Developments in the global and Asian FeSi markets

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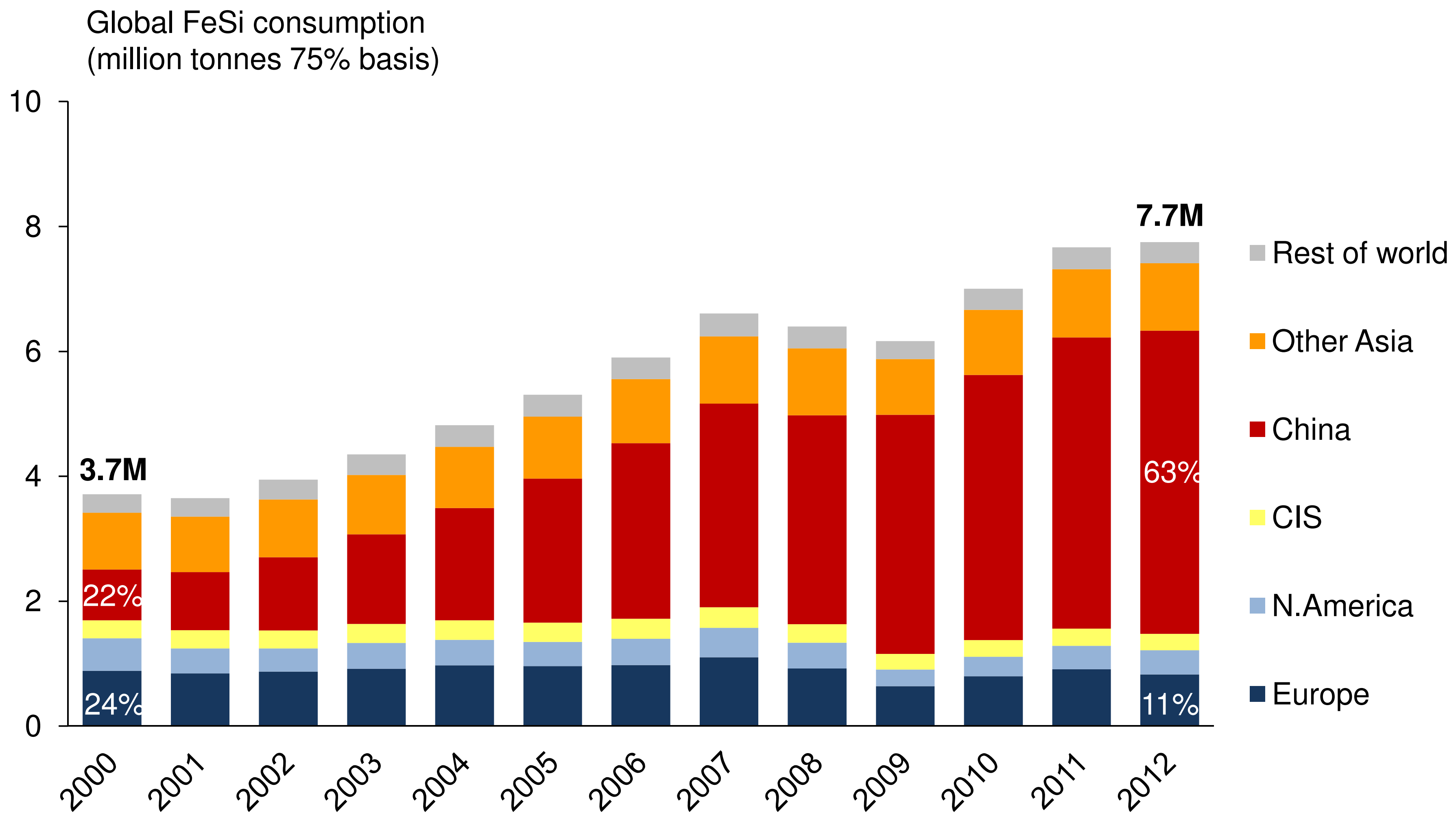
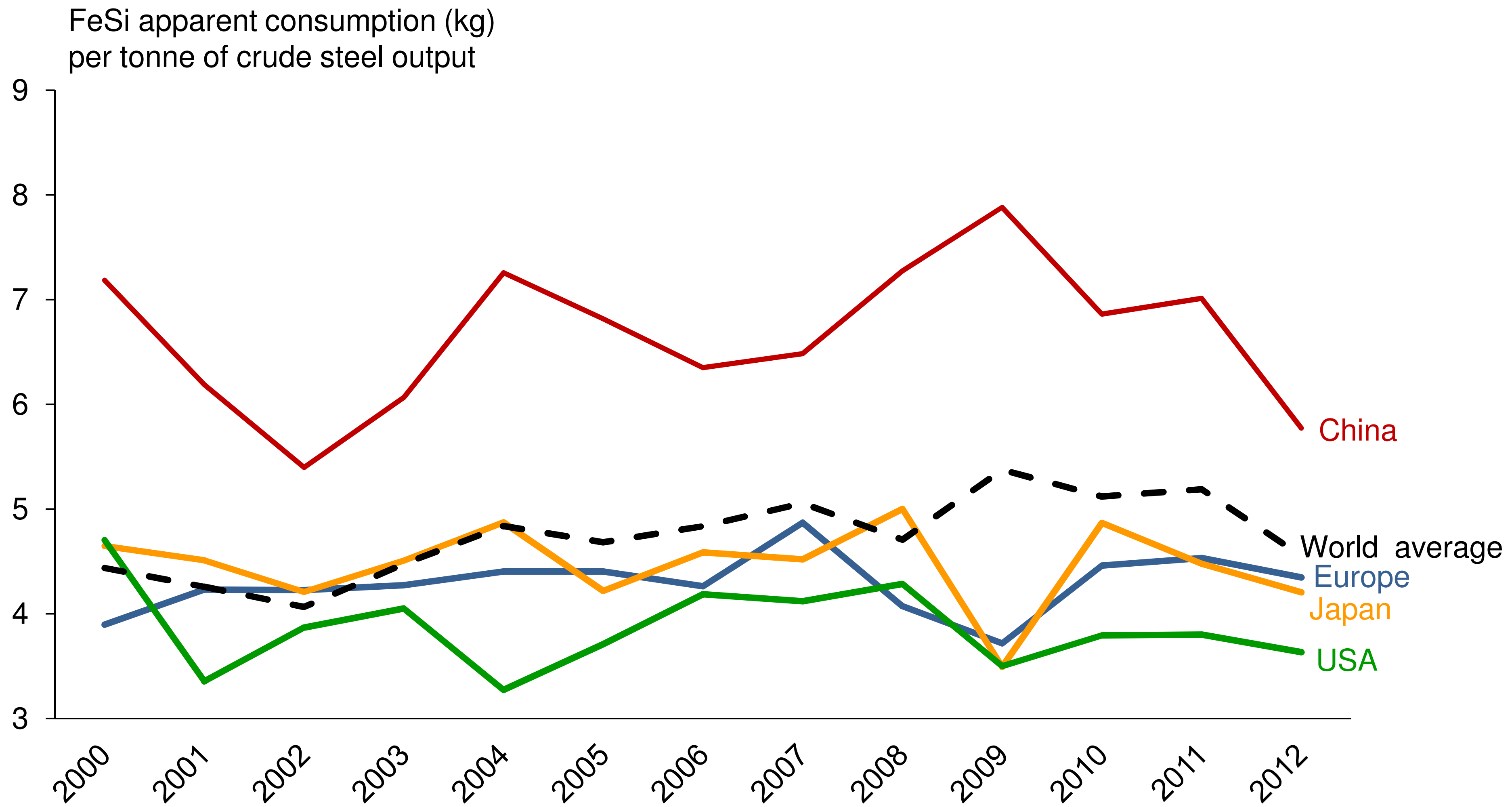
What is ferrosilicon?

