



IPHA - Annual Conference 2018
Helsinki, FINLAND

Ivan Kaic

Some words about me

Born 1978 in Sarajevo,
fm Yugoslavia

Living today
Linköping, Sweden

Family

Linda

Maximilan 5, Viktor 3

Graduated University 2003

Master of Science in
Chemical Engineering

Mining – Lonmin Platinum

Mining - Boliden

Production - SSAB


Sales & Strategy -
Outokumpu

Sales – Hjulbro Steel

WORLD MARKET FOR STEEL - update



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- 1 From mine to PC-strand**
 - 2 Steel market fundamentals**
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 - 5 Presentation Hjulstro Steel AB**
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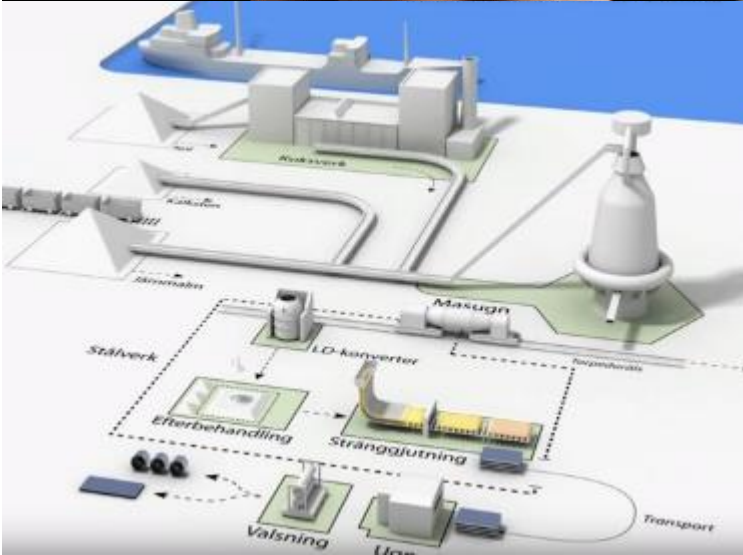
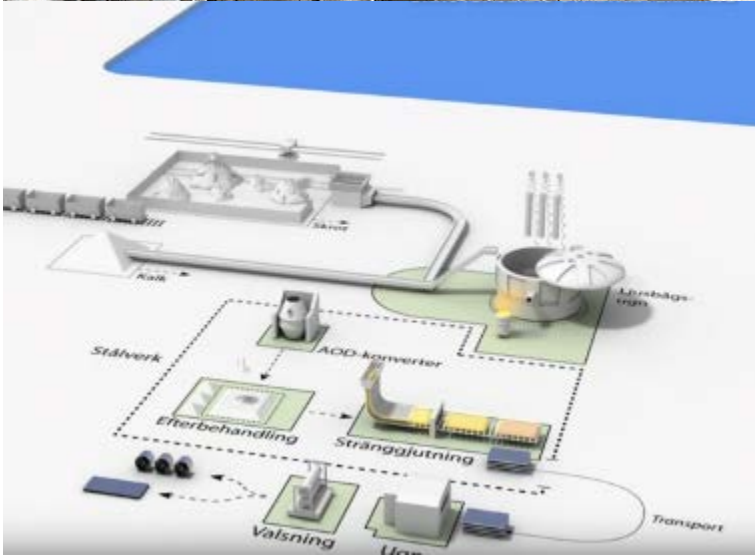
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Steel Production Routes

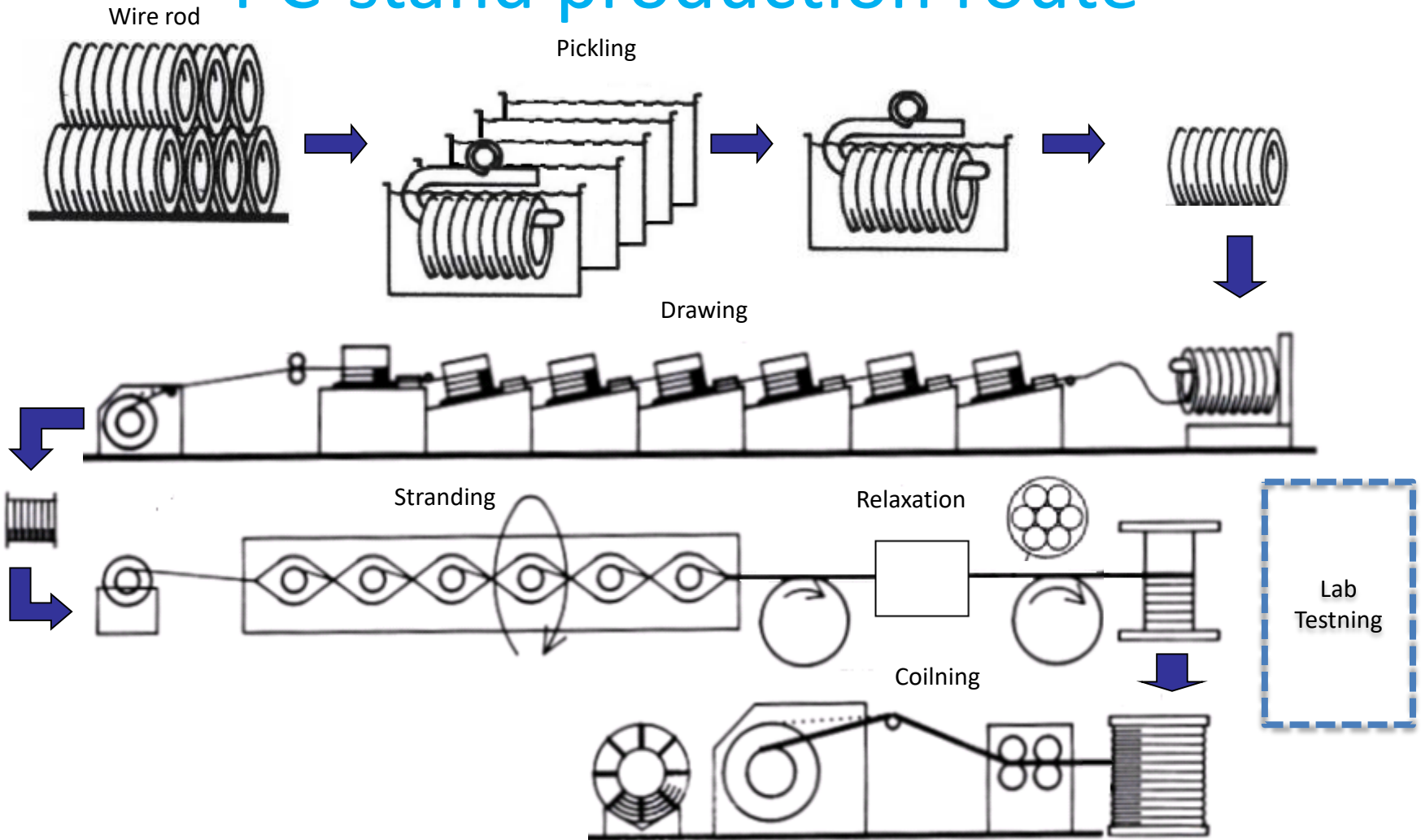
Scrap based



Iron ore based

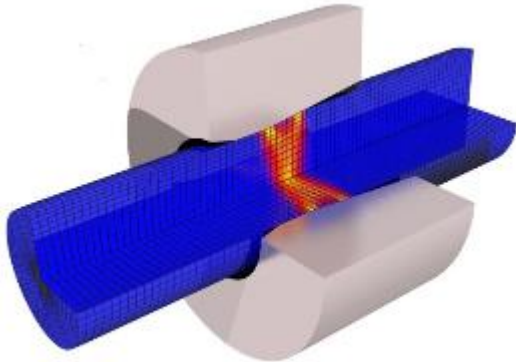


PC-stand production route

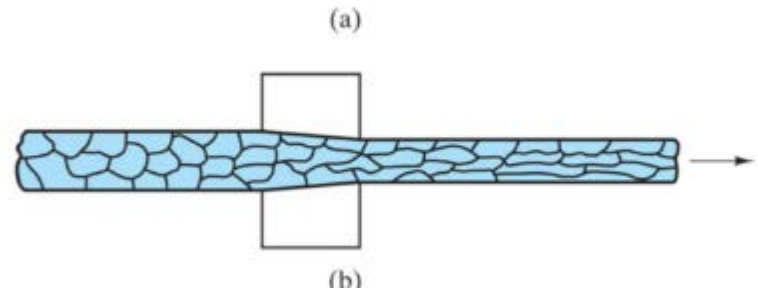


The important...

