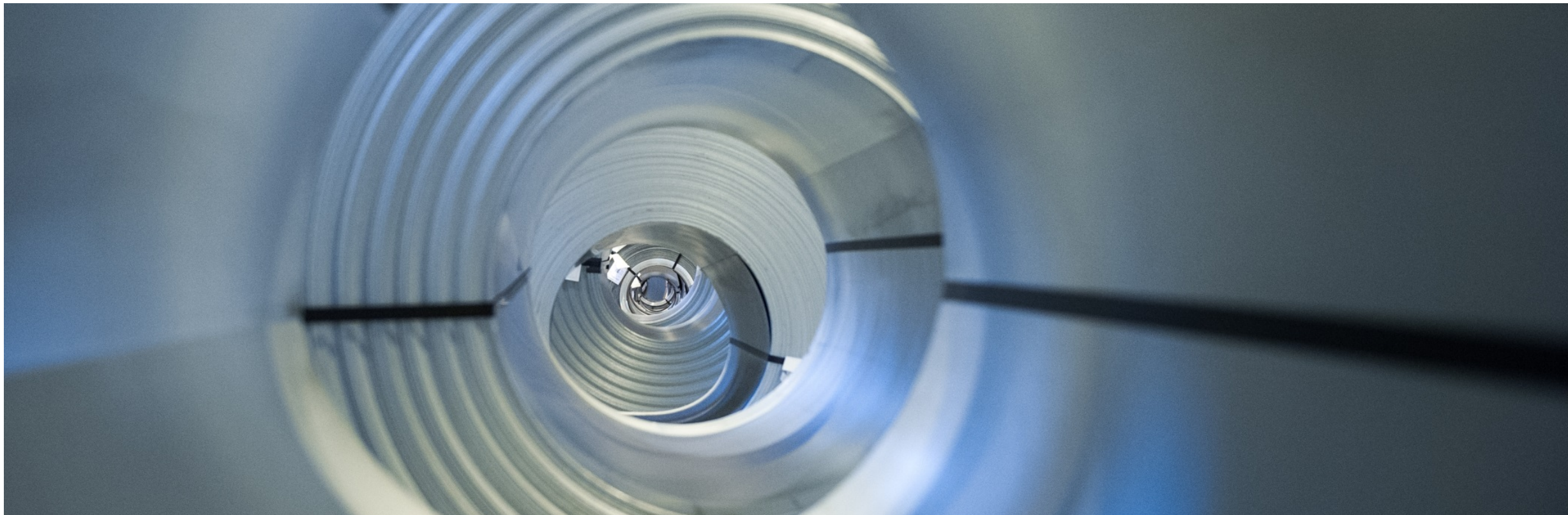


## **Global steel industry and its raw materials**

ALACERO Annual Conference 2019

November 12, 2019 – Buenos Aires



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# Agenda

- World Steel Association
- Steel demand prospects
- Global steelmaking structure and steelmaking materials markets
- Conclusions

**worldsteel**  
ASSOCIATION

**World Steel Association**



# Key facts - worldsteel today

- Headquarters in Brussels, second office in Beijing
- Over 160 Members:
  - 108 Regular
  - 53 Affiliated (Regional / National Associations and Steel Research Institutes)
- Membership HQs are located in over 50 countries
- 9 out of 10 of the world's largest steel companies are members
- Members represent around 85% of global steel production

# What is our role?

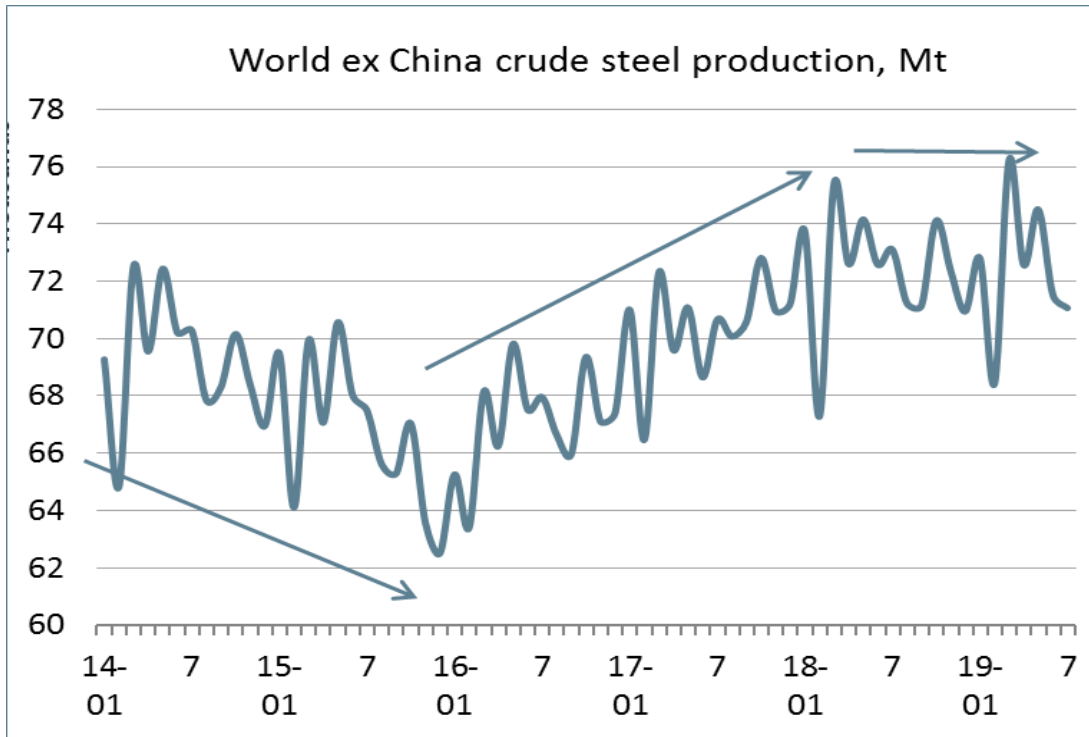
- worldsteel acts as the focal point for the steel industry.
- worldsteel provides global leadership on all major strategic issues affecting the industry, particularly focusing on economic, environmental and social sustainability.
- worldsteel promotes steel and the steel industry to customers, the industry, media, financial markets and the general public.
- worldsteel assists its members to develop the market for steel, managing major projects in a range of industry sectors.

## **Steel demand prospects**



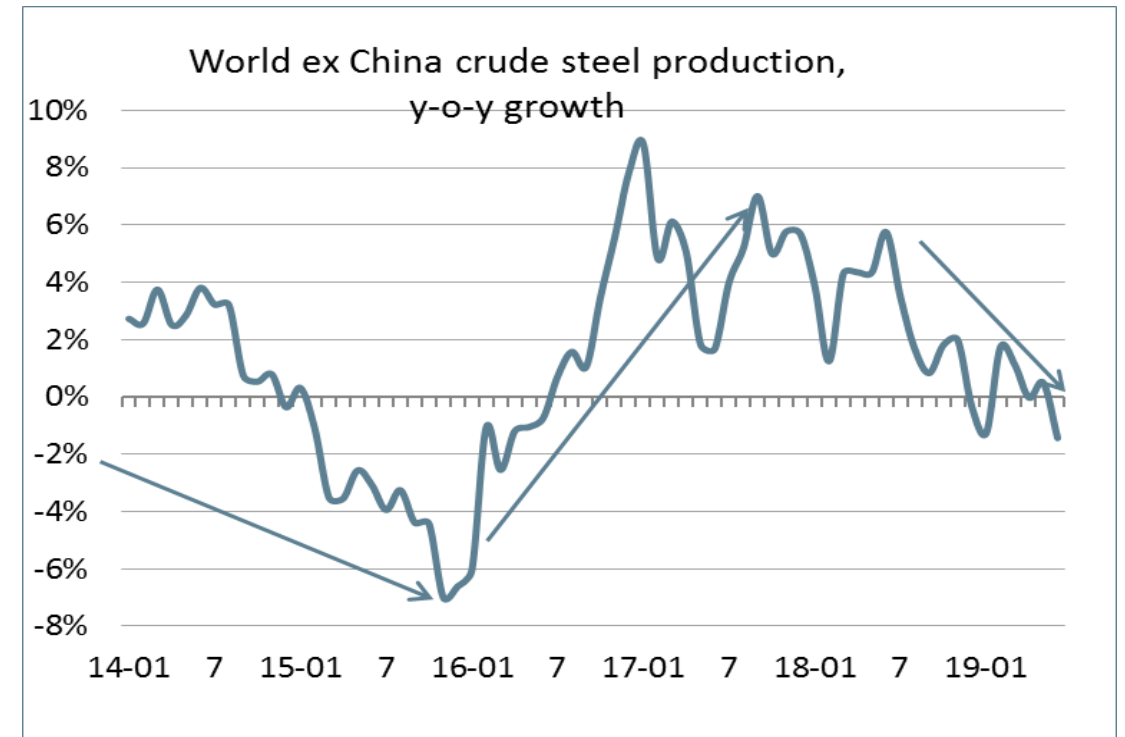
# Steel output: world-ex China

- Bottomed out in 2016 Q1. Hit 75 Mt per month level in 2018 Q1 thanks to a broad based recovery

