

Quo Vadis EU Steel ?

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Paris, October 29 2013

Four mega trends in World and EU steel industry

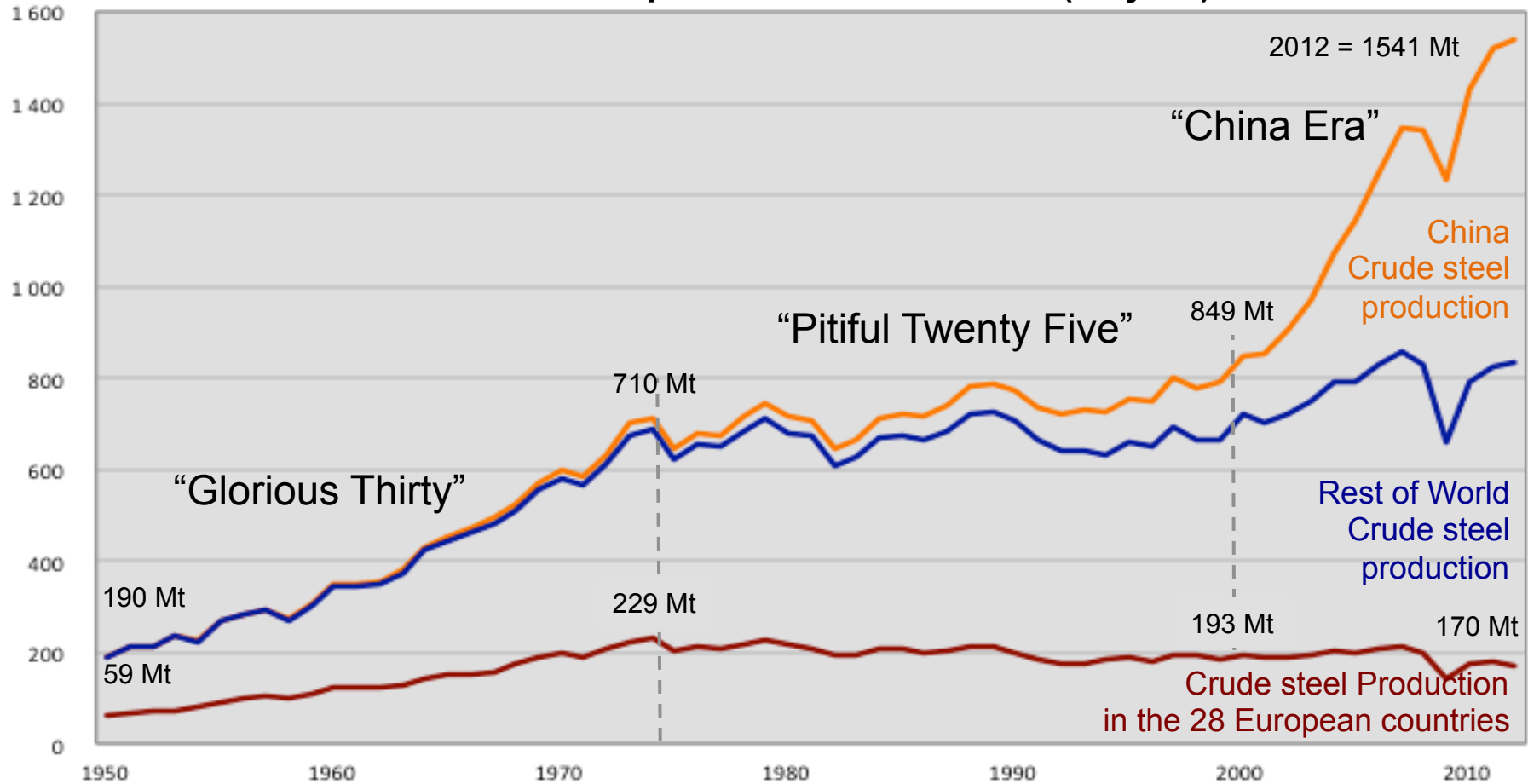
1. World production will continue to grow, led by China. EU production will recover only slightly.
2. Global raw material prices, hence steel prices, will decline gently as raw materials supply growth exceeds demand growth.
3. Technology change will accelerate and lead to increased share of EAF production, hence lower production by BF/BOF producers.
4. “De-concentration” of Steel Industry (outside China) will continue as many international ventures flounder. Winners are regionally focused, prudent, producers.

FIRST MEGA-TREND :

World production will continue to grow, led by China. EU production will recover only slightly.

Since 1974, EU28 production has slowly declined while world production has soared thanks to China

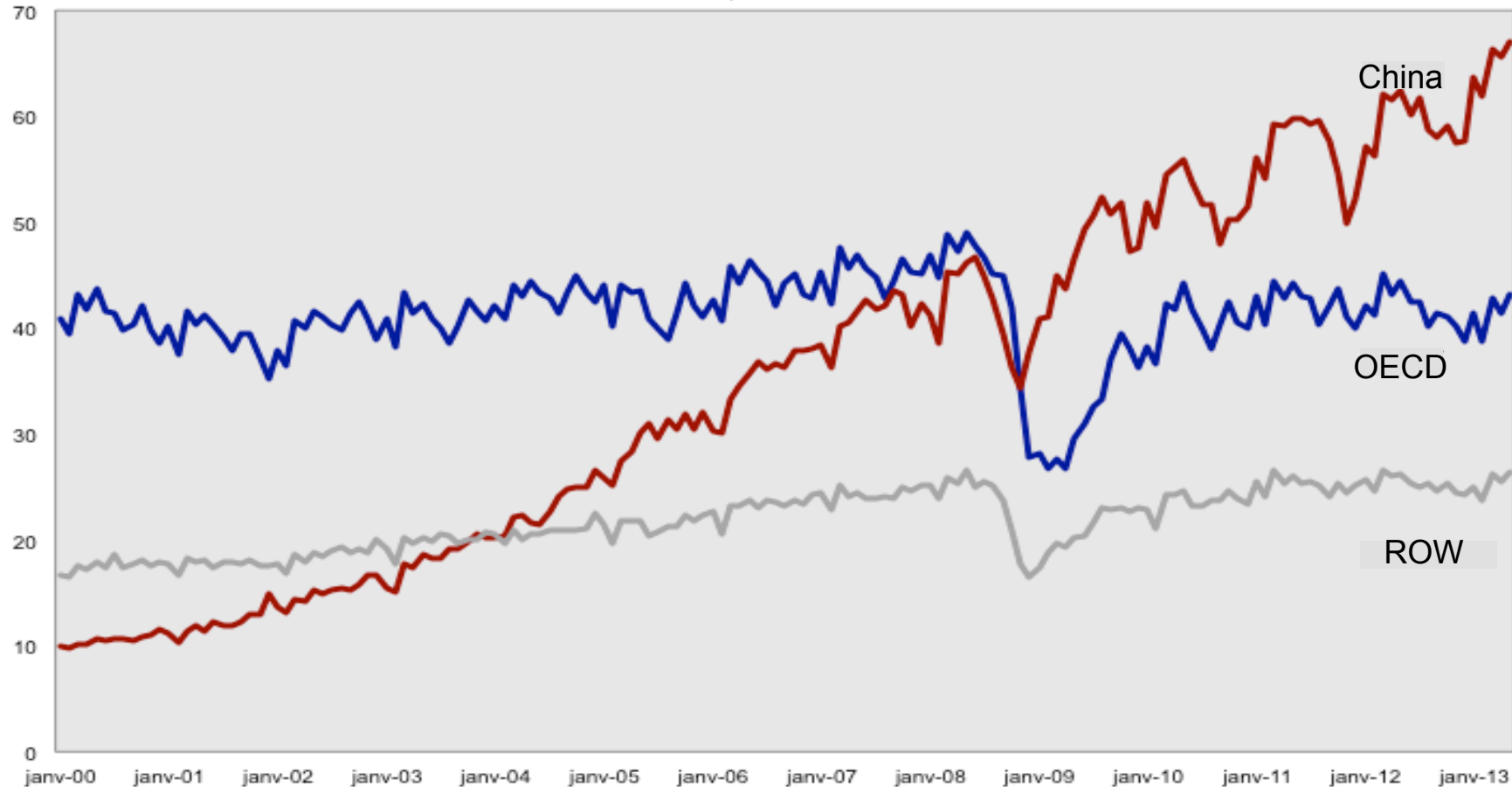
Evolution of crude steel annual production in the world (Mt/year)



Source : Worldsteel Laplace Conseil analysis

China grew at 20% CAGR until 2008, then at 6,5% while OECD has not yet fully recovered since 2009

Evolution of China, OECD and ROW monthly production (Mt/month)



Source : Worldsteel Laplace Conseil analysis



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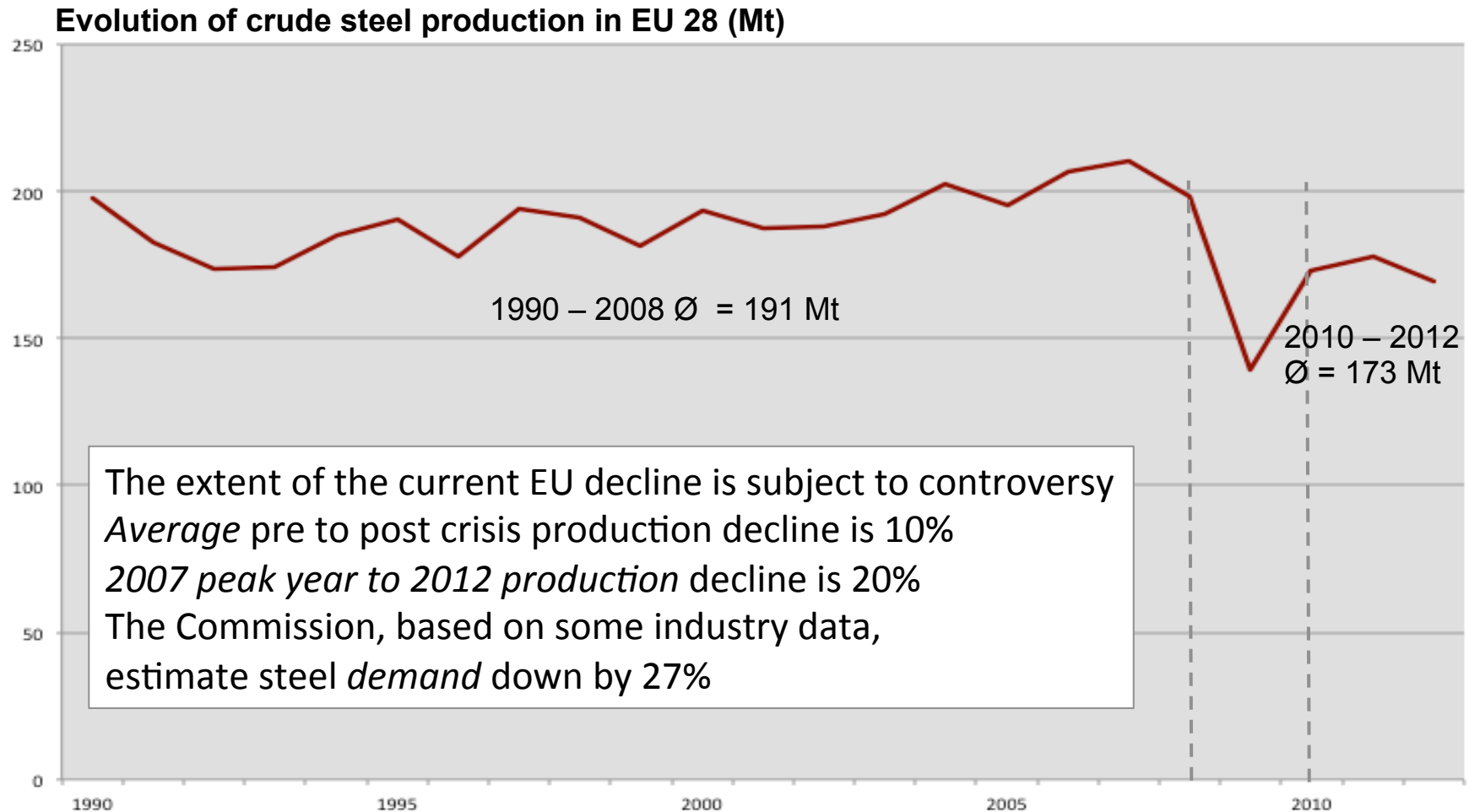
EU28 production has slowly declined since the end of the “Glorious Thirty”

Evolution of crude steel production in EU 28 (Mt)



* Laplace Conseil has reconstructed the cumulative production of today's EU 28 members. Data prior to 1995 are partly estimated
Source : Worldsteel Laplace Conseil analysis

EU28 production grew slowly from 1993 to 2007, collapsed in 2009, then declined by 10% on average