- A ferroalloy of iron and silicon (FeSi), normally ~75% Si
- Used extensively in molten crude steel as a de-oxidising agent
- Also used to add electrical conductivity and corrosion-resistance properties to steel
- Average Si content of steel is 0.3%. Many individual grades are much higher in Si – stainless steel (up to 1% Si), electrical steels (up to 7% Si)
- Around 65% of global FeSi output is used in steel
- Other important applications are for de-carburising molten grey iron for the production of foundry castings and for producing magnesium metal in China

Global FeSi demand has doubled over the past decade, but showed little growth in 2012. China's share rose from 22% in 2000 to 63% in 2012

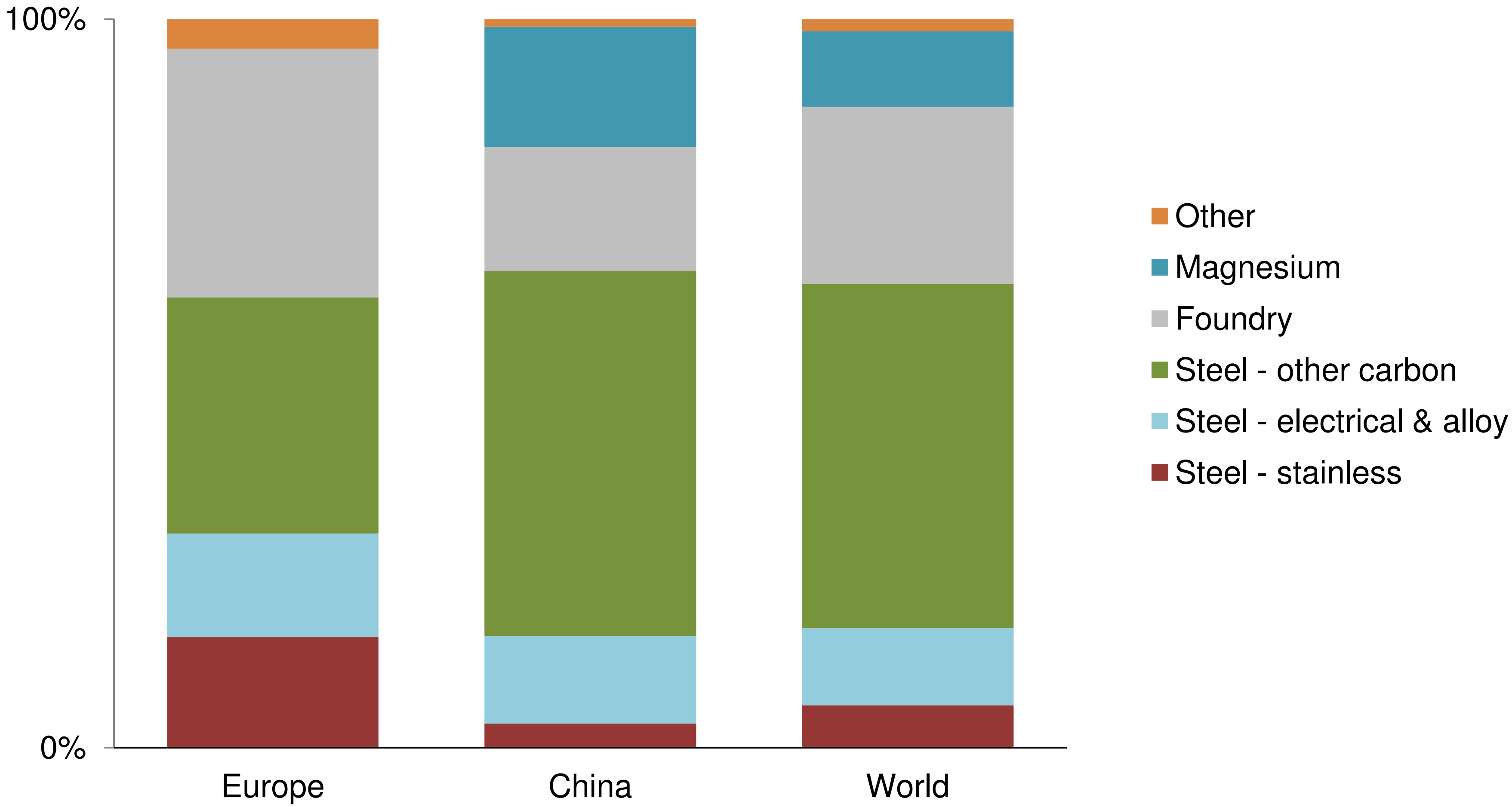


Consumption of FeSi per tonne of steel in China is double or treble that of most other countries