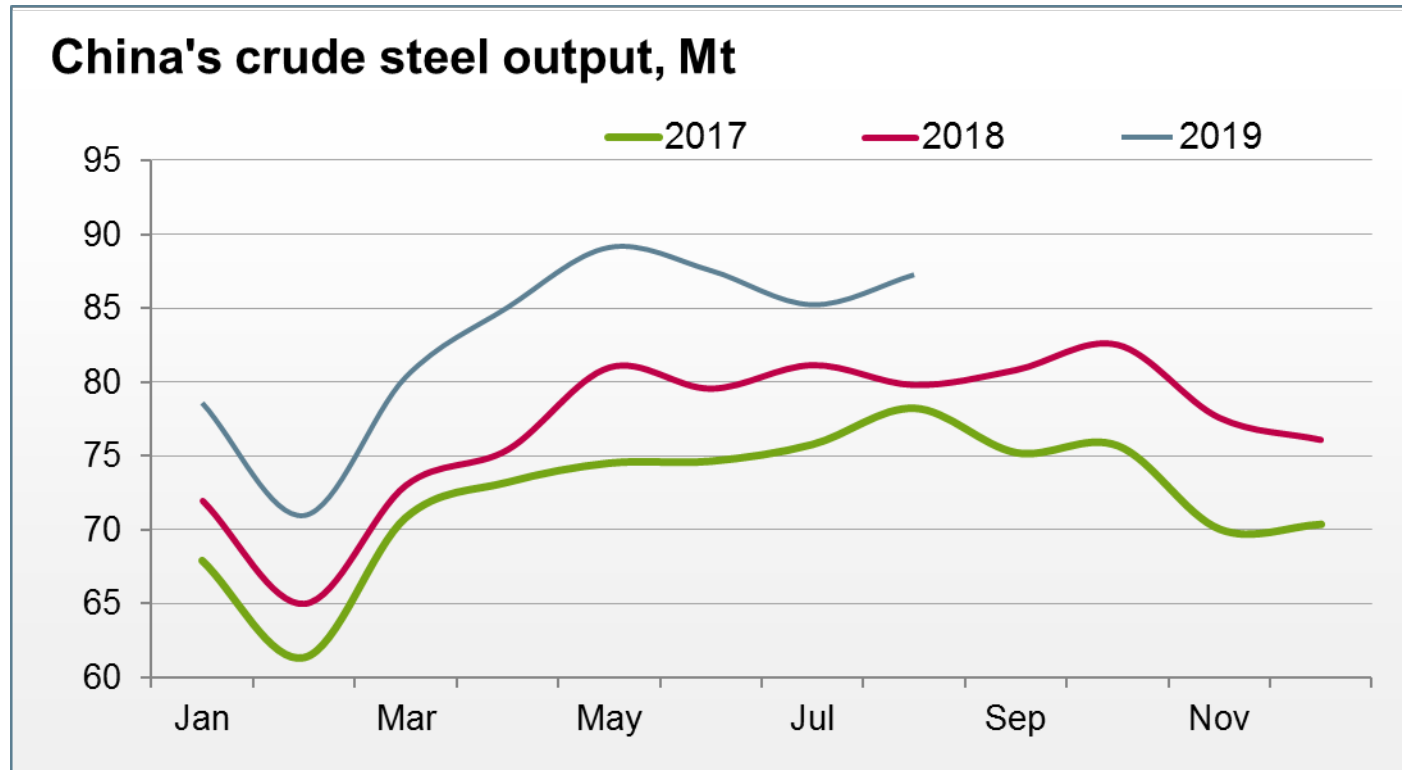


Source: worldsteel

- Recovery losing momentum since mid-18. Downturns in Turkey, EU, Japan; continued growth in US and India



# China: continued output surge, up 10% y-o-y in H1-19



Source: worldsteel

# worldsteel's latest short range outlook confirms weakening momentum

Steel demand, finished steel (SRO October 2019)

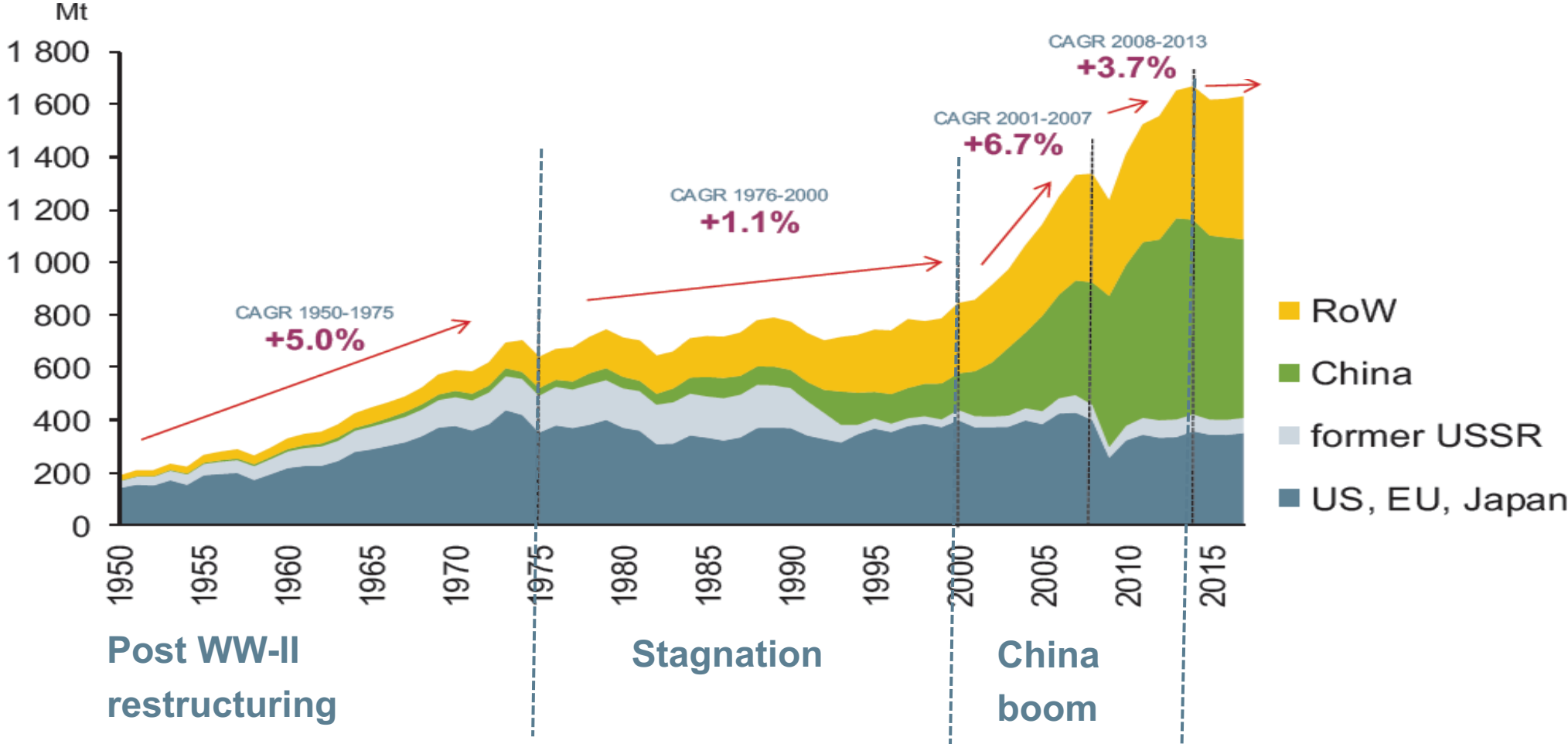
	million tonnes (Mt)			%			2020 as % of 2007
	2018	2019	2020	18/17	19/18	20/19	
<b>World</b>	<b>1 708.6</b>	<b>1 775.0</b>	<b>1 805.7</b>	<b>4.6/ 2.2*</b>	<b>3.9/ 2.0*</b>	<b>1.7</b>	<b>147.4</b>
European Union (28)	168.9	166.8	168.6	3.6	-1.2	1.1	83.1
Other Europe	37.4	32.9	34.5	-11.8	-12.1	5.0	114.0
CIS	55.3	58.0	59.2	1.9	4.8	2.0	103.8
NAFTA	140.6	141.5	142.6	0.9	0.6	0.8	101.2
Central & South America	43.9	43.8	45.5	4.0	-0.4	3.9	106.7
Africa	36.5	36.0	37.2	4.5	-1.4	3.2	162.9
Middle East	50.3	47.9	48.0	-5.7	-4.6	0.2	110.1
Asia & Oceania	1 175.7	1 248.1	1 270.0	6.5	6.2	1.8	185.5
China	835.0	900.1	909.1	7.9/ 3.0**	7.8/ 4.0**	1.0	217.3
Developing Asia excl. China	191.9	199.9	212.6	6.2	4.1	6.4	216.9
Developed Asia	142.2	141.6	141.8	-0.8	-0.4	0.2	88.7