**Deformation
(cold drawing)**



Structure transformation



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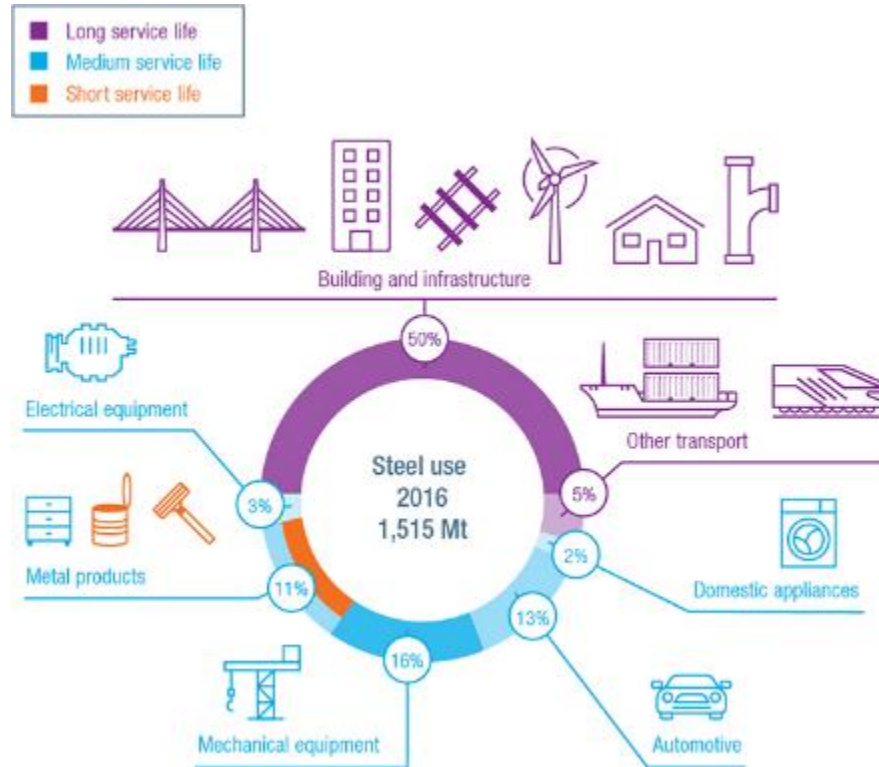
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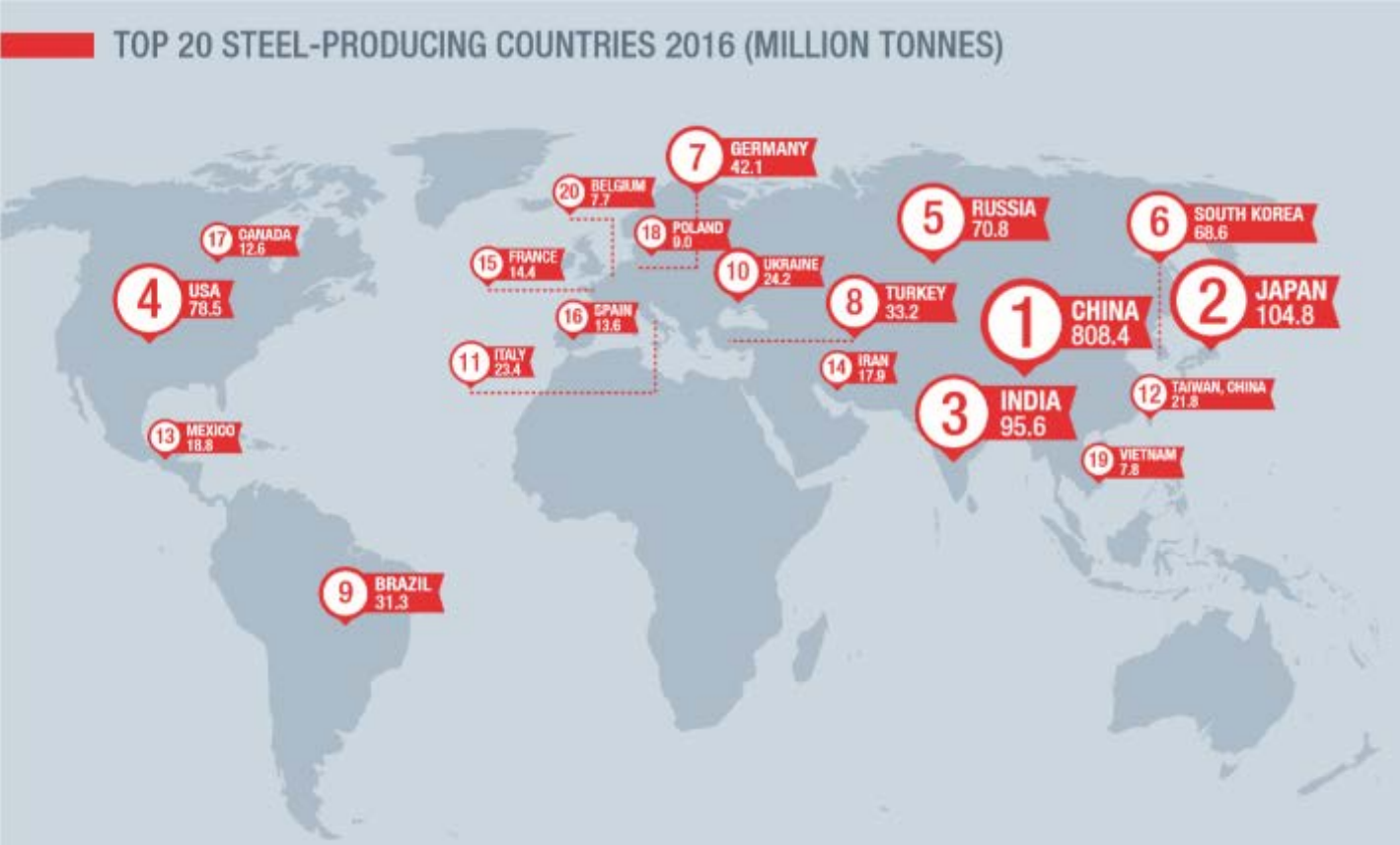
6 Q&A



Where does all steel go?



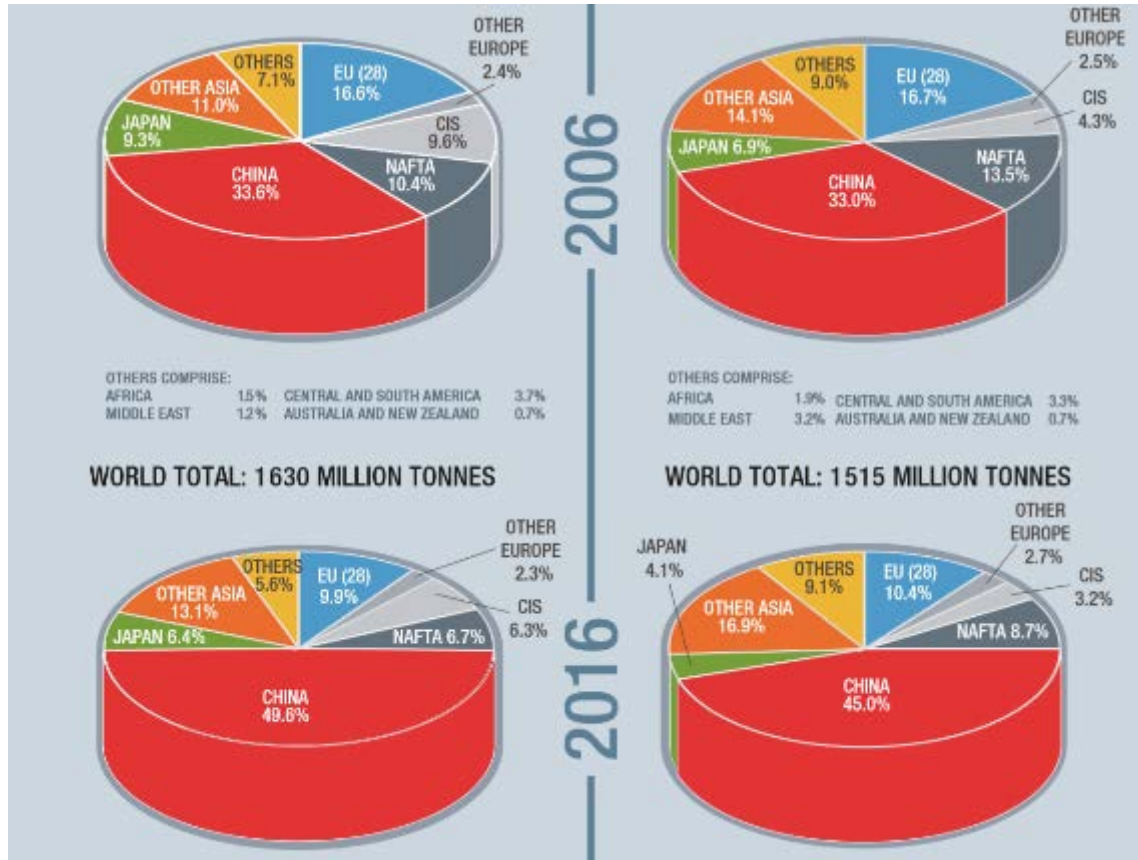
China is by far the biggest steel producer and India is now bigger than US



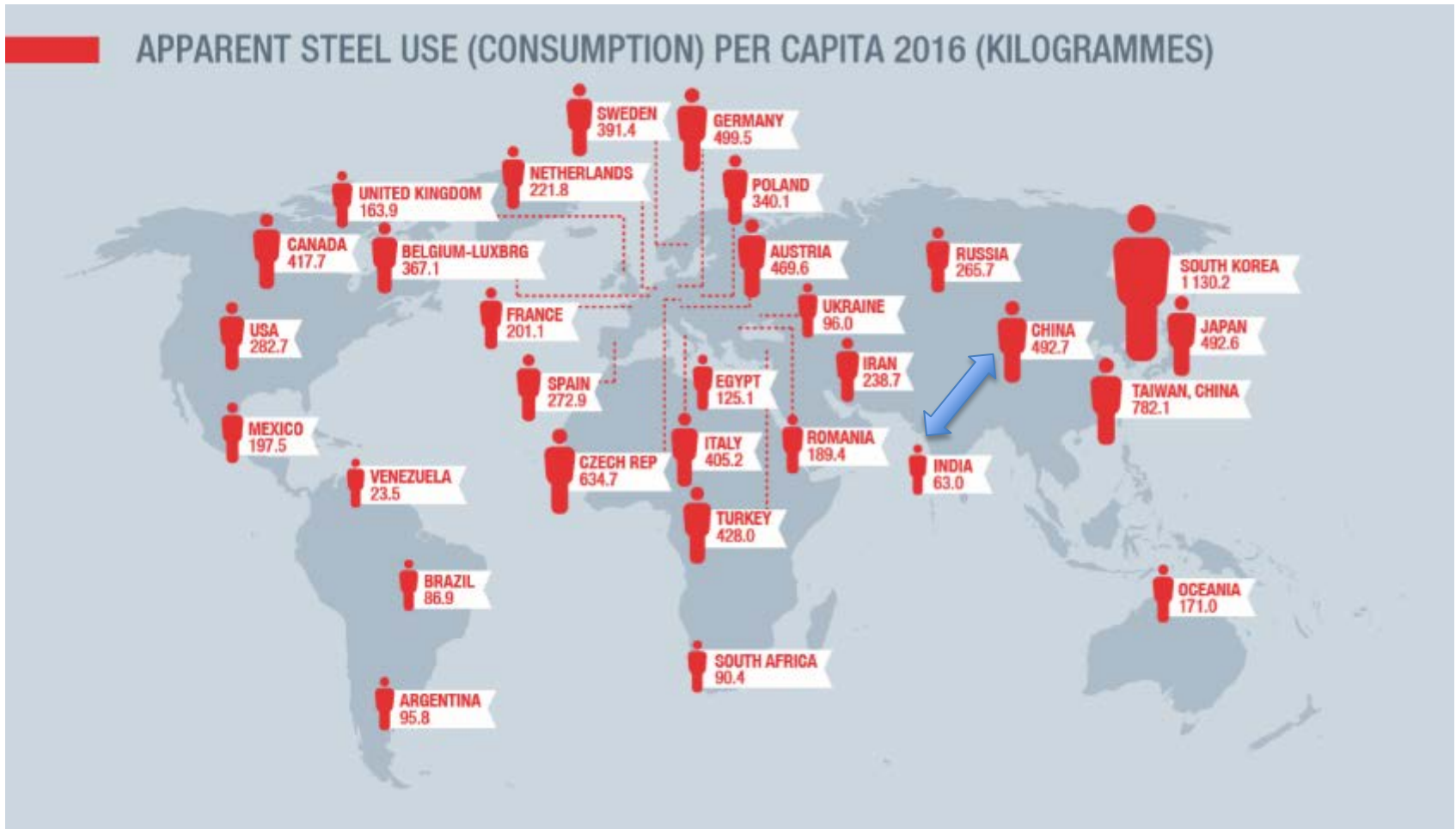
And just in a decade...