Source : Worldsteel Laplace Conseil analysis

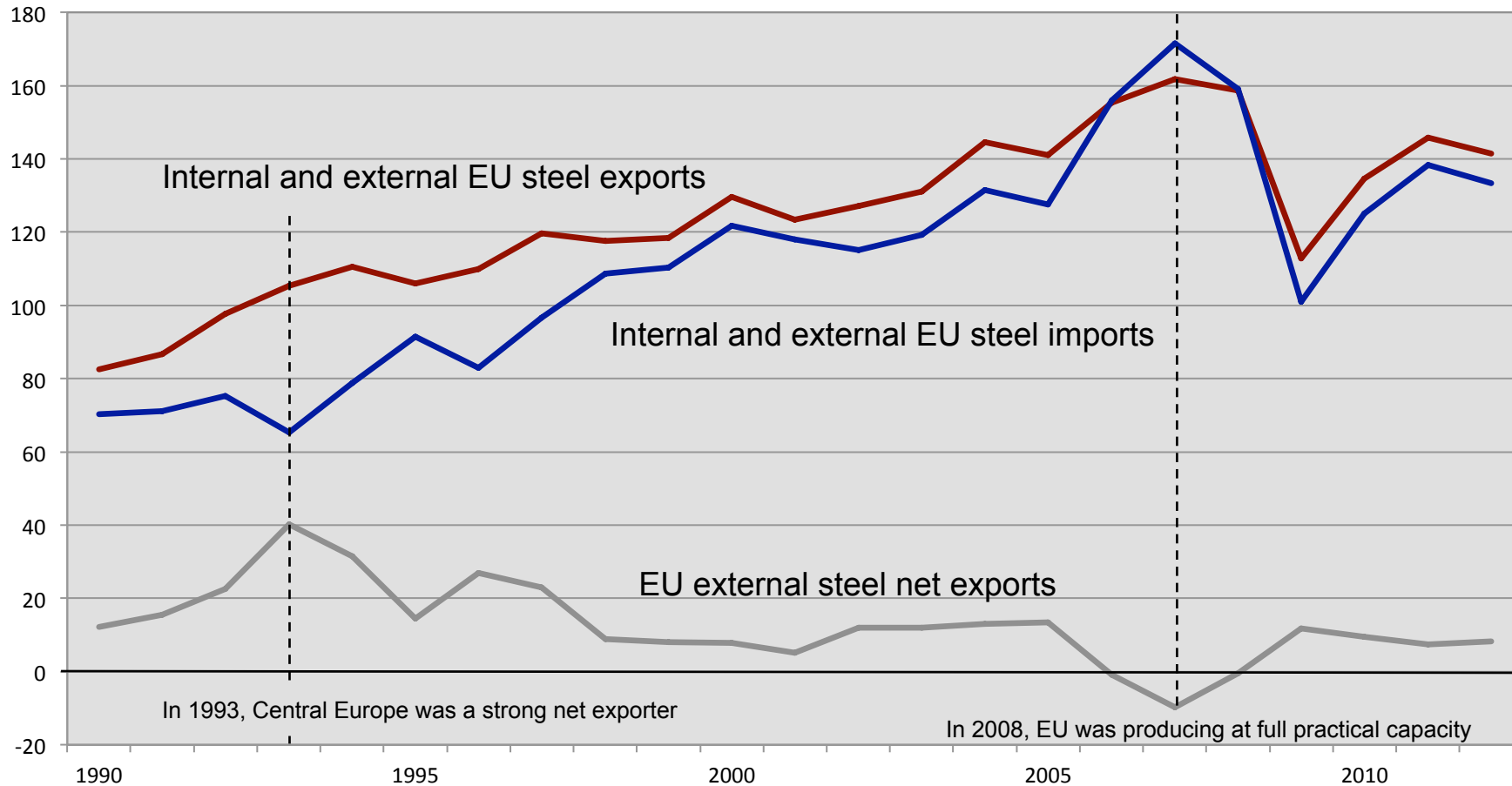


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Despite production decline, trade kept increasing; net steel export was always positive, except in 2008

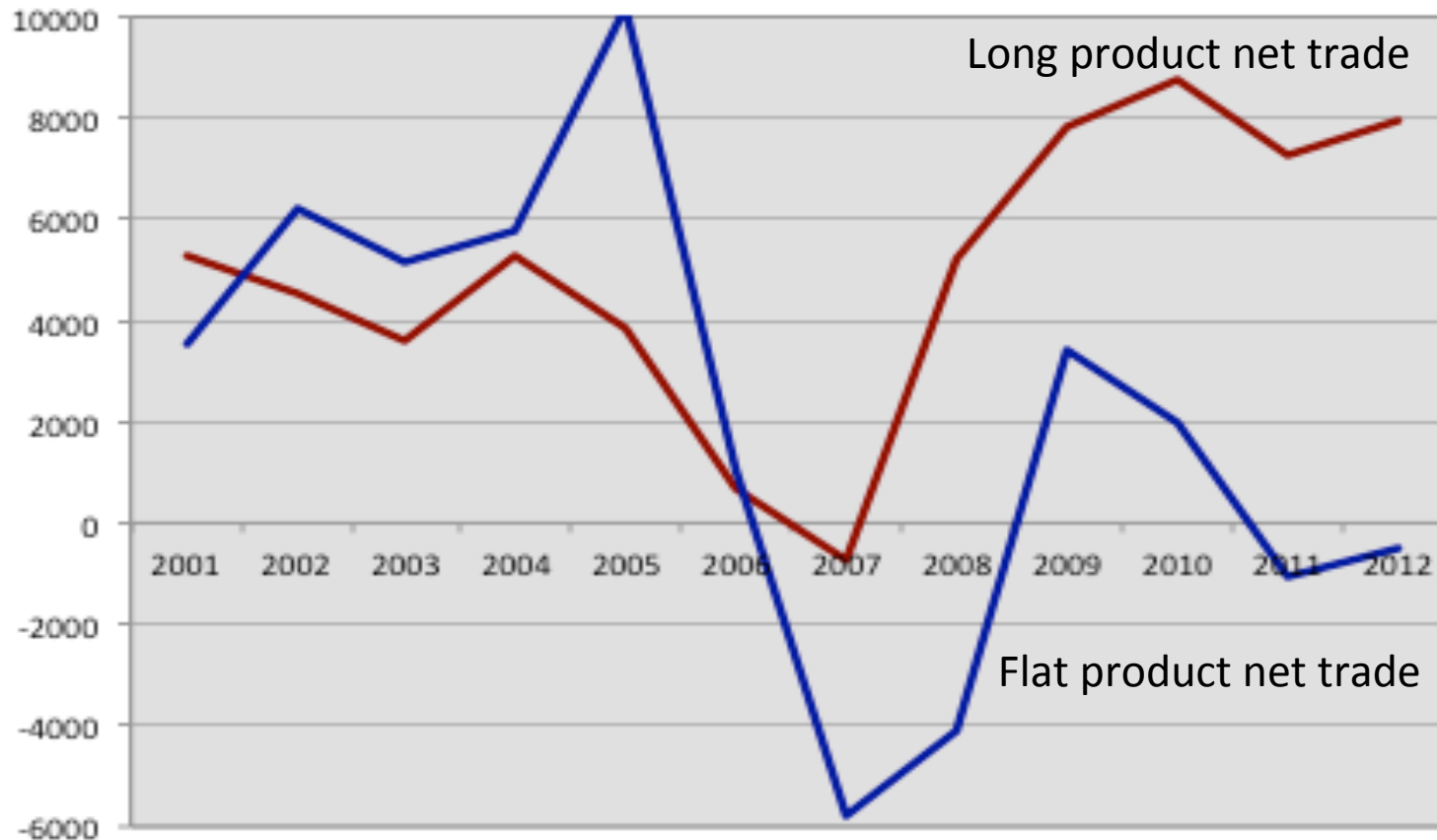
Evolution of internal and external EU trade (Mt)



Source : Worldsteel Laplace Conseil analysis

Long products net exports by minimills have increased in recent years while flat products net trade has collapsed

Evolution of EU net trade (export minus import) for flat and long products (Kt)



Laplace Conseil forecasts a steady growth in global steel production but only mild recovery for Europe

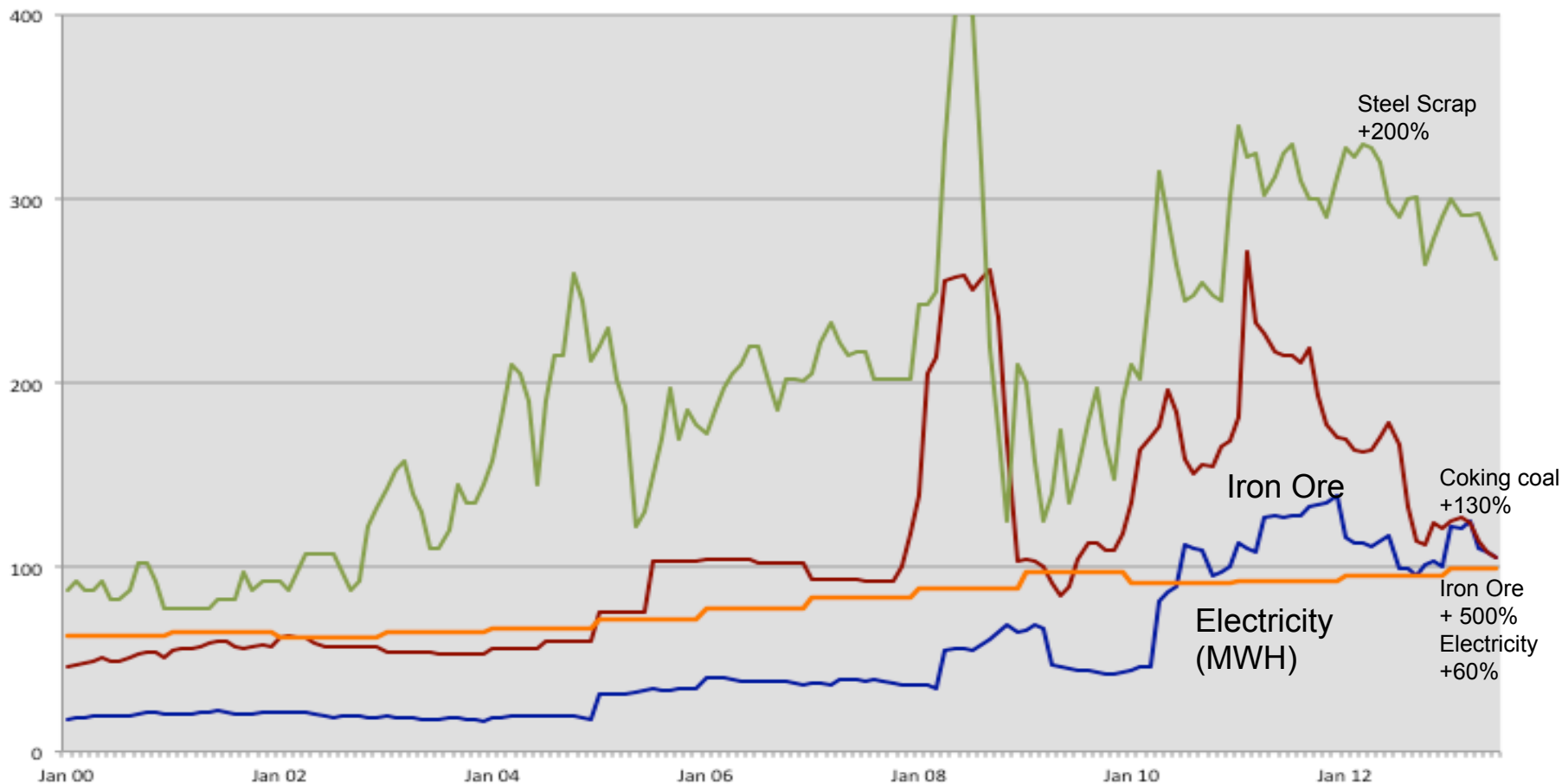
- Worldwide, steel production should increase on average by 40 to 60 Mt per year with 60 to 80% of that growth in China. While China growth will “decelerate” when measured in percentage, in absolute terms, annual production will continue to increase significantly.
- In Europe, steel consumption will only recover when construction restarts, which means an improvement in public finance and a greater confidence in the future by economic agents.
- EU28 production could return in a few years to its long term average of 190 Mt, that is 10 to 12% above current production level.

SECOND MEGA-TREND :

Global raw material prices, hence steel prices,
will decline gently as raw materials supply
growth exceeds demand growth

Since 2003, the price of raw materials grew very strongly, but recently are coming down

Evolution of the main raw material prices (iron ore, coking coal, steel scrap and electricity in €/t)



Source : Platts SBB, Eurostat, Laplace Conseil analysis

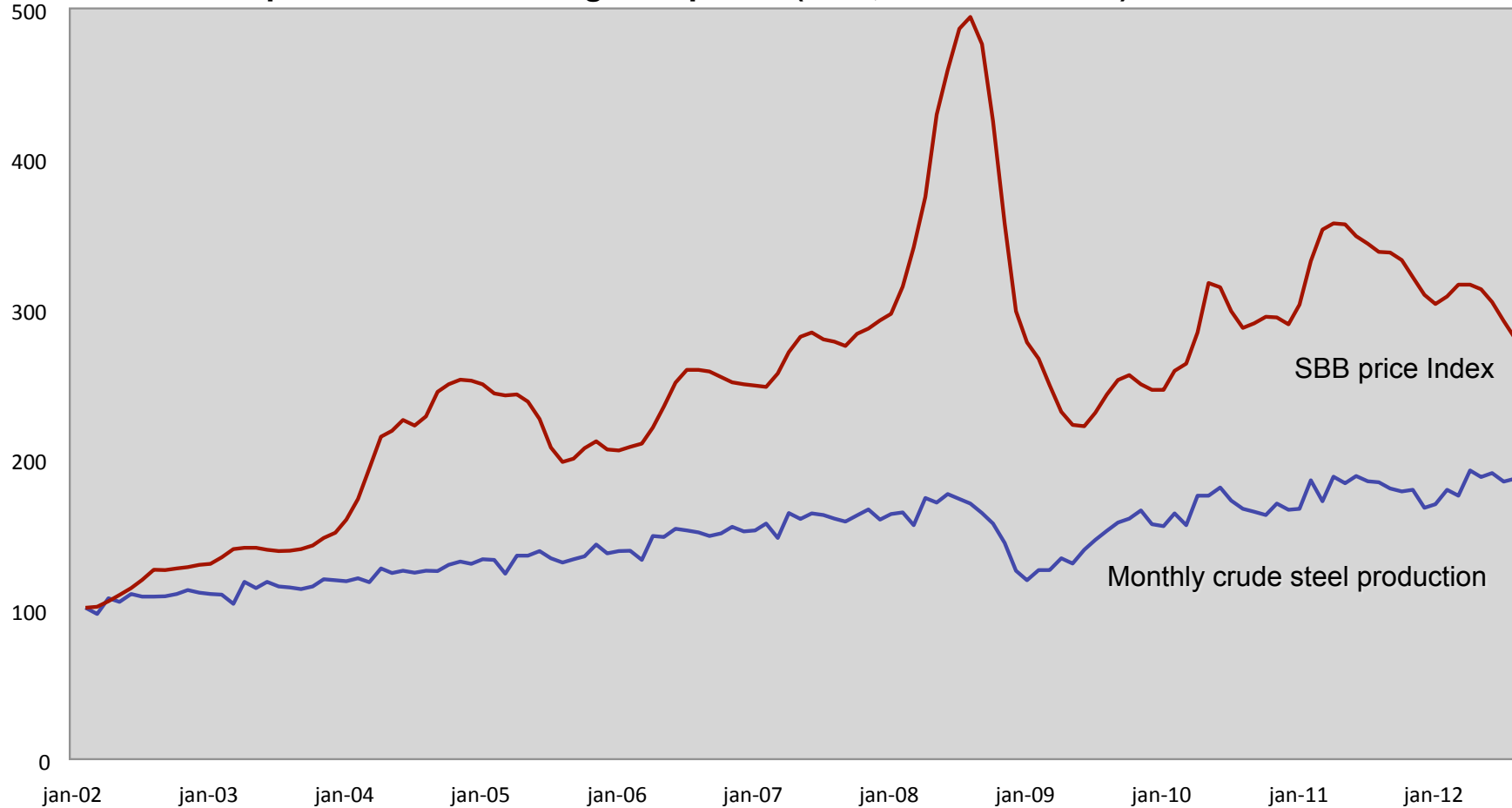


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In 2008, the steel industry was working at full practical capacity and prices shot through the roof