\*- World growth rates based on adjusted Chinese growth rates

\*\* - Estimated real steel use growth rates based on China's steel using sectors dynamics

# Steel output growth in the medium-term

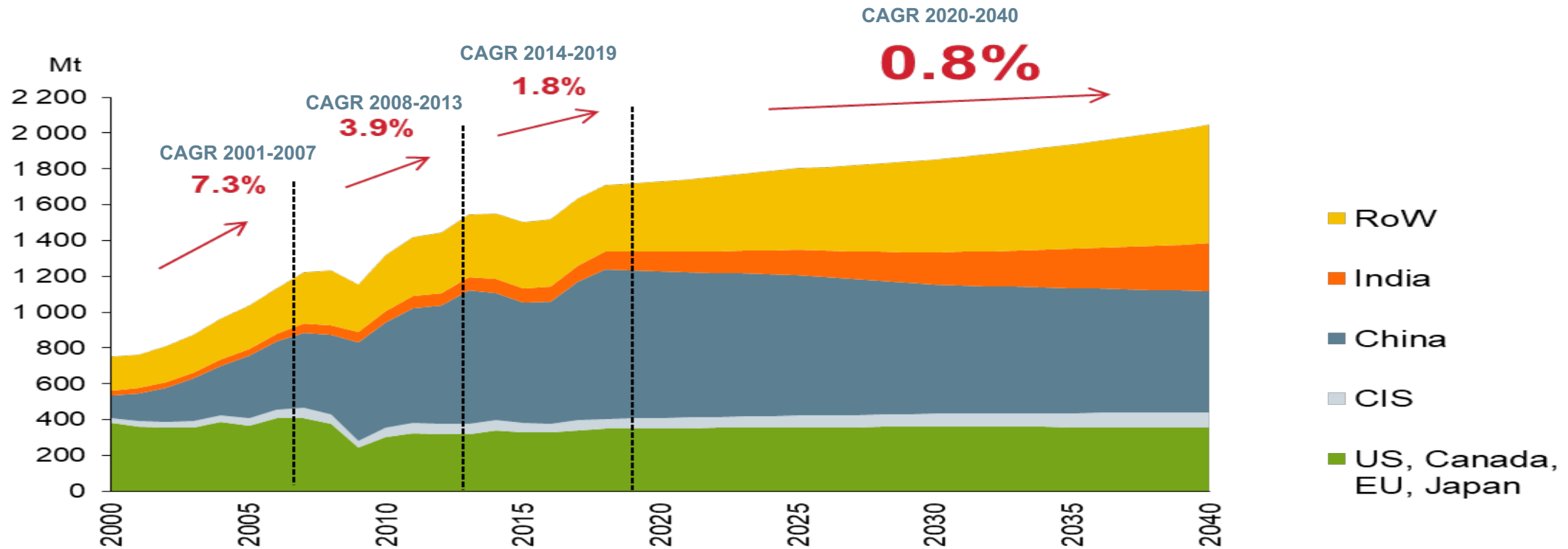
Evolution of global steel demand, 1950 - 2016



Source: worldsteel, steel demand in crude steel equivalent terms

# Slow global steel output growth in the medium-term

## Steel demand, 2000-2040



Source: worldsteel, steel demand finished steel

# Pockets of strong growth, but probably not big enough to result in another period of strong global steel demand growth

	Population, Million		Urbanization %		GDP per cap th real 2010 US\$		Steel use per cap kg	
	2016	2025	2016	2025	2016	2025	2016	2016 2007=100
India	1,324	1,452	32.7	37.0	1.8	3.1	63	144
Mexico	128	141	79.2	81.8	9.6	10.8	198	131
Vietnam	95	103	33.6	39.9	1.7	2.7	236	218
Turkey	80	86	73.4	77.7	14.0	18.2	428	128
Brazil	208	220	85.7	87.8	10.7	12.9	87	76
Developed Economies*	1,045	1,080	80.4	82.3	45.5	51.7	381	80

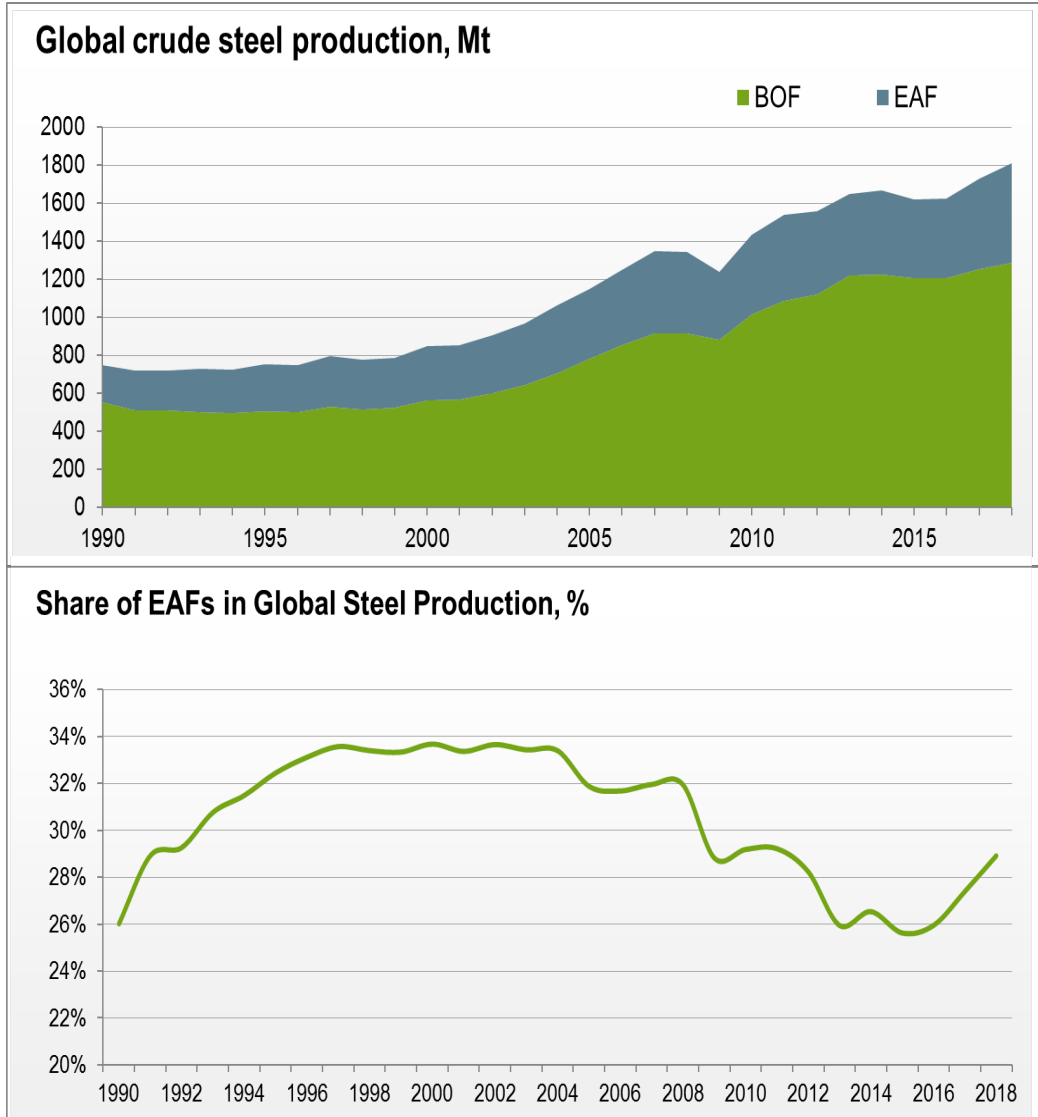
Source: worldsteel, Global Insight, UN World Population Prospects 2017 Revision, UN World Urbanisation Prospects 2014 Revision

