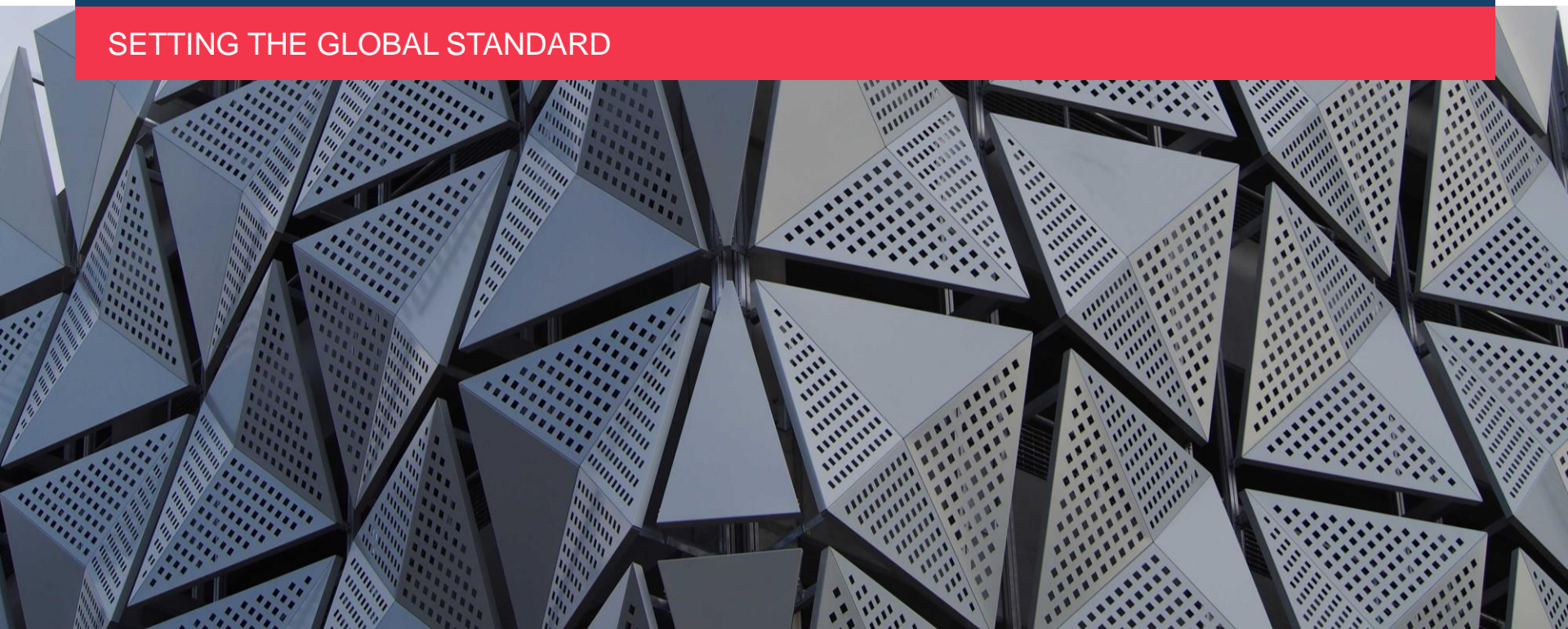


# LME Ferrous Kallanish 3<sup>rd</sup> Asia Steel Markets

Edric Koh  
Head of Corporate Sales, Asia  
April 2019



SETTING THE GLOBAL STANDARD



# Agenda

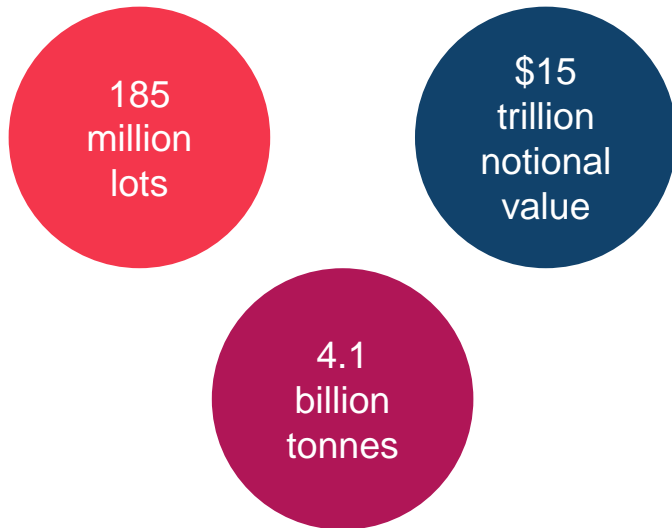
Section	Title
1.	Overview of the LME
2.	LME Ferrous

# Overview of the LME

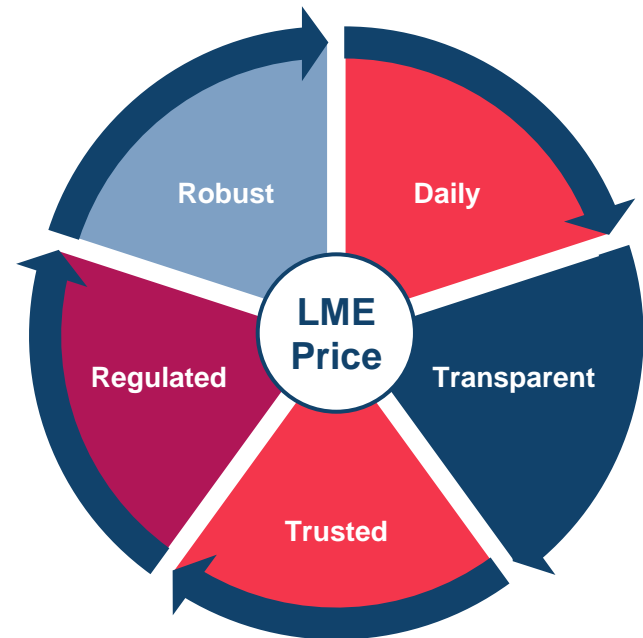
# The LME is the leading global venue for metal market participants to manage their price risk