Crude steel production

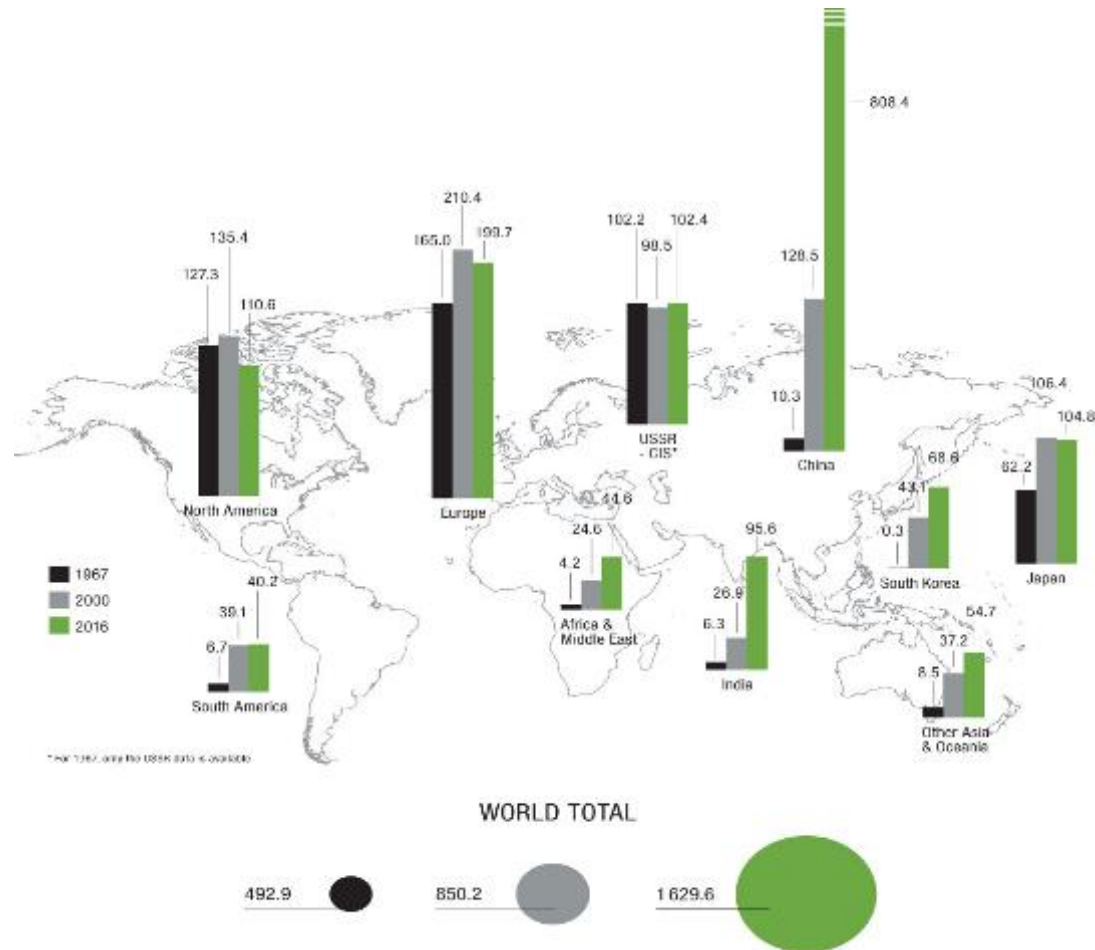
Apparent steel use



Who is consuming the most?



Global steel production through the decades



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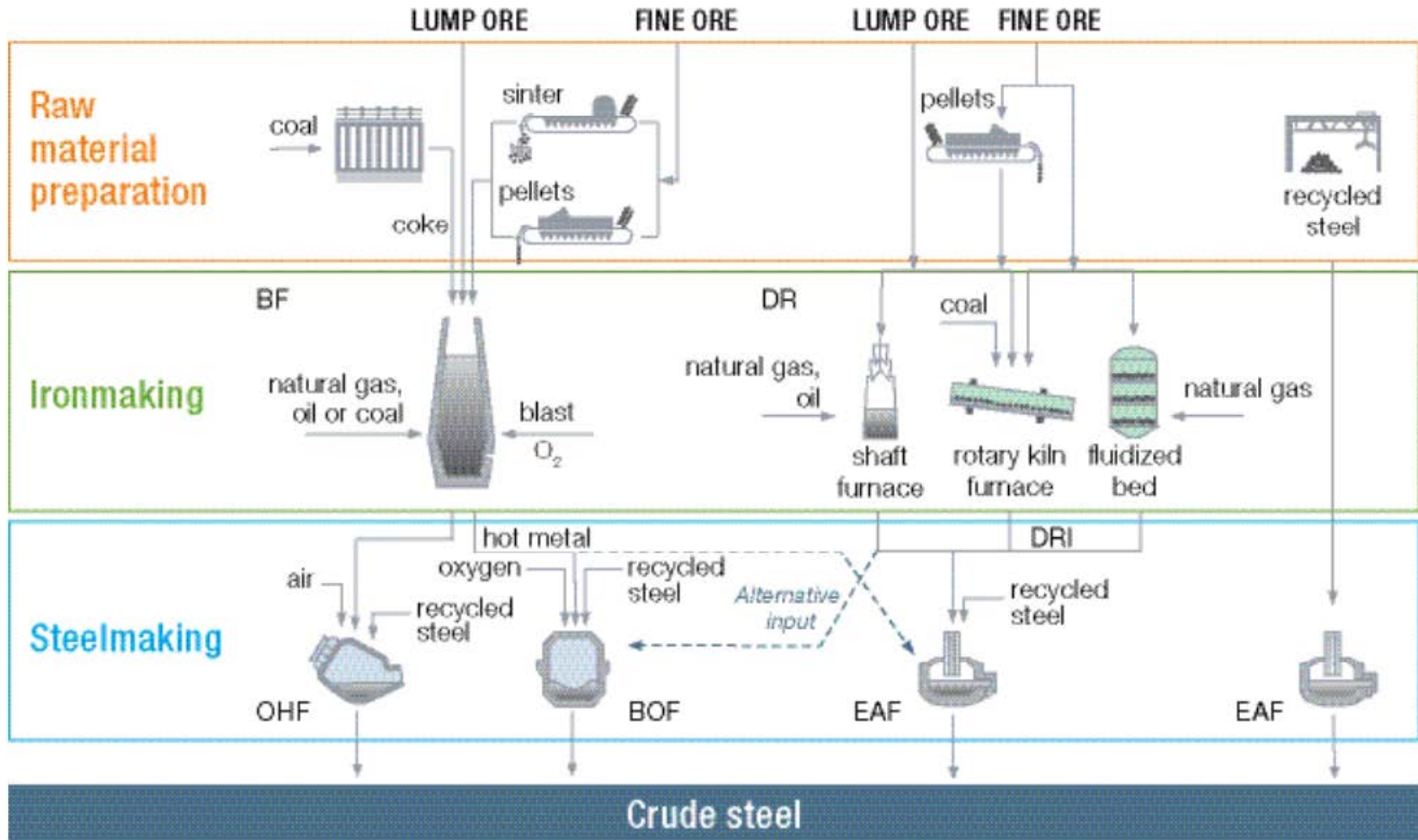
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Raw material & energy needed...



Raw materials are many...

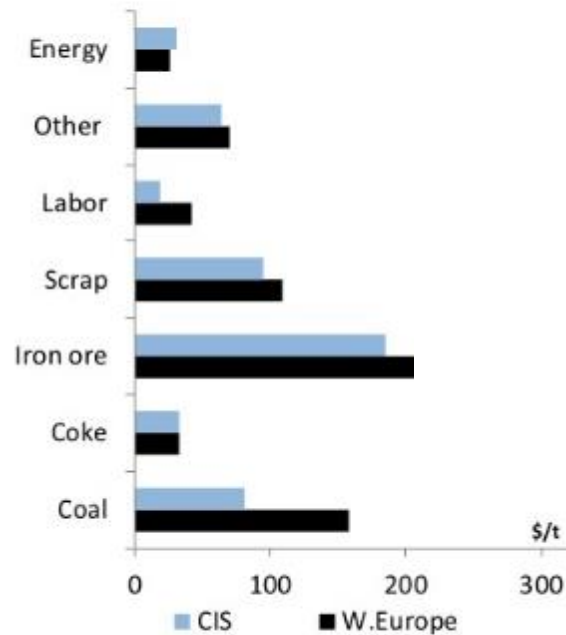
- Iron Ore
- Scrap
- Energy
 - Coal
 - Electricity
 - Gas
 - Oil
- Lime
- Grafite electrodes
- Refractories



Steel

Typical cost breakdown for blast furnace route

Crude steel production costs



Source: WSD, Company estimates

CIS STEEL PRODUCTION ADVANTAGE



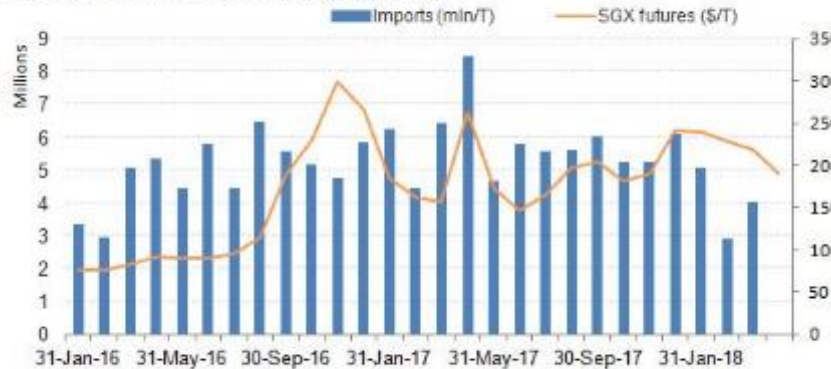
- Cost advantage mainly lies in the access to low-cost raw materials
- Ongoing assets rewamp in CIS to eat into EU advantages – energy efficiency and labor productivity

4

Coking Coal - Even the weather is a factor...