\* High income economies for urbanisation, Advanced Economies grouping from Global Insight

## **Steel production structure and raw materials markets**



# Global steel production structure



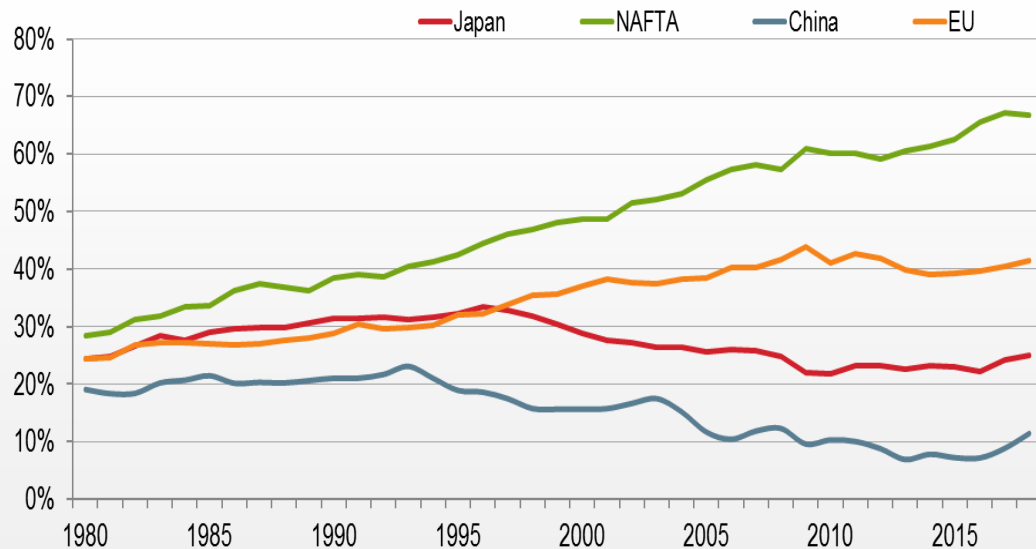
Source: worldsteel Raw Materials Demand Model

- World crude steel production hit 1.8 Gt in 2018: BOF at 1.29 Gt and EAF at 523 Mt
- EAFs share in global steel production decreased from about 34% in early 2000's to almost 25% in 2010's...
- Closure of IFs in 2017 has resulted in a scrap surplus in China
- Combined with environmental actions, such as curbs on BF operations, this resulted in a strong jump in the share of EAFs in China's total output
- And an increase in share of EAFs in global steel output

# Steel production shows different characteristics at different regions

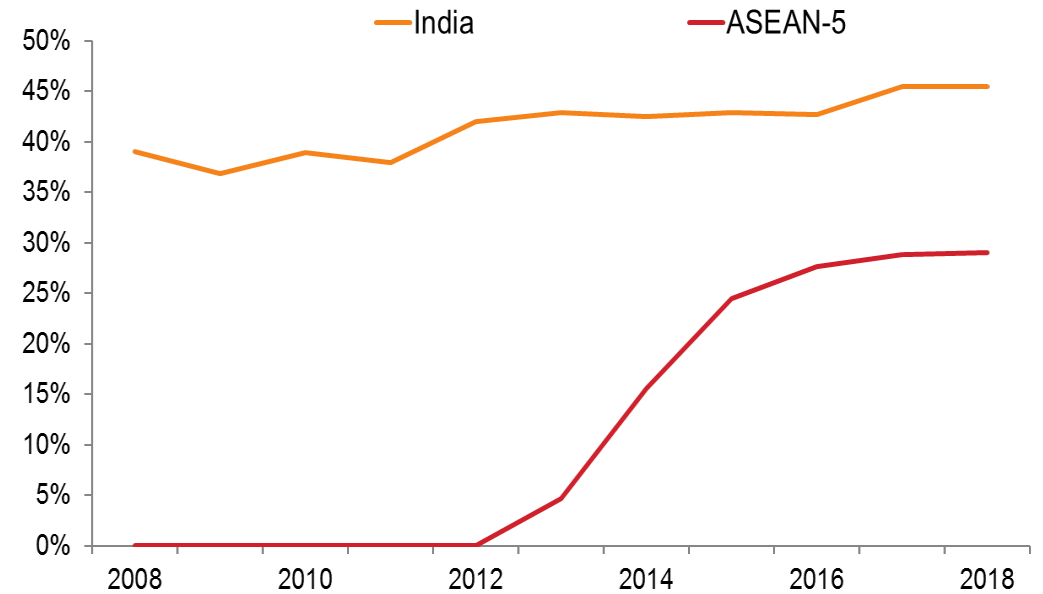
- Japan, US and EU, three scrap surplus regions, had a similar level for the share of EAFs in total steel output in 1980's...

Share of EAFs in different regions, %



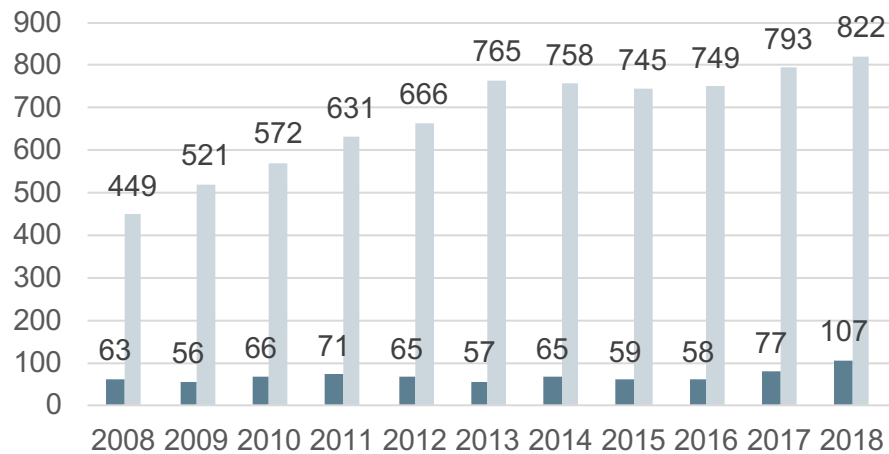
- Share of BOFs showing growth in India and ASEAN