LME is the leading global exchange in all non-ferrous metals

In 2018, the LME traded in excess of

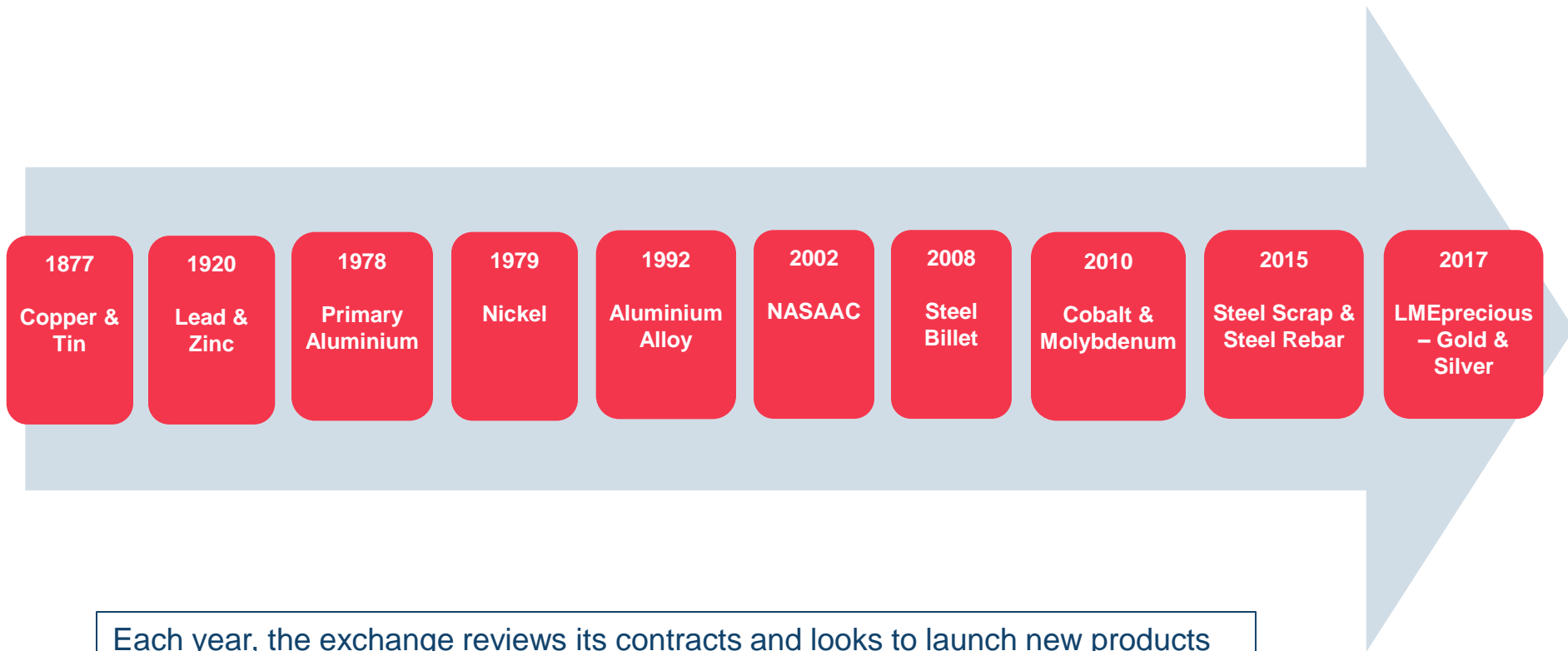


LME provides market leading pricing of futures contracts



# The LME metals

New contracts have been added to the initial copper and tin contracts over the over the past ~100 years...



Each year, the exchange reviews its contracts and looks to launch new products to meet the needs of the industry.

# New products complement LME's existing offering

Seven new contracts to be launched in Q1 2019 across three product suites

	Current contracts (physical)	Current contracts (cash settled)	New contracts (cash settled)
1. Aluminium	Primary aluminium		EU Duty Unpaid Aluminium Premium
	NAASAC/Aluminium alloy		US Duty Paid Aluminium Premium
	Aluminium premiums		Alumina
2. Ferrous		Steel scrap (cash settled)	HRC N America
		Steel rebar (cash settled)	HRC FOB China
3. Minor metals	Cobalt		Cobalt
	Molybdenum		Molybdenum

# LME Ferrous

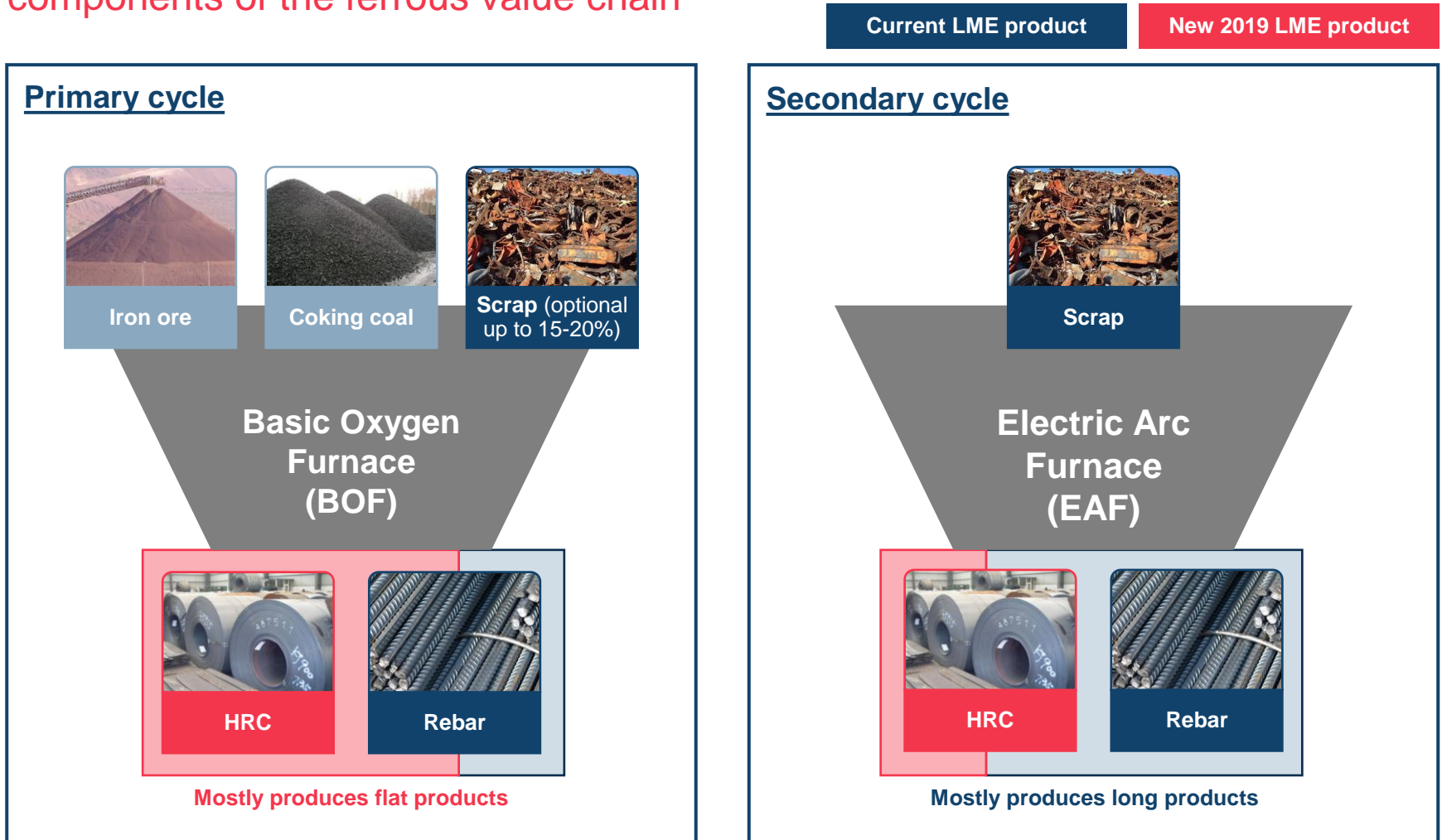
# LME steel suite: contract specifications

	LME Steel Scrap	LME Steel Rebar	LME Steel HRC FOB China (Argus)	LME Steel HRC N. America (Platts)
<b>Status</b>	Live since November 2015		Launch on 11 March 2019	
<b>Underlying index</b>	Platts TSI HMS 1&2 (80:20) CFR Turkey	Platts Rebar, FOB Turkey Port	Argus HRC FOB Tianjin China	Platts TSI HRC US EXW Indiana
<b>Initial margin per lot (as of Mar-19)</b>	\$360	\$360	\$370	\$510
<b>Bloomberg ticker</b>	JBOA Comdty	JBPA Comdty	LCYA Comdty	HUSA Comdty
<b>EIKON RIC</b>	0#CSSCF:	0#CSRRF:	0#CMHCF:	0#CLHUF:
<b>Lot size</b>	10 metric tonnes			10 short tons
<b>Price quotation</b>	USD / metric tonne			USD / short ton
<b>Contract type</b>	Cash settled futures			
<b>Contract period</b>	Monthly out to 15 months			
<b>Trading venues</b>	LMEselect and Inter-office telephone			
<b>Margining</b>	Realised variation margins applied			
<b>Trading and clearing fees</b>	For an exchange contract: \$0.10 per lot (\$0.01 per metric tonne) For a client contract: \$0.30 per lot (\$0.03 per metric tonne)			