CHINA'S COKING COAL IMPORTS

China coking coal imports vs. SGX TSI futures price

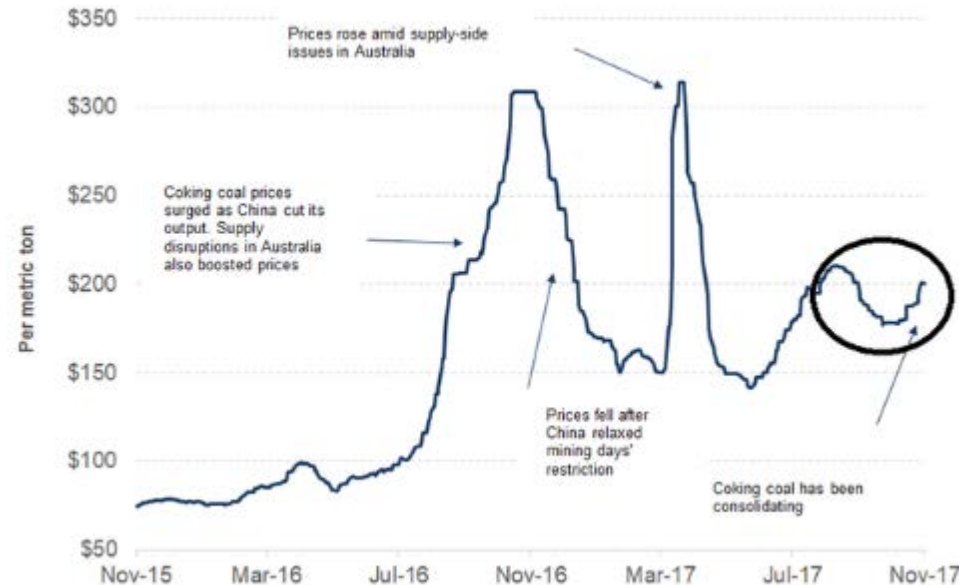


Note: April 2018 SGX futures price is month-to-date

Source: Thomson Reuters Eikon Reuters graphio/Clyde Russell 26/04/18

REUTERS

Spot Hard Coking Coal Prices

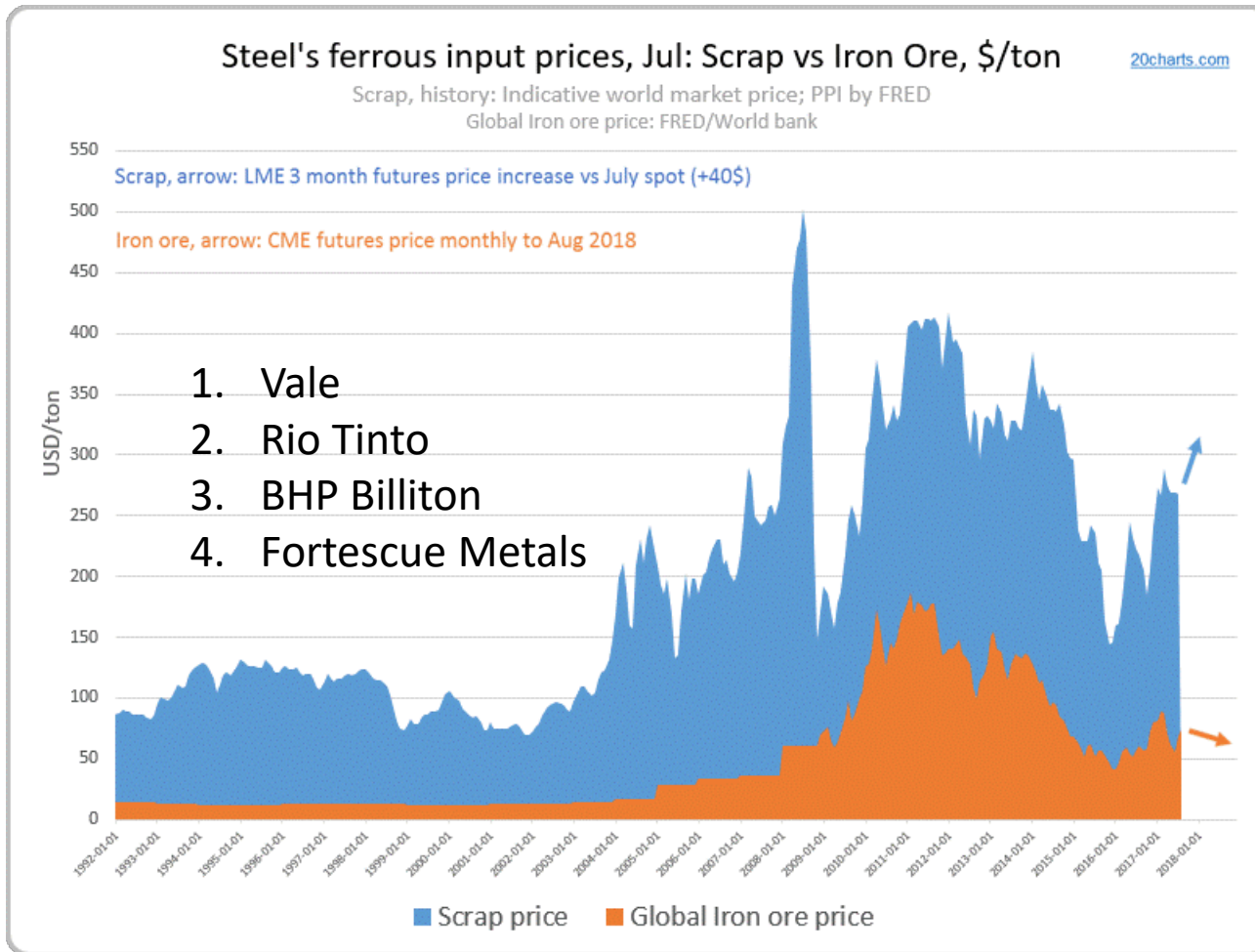


Market Realist

Source: TSI

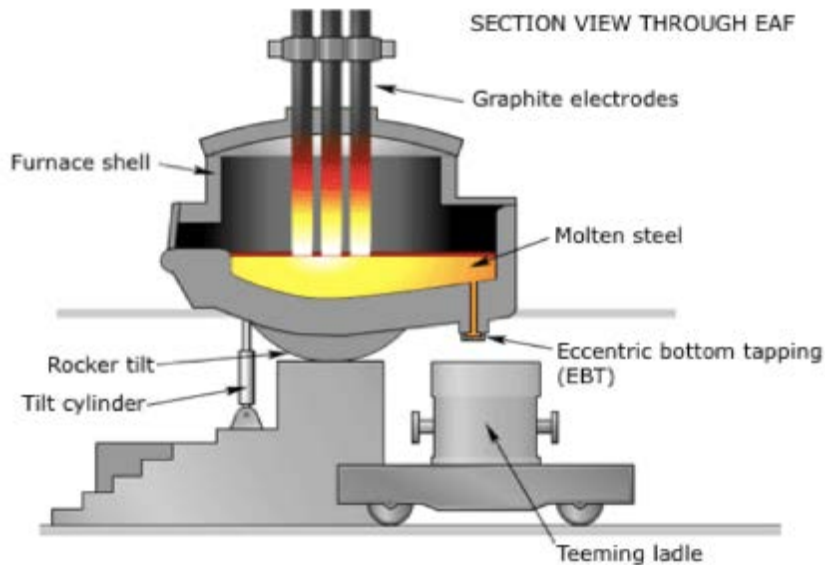
- Very turbulent market
- Australia has a leading role
- All disturbances are reflected in the price

Steel Scrap is still going strong...

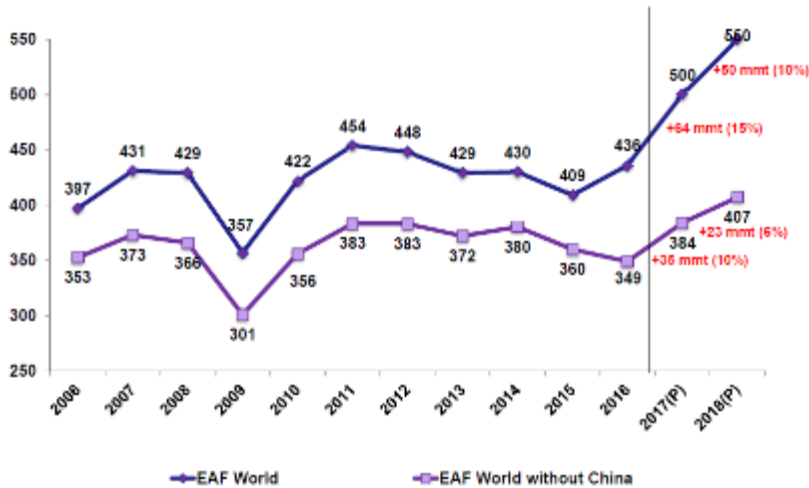
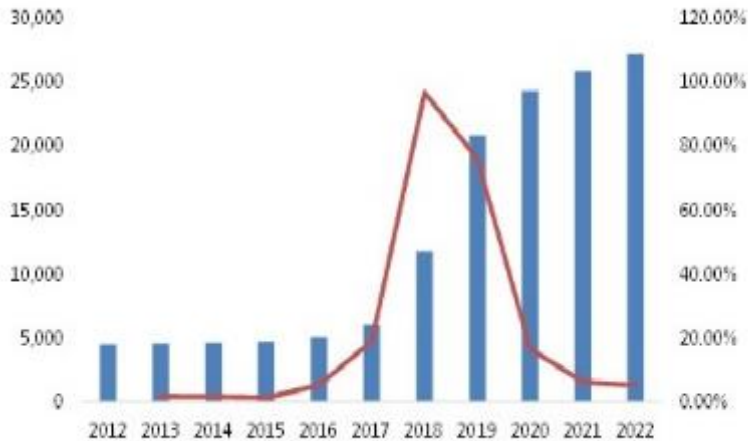


Graphite electrodes -EAF production is increasing

- Cut down of inefficient induction furnaces and blast furnaces
- 110 Mtons in steel production through EAFs in China today and aiming for 160 Mtons



Combined with elevated refractory prices, Graphite electrodes continue to add a minimum of \$30-50/mt

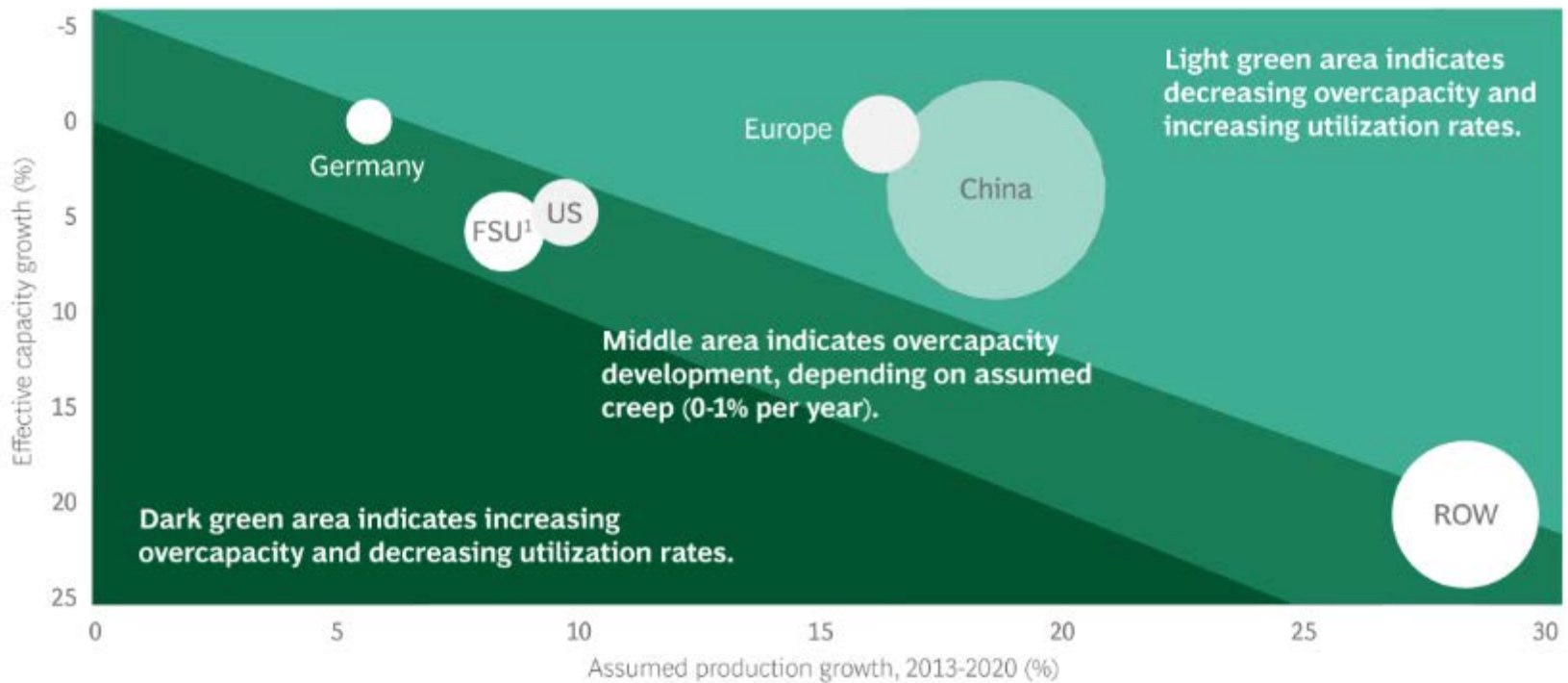


- Supply side reforms in China
 - higher usage of EAFs for steel
 - From 5% to 20%
- High barriers to entry
- Falling Chinese exports
- Needle coke supply remains a key overhang
- Oligopol market