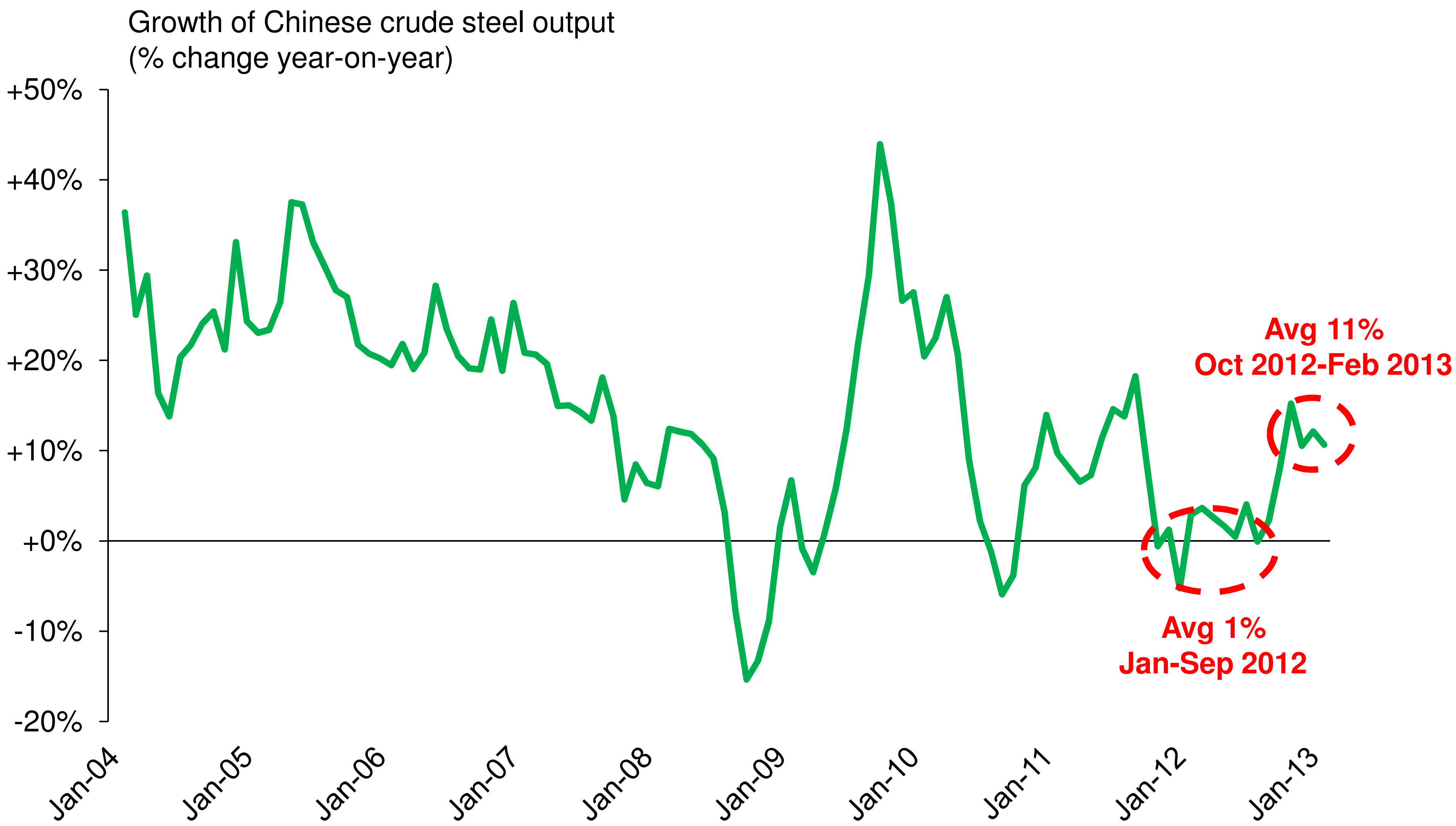


Around 65% of FeSi was consumed in steel in 2012. Foundries and Chinese magnesium plants are the other major consuming sectors

FeSi consumption by end-use sector, 2012



Chinese crude steel output has rebounded strongly in the past 6 months, following low growth in the first 9 months of 2012



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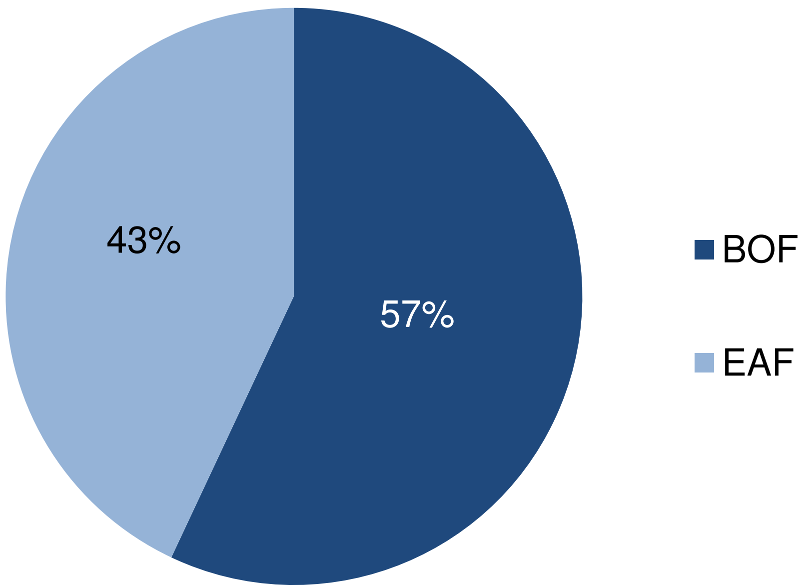
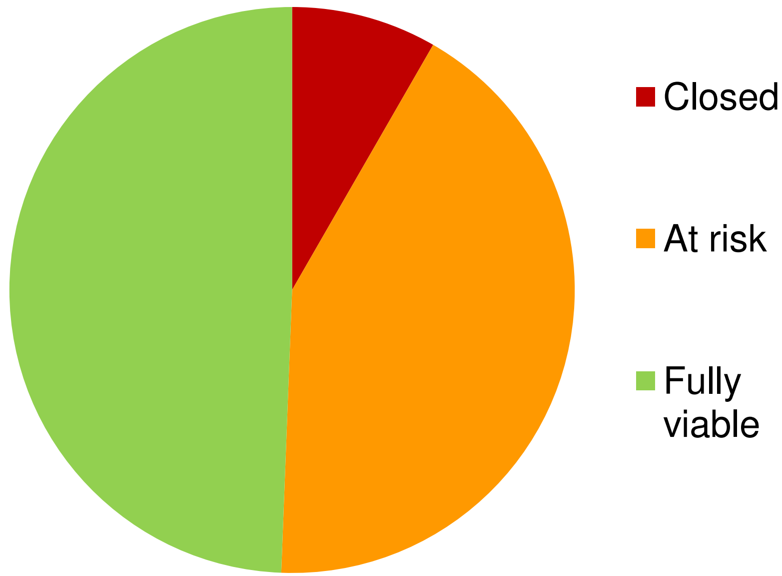
BOF steelmaking capacity in developed countries – especially in Europe – is increasingly under threat, which is damaging for FeSi demand