# Ferrous value chain can be simplified to two cycles

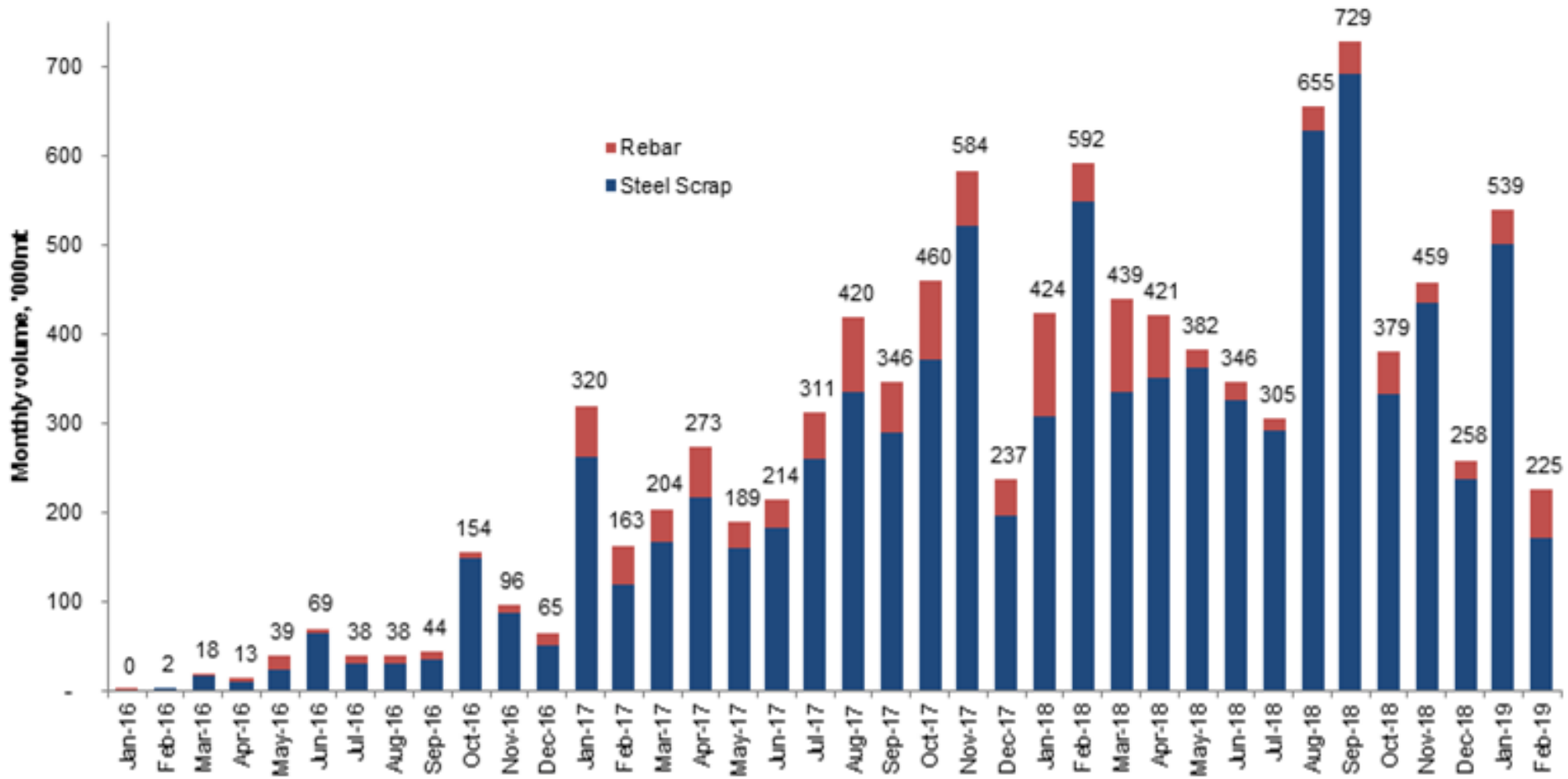
With the addition of three regional HRC contracts, LME will cover the key components of the ferrous value chain



# The existing LME steel contracts continue growing

C.8.4 million tonnes of scrap and 1.3 million tonnes of rebar traded since launch

LME Steel, monthly traded volumes in '000mt, Jan16-Feb19



Source: LME

# LME Steel Suite – Forward Curves

**LME Steel Scrap**  
(USD /mt)

Contract	BQty	Bid	Offer	OQty
SCDMAR19	5	320.50	328.50	5
SCDAPR19	7	312.50	318.50	5
SCDMAY19	5	308.00	316.00	1
SCDJUN19	5	306.50	316.00	5
SCDJUL19	10	305.00	315.00	10
SCDAUG19	5	305.00	315.00	5
SCDSEP19	10	304.00	314.00	10
SCDOCT19	6	303.00	313.00	6
SCDNOV19	1	302.00	311.50	1
SCDDEC19	1	301.00	310.50	1
SCDJAN20	1	300.00	309.50	1
SCDFEB20	1	300.00	309.50	1
SCDMAR20	1	299.50	309.00	1
SCDAPR20	1	298.50	308.00	1
SCDMAY20	2	297.00	307.00	2

**LME Steel Rebar**  
(USD /mt)

Contract	BQty	Bid	Offer	OQty
SRDMAR19	5	473.00	483.00	5
SRDAPR19	5	470.50	478.00	5
SRDMAY19	5	468.00	477.00	5
SRDJUN19	5	466.00	475.00	5
SRDJUL19	5	464.00	473.00	5
SRDAUG19	5	463.50	472.00	5
SRDSEP19	5	461.00	470.00	5
SRDOCT19	6	461.00	471.00	6
SRDNOV19	1	461.00	470.50	1
SRDDEC19	1	460.50	470.00	1
SRDJAN20	1	459.00	468.50	1
SRDFEB20	1	458.00	467.50	1
SRDMAR20	1	457.50	467.00	1
SRDAPR20	1	456.50	466.00	1
SRDMAY20	2	455.00	465.00	2

**LME Steel HRC N.America (Platts)**  
(USD /mt)

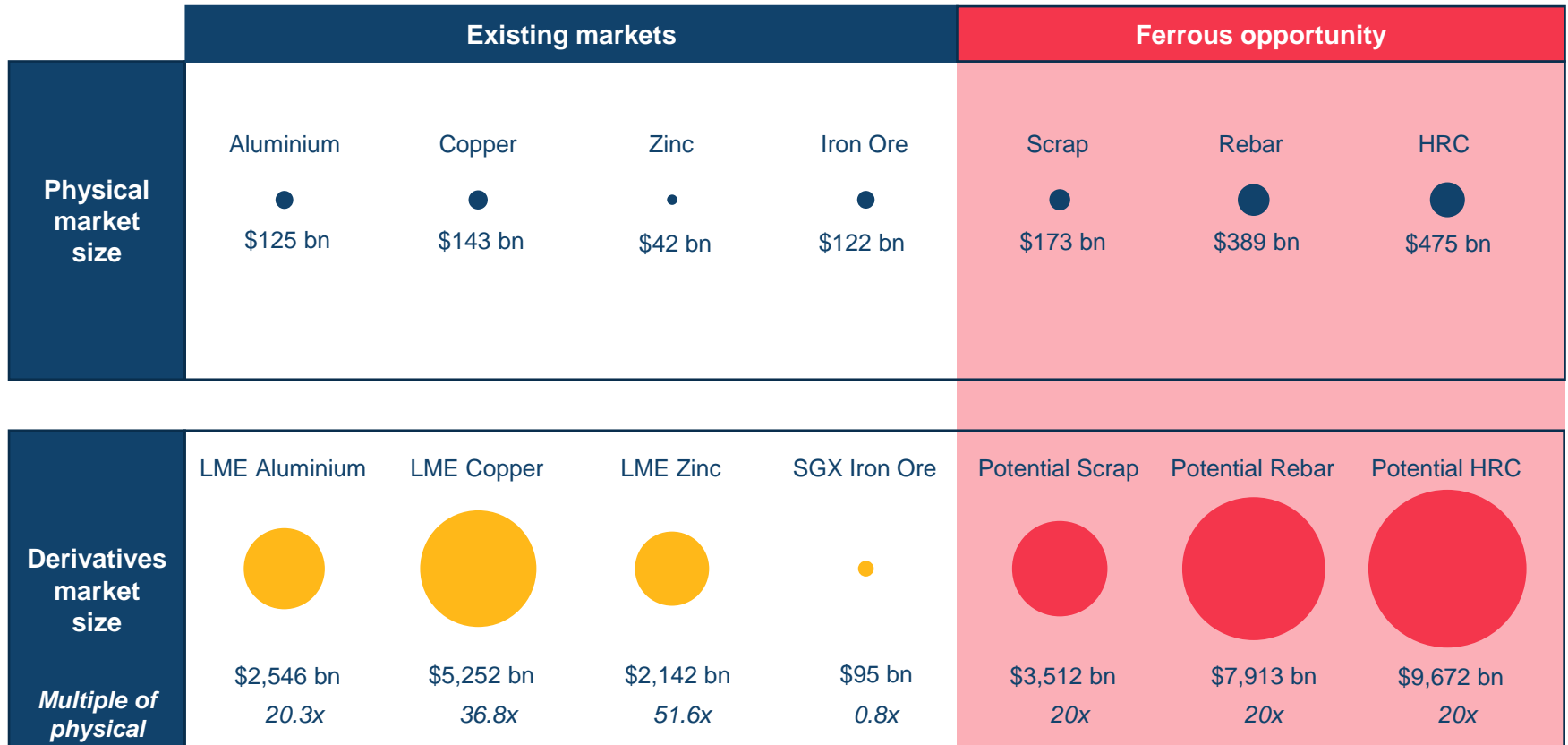
Contract	BQty	Bid	Offer	OQty
HUDAPR19	10	693.00	703.00	10
HUDMAY19	10	696.00	706.00	10
HUDJUN19	10	695.00	705.00	10
HUDJUL19	10	695.00	705.00	10
HUDAUG19	10	695.00	705.00	10
HUDSEP19	10	695.00	705.00	10
HUDOCT19	10	695.00	705.00	10
HUDNOV19	2	691.00	701.00	2
HUDDEC19	2	687.00	697.00	2
HUDJAN20	2	682.00	692.00	2
HUDFEB20	2	677.00	687.00	2
HUDMAR20	2	675.00	685.00	2
HUDAPR20	2	673.00	683.00	2
HUDMAY20	2	672.00	682.00	2