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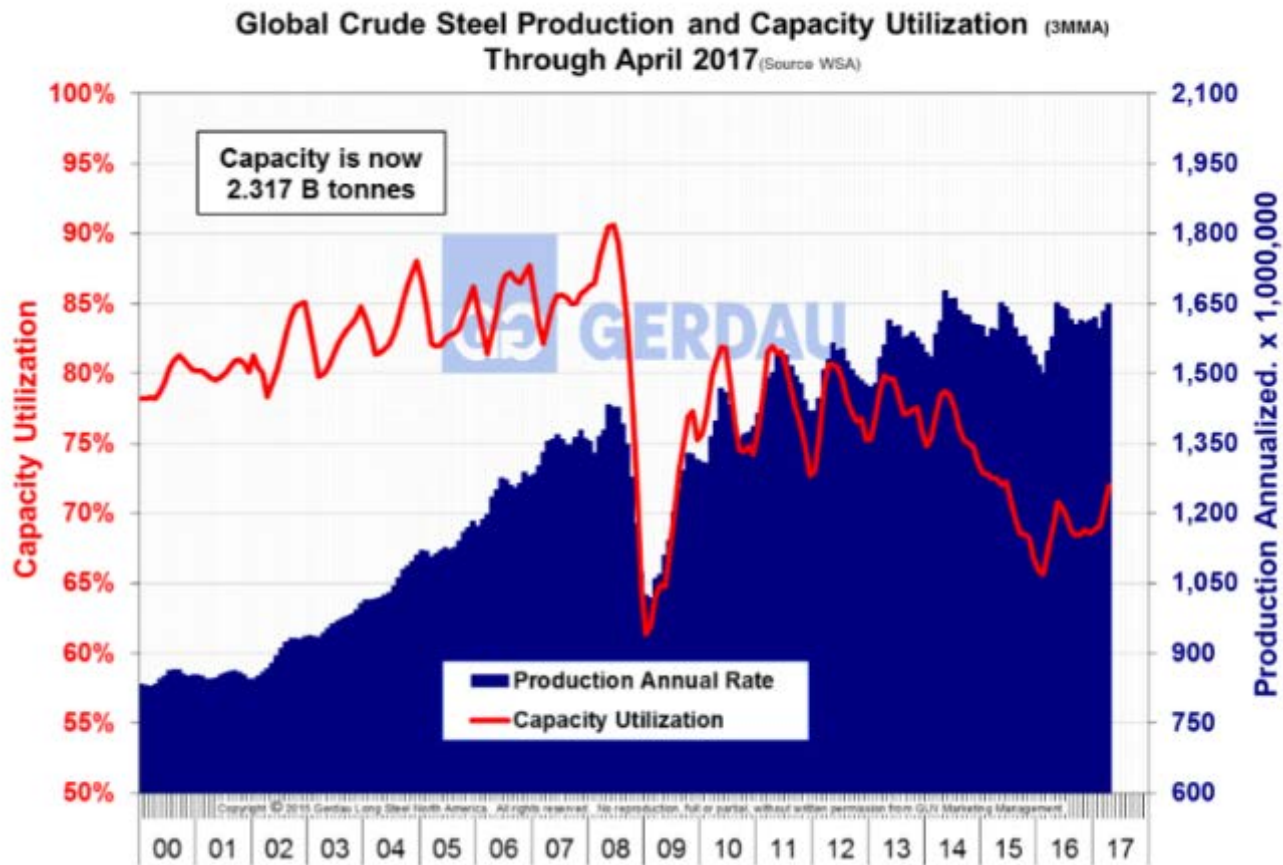
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Overcapacity will decline in most regions where demand outpaces capacity additions

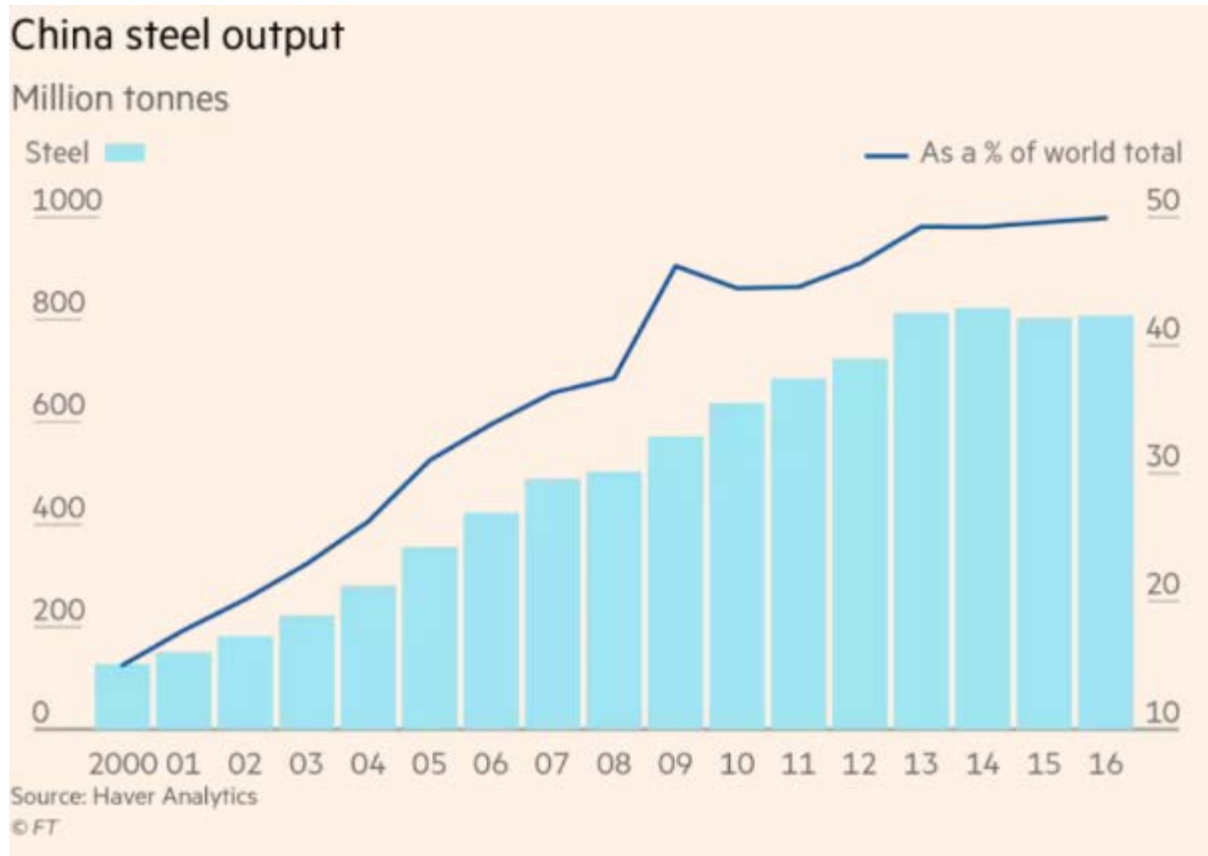


Source: BCG analysis.
1. FSU is nations of the former Soviet Union.

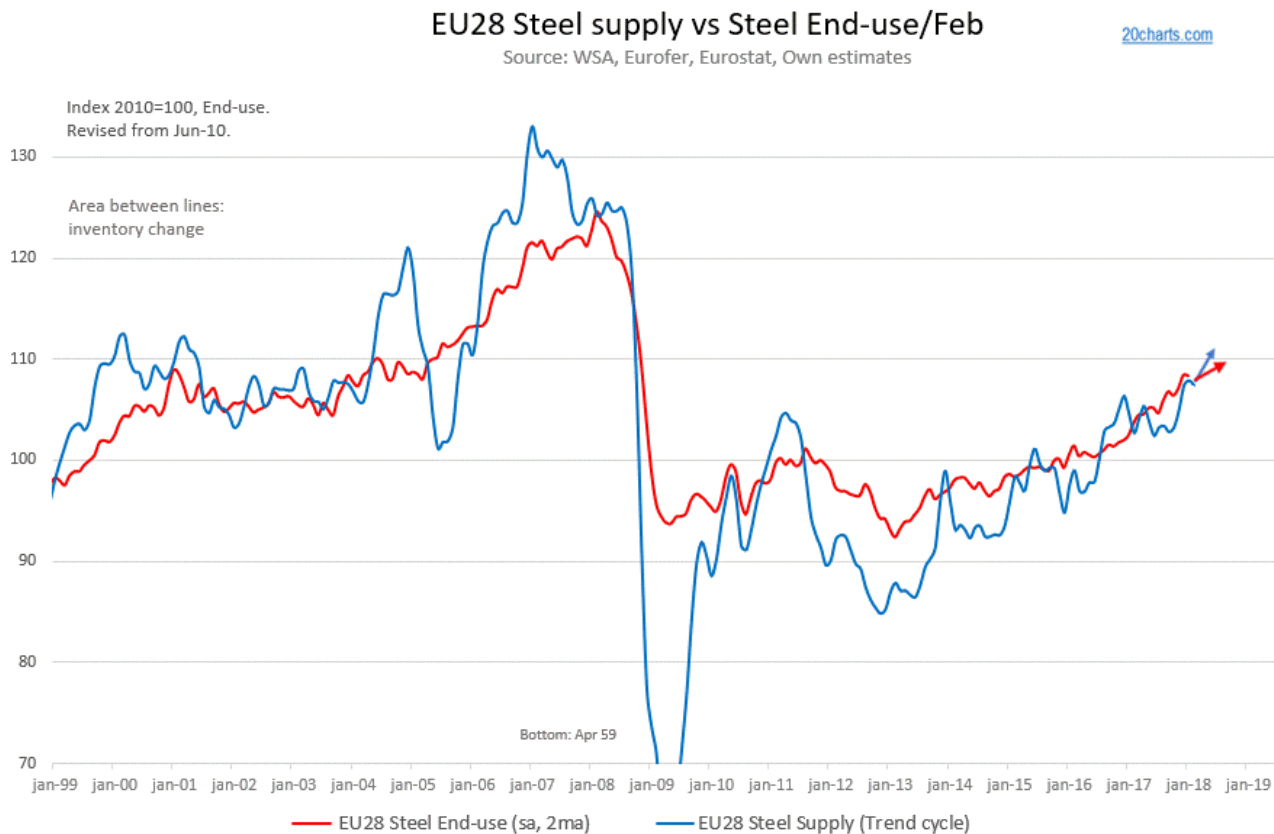
Capacity utilization is improving and in china back on healthy levels...