EU steel production by process*



** 2011 data*

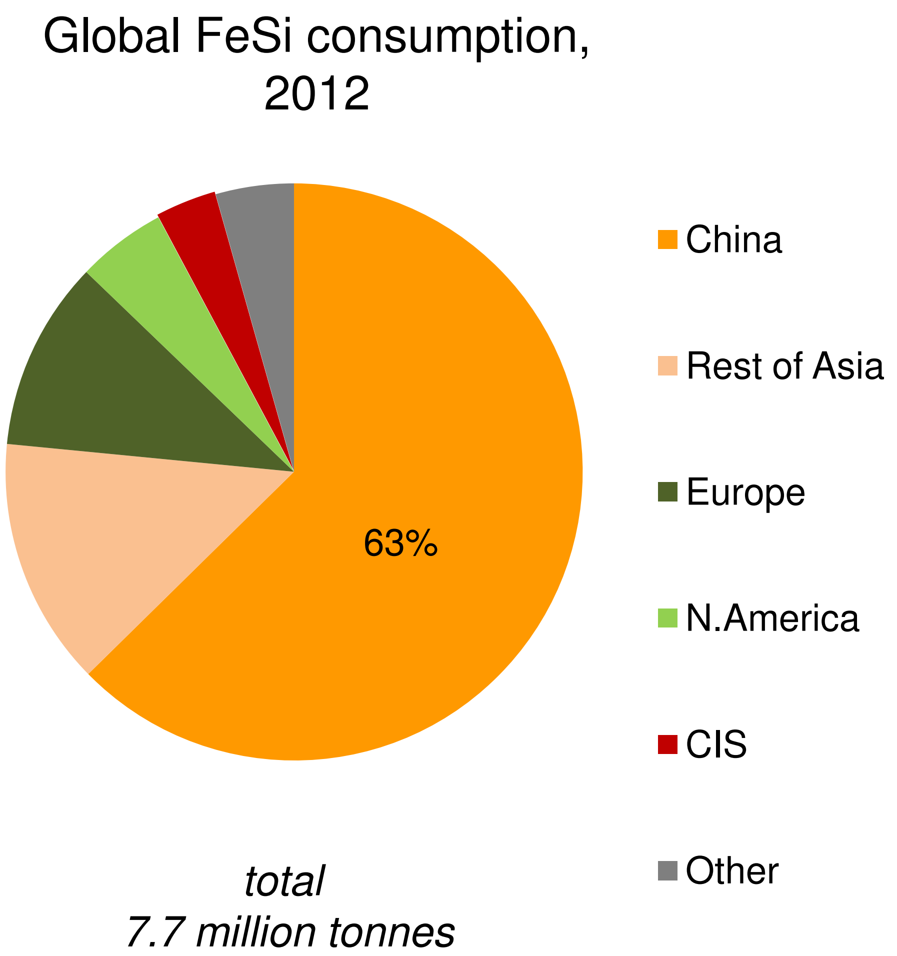
Status of EU BOF steel capacity, Q1-2013

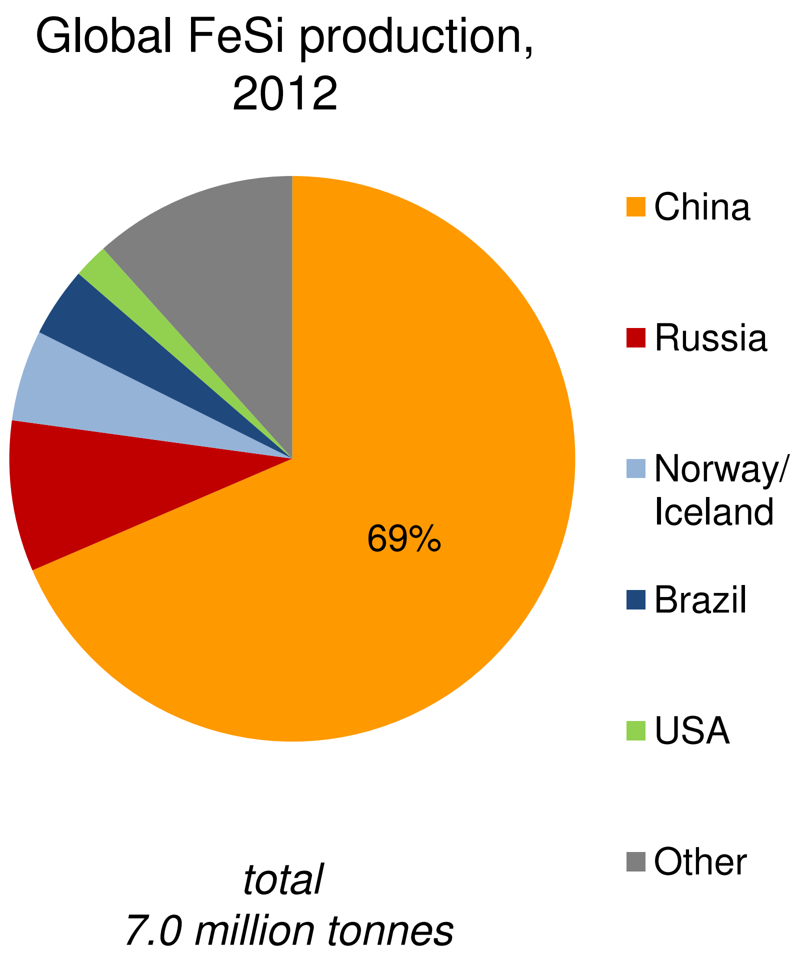


EU-27 steel output: 2011 – 178Mt
2012 – 169Mt

Source: WSA, Hatch Consulting

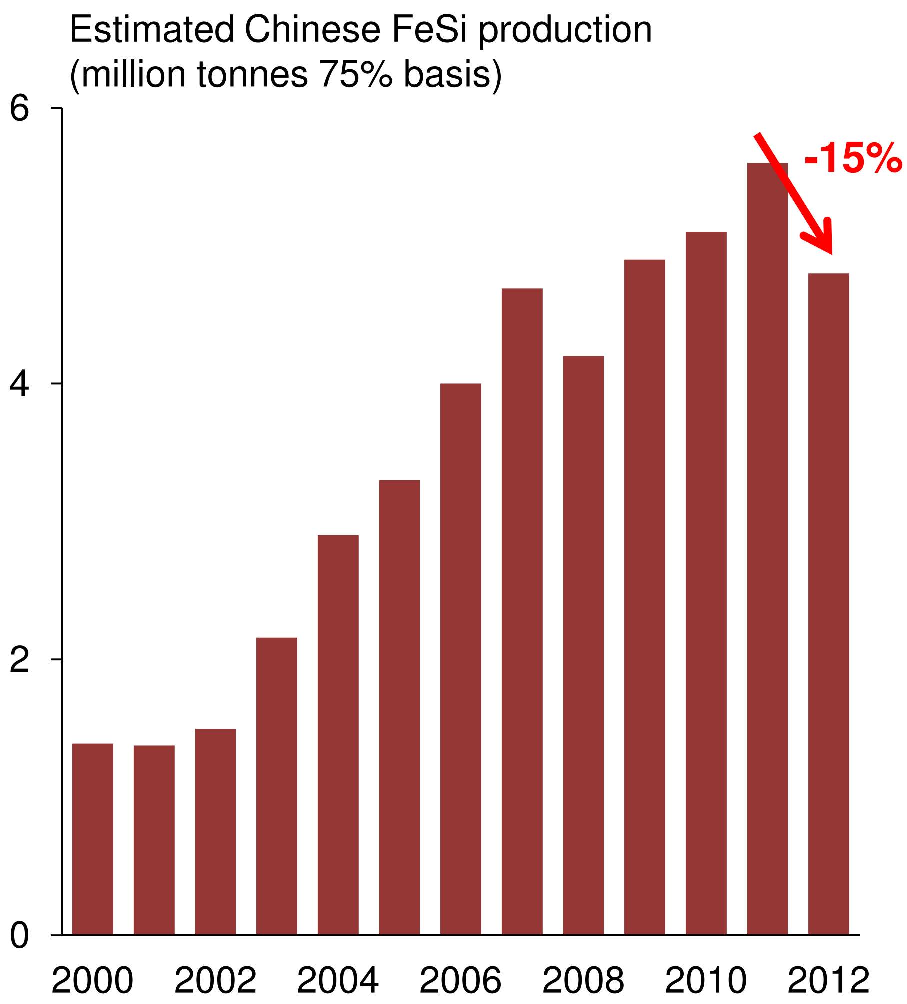
China dominates world FeSi production to an even greater extent than consumption – it remains a substantial net exporter