**LME Steel HRC FOB China (Argus)**  
(USD /mt)

Contract	BQty	Bid	Offer	OQty
HCDAPR19	10	518.00	528.00	10
HCDMAY19	10	512.00	522.00	10
HCDJUN19	10	505.00	515.00	10
HCDJUL19	10	500.00	510.00	10
HCAUG19	10	494.00	504.00	10
HCDOCT19	10	481.00	491.00	10
HCDNOV19	5	474.00	483.50	1
HCDDEC19	2	468.00	478.00	2
HCDJAN20	2	460.00	470.00	2
HCDFEB20	2	454.00	464.00	2
HCDMAR20	2	453.00	463.00	2
HCDAPR20	2	452.00	462.00	2
HCDMAY20	2	451.00	461.00	2

# Steel market represents a significant opportunity

The steel industry is still new to hedging, but its size and extended value chain suggest it could support a sizeable market for futures trading



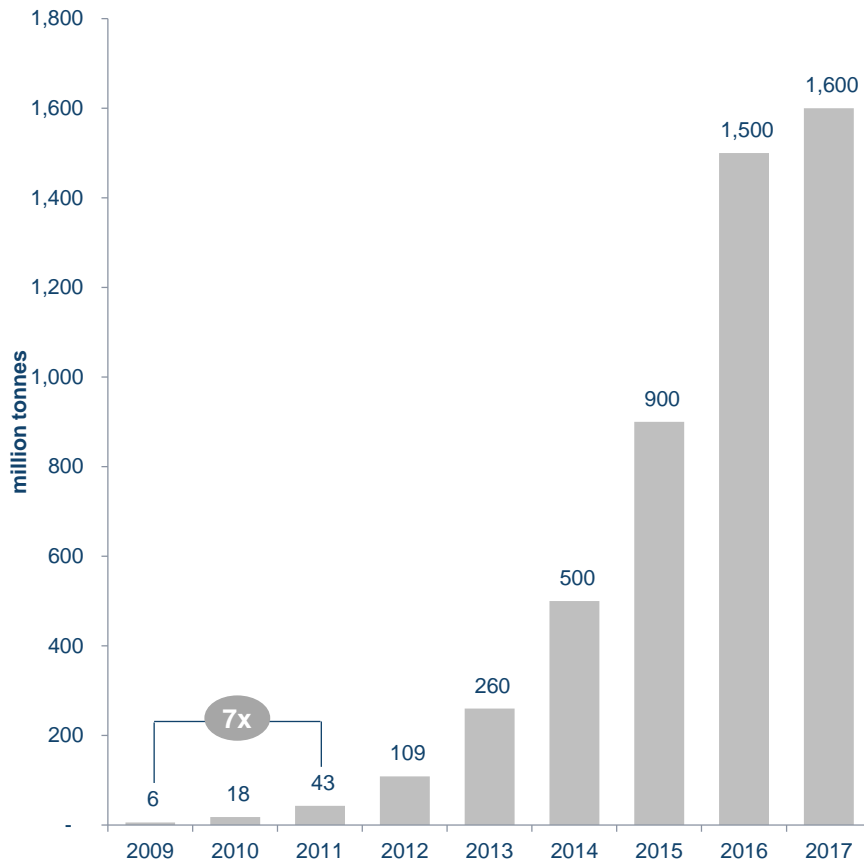
Notes: physical market sizes based on 2017 consumption figures, excluding rebar and HRC that are based on production data for 2016, multiplied by the 2017 average prices (3mo for base metals and front month settlements for steel). Notional values of the derivative markets were calculated by multiplying 2017 annual traded volumes (across all contract types) by the same prices used for in the physical market calculations.

Sources: Bloomberg, CME, LME, Platts, SGX, WoodMac, WorldSteel

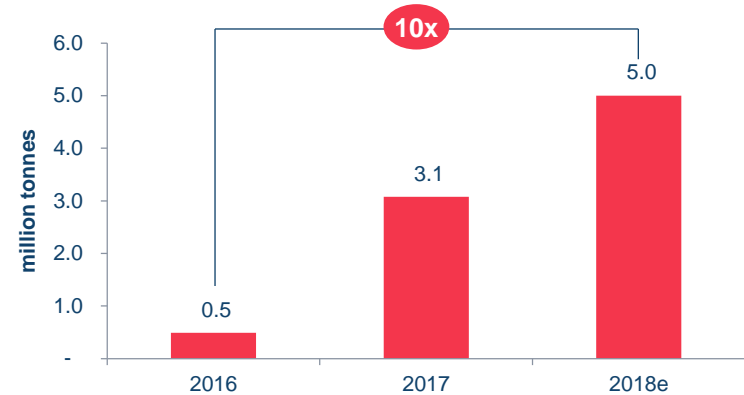
# Ferrous derivatives trading is growing rapidly

The steel industry has recently shown increased awareness and adoption of derivatives and risk management

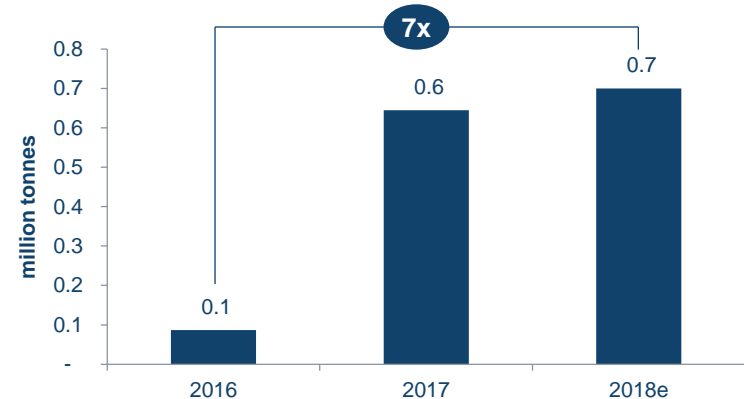
SGX Iron Ore futures, options and swaps volumes



LME Steel Scrap volumes



LME Steel Rebar volumes



Source: LME, Platts

# Existing trade clients have exposure to steel

There is an untapped market that is already set up to trade non-ferrous metals and can be leveraged across adjacent business lines



Steel mills



Recyclers



Service centres



Trade houses



Automotive



White goods



Heavy machinery



And many more...

# Why is this the right time to focus on steel?

Higher awareness of risk management in the steel industry is driving client demand for steel derivatives

“Big River Steel is able to offer customers long-term fixed prices by locking in profits by using futures and hedges.”