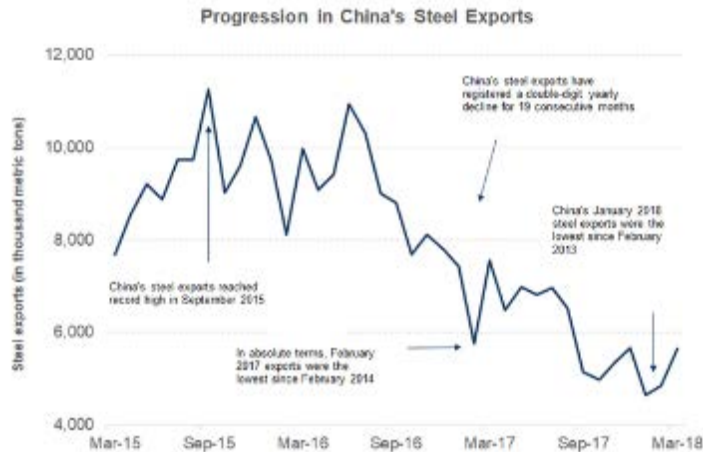
Steel output has stopped increasing



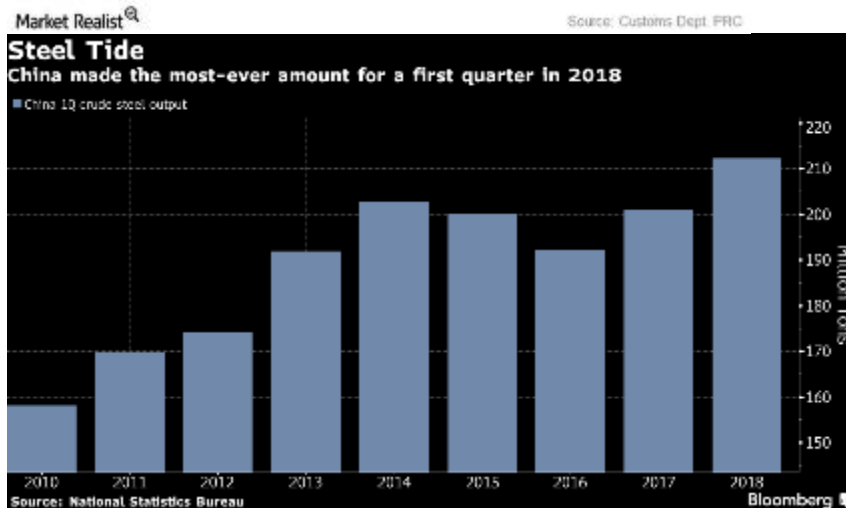
In EU supply and demand are in balance for the moment



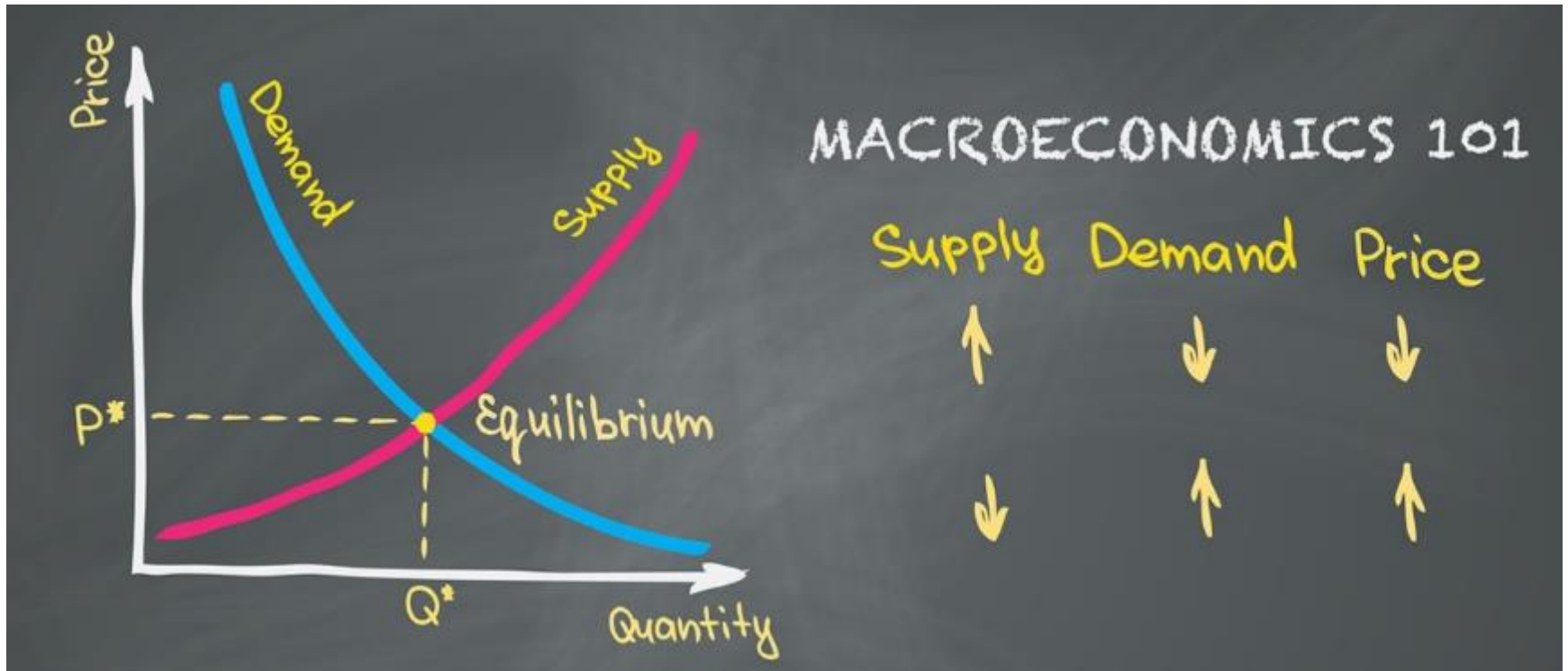
Steel output has stopped increasing



- There are still currently a number of trade suits pending against China
 - Latest one is from Trump administration
- Chinese production cuts have been going forward but very slowly as market has improved
 - For the first quarter we even see an increase on year to year basis
 - China's steel demand growth to slightly outpace production increase



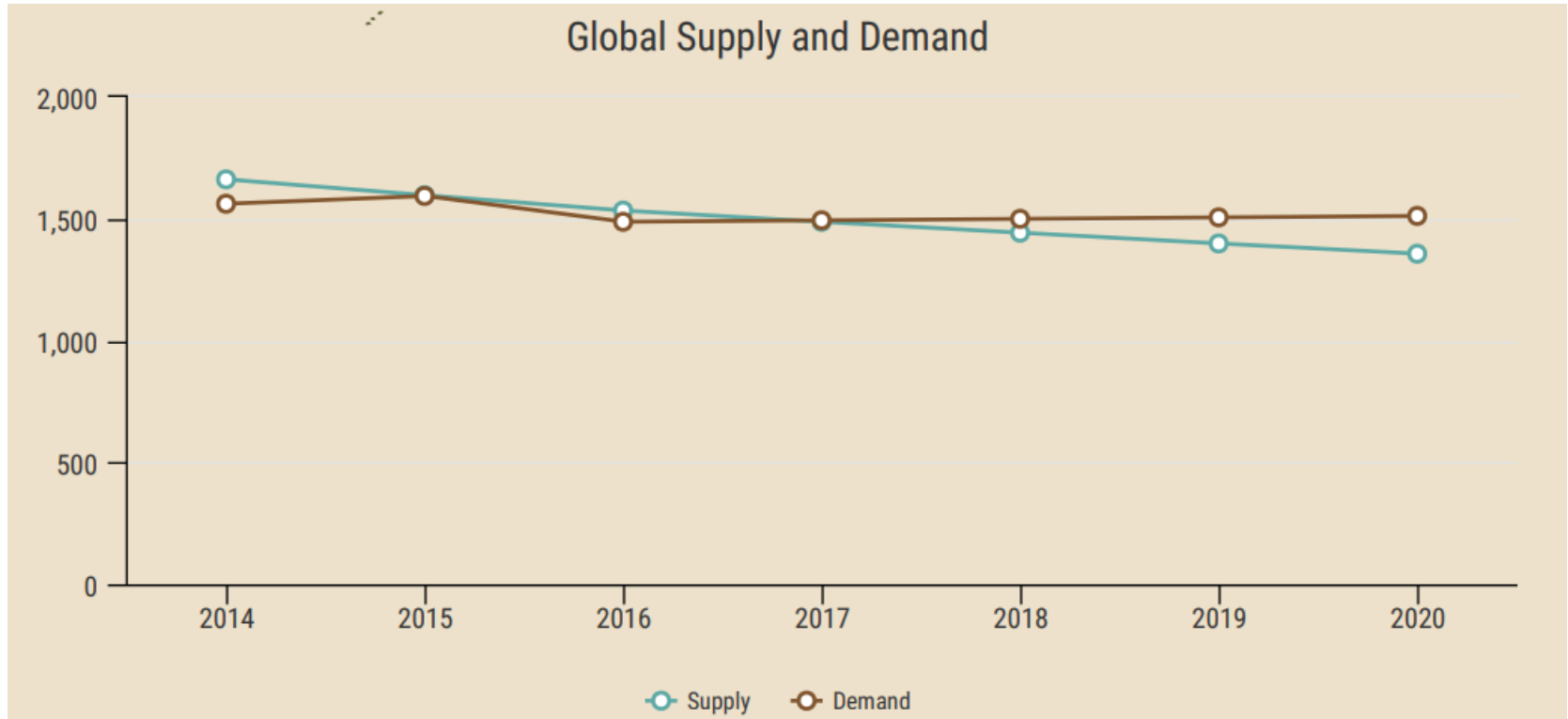
What about the price then???



Some macro assumptions...



So Where are we heading?



Prices are increasing but what could change the momentum?