Global steel production index vs global prices (SBB, 100 = Jan 2002)



Source : SBB, WorldSteel, Laplace Conseil analyses

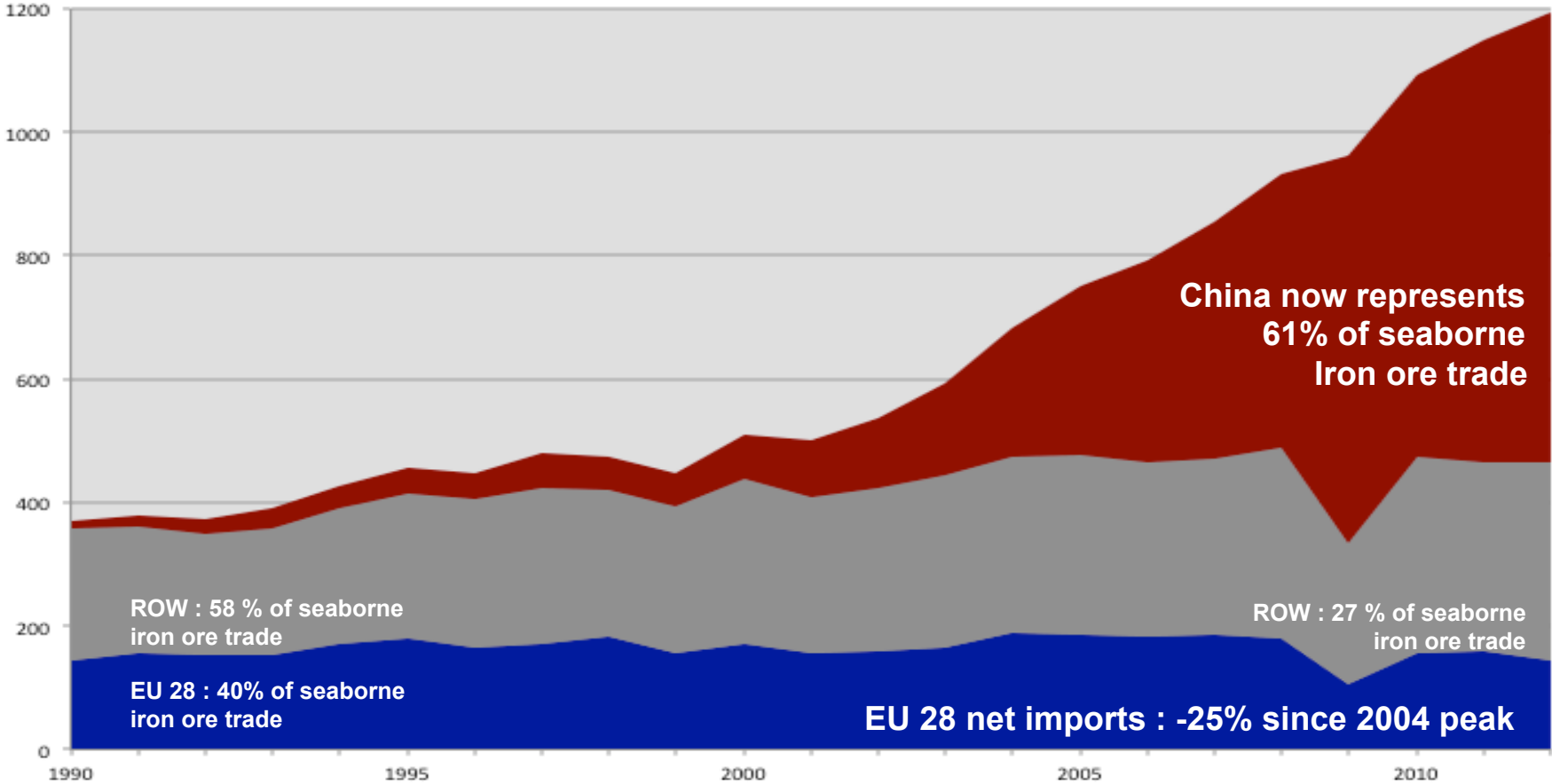


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Seaborne iron ore trade trebled since 2000, exclusively as a result of Chinese demand growth

Evolution of seaborne iron ore trade by region (Mt/year)



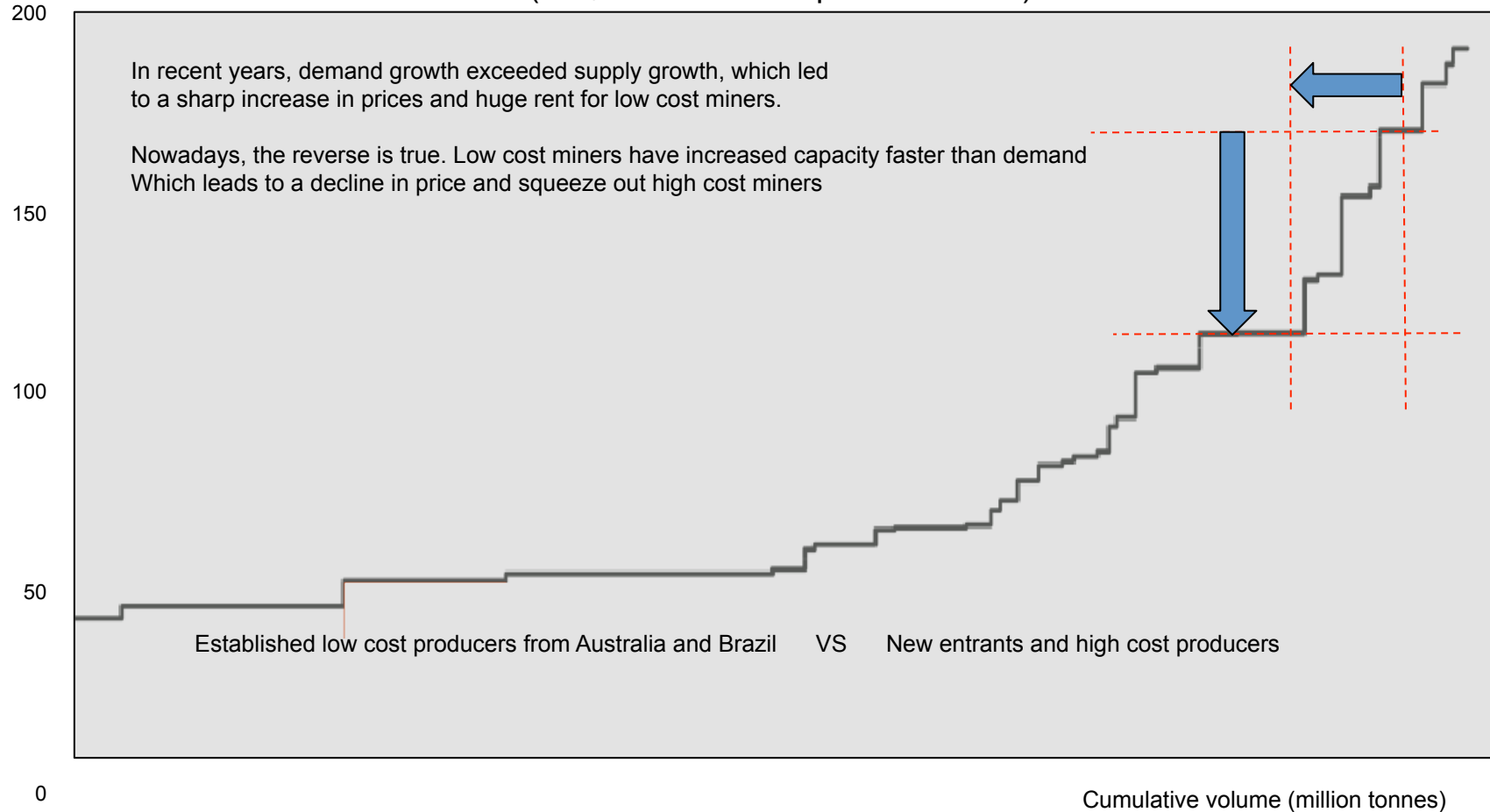
Source : WorldSteel, Laplace Conseil analysis

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To meet China's demand, the mining industry had to open new mines and expand others

Cost Curve for Iron ore fines (US\$/t CIF China equivalent basis)



Source Macquarie Research March 2012 Laplace Conseil analysis

Today, raw materials are global commodities, while steel is still mostly a regional industry

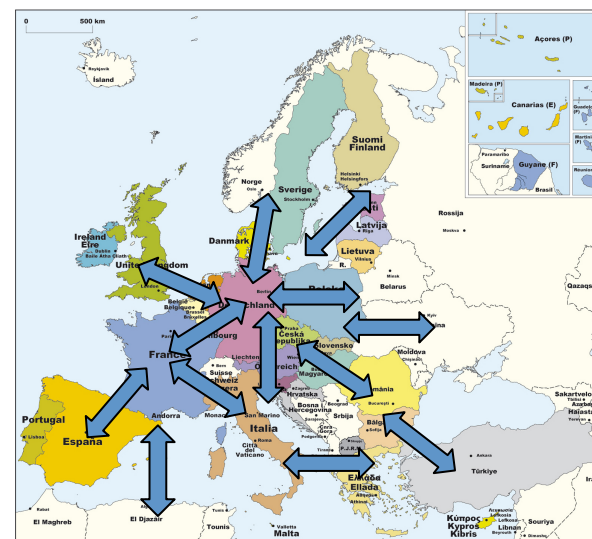
Global raw materials trade



Iron ore, coal, steel scrap and alloys are globally traded commodities. Increasingly, they are traded in global online exchanges such as LME, now located in Hong Kong. Reference indices are published daily and gain traction month after month.

Source : Laplace Conseil analyses

Regional steel trade



Steel production remains a regional business. Most steel trade is conducted regionally. Substantial price differences remain between regions and trans-oceanic trade is small and peripheral. There is only one global producer.

Source : Laplace Conseil analyses

Laplace Conseil forecasts a gentle decline in steel prices, consequence of lower raw material prices