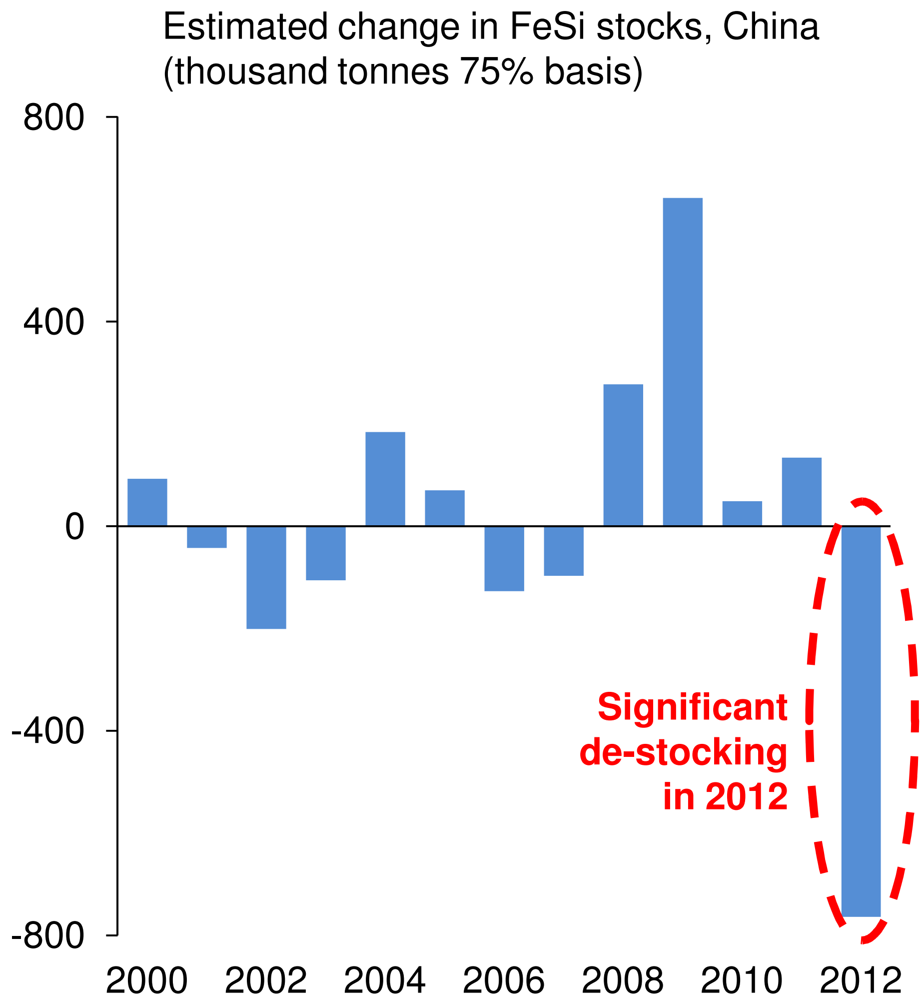




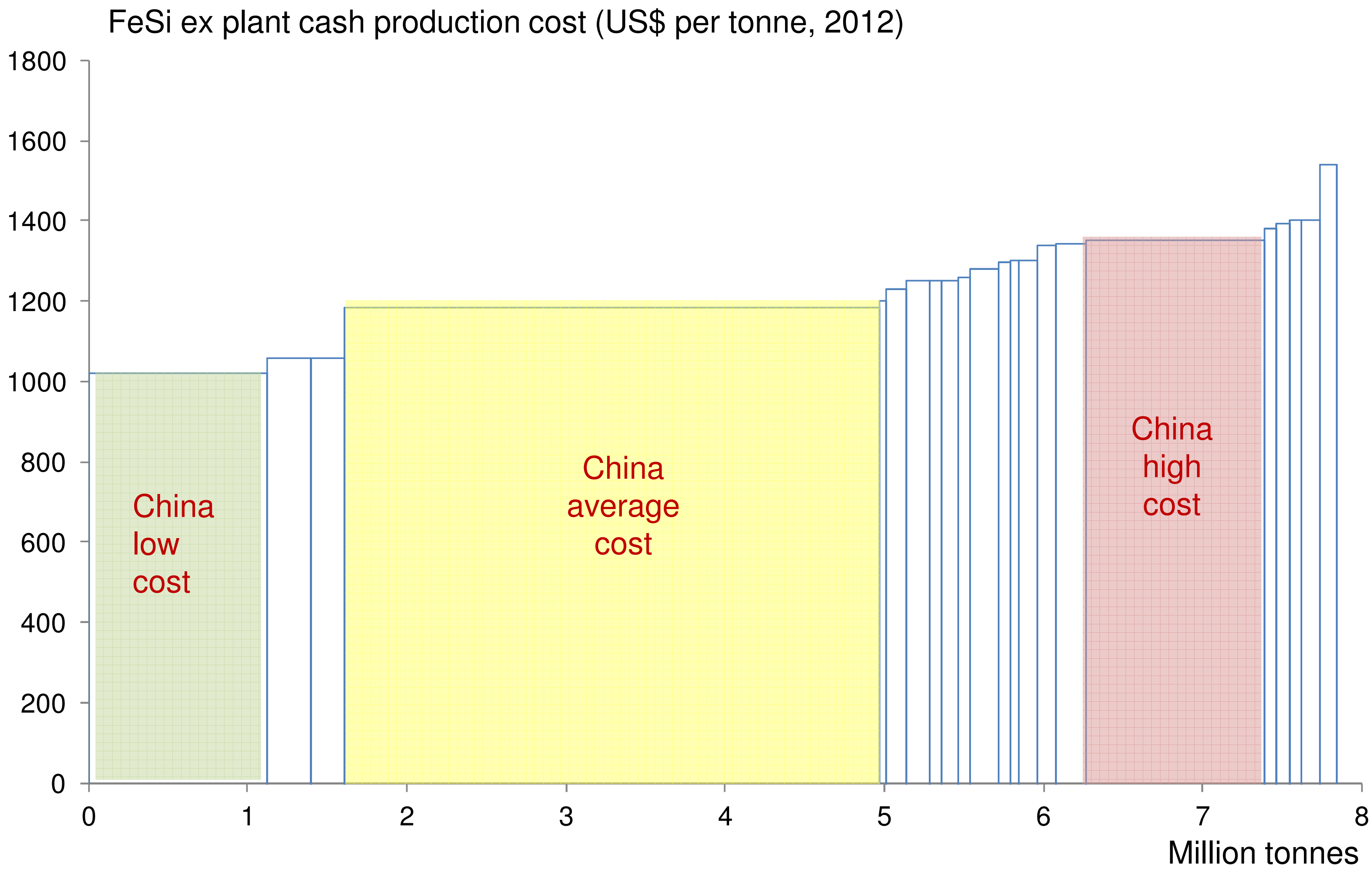
(total FeSi production capacity in China is ~10 million tonnes)