Share of BOF in crude steel production, %

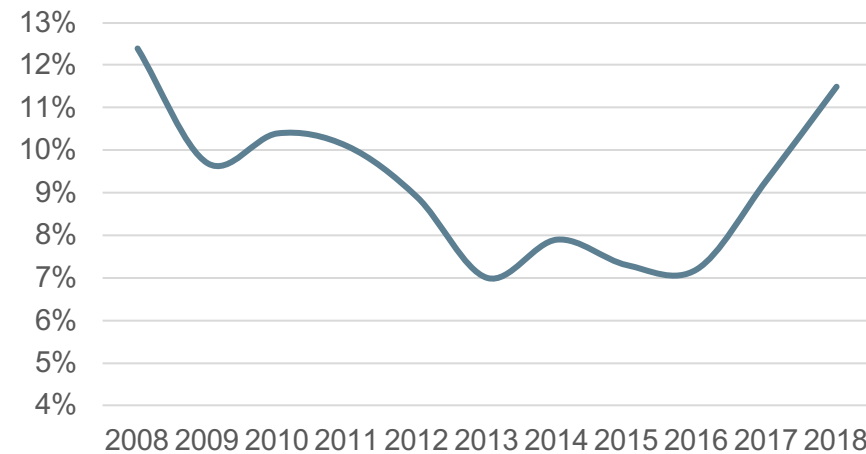


# Share of EAFs in China's total crude steel output continued to increase in 2018

China crude steel output by EAF & BOF, Mt

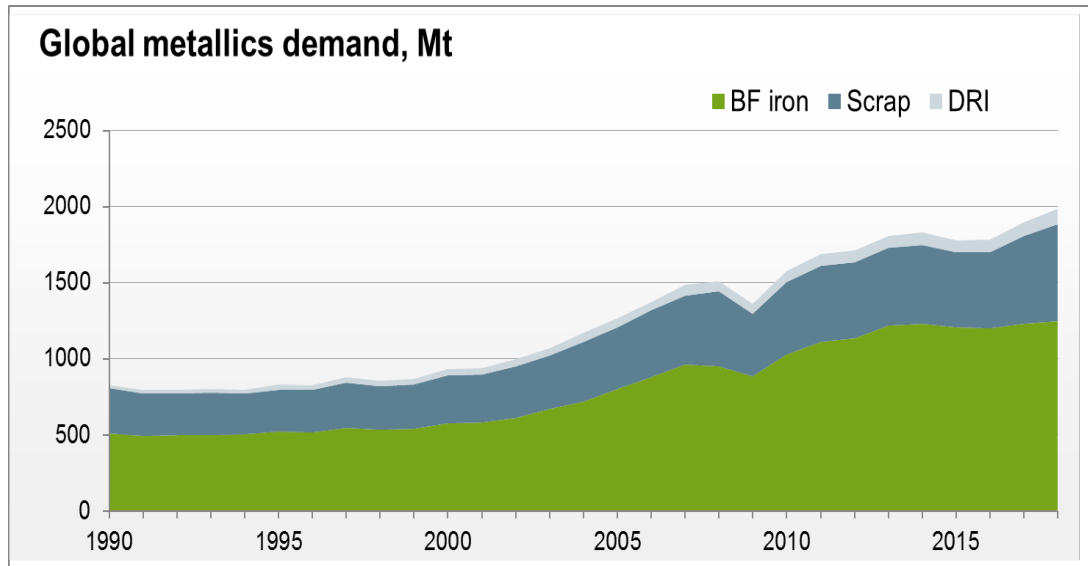


Share of EAFs in total crude steel output



- China's EAF output in 2017 estimated at 77 Mt, accounting for 9.3% of the total and a jump from 7.2% in 2016
- Allegedly China's EAF output continued to grow in 2018 and reached above 100 Mt (varying estimates for EAFs share from different sources: CAMU 9.8%, BIR 13%)
- Increasing availability of scrap resulted in a higher scrap charge in BOFs in China since 2017

# Global metallic demand for steelmaking

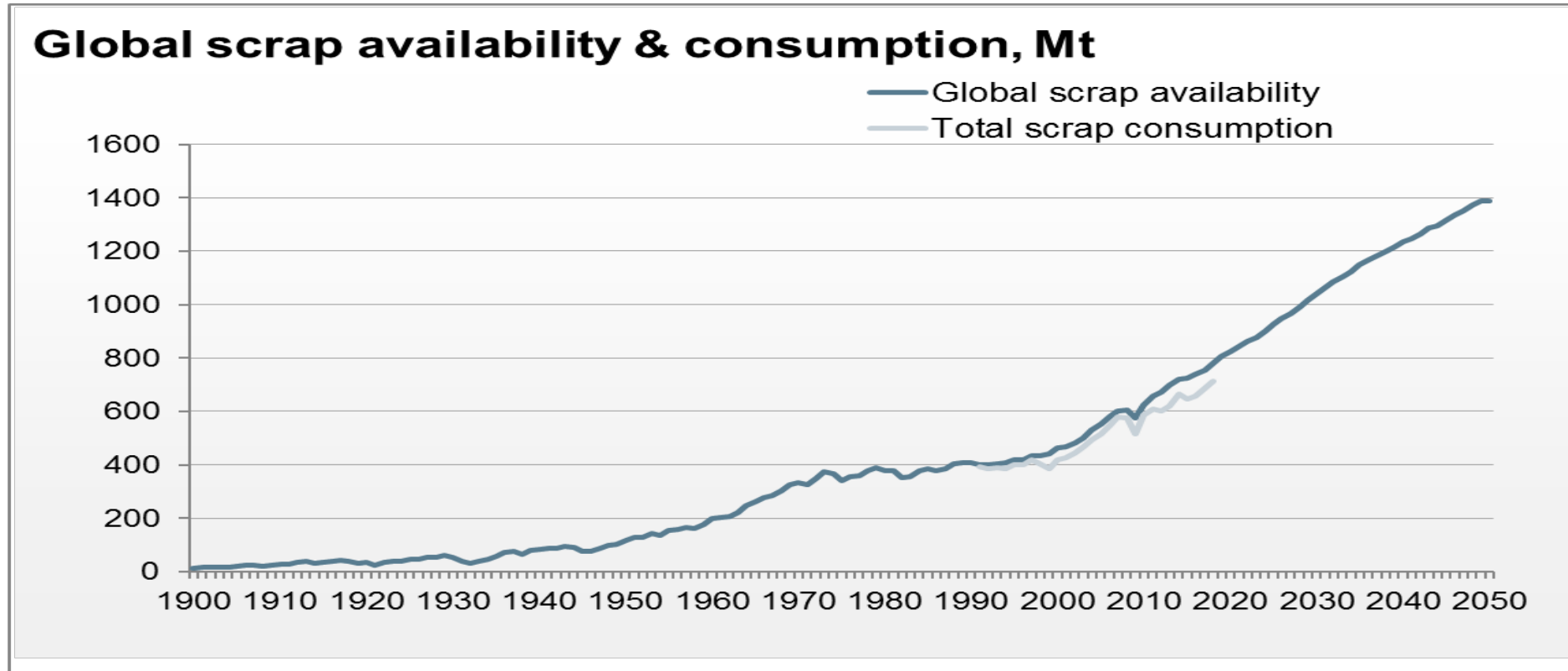


	Share 2000	Share 2016	Share 2018
BF iron	61%	67%	63%
Scrap	34%	28%	32%
DRI	5%	5%	5%

- In 2018 steel industry used about 1.25 Gt of hot metal, 640 Mt of scrap and 100 Mt of DRI
- Compared with only 570 Mt of hot metal, 320 Mt of scrap and 43 Mt of DRI in 2000
- Reflecting the change in global steel production structure in 2000's, share of blast furnace iron in steelmaking increased and that for scrap decreased
- Scrap gaining share since 2017