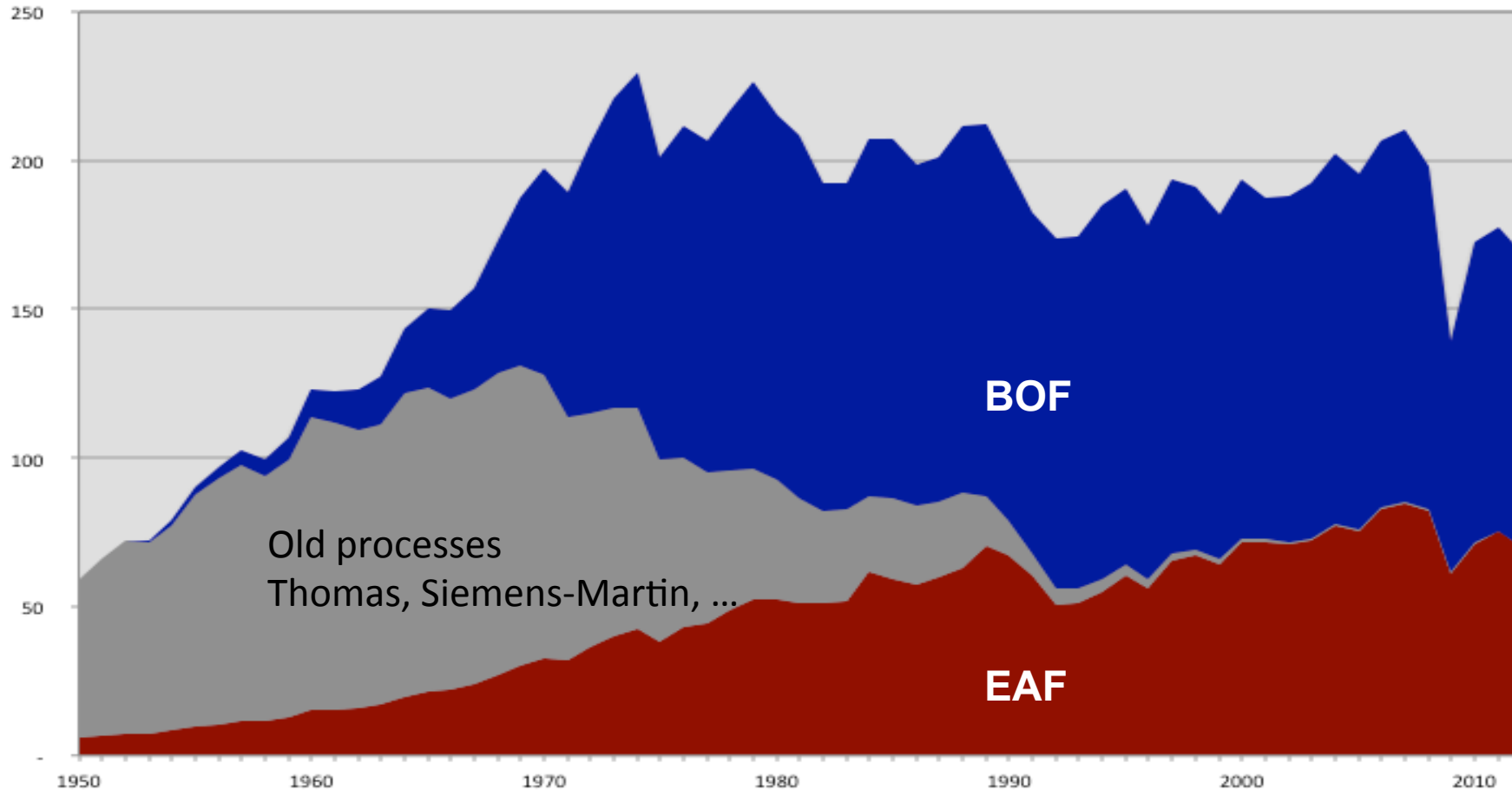
- In recent years, most steel mills have tied their selling prices to their raw material prices through “raw material cost surcharges”.
- The procedure has durably changed the nature and the economics of the steel industry who is now acting as a “transformer” and no longer as a full fledged producer. The industry is now managing a “spread” and the first “spread futures” are appearing in financial markets. It has lost major pricing power.
- The mining industry was hugely profitable in recent years, but low cost miners have also expanded capacity at a fast and furious clip. Mining capacity is now “slightly” outstripping demand, despite China continuing growth.
- Coal is declining faster due to competition from shale gas in North America.
- Scrap prices are tightly correlated to iron ore and coal prices and should decline accordingly.
- We expect finished steel prices to decline slowly in the medium term, and still remain quite volatile.

THIRD MEGA-TREND :

Technology change will accelerate and lead to increased share of EAF production, hence lower production by EU BF/BOF producers.

EAF production is steadily growing in EU28 while old processes have been replaced by modern BOF

Evolution of Crude steel production by process in EU28 (Mt)



Source : Worldsteel Laplace Conseil analysis



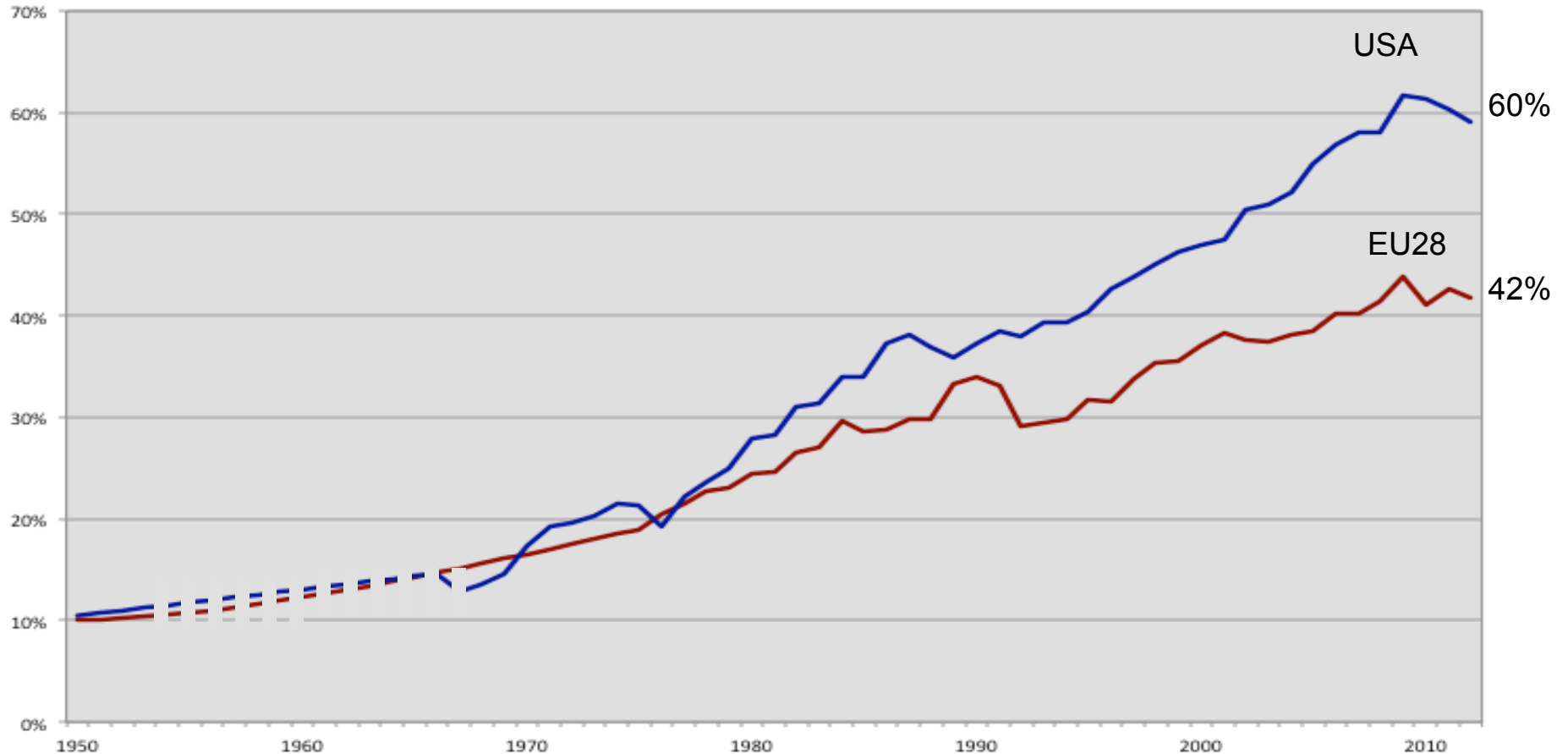
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For many decades, the share of EAF steel has grown steadily in Europe and USA

EAF share in crude steel production in EU28 and USA (%)



Source : WorldSteel, Laplace Conseil analysis

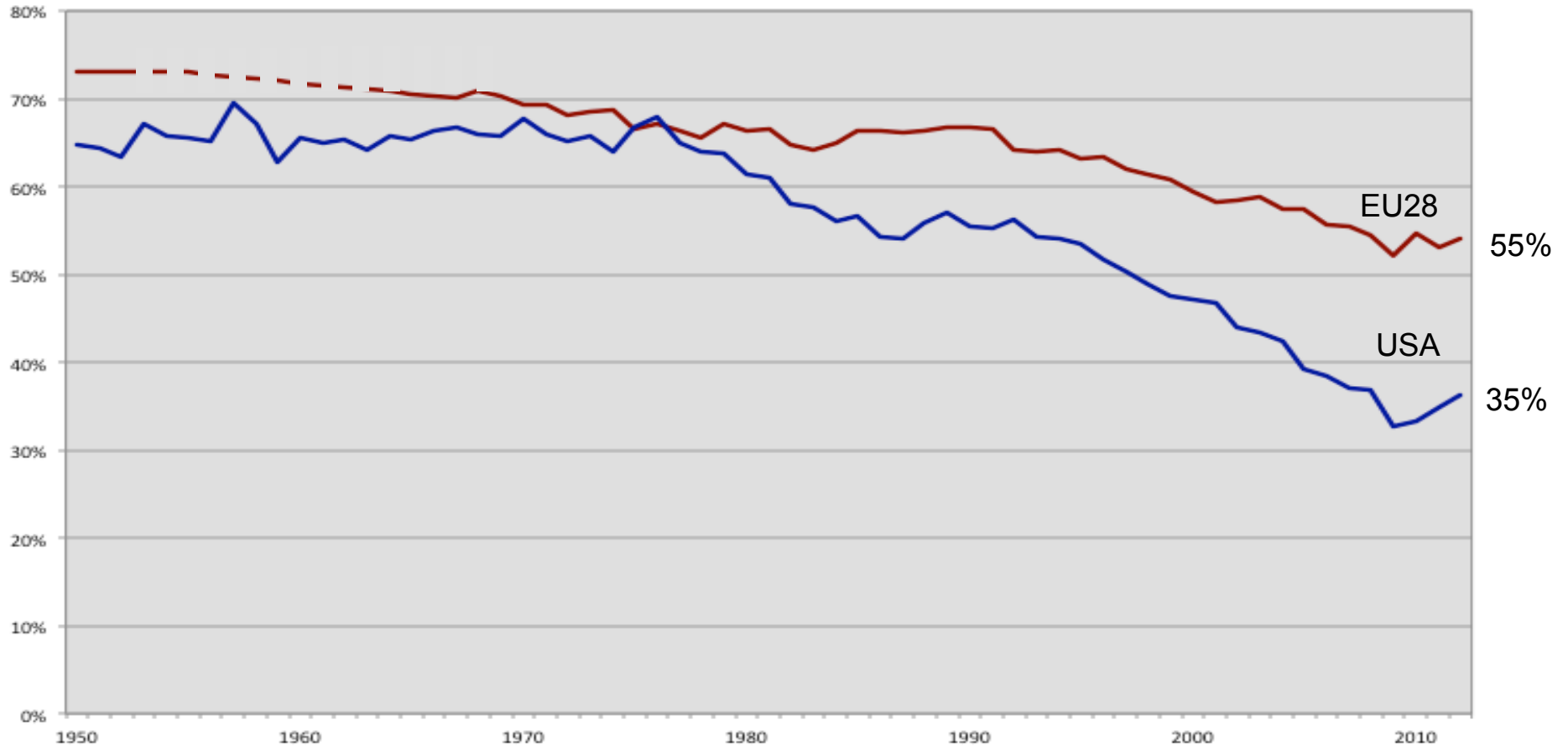


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Consequently, the share of pig iron to crude steel has steadily diminished...

Ratio of pig iron to crude steel production, by region (%)



Source : WorldSteel, Laplace Conseil analysis

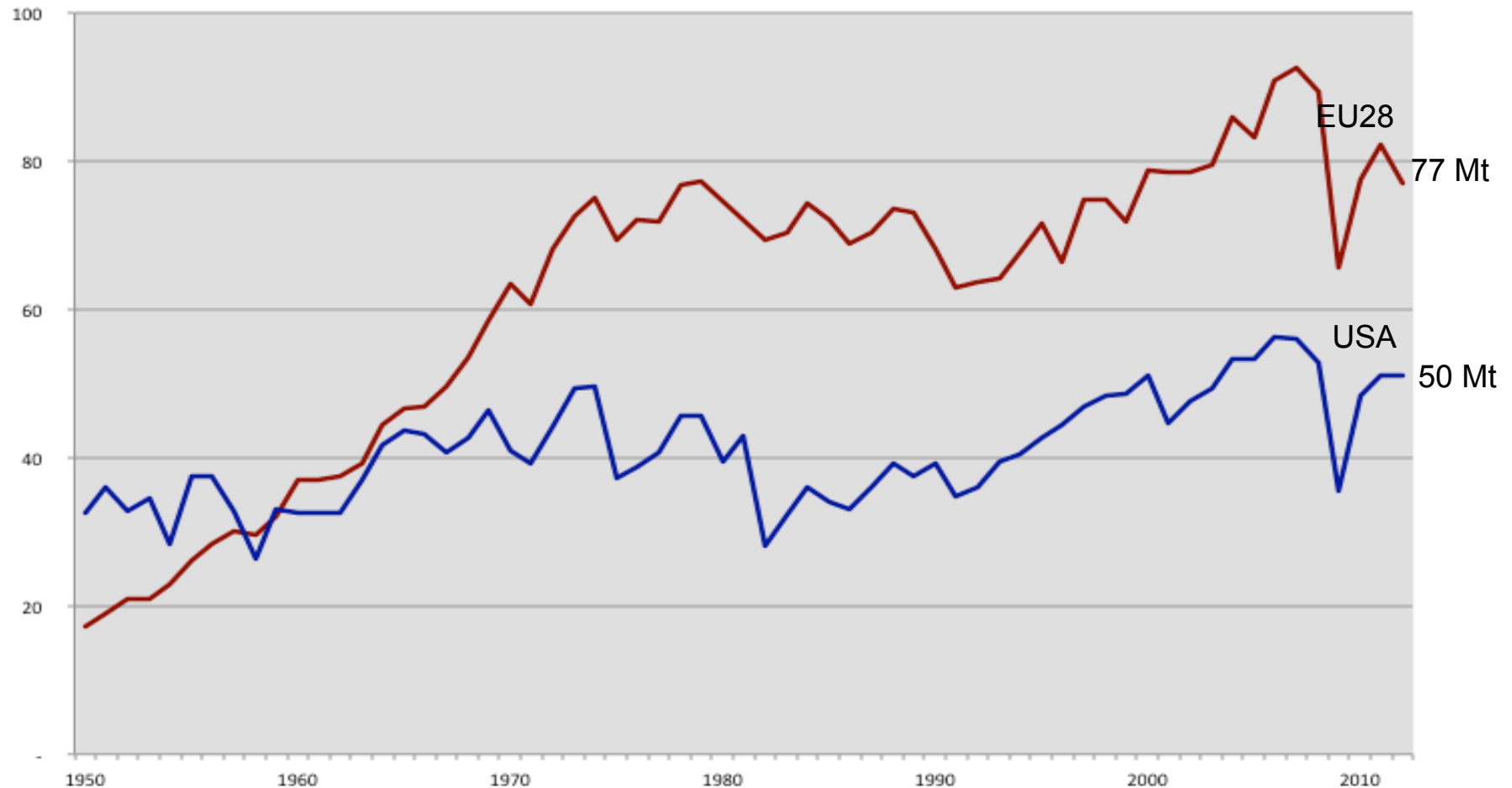


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...and the use of steel scrap has steadily increased especially after 1990