**David Stickler, CEO, Big River Steel, Jun 2017**



“The global steel costs have risen substantially and in particular in the US that have reached unexplainable levels. Our annual steel contracts and hedging contracts with our base metals give us some protection, but do not insulate us from more material trends”

**Marc Bitzer, CEO, Whirlpool, Jul 2018**



“In terms of steel, we have multiple contracts that are phased in over time. So it provides a little bit of a smoothing effect, there is not a market big enough to do any hedging and we continue to look at that”

**Bob Shanks, CFO, Ford, Jan 2018**



“The scrap and rebar contracts are well on their way to achieving the critical mass of volume that will attract further liquidity. Given the inherent price risk in the steel industry there is immense potential for growth amongst industrial clients.”

**David Fleming, Ferrous Derivatives Trader, Gerald Group, Nov 2016**



“We are pleased to see the increased volume and liquidity on the LME rebar and scrap contracts, especially in light of the recent price volatility of steel-making raw materials and of finished steel grades.”

**Bill Schmiedel, President, Sims Group, Nov 2016**



“Price risk management is becoming a reality for the steel industry and the LME steel contracts are supporting this development.”

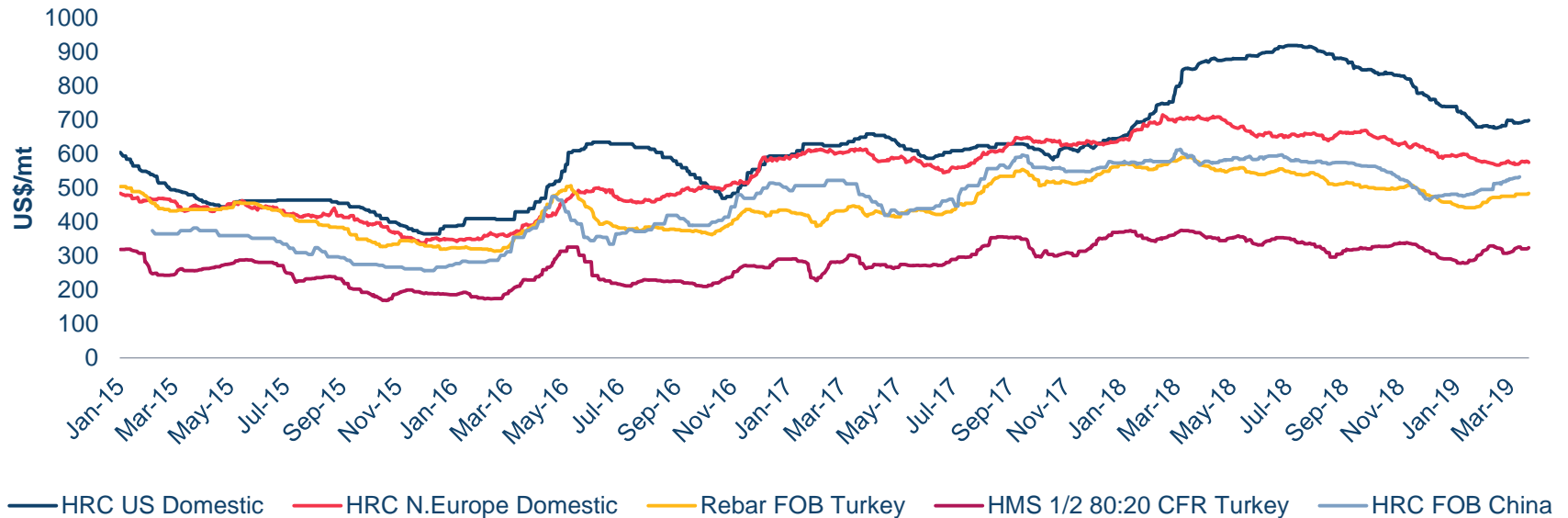
**Ugur Dalbeler, CEO, Colakoglu Metalurji, Nov 2016**



# Steel price volatility is a major risk factor for firms

Volatility and widening trading ranges are making hedging a necessity

Key steel prices



Increased volatility

Increased regional divergence in prices

The LME ferrous suite offers tools to manage risk across the ferrous value chain

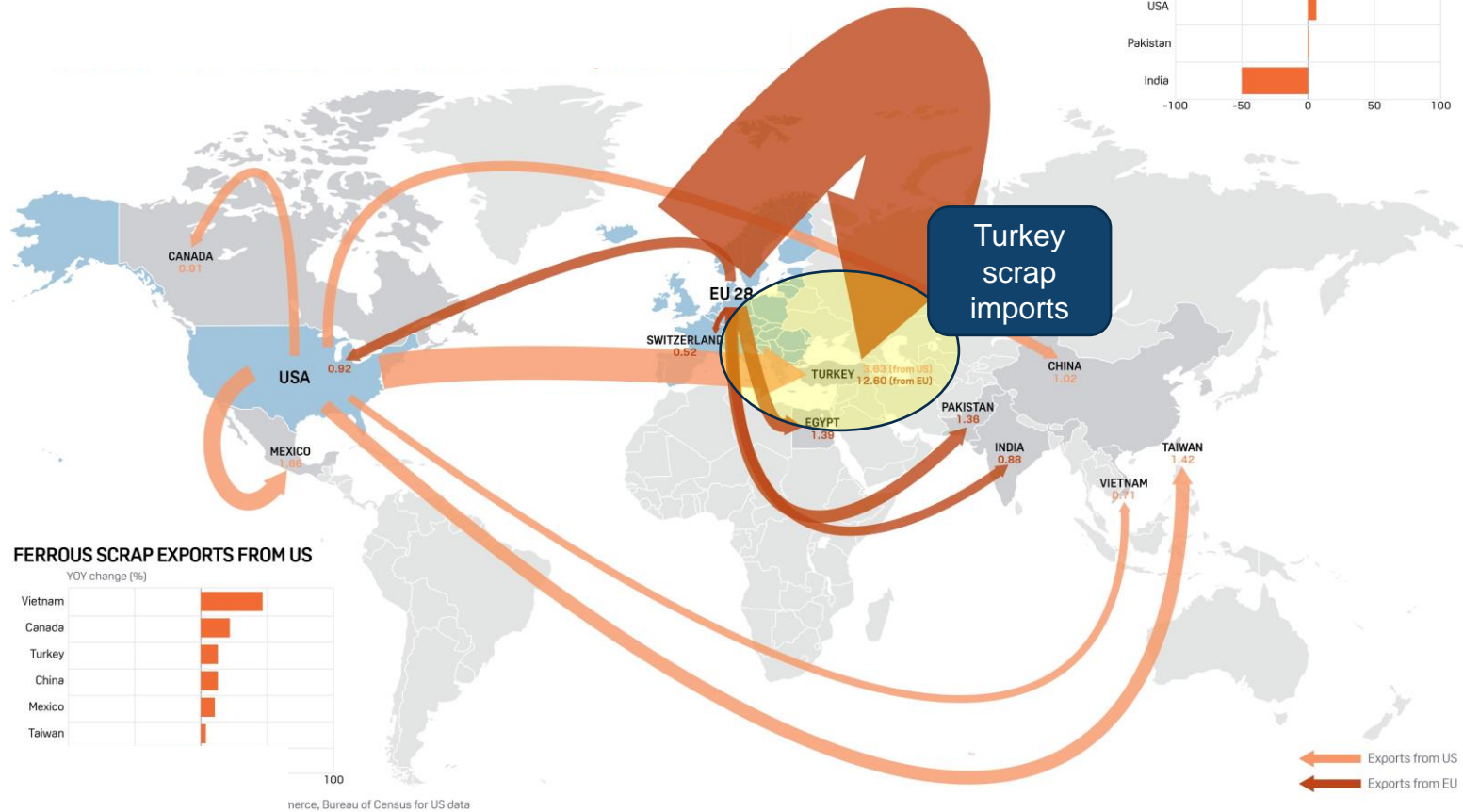
Source: LME, Platts, Argus



# Turkey: the international hub for steel scrap

One single contract as a global reference

Ferrous scrap exports in 2017 (million metric tonnes)

