, 2010-2020 Million metric tons "China steel exports are facing with increasing pressure of protections such as anti-dumping, regarding current 112 huge export volume and slowdown of 108 global demand, the export growth potential will be limited in the future" 94 - Mysteel 80 80 80 76 62 56 49 43 "Government doesn't encourage steel exports, the export volume is mainly decided by global demand. China steel exports will remain ~ 80-90mtpy in the long term" - Steel Home 2010 11 12 13 14 15 16 17e 18e 19e 2020e

CHINA STEEL EXPORT

### Government's long-term policy goal to restrict the export of low value-added steel products

China steel products export tariff, 2005 - 2017 Percentage



13 January 2016: Export tax for semi reduced from 25% to 20%

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#### CHINA STEEL INVESTMENT

# Increasing global investments from Chinese top steel players as they expand market footprints, seek new growth, and acquire technology

	Chinese steel players	Investment details	Value creation levers	Last M
"More and more Chinese steel mills explore oversea markets to achieve	e Apr 2013 💓 WISCO	<ul> <li>Announcement for JV with TBEA for silicon steel distribution center (20 ktpy) in India</li> </ul>	<ul> <li>New growth market</li> </ul>	Chinese top
new growth and acquire technology. For some companies	Jun 2013 戫 WISCO	<ul> <li>Acquired laser welding dept. of ThyssenKrupp</li> </ul>	<ul><li>Extend value chain</li><li>Acquire technology</li></ul>	steel players have been increasing
such as WISCO and Baosteel, the acquisition is shifting from resource driven	Sep 2013 ( Baosteel	<ul> <li>New Five-Year plan: Develop distribution networks and JV in ASEAN markets for CR and coating products</li> </ul>	<ul> <li>New growth market</li> </ul>	investment for globalization, ~4.0 bn USD in 2013-2016
to technology driven" – YiCai Financial, Jun 2015	May 2014 🔶 Maanshan Steel	<ul> <li>Applied to French govt. for acquisition of wheel producer Sasvaldunes</li> </ul>	<ul><li>Acquire technology</li><li>Extend footprints</li></ul>	ASEAN countries and South Africa for
"Steel companies could	May 2014 C Kunming Steel	<ul> <li>Commissioned JV in Vietnam for 1.0 mtpy integrated steel mill</li> </ul>	<ul> <li>New growth market</li> </ul>	new growth engine via JV of integrated steel
of steelmaking and distribution in ASEAN and Africa countries to	Sep 2014 HBIS Hebei Steel	<ul> <li>Started investment in South Africa for 5.0 mpty integrated steel mill</li> </ul>	<ul> <li>New growth market</li> </ul>	mill and distribution centers
extend value chain and expand sales, and take advantage of local raw material	Sep 2015 HBIS Hebei Steel	<ul> <li>Acquired European steel trader Duferco (annual trading volume ~20 mt)</li> </ul>	<ul><li>Extend footprints</li><li>Avoid anti-dumping</li></ul>	<ul> <li>While investments in European market mainly to acquire</li> </ul>
resources ideally" – Hebei Government, Nov 2014	Jul 2015 Delong Steel	<ul> <li>Commission of JV in Thailand for 0.6 mtpy steel sheet distribution center</li> </ul>	<ul> <li>New growth market</li> </ul>	technology as well as extend value chain and
	Apr 2016 HBIS Hebei Steel	<ul> <li>Acquired Zelezara Steel (~1.0 mtpy) in Serbia</li> </ul>	<ul> <li>Extend footprints</li> </ul>	markerrootphilts

SOURCE: Press search; McKinsey

### **End of document**