Evolution of steel scrap purchases in EU28 and US (Mt)



Source :EFR, WorldSteel, Laplace Conseil analysis

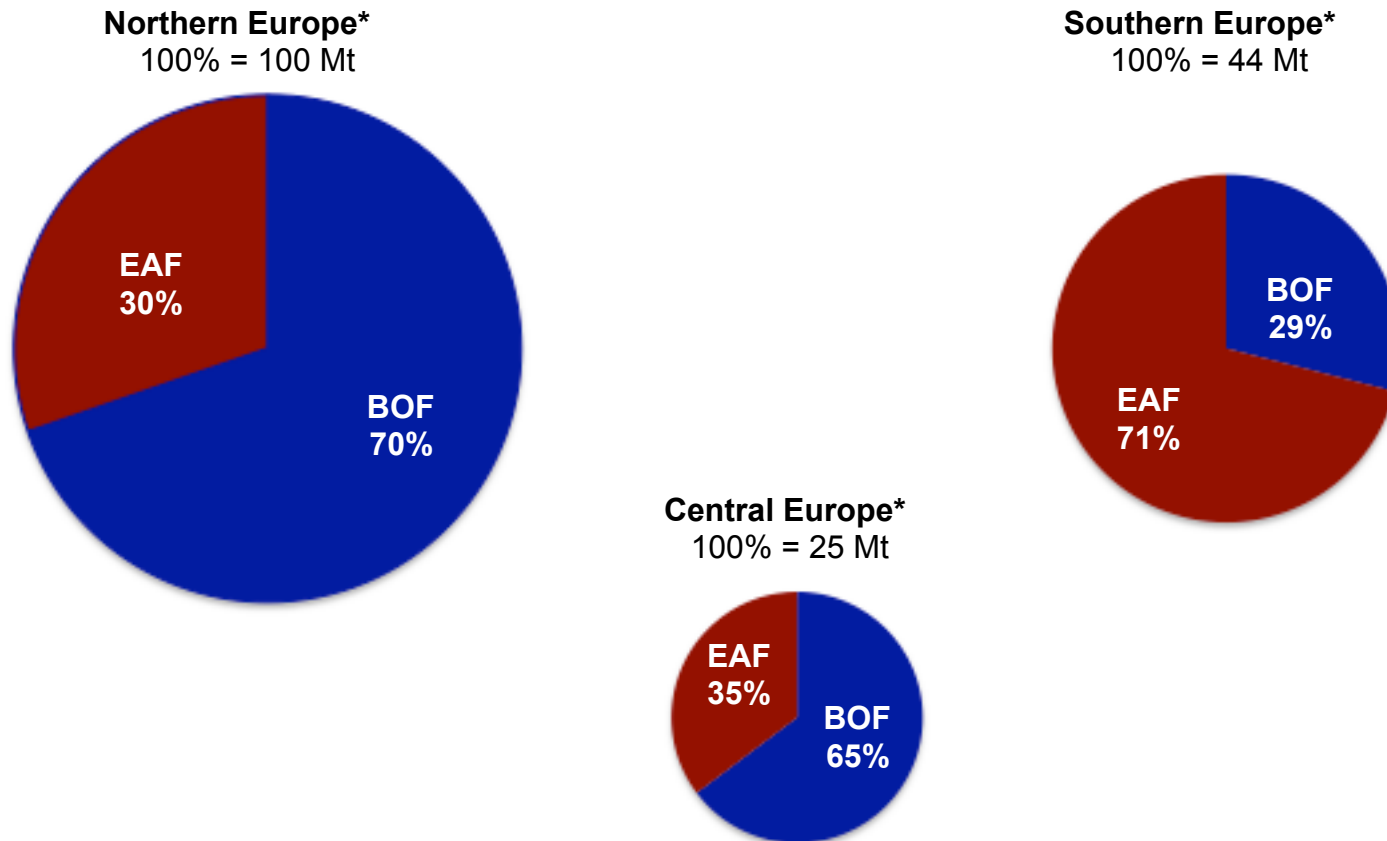


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BOF production is more important in Northern and Central Europe than in Southern Europe

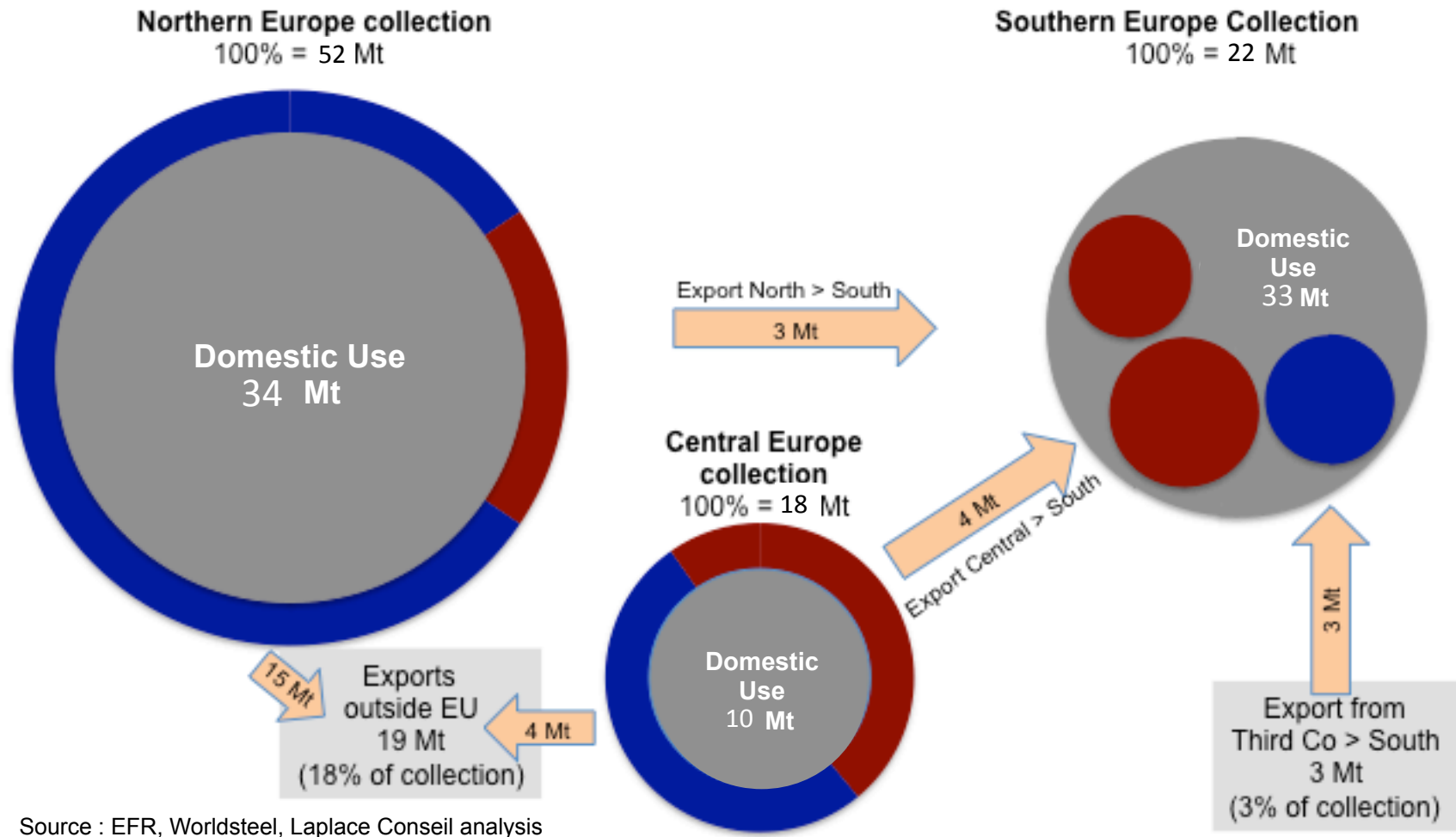
Repartition of crude steel production by process in EU28 (Mt and %)



* Northern Europe : Austria, Benelux, France, Germany, Scandinavia, UK;
Central Europe : Bulgaria, Croatia, Czech Republic, Hungary, Latvia, Poland, Romania, Slovak Republic, Slovenia;
Southern Europe : Greece, Italy, Portugal, Spain
Source : Worldsteel, Laplace Conseil analysis

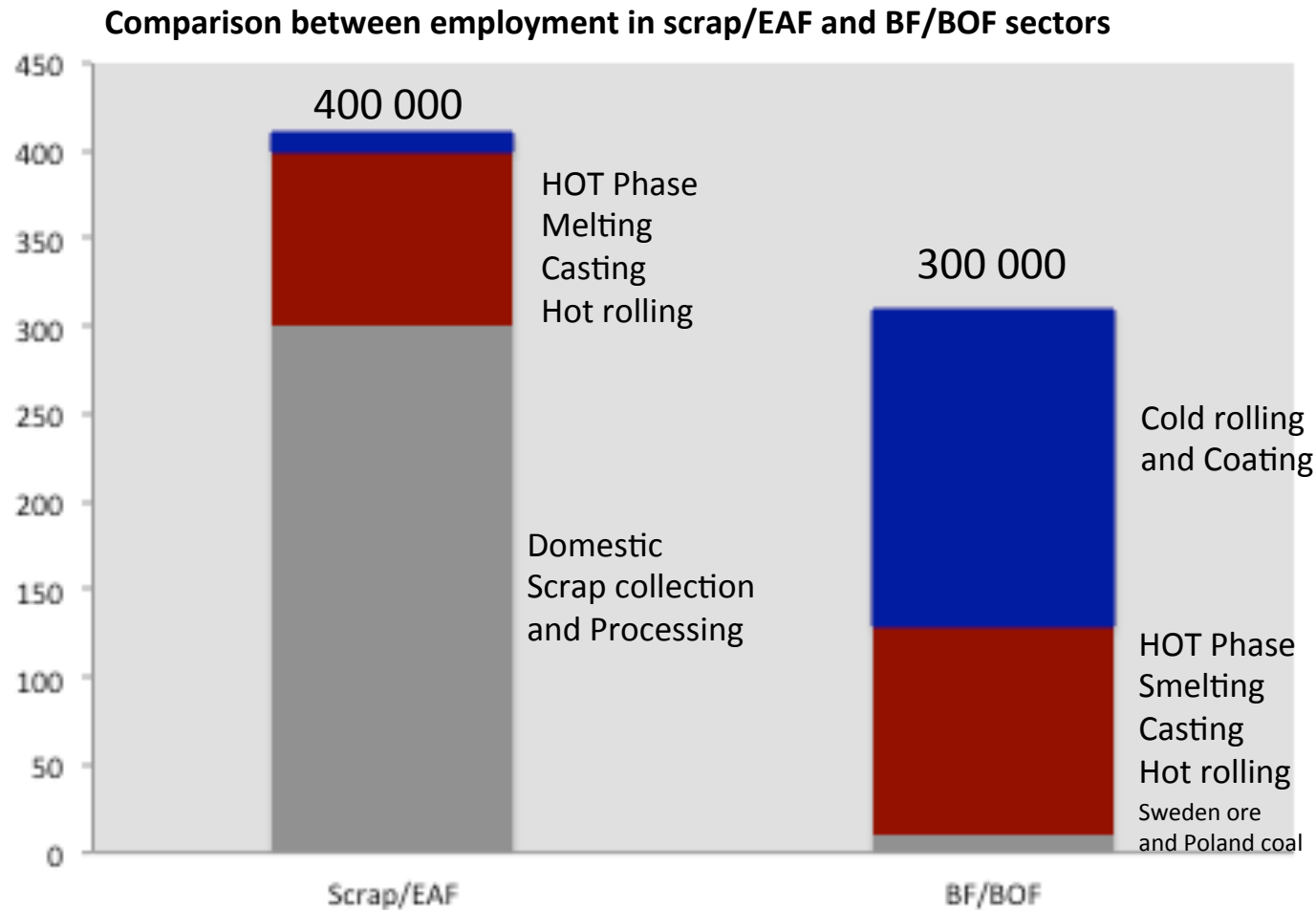
Northern and Central Europe export 19 Mt of scrap to third countries and 4 Mt to Southern Europe

Repartition of steel scrap collection, consumption and trade in EU28 (Mt and %)