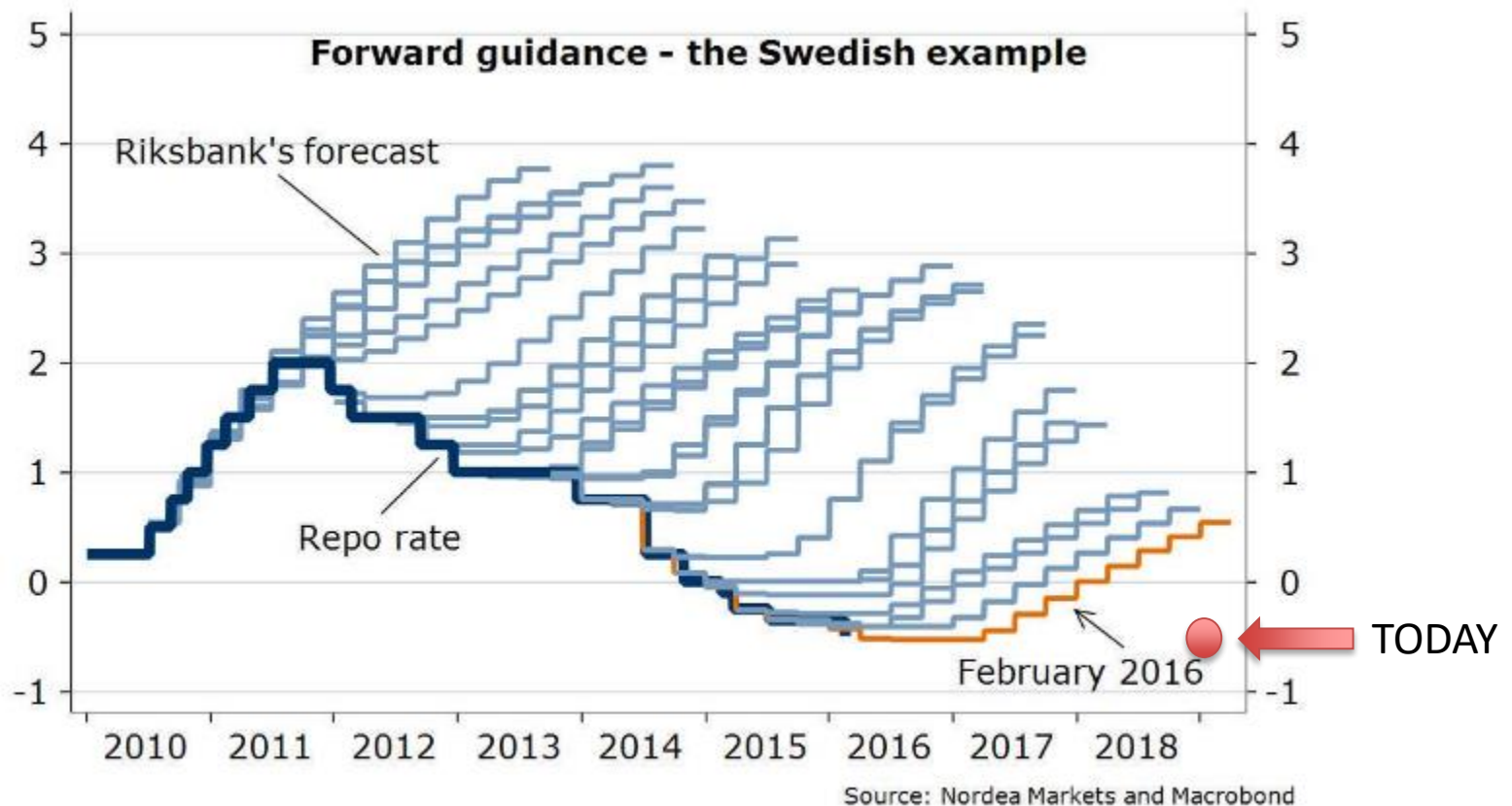


- Better global economy and better capacity utilization specially in China (incl trade restrictions) has led to rush to buy steel
- Rising steel scrap prices have ensured that steel buyers don't resist paying more for steel products
- Increasing trading restrictions and better-than-expected demand from the construction sector has boosted Chinese prices
- Chinese production was set to decelerate as the Chinese economy shifts away from manufacturing and infrastructure and toward services. This trend is expected to continue as Chinese officials announced last year that the country will decrease steel production by more than 165 million tons by 2020.


China and the global economy are the keys!

- **Production in china has grown and demand has met the supply**
 - Today we don't see the slowdown in the economy
 - Going more forward consumer driven economy
- **There are still big anti dumping cases on going**
 - Chines exports to US and EU → anti dumping measures are in place and coming
 - 300 CISA members and the half of them is making losses today
 - " Trade without fairness is not trade, it's war."
 - Anti dumping not only toward Chinese steel makers
- **Development forward**
 - India has a big potential on demand side where steel is still not used as elsewhere
 - Capacity cuts in China but in which pace?
 - More of environmentally friendly steel making
 - There is still a over capacity globally

It is easy to forecast!!! (Swedish central bank forecast's)



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HJULSBRO STEEL

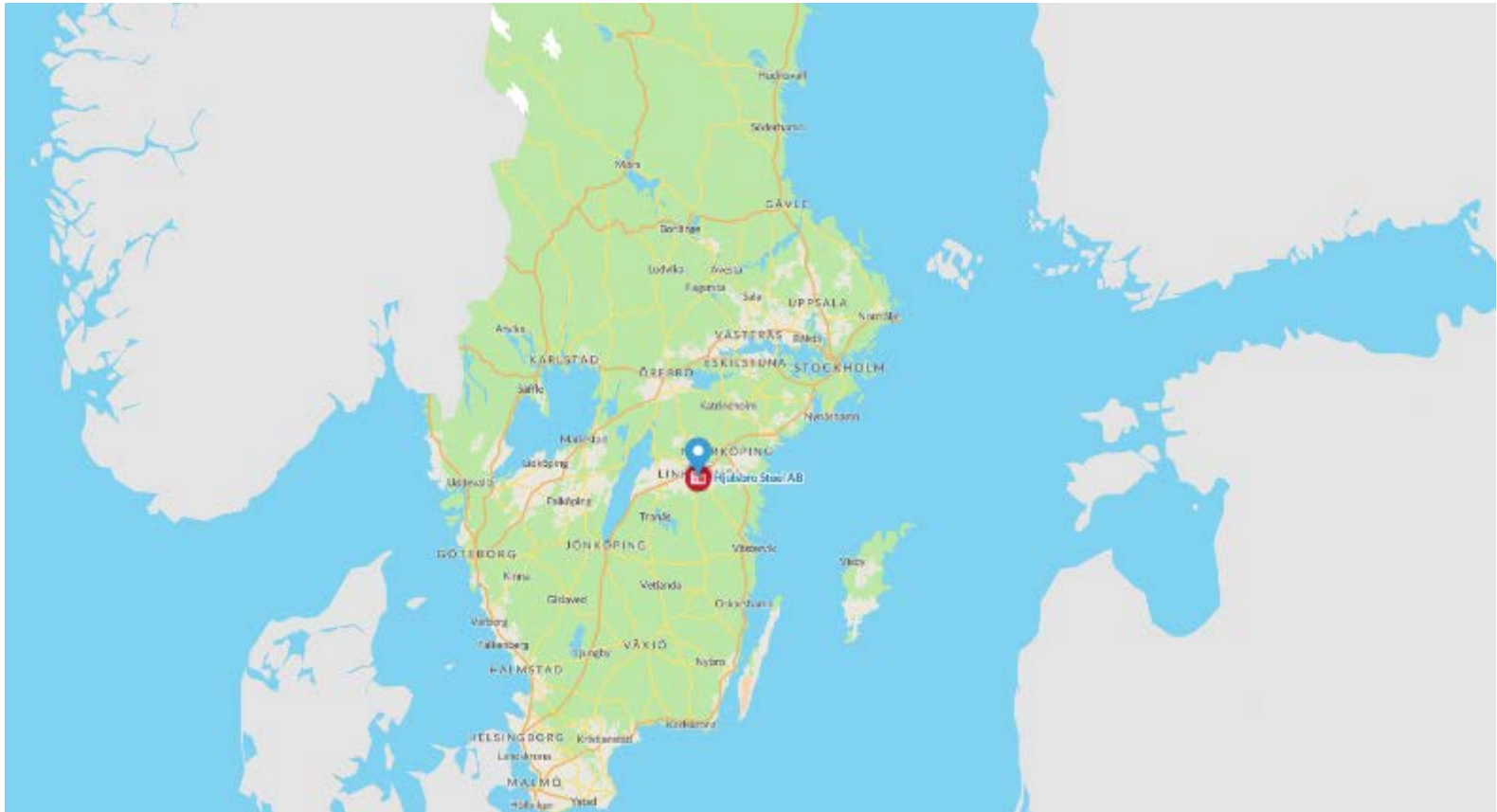


Many names and owners throughout the history...



Hjulsbro Tråddrageri och Spikfabriks AB
Nya Hjulsbro Tråddrageri och Spikfabrik
Hjulsbro Tråddrageri och Nätfabrik AB
Hjulsbro AB
Hjulsbro Spännarmering AB
Fundia Hjulsbro AB
Ovako Hjulsbro AB
Fnsteel Hjulsbro AB
Hjulsbro Steel AB
...

We are located...



Earlier Two production sites



ENSTEEL
HJULSBRO,
SWEDEN

Production of PC-strand

⚙️ Production 30 000 t/y

👤 Personnel 45



FNSTEEL
DALWIRE, FINLAND

Production of PC-strand

⚙️ Production 15 000 t/y

👤 Personnel 25

Today

One bigger factory



52 employees

5 shifts (24/7)

1 Pickling line, 4 drawing and 3 stranding lines

Capacity 45000 ton PC-strand/year

Turnover approx 300Msek

Bigger investments throughout the years

Pickling line -00

Drawing lines (-75, -92, -07, -16)

3-wire strander (-90, new skip-08)

3-wire strander (-97 and -16)

HDPE - line (-16)

Prestressing segments



Precast Concrete industri

- Hollowcore slabs
- Beams
- Columns



Civil engineering (Posttensioning)

- Bridges
- Viaducts
- Ground ancors



Railway Slippers

- Slippers



Mining industry (Rock Bolting)