In 2012, Chinese FeSi output fell by 15% to its lowest level since 2008. This prompted substantial de-stocking in the Chinese FeSi market

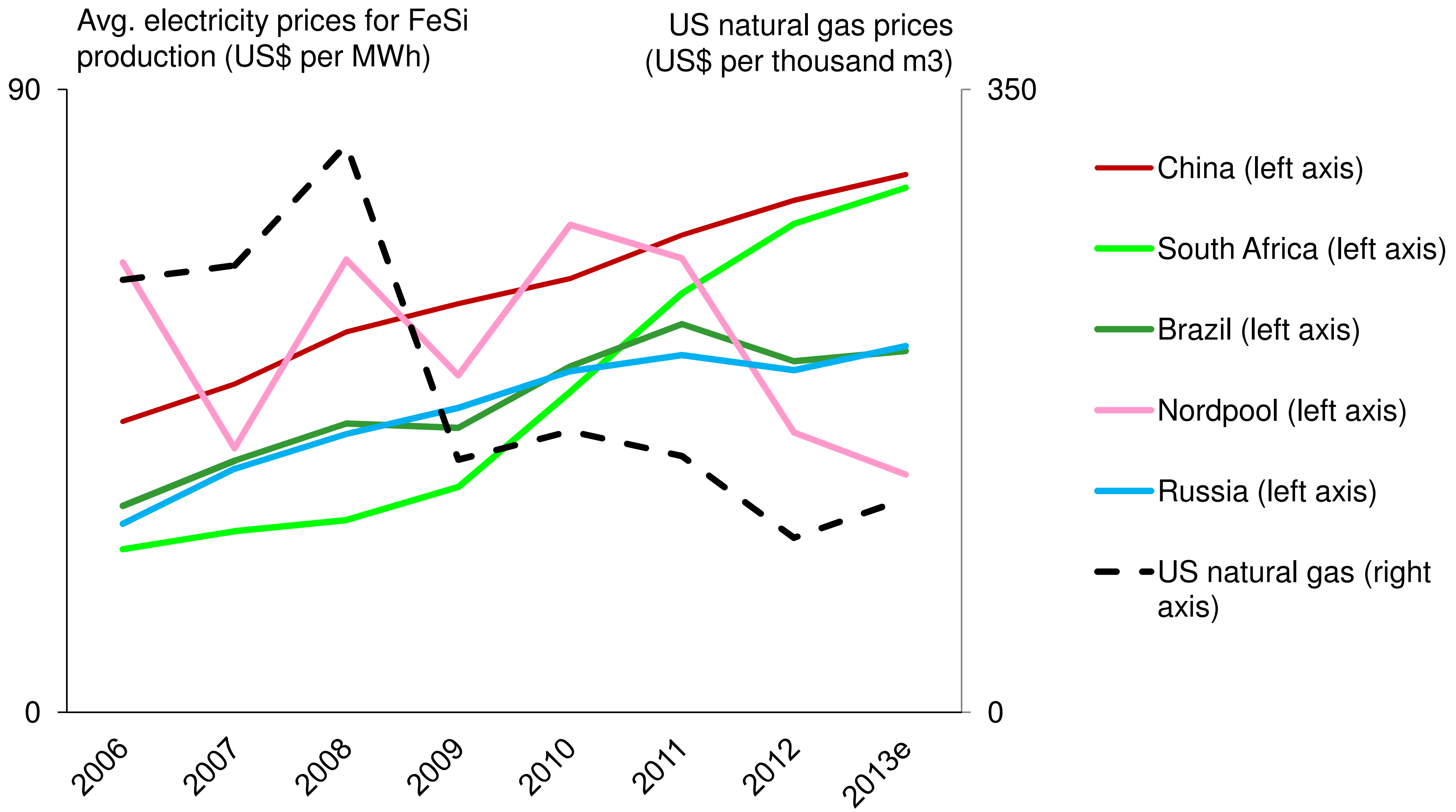




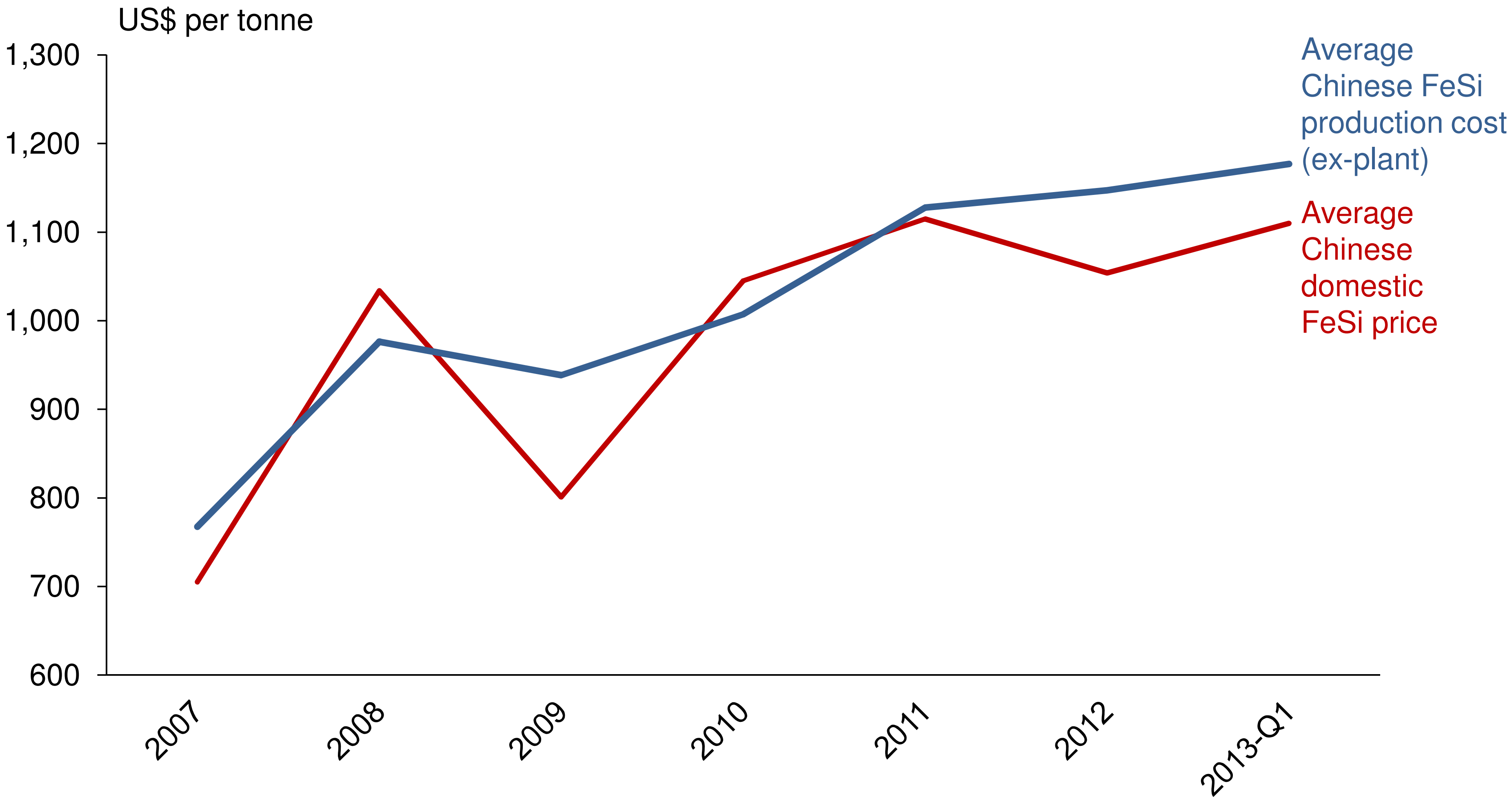
Chinese FeSi producers are mostly competitive on the global cost curve, if export taxes and anti-dumping duties are not considered