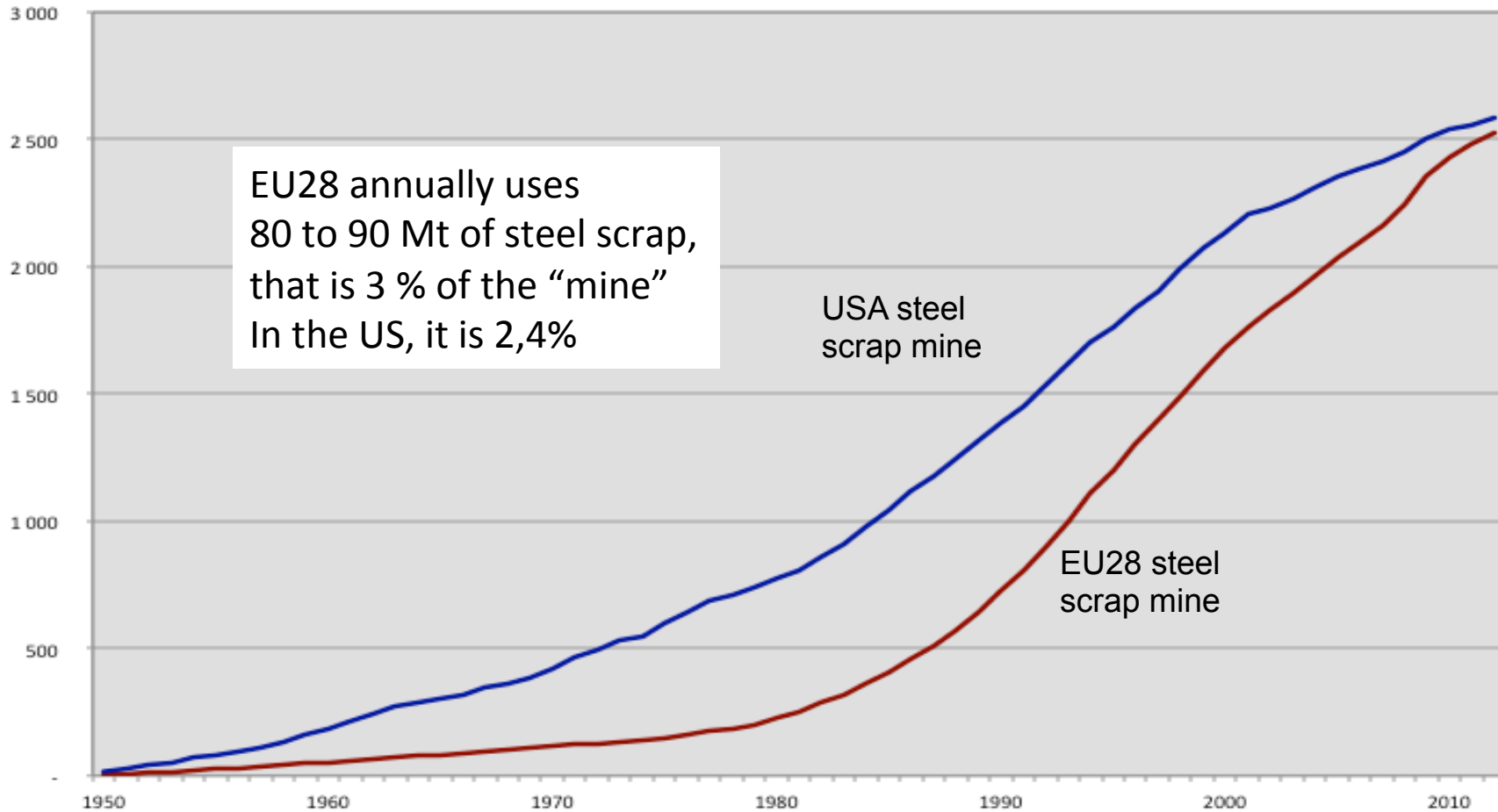
Source : EFR, Worldsteel, Laplace Conseil analysis

The Scrap and EAF industry employs more workers than the integrated sector who needs to import iron ore and coal



In addition, EU28 has accumulated a stock of steel scrap of 2500 Mt for the future, quite a scrap mine !

Growth of the EU28 and USA scrap mines* (Mt)



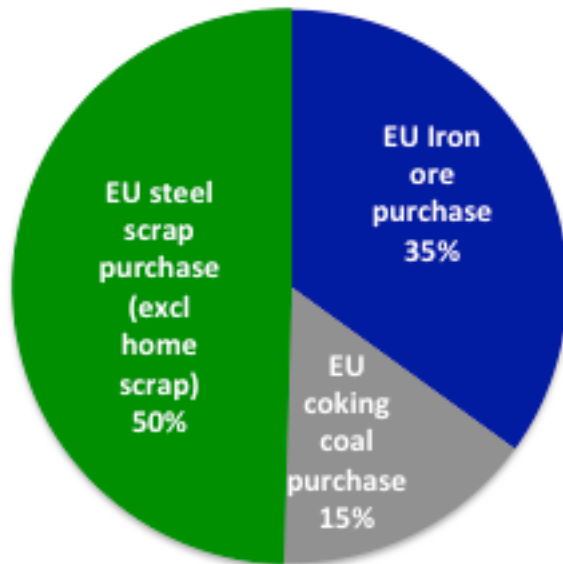
EU28 annually uses 80 to 90 Mt of steel scrap, that is 3 % of the "mine"
In the US, it is 2,4%

* The scrap mine is the difference between scrap arising and scrap use net of cumulative losses and uneconomic collection

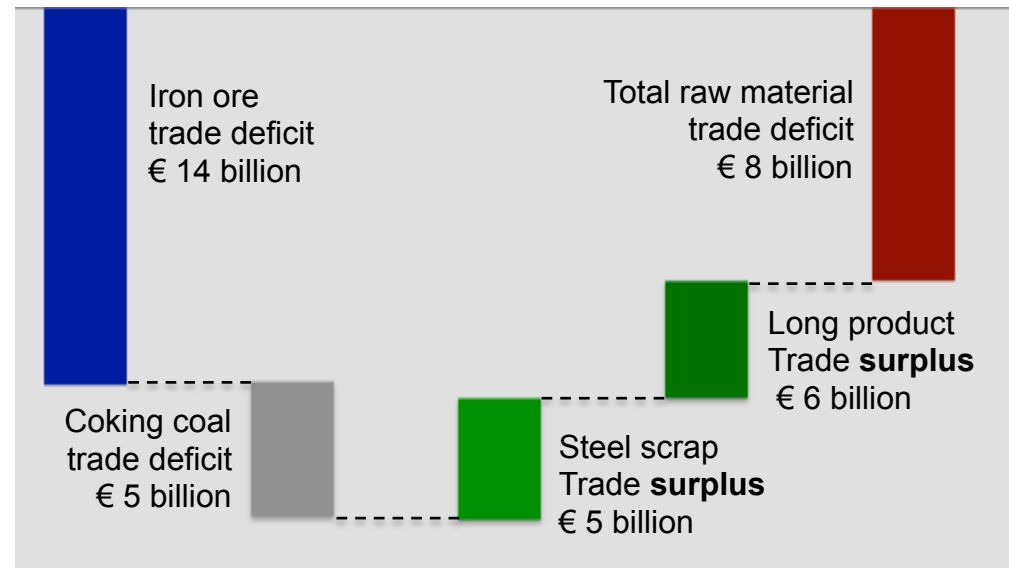
Source : EFR, WorldSteel, Laplace Conseil analysis

Steel scrap and long product exports help offset the large trade deficit in iron ore and coking coal

EU Steel purchase of raw materials
100% = € 47 Billion



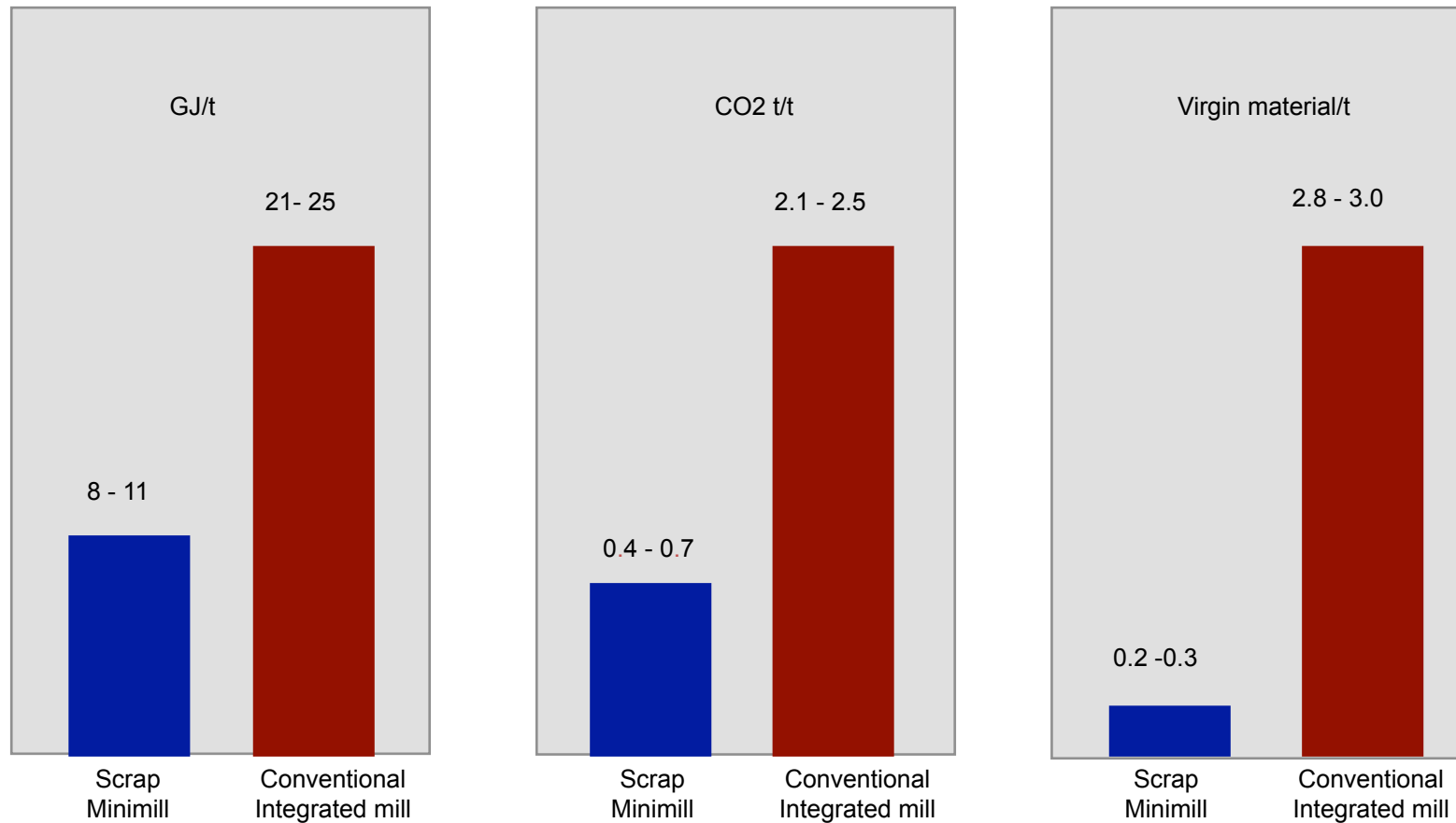
EU Steel net external trade balance
100% = € 10 Billion



Source :Platts SBB, Worldsteel, Eurofer, EFR, Laplace Conseil estimates

The environmental advantages of scrap recycling over traditional BF/BOF smelting are important

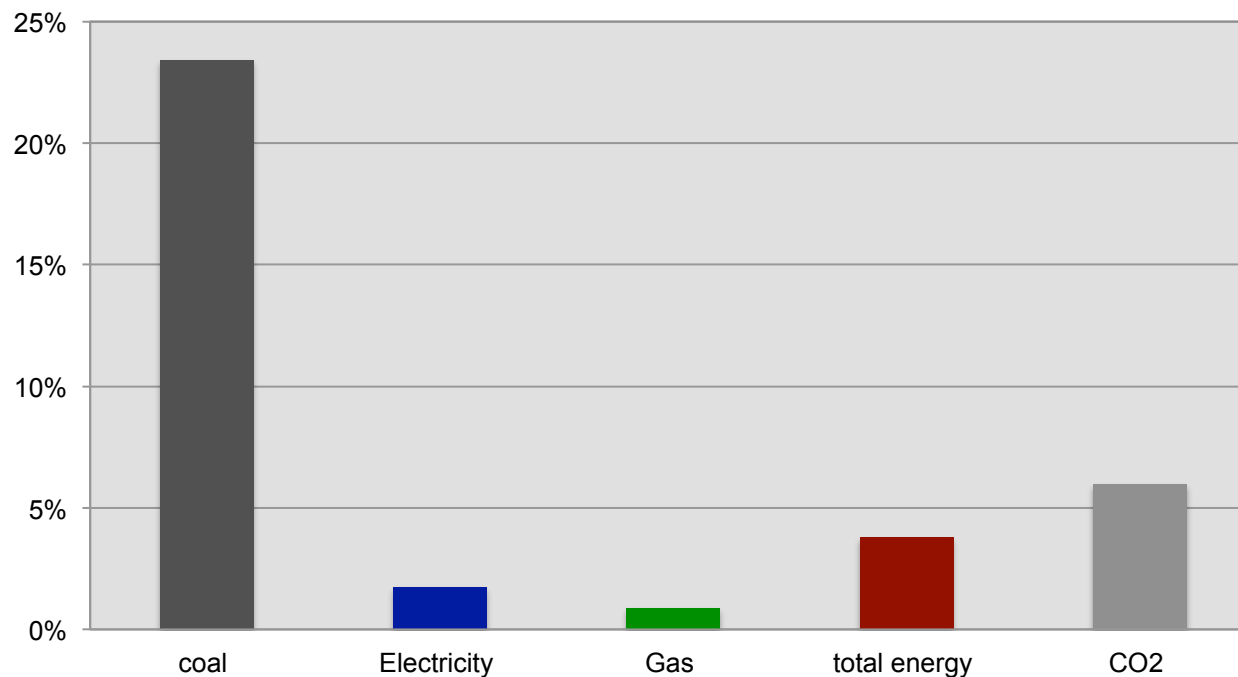
Environmental comparison of EAF and BF/BOF in EU28



Source : Industry data, Laplace Conseil estimates

The EU steel industry uses 23% of all coal, 1,9 % of electricity, 0,9% of gas and emits 6% of CO₂