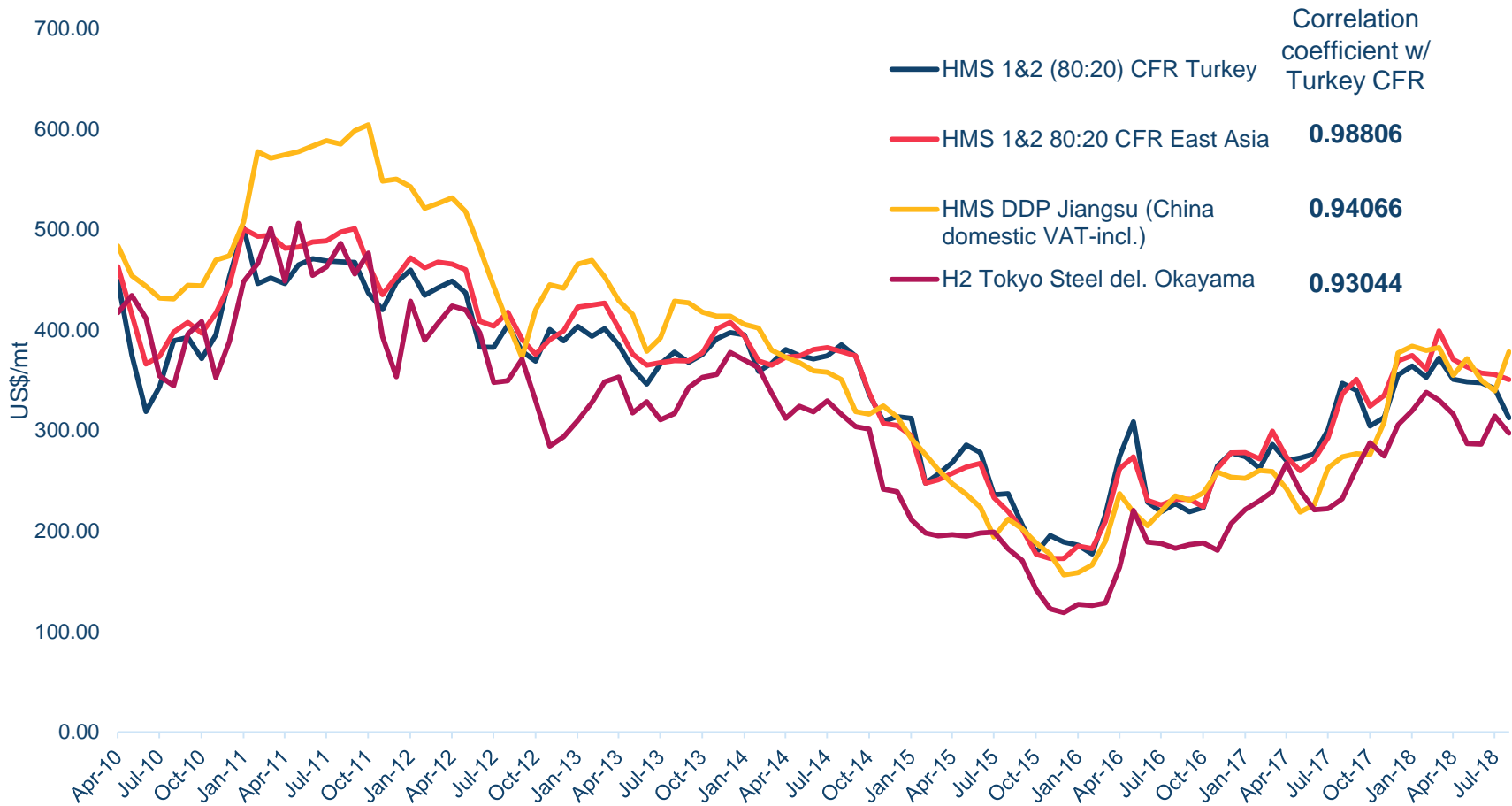


Source: Platts

# LME Steel Scrap, a globally relevant hedging tool

Turkey CFR scrap prices are highly correlated to key major Asian steel scrap markets, both domestic and imports

Selected historical scrap monthly average prices, 5-Apr-10 to 24-Aug-18, US\$/mt

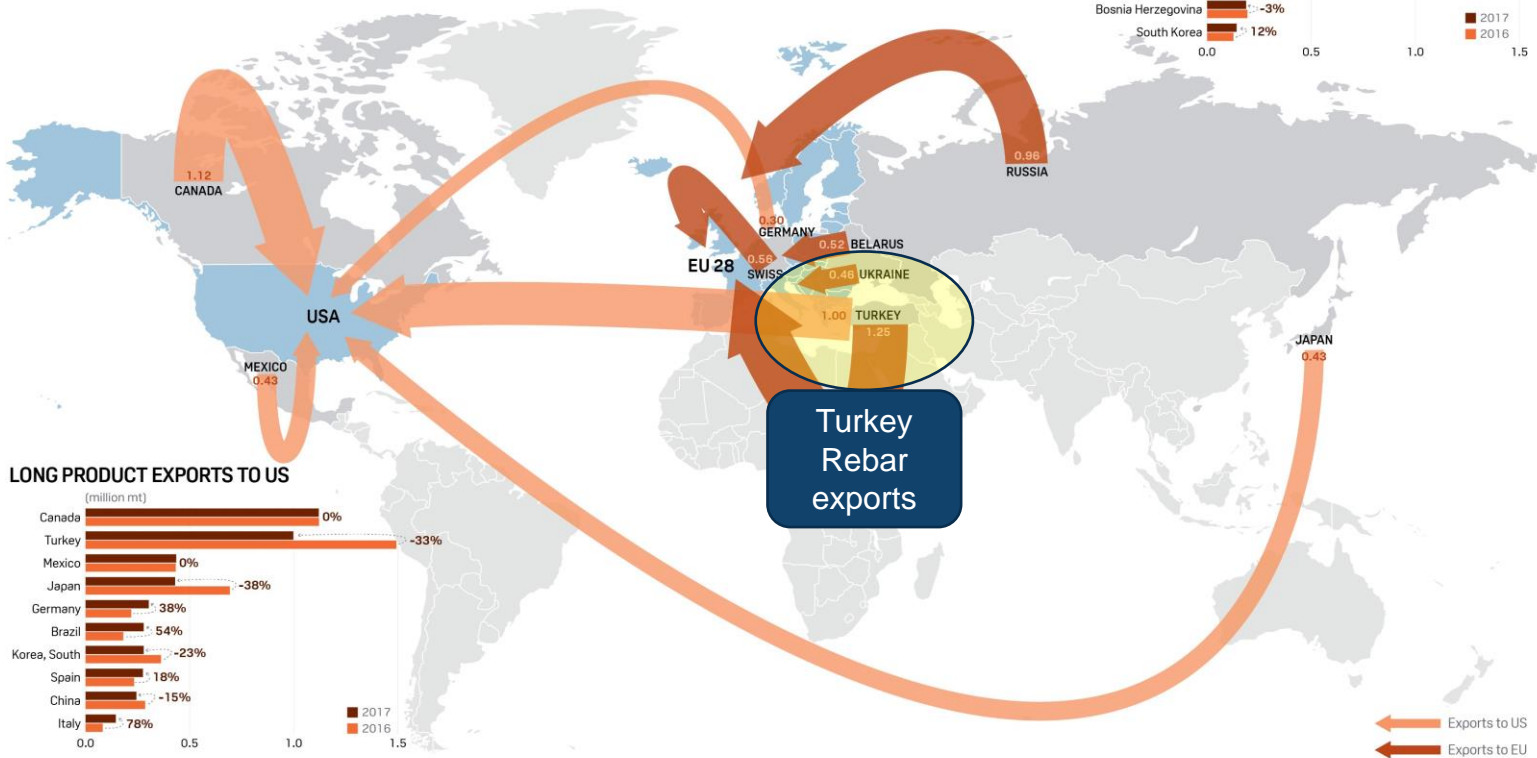
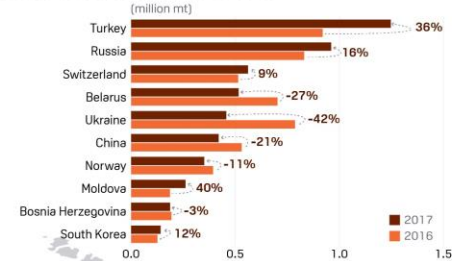