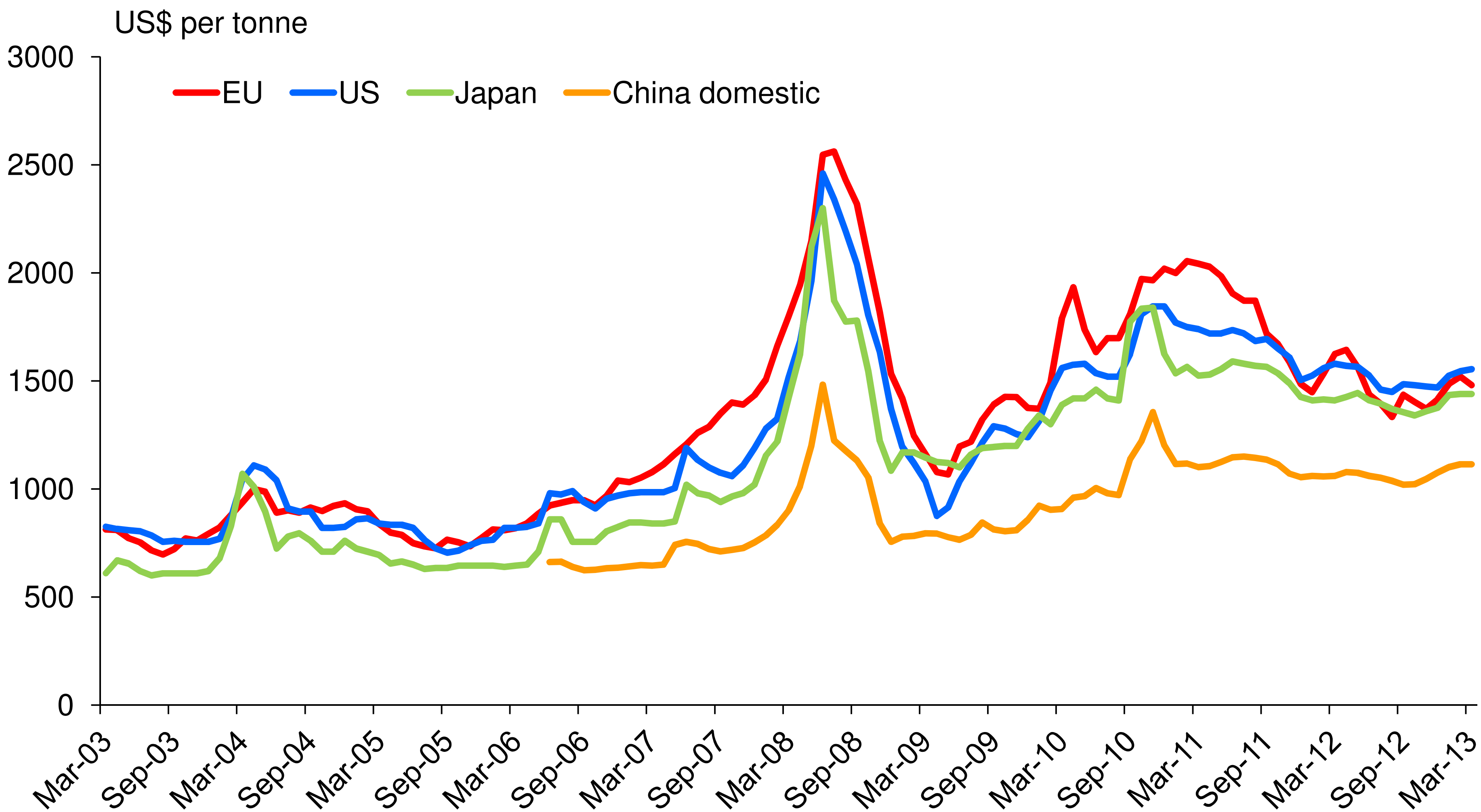
Electricity tariffs have declined in Europe and the USA, whilst they have continued to rise strongly in China and other developing countries



Over time, Chinese domestic FeSi prices track production costs closely – implying current prices are still around $75/tonne too low



Globally, FeSi prices have recovered slightly since Q4-2012, but the level of improvement has been modest