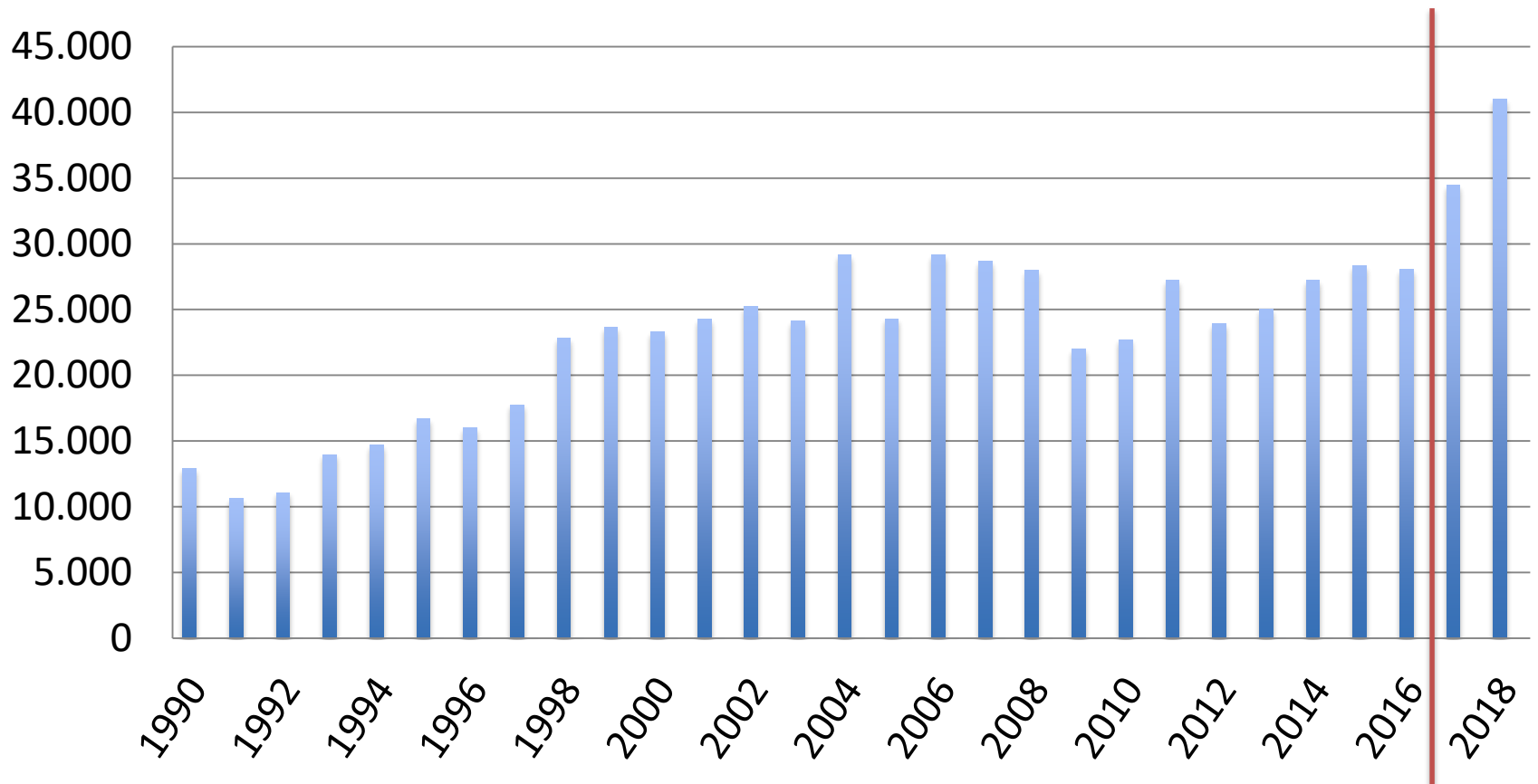
- Rock Bolting

3-wire and 7 wire strand HDPE -strand

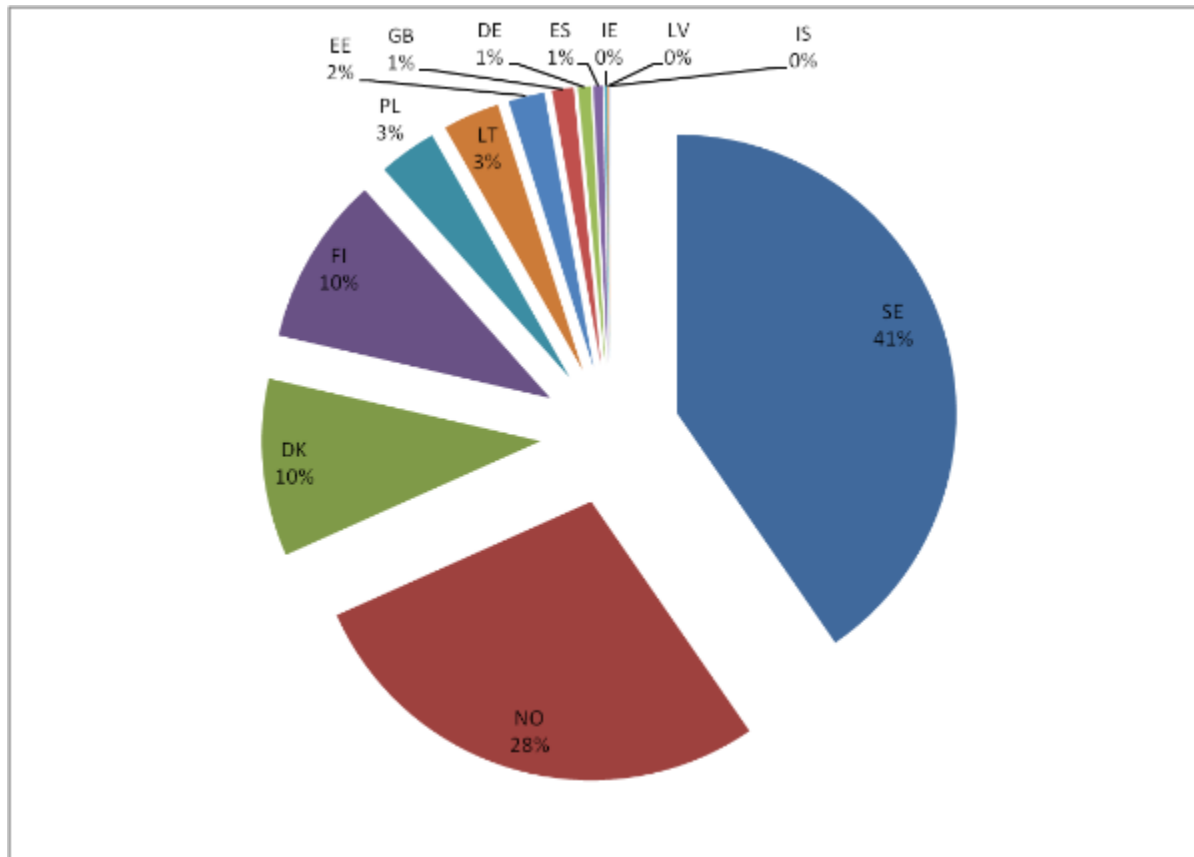
Strand code	Diameter d mm	Cross- sectional area S_n mm ²	Nominal mass M g/m	Tensile strength R _m MPa	Characteristic value of max. force F _m kN	Characteristic value of 0,1% proof force F _{p0,1} kN
3-wire strands						
Y1860S3 6.5	6.5	21,2	166	1860	39,4	33,9
Y1860S3 6.9	6.9	23,4	183	1860	43,5	37,4
Y1860S3 7.5	7.5	29,0	227	1860	53,9	46,4
Y1860S3 8.6	8.6	37,4	292	1860	69,6	59,9
7.wire strands						
Y1770S7 9.3	9.3	52,0	406	1770	92,0	79,1
Y1770S7 12.5	12.5	93,0	726	1770	165	142
Y1770S7 15.3	15.3	140	1093	1770	248	213
Y1770S7 15.7	15.7	150	1172	1770	266	229
Y1860S7 8.0	8.0	38,1	297	1860	70,7	60,8
Y1860S7 9.3	9.3	52,0	406	1860	96,7	83,2
Y1860S7 9.6	9.6	55,0	430	1860	102	87,7
Y1860S7 12.5	12.5	93,0	762	1860	173	149
Y1860S7 12.9	12,9	100	781	1860	186	160
Y1860S7 15.3	15.3	140	1093	1860	260	224
Y1860S7 15.7	15.7	150	1172	1860	279	240

Hjulsbro Steel

Sales development and forecast

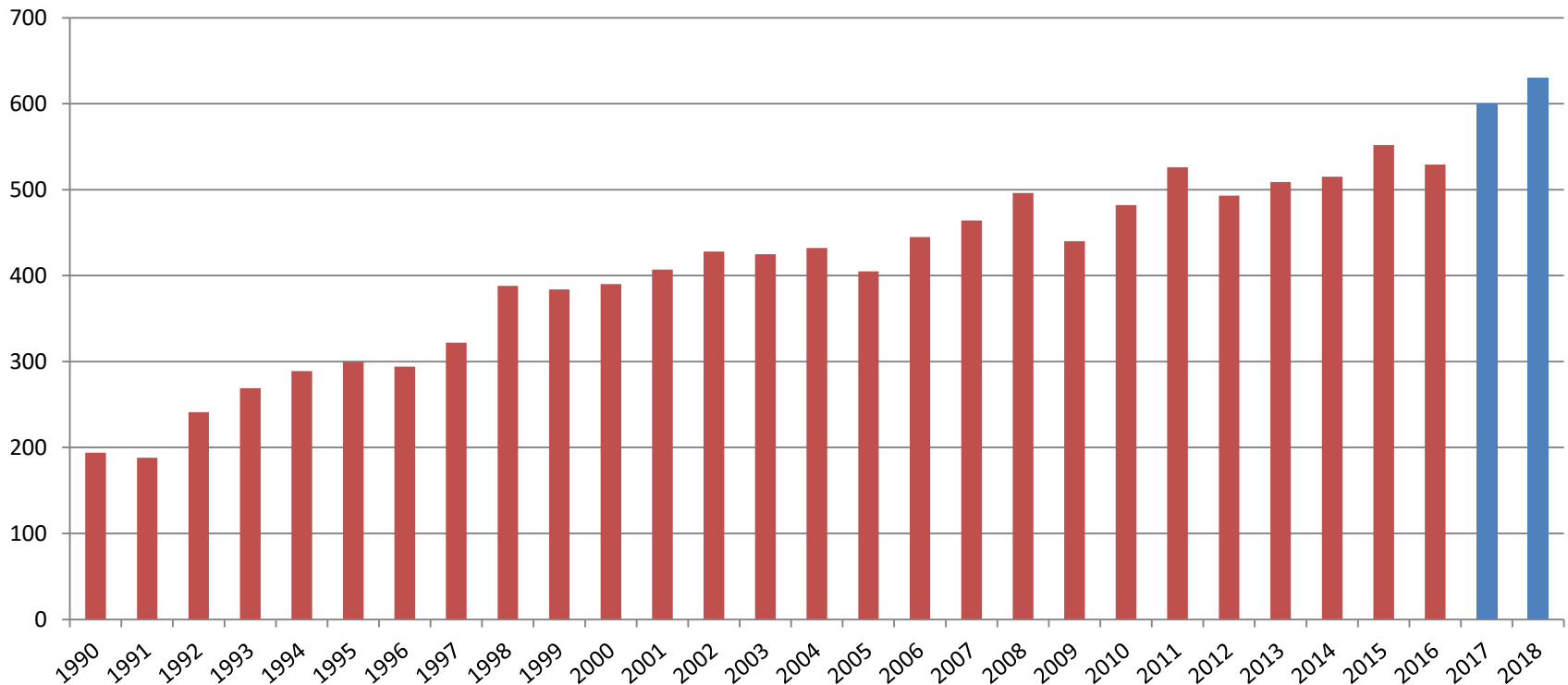


Focused on nordic markets



Productivity increase...an necessity

Kg strand/working hour

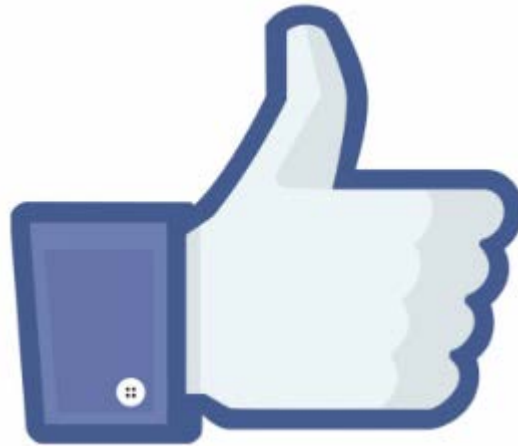


Our strenghts

- ✓ Flexibility
- ✓ Delivery time/performance
- ✓ Reliability
- ✓ Quality
- ✓ Full product range in PC-strand
- ✓ Environmentally friendly
 - (EPD <http://www.environdec.com/en/Detail/epd810>.)



Q&A



Thank you for listening!
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