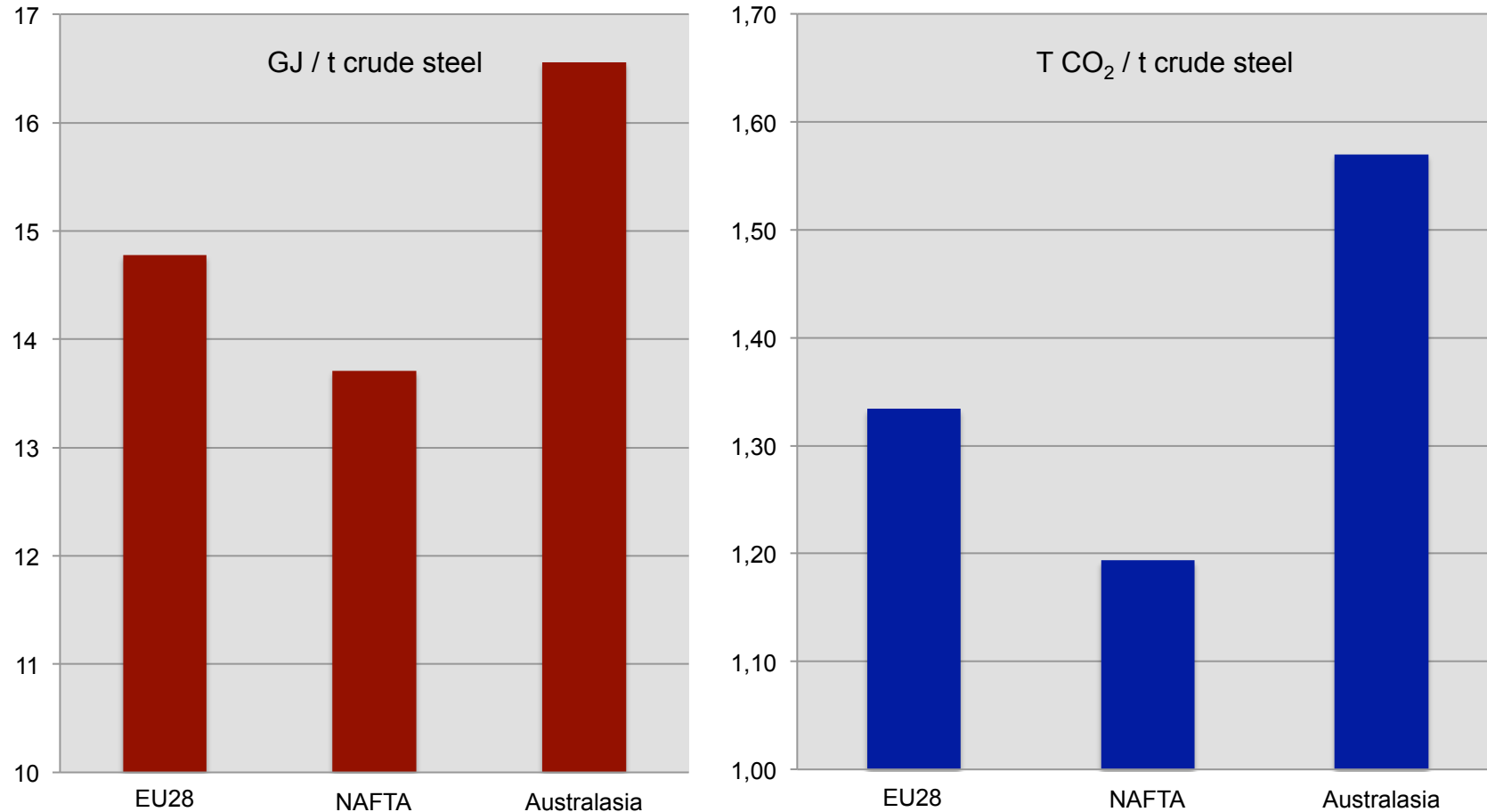
Share of energy consumed and CO2 emitted by the Steel industry in the EU (%)



Source : IEA, WorldSteel, BP Energy statistics, World Coal association, Midrex, Laplace Conseil analysis

Thanks to its higher share of EAF, NAFTA has the lowest energy consumption and CO₂ emissions

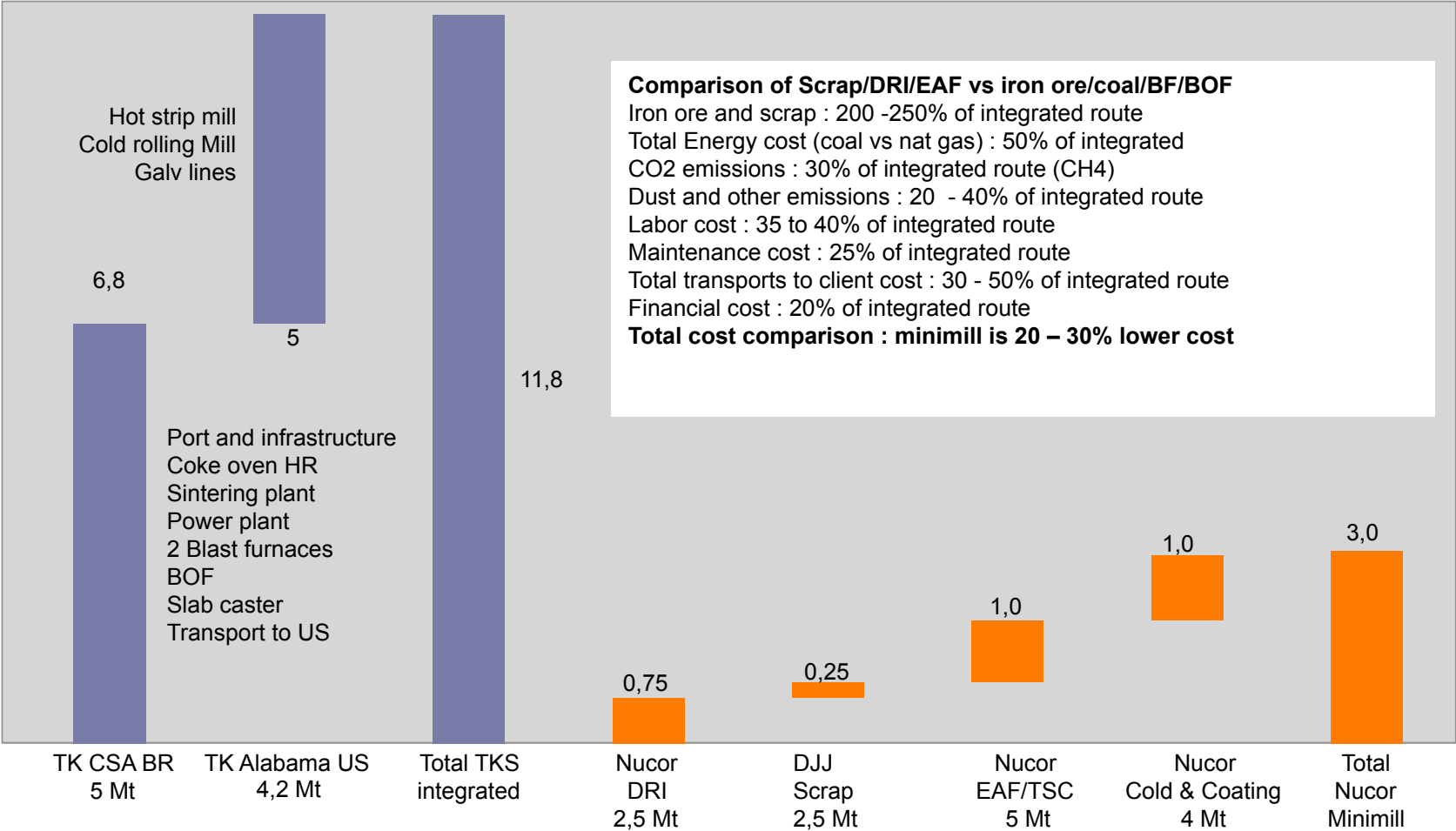
Comparison of Energy and CO₂ per tonne in OECD regions



Source : IEA, WorldSteel, BP Energy statistics, World Coal association, Midrex, Laplace Conseil analysis

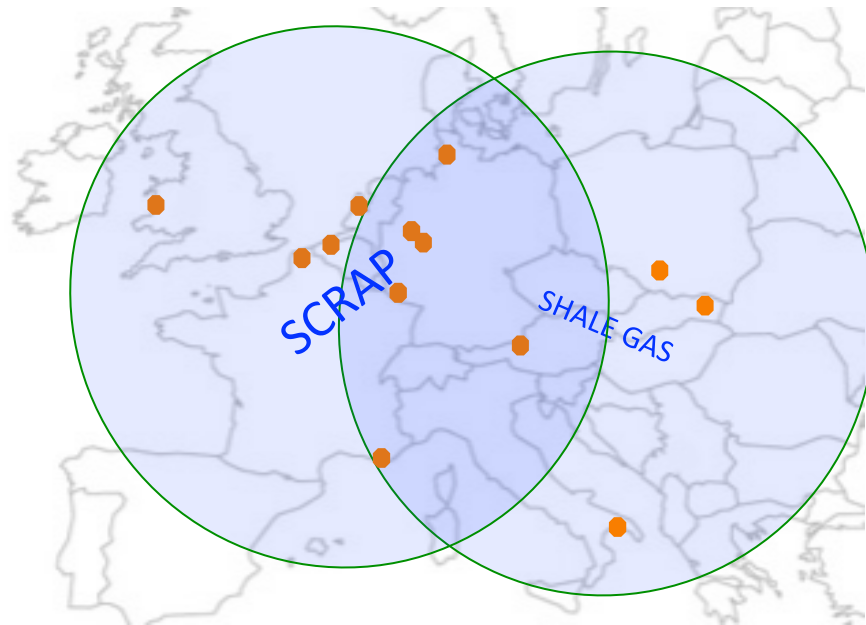
Minimill technology drawing on DRI, EAF and TSC costs one fourth of the same integrated mill

Comparison between Integrated and minimill philosophies for investment (Billion US\$)

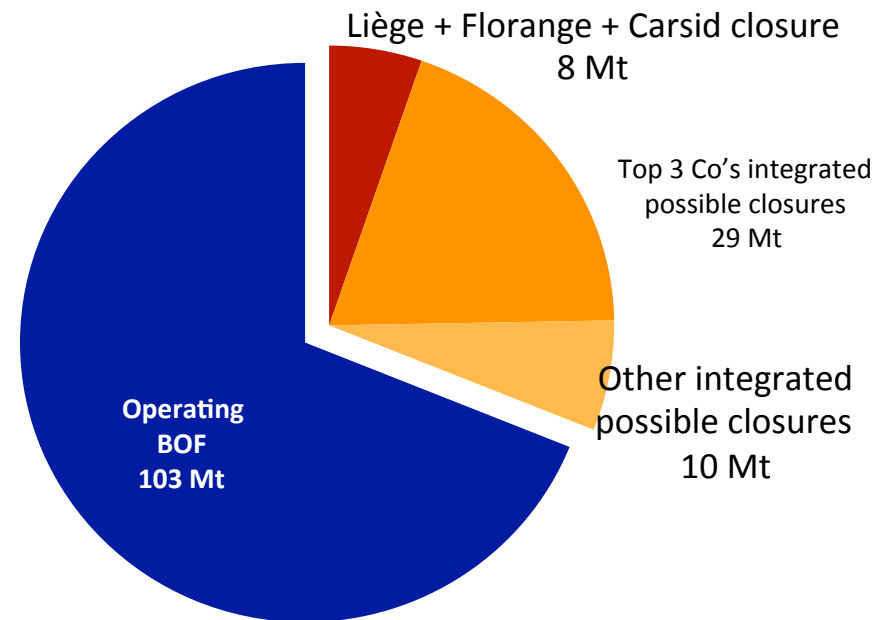


Source : SBB, USGS, Steel on the net, EIA,WSJ, Laplace Conseil analysis

By 2020, one third of the existing EU integrated mills are likely to be closed and many replaced by EAF's



EU27 + TK integrated capacity in 2012
100% = 150 Mt crude steel

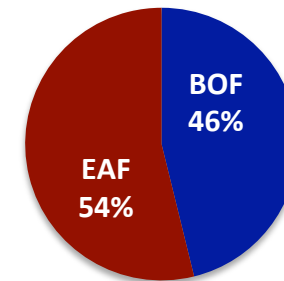


Source: Kuuskraa et al, Laplace Conseil analysis

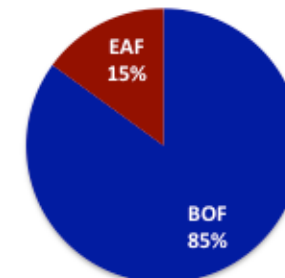
The impact of EU regulations on the steel industry is large and borne mostly by steel scrap using EAF's

	BOF HRC	EAF WR	Steel Industry
ETS	0.74	5.85	2.79
Energy	3.67	8.12	5.46
Environment	6.15	3.39	5.04
Product (REACH)	0.10	0.05	0.08
Total	10.66	17.41	13.37

Total cost of regulation
100% = 2300 M€



Total industry CO2
100% = 236 Mt



FOURTH MEGA-TREND :

“De-concentration” of Steel Industry (outside China)
will continue as many international ventures flounder.

Winners are regionally focused, prudent, producers.

International acquisitions have been unsuccessful so far. Many are unraveling.

- Russia international strategy is a costly failure :
 - Severstal Lucchini acquisition is in receivership with no buyer in sight
 - NLMK plate mill assets in DK, BE, IT, are in trouble and partly closed
 - Evraz acquisition in Czech Republic is also in difficulty
 - Same situation in US
- European investments in Brazil for integrated mills also in trouble
 - ThyssenKrupp 12 B\$ investment in Brazil and US may be sold at 80 – 90% discount
 - Vallourec Sumitomo investment in integrated tube; capacity may be saved by offshore oil find
- US Steel investment in Slovakia unprofitable and dependent on State aid for energy.
- Tata Steel investment in Corus very unprofitable despite high quality asset in IJmuiden.
- ArcelorMittal, the world largest steelmaker, is rated BB- by debt agencies and its market share has lost 80% of its value since its peak and 60% since 2010.
- Can anyone name a significant international steel acquisition or merger that can be considered financially successful ?

For OECD producers, three elements distinguish the most profitable companies from the rest.