# Turkey: the a global exporter of steel rebar

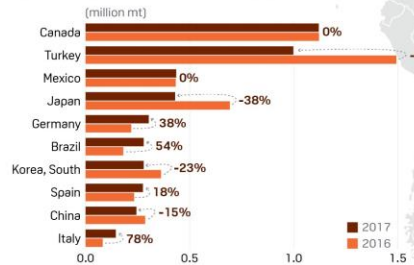
One single contract as a global reference

Key long steel products imports in 2017 (million metric tonnes)

LONG PRODUCT EXPORTS TO EU



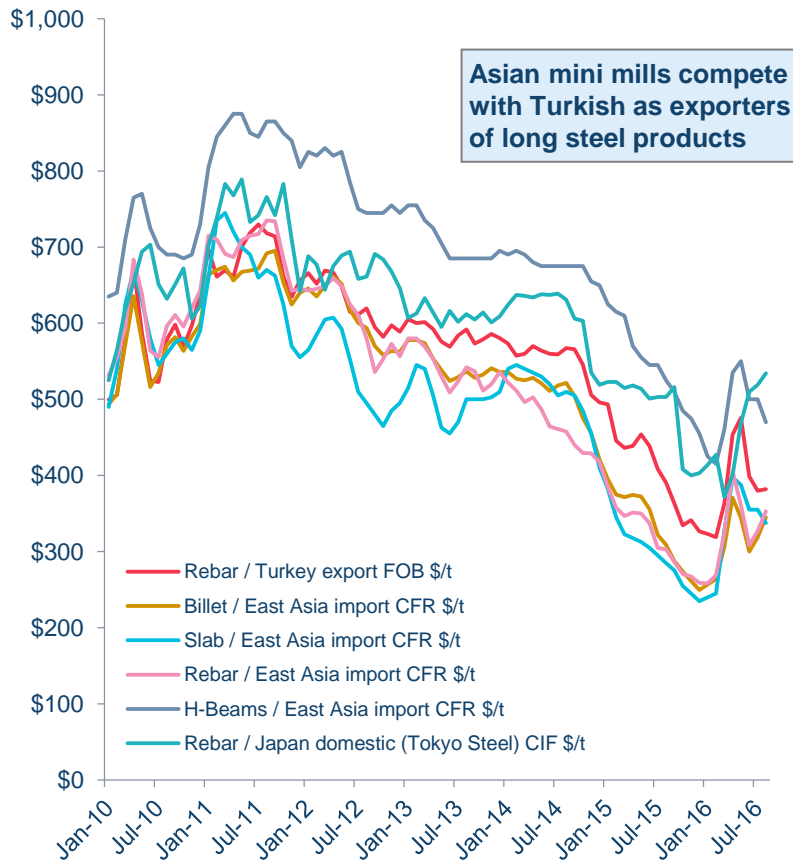
LONG PRODUCT EXPORTS TO US



Source: Eurostat for EU data; U.S. Department of Commerce, Bureau of Census for US data

# Rebar: FOB Turkey and South East Asia / Japan

South East Asian and Japanese prices for long steel products, Jan 2010 - Aug 2016, US\$/mt

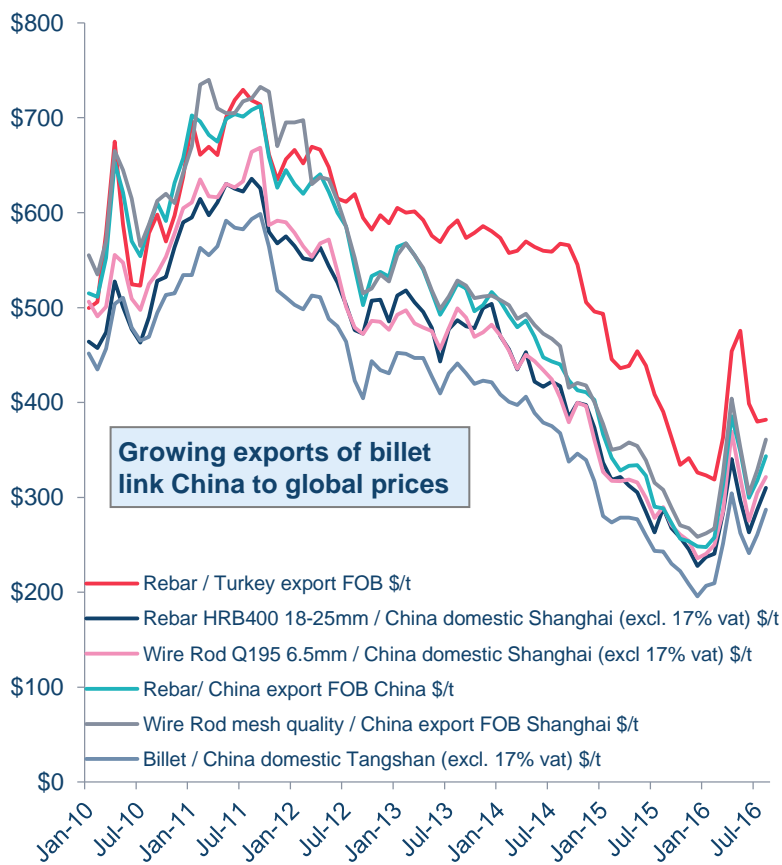


Correlations with Platts Rebar FOB Turkey

	Jan 2010 - Aug 2016	Jan 2014 - Aug 2016
East Asia Import Billet	<b>97%</b>	<b>96%</b>
East Asia Import Slab	<b>86%</b>	<b>91%</b>
East Asia Import Rebar	<b>92%</b>	<b>92%</b>
H- Beams/ East Asia Import	<b>94%</b>	<b>93%</b>
Rebar / Japan domestic (Tokyo Steel)	<b>82%</b>	<b>77%</b>

# Rebar: FOB Turkey and China

Chinese prices for long steel products, Jan 2010 - Aug 2016, US\$/mt



Correlations with Platts Rebar FOB Turkey

	Jan 2010 - Aug 2016	Jan 2014 - Aug 2016
HRB400 Rebar Shanghai	<b>93%</b>	<b>90%</b>
Wire Rod Q195 6.5mm / China Shanghai	<b>89%</b>	<b>89%</b>
Rebar China export	<b>91%</b>	<b>92%</b>
Wire Rod Mesh quality China Export	<b>88%</b>	<b>91%</b>
Tangshan Billet	<b>88%</b>	<b>89%</b>
East Asia Import Billet	<b>97%</b>	<b>96%</b>
East Asia Import Slab	<b>86%</b>	<b>91%</b>