Source: worldsteel Raw Materials Demand Model

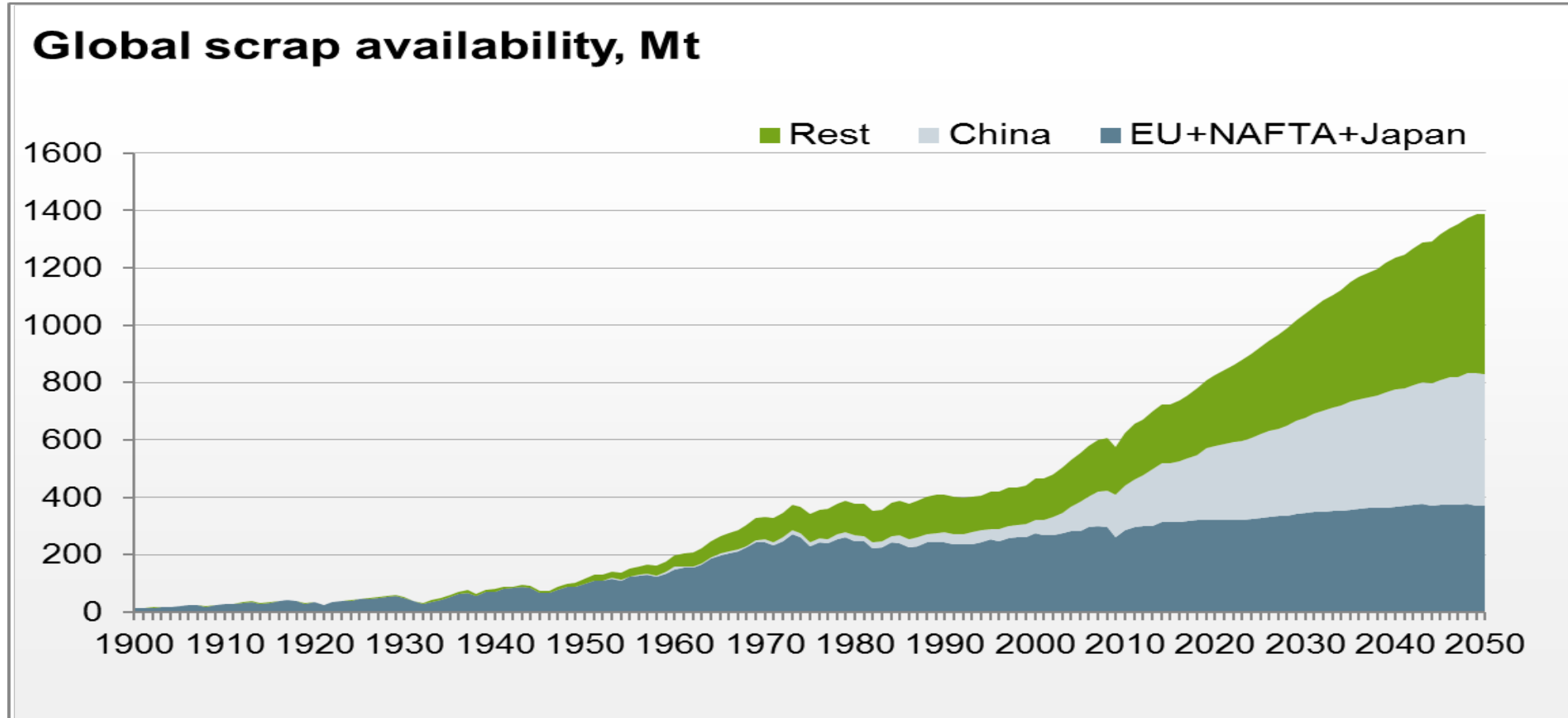
# worldsteel's global scrap availability and consumption estimates



- Global ferrous scrap availability expected to increase to 1 bn tonnes in 2030 and 1.4 bn tonnes in 2050 from about 780 Mt in 2018

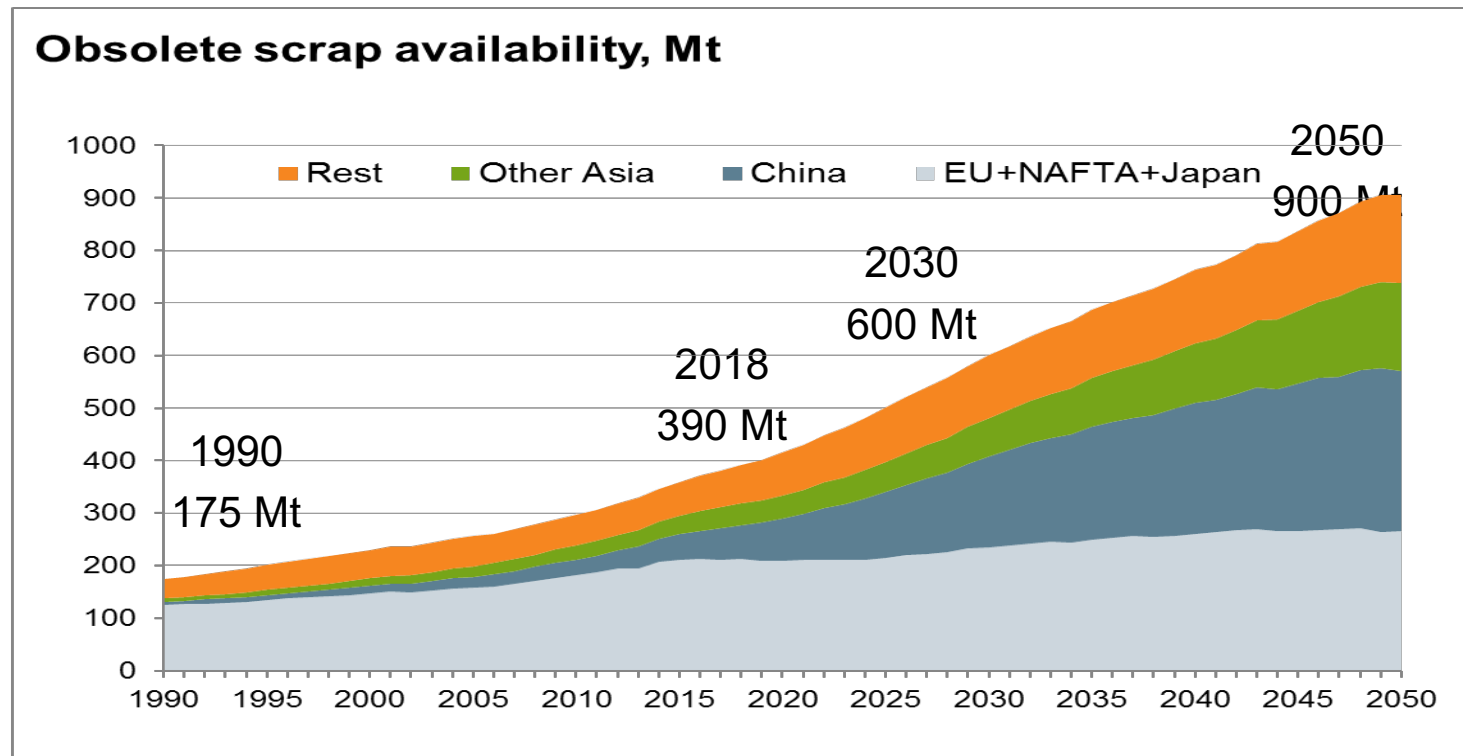
Source: worldsteel's Raw Materials Demand and Scrap Availability Models