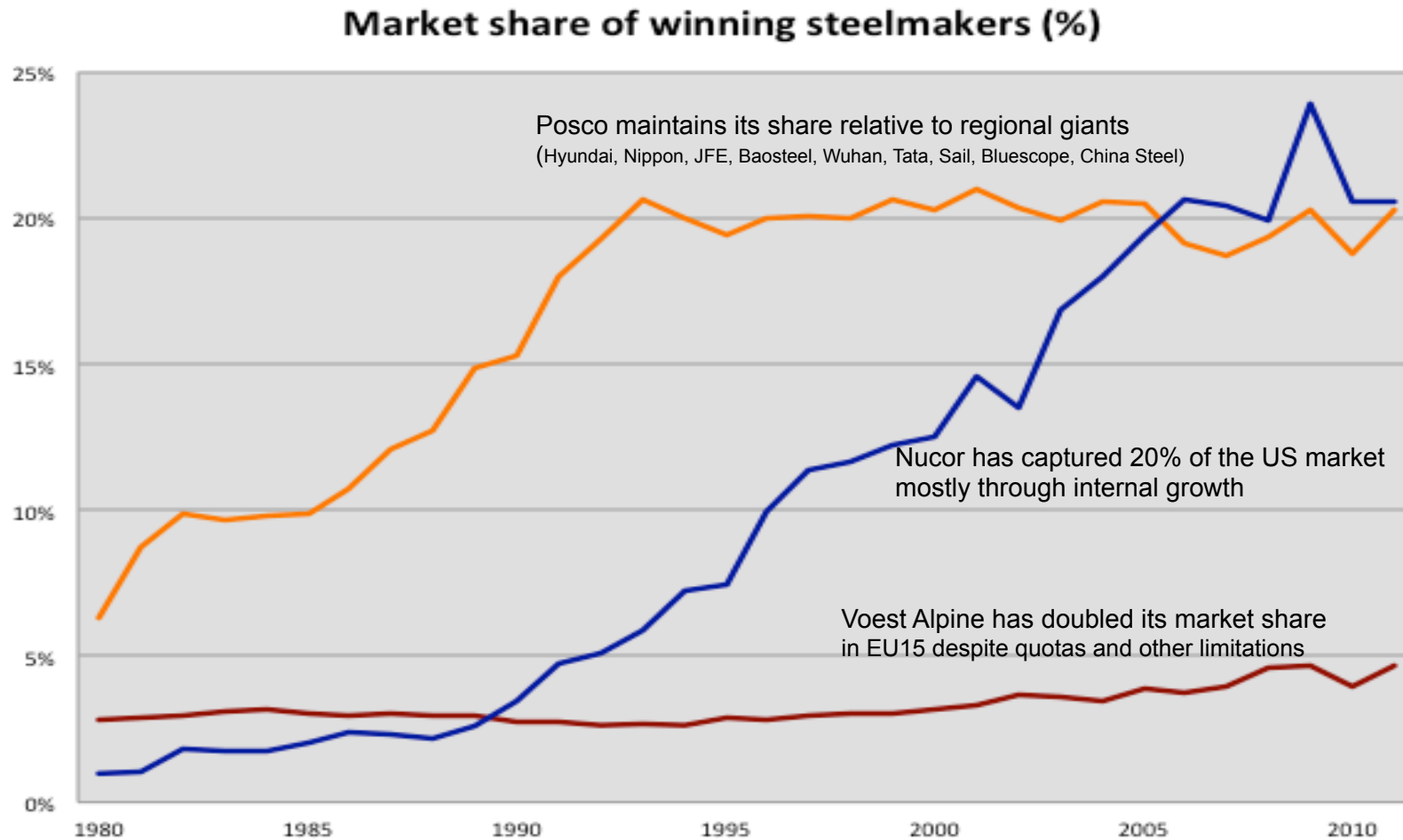
1. *Genuine* commitment to new ideas and rapidly switching to best available technology for the available raw material resources.
2. *Genuine* commitment to customers and staying close to them.
3. *Genuine* commitment to employees and staying close to them.

Nearly all steel companies profess adhering to these values, but those few who *genuinely* practice them stand out of the pack

Three companies, among the most successful, share common characteristics in different cultures

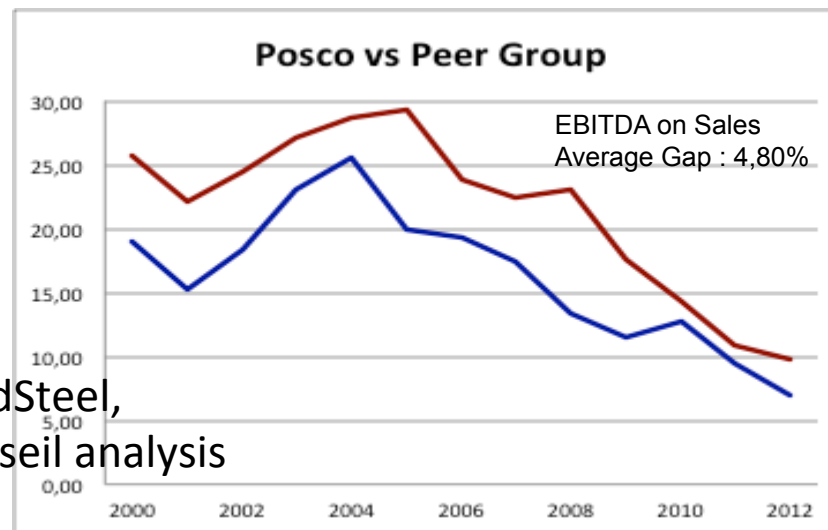
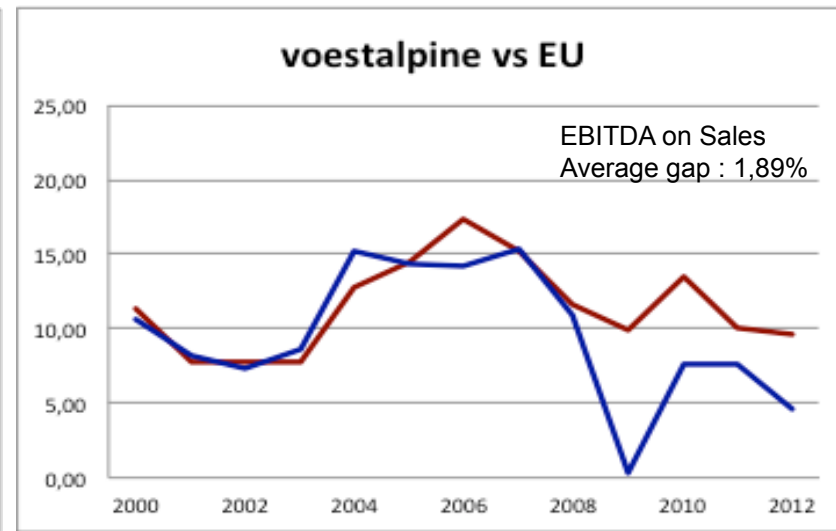
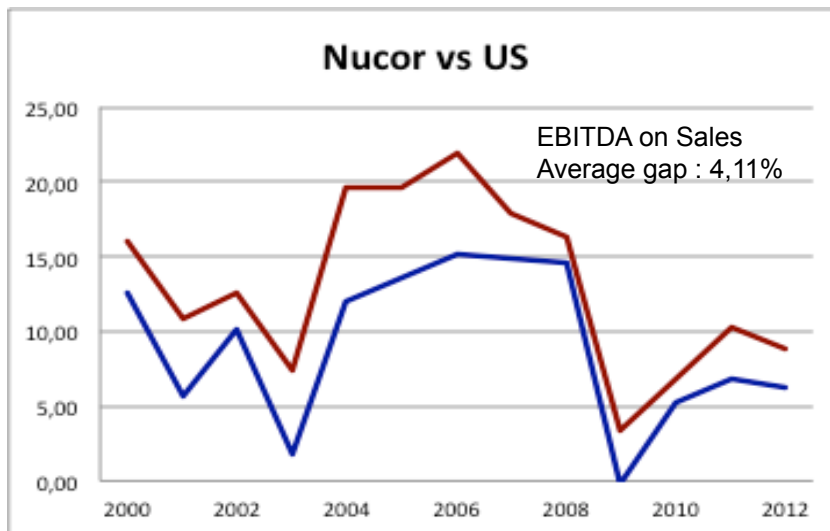
- **Nucor** : US leader in growth and profitability
 - World leader in EAF for flat products, thin slab caster and shale gas DRI
 - Network of autonomous US minimills responsible of regional markets
 - 11900 highly motivated and incentivized, non union “teammates”
- **Voest Alpine** : EU leader in growth and profitability
 - Inventor of LD steelmaking, first in EU to build a shale gas DRI in US
 - 2 integrated mills highly specialized and network of value adding plants
 - 43 000 employees fully participating through “mitbestimmung”
- **Posco** : Asian leader in growth and profitability
 - Inventor of Finex steelmaking process; CEO is former head of R&D
 - 2 large integrated steel mills :clear emphasis on Korean and regional market
 - Smart Work Place Initiative; leading social engineer in Korea

Without merger or major acquisitions, the leaders have steadily grown their market share



Source: OECD, WorldSteel, Factset, Laplace Conseil

The three leaders have had consistently higher EBITDA/Sales than their peer group.



Source: OECD, WorldSteel, Factset, Laplace Conseil analysis

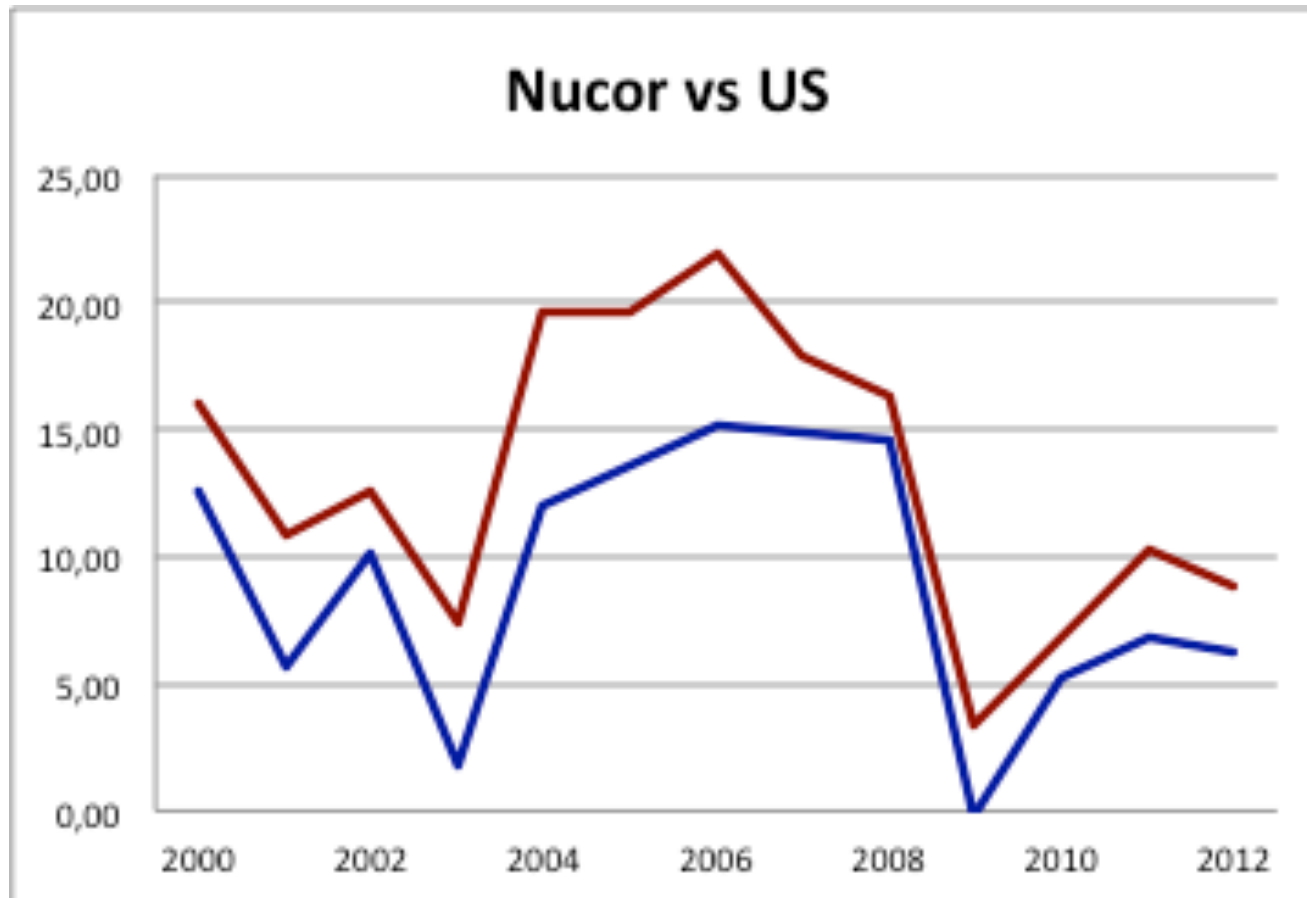


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Nucor market capitalization on sales is 50% above the ratio of its competitors



Source: OECD, WorldSteel, Factset, Laplace Conseil analysis

Conclusions

- The steel industry is characterized by a volatile and generally low profitability. The good years are few and far apart.
- The industry has tried a number of “generic strategies” :
 - Moving to higher growth markets
 - Merging with or acquiring competitors to gain benefit of scale
 - Increasing the share of “high value added” products
 - Integrating upstream into coal and iron ore mining
- In the last 40 years, these “generic strategies” did not work
- Successful results seem to come from superior execution :
 - Genuine commitment to rapidly switching to best available technologies
 - Genuine commitment to superior customer services
 - Genuine commitment to superior employee co-management
- Eurometal members can learn from these successful strategies to conduct their operations

Thank you for your attention



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