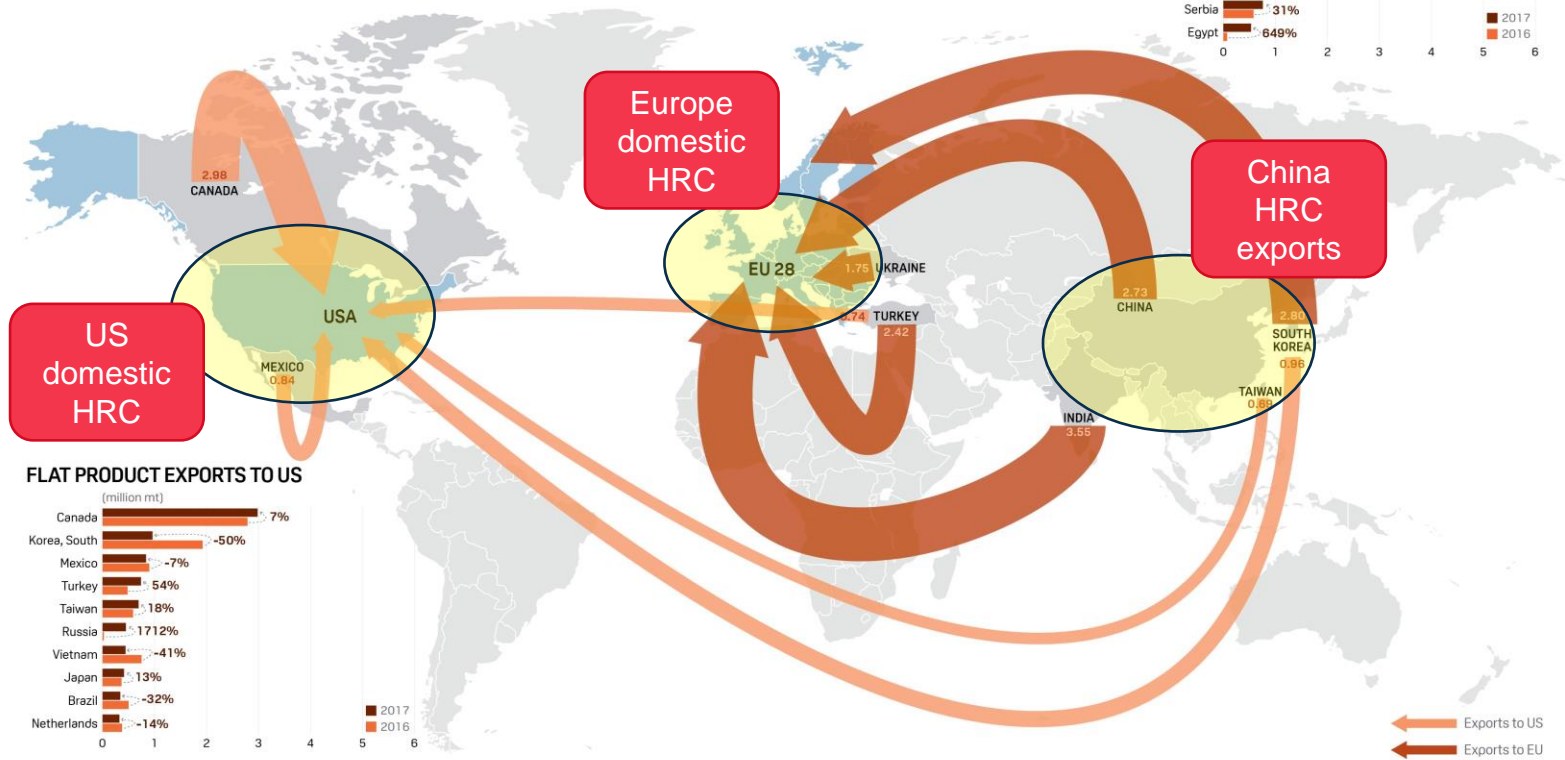
Note: please refer to the following section for a more in depth review of the relationship between LME Steel Rebar and SHFE Rebar

# Three steel HRC futures covering key markets

Regional contracts to serve regional markets for finished products

Key flat steel products imports in 2017 (million metric tonnes)

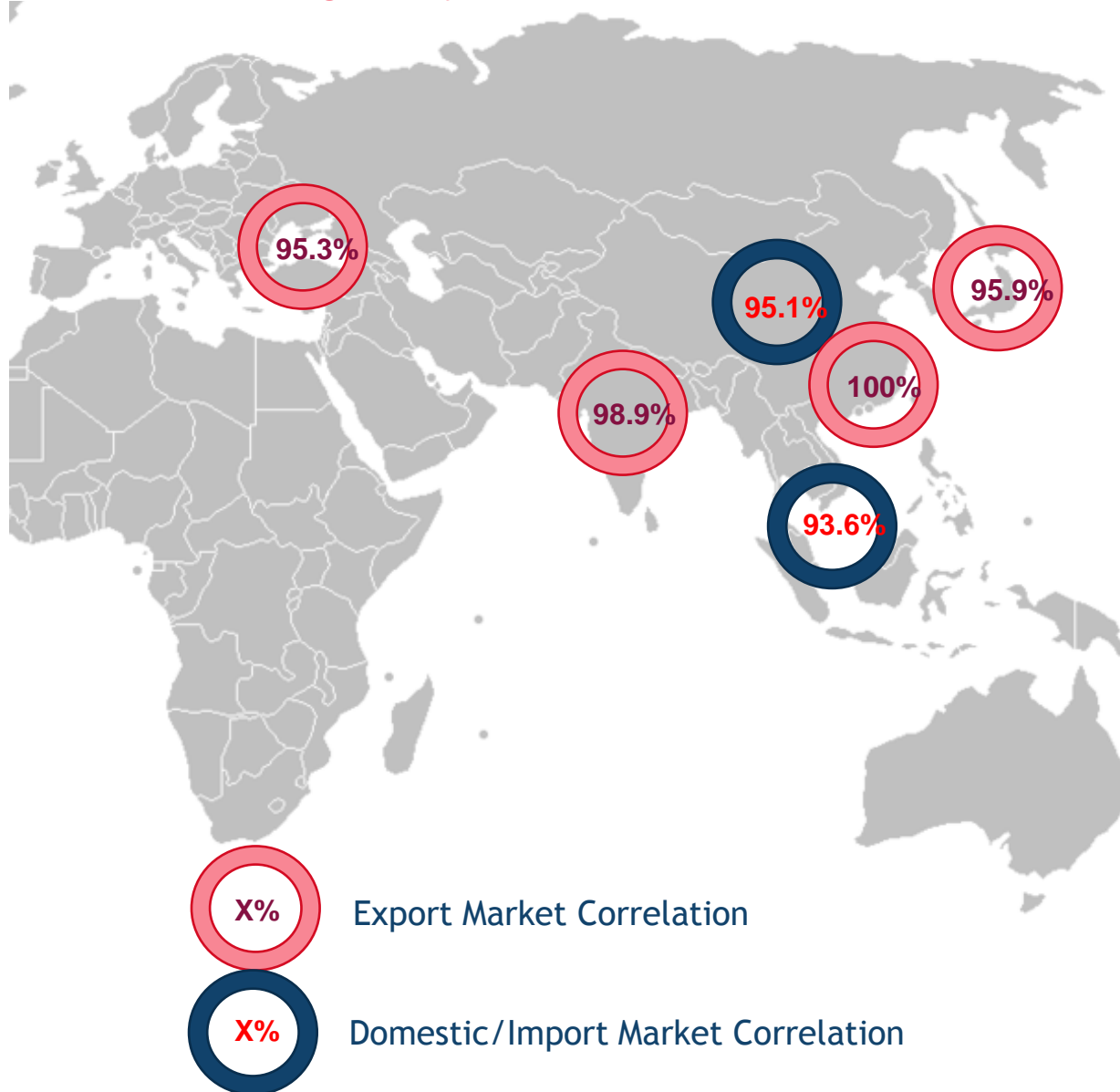
FLAT PRODUCT EXPORTS TO EU (million mt)



Source: Eurostat for EU data; U.S. Department of Commerce, Bureau of Census for US data

# LME Steel HRC FOB China (Argus)

Highly correlated to HRC regionally



Source: Argus

# Typical Scenarios

## Case 1

You are a steel mill / producer and you are selling forward at a fixed price. You are short of physical material because you have sold before buying.

### What are your options?

1. *Do nothing*; price of steel scrap rises, cost of purchase rises
2. *Buy now and hold the material*; use up working capital and incurring storage expenses
3. *Buy forward a LME Future*; hedge your exposure at a fraction of the cost of holding physical material

## Benefits

1. Lock-in a forward purchase price
2. Accurate budgeting for raw material requirement costs
3. Increased ability to commit to future sales prices



# Typical Scenarios

## Case 2

You are a trader that normally works back-to-back, and you see material you like and wish to buy it.

### What are your options?

1. *Do nothing*; and lose the opportunity
2. *Buy the material*; and exposed to risk of prices moving against you
3. *Buy the material and Sell forward a LME Future*; hedge your exposure while you find a physical buyer for the material

## Benefits

1. Hedge physical sales & purchases
2. Pricing flexibility; offer fixed sales price
3. Protect value of physical stock against a fall in price

# Common Hedging Opportunities

- Cost of raw material (buying price)
- Sales revenue (selling price)
- Inventory hedging
- Time-spread risk (Traders)
- Financing scheme (e.g. Repo)
- Pricing flexibility (Fixed-to-Float, Float-to-Fixed)

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