# Scrap availability to surge in developing world, particularly in China



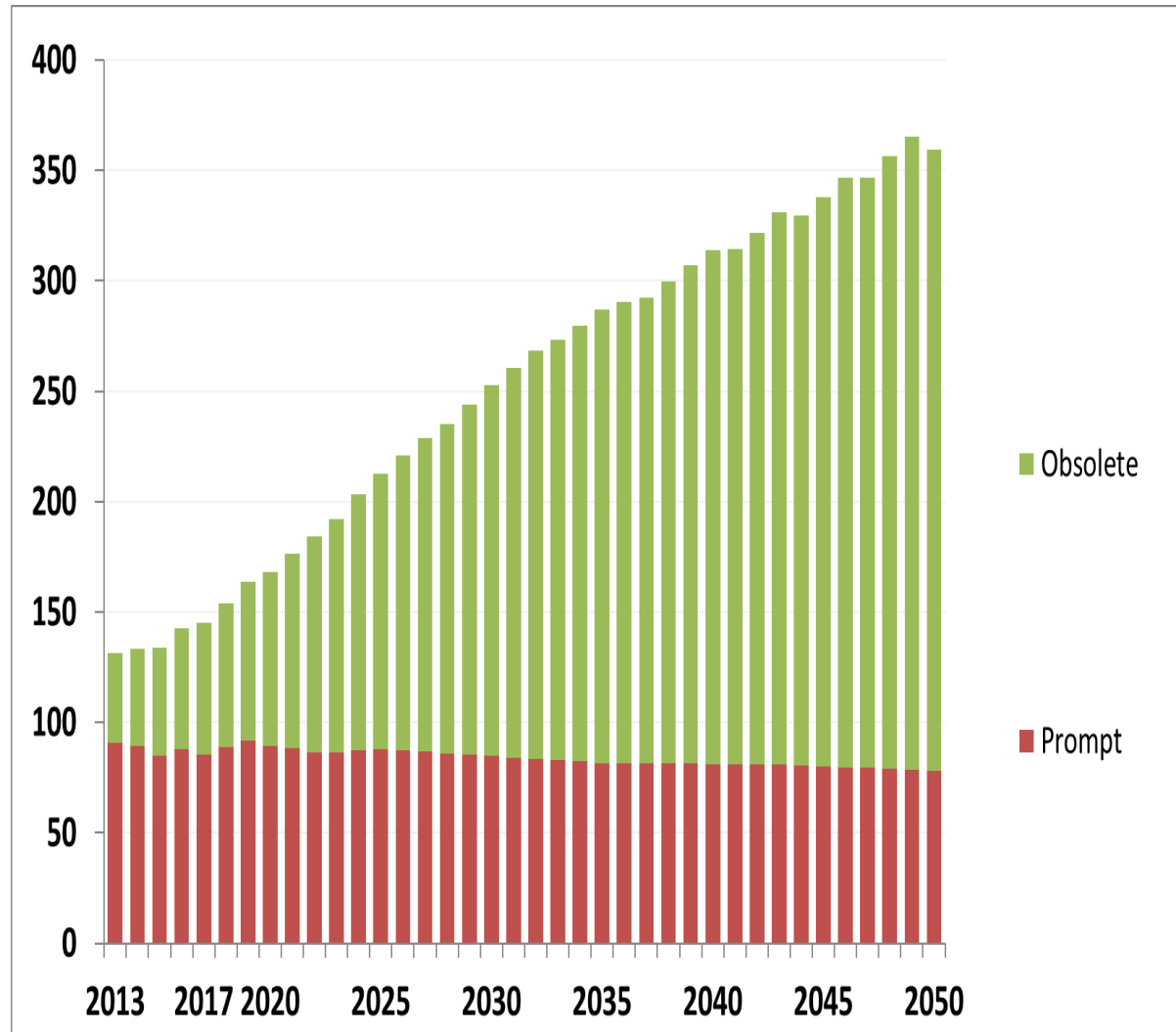
Source: worldsteel's Scrap Availability Model

# Obsolete scrap wave approaching



- Obsolete scrap availability estimates
  - EU+NAFTA+Japan: 210 Mt in 2018, 235 Mt in 2030, 265 Mt in 2050
  - China: 65 Mt in 2018, 175 Mt in 2030, 300 Mt in 2050
  - Other Asia: 40 Mt in 2018, 75 Mt in 2030, 165 Mt in 2050
  - Rest: 70 Mt in 2018, 120 Mt in 2030, 170 Mt in 2050

# China scrap availability: China is consuming almost all of scrap availability domestically

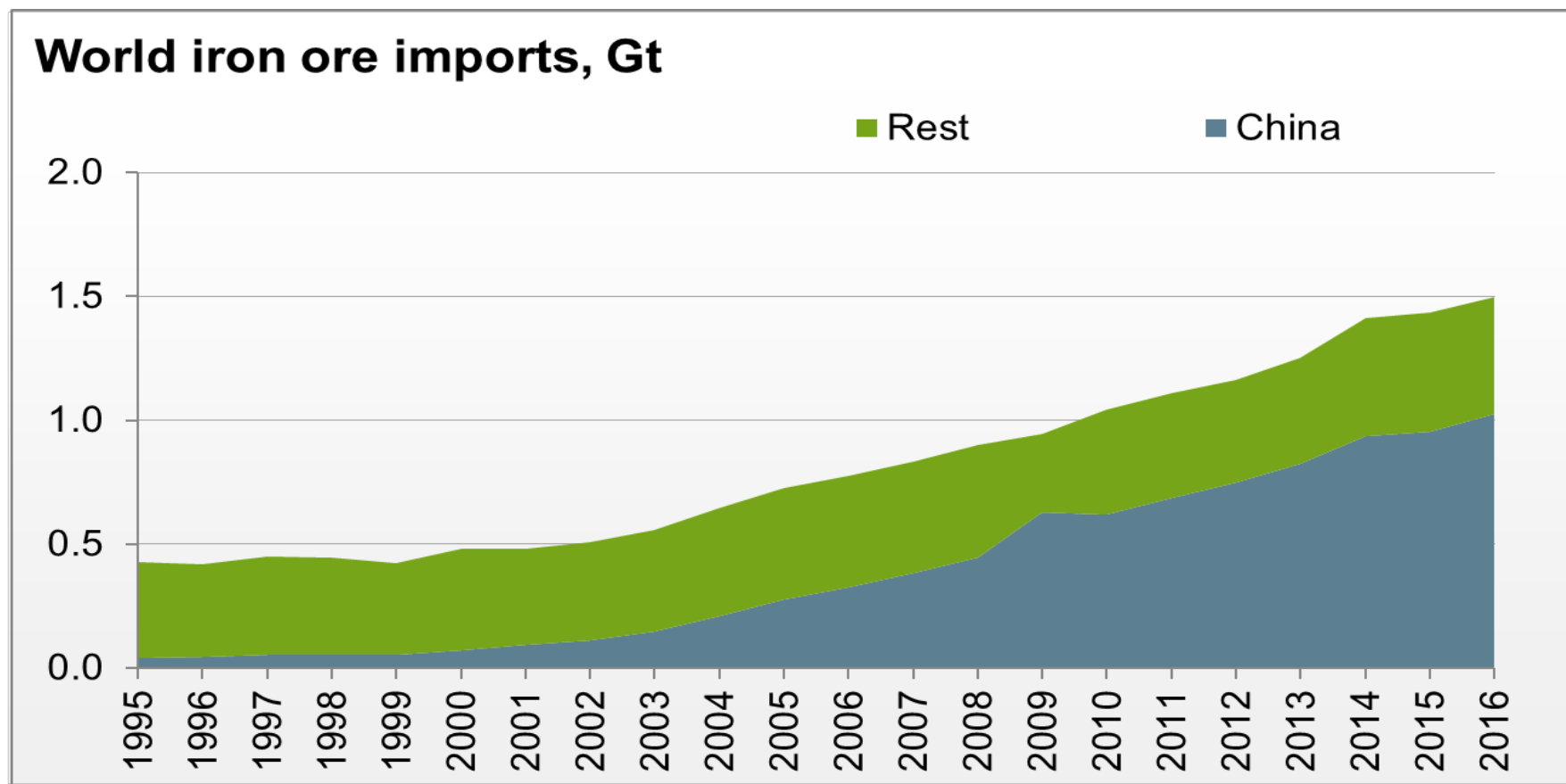


... However, with the steel demand stabilizing, we expect that Chinese scrap consumption will probably not catch up with the increase in scrap availability

China has the potential to become a scrap exporter by mid-20's

Increase in scrap availability seem to be increasing scrap charge ratios and usage

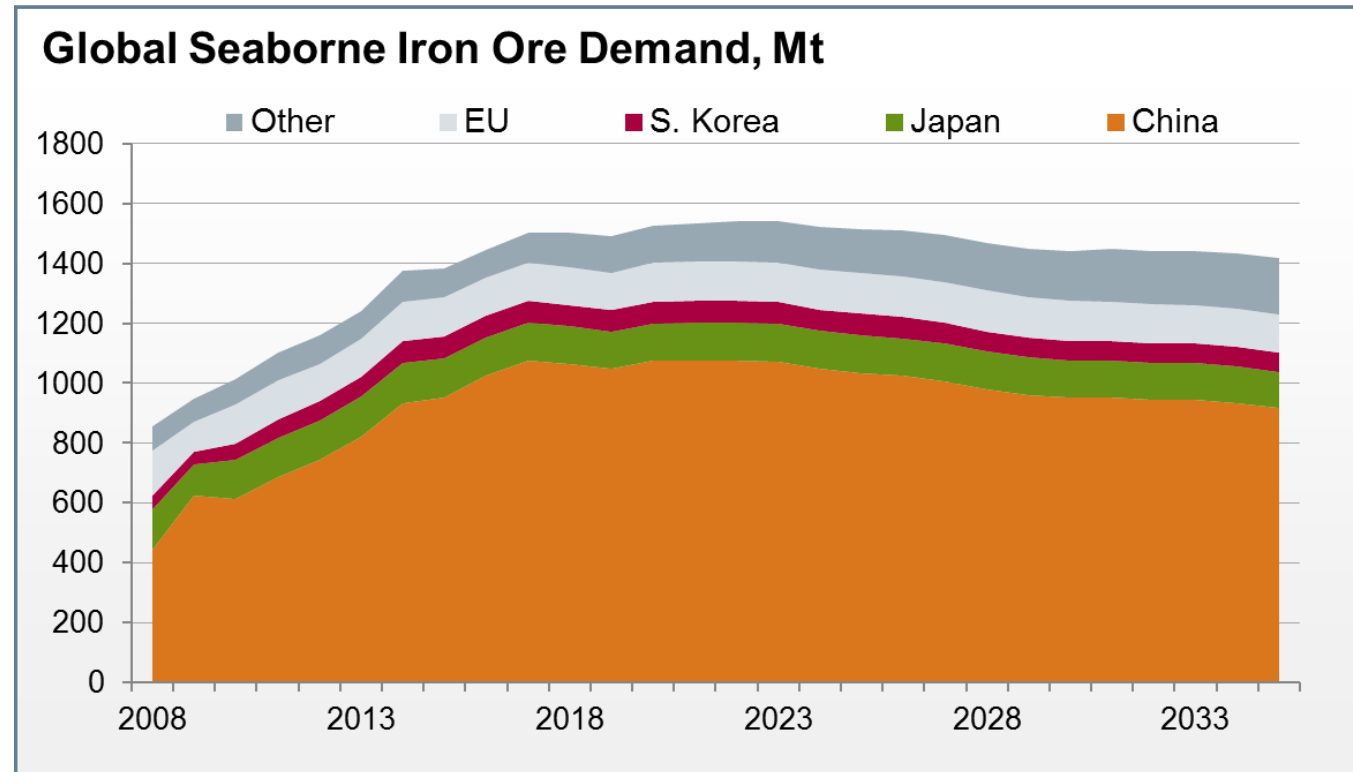
# Iron ore and metallurgical coal



- The super-cycle has resulted in a **dramatic decline in the quality** of steelmaking materials and an **ongoing tightness** for higher quality material

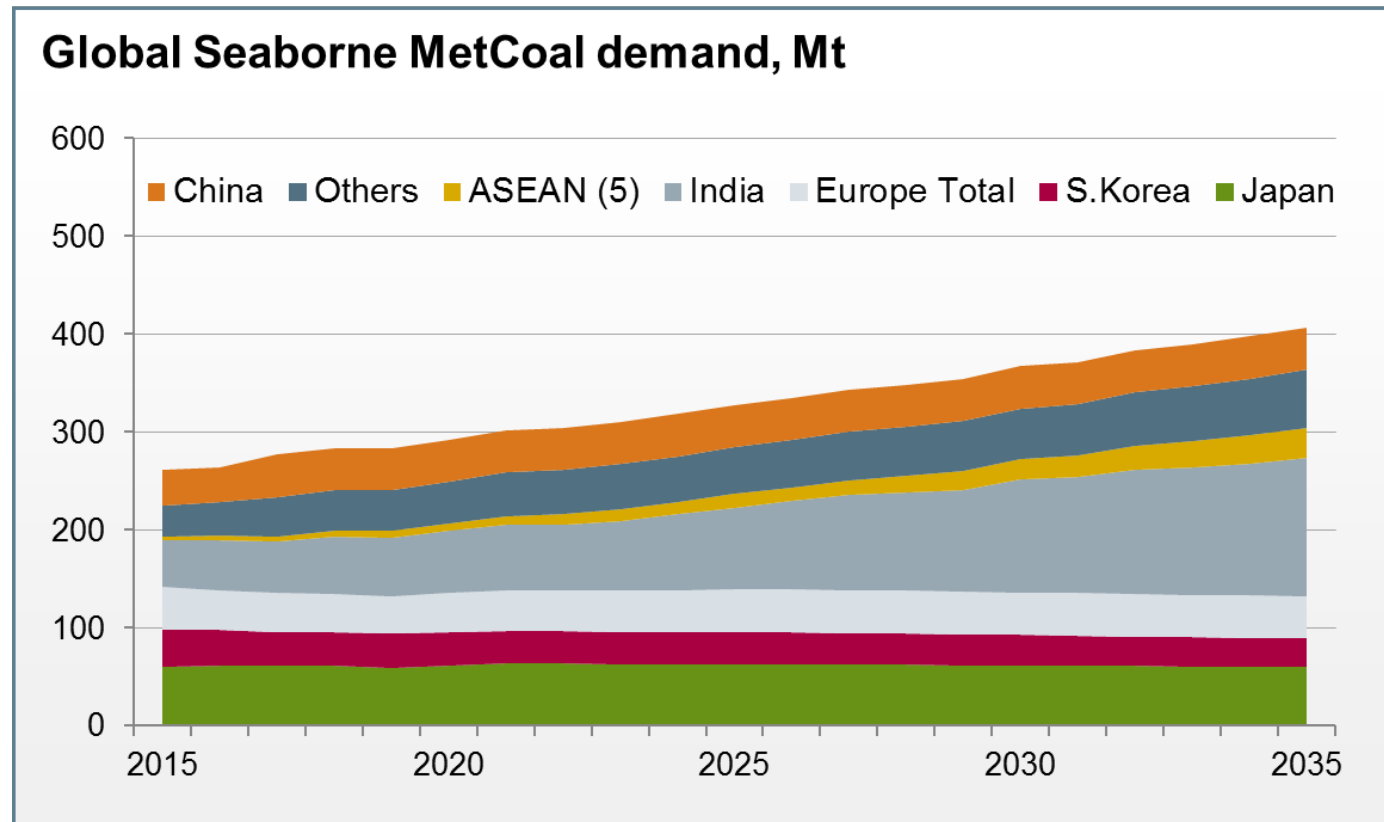
Source: worldsteel

# Seaborne iron ore demand is around its historical peak and expected to enter a decline phase within the next decade



- The decline will mainly be driven by declining steel demand and BF-output requirement in China

# Seaborne metcoal demand expected to continue growing thanks to strong growth potential in India and ASEAN



## **Conclusions**



# Conclusions

- Steel demand prospects: mid 2010's represent an inflection point for global steel demand from strong growth to weak growth era
- worldsteel's latest short range outlook confirms weakening momentum
- Obsolete scrap availability to grow by about 200 Mt by 2030 and 500 Mt by 2050
- In raw materials markets, concerns about quality deterioration, exposure to high weather and operational risk resulting in periods of severe volatility, and long-term metallurgical coal availability

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A S S O C I A T I O N

[worldsteel.org](http://worldsteel.org)