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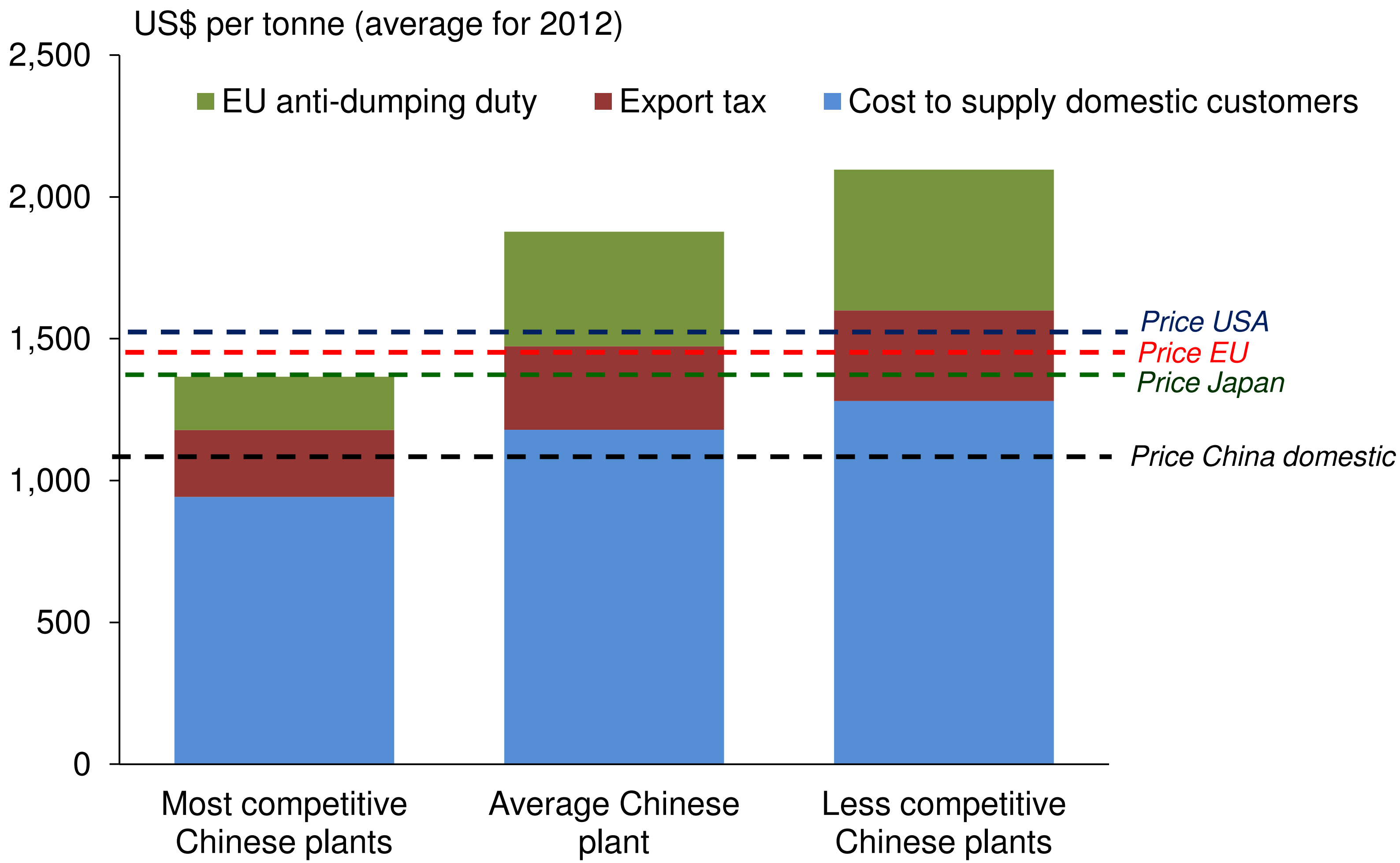
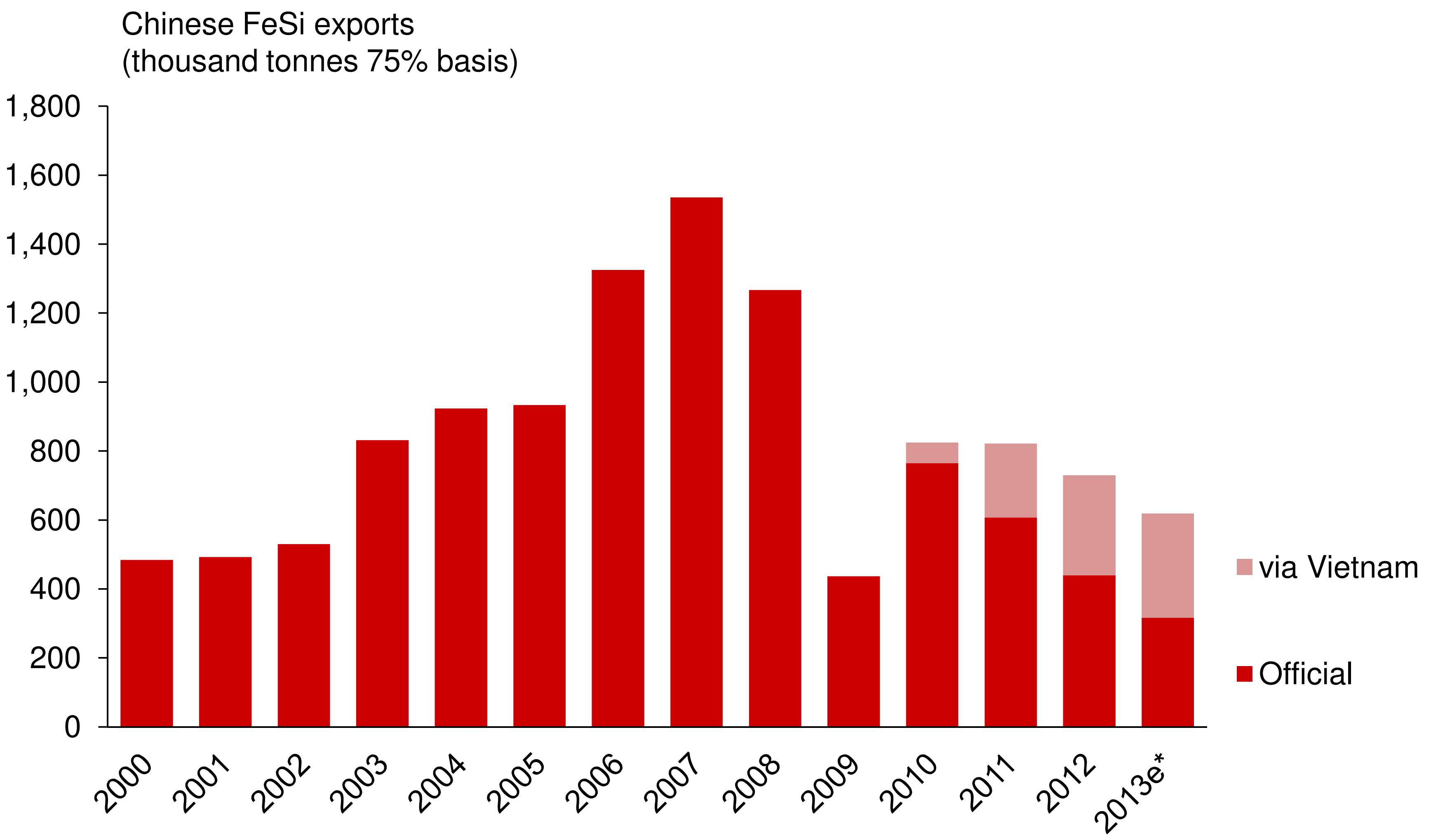
Lack of profitability from domestic sales or legal exports gives some Chinese suppliers a clear incentive to avoid export duty by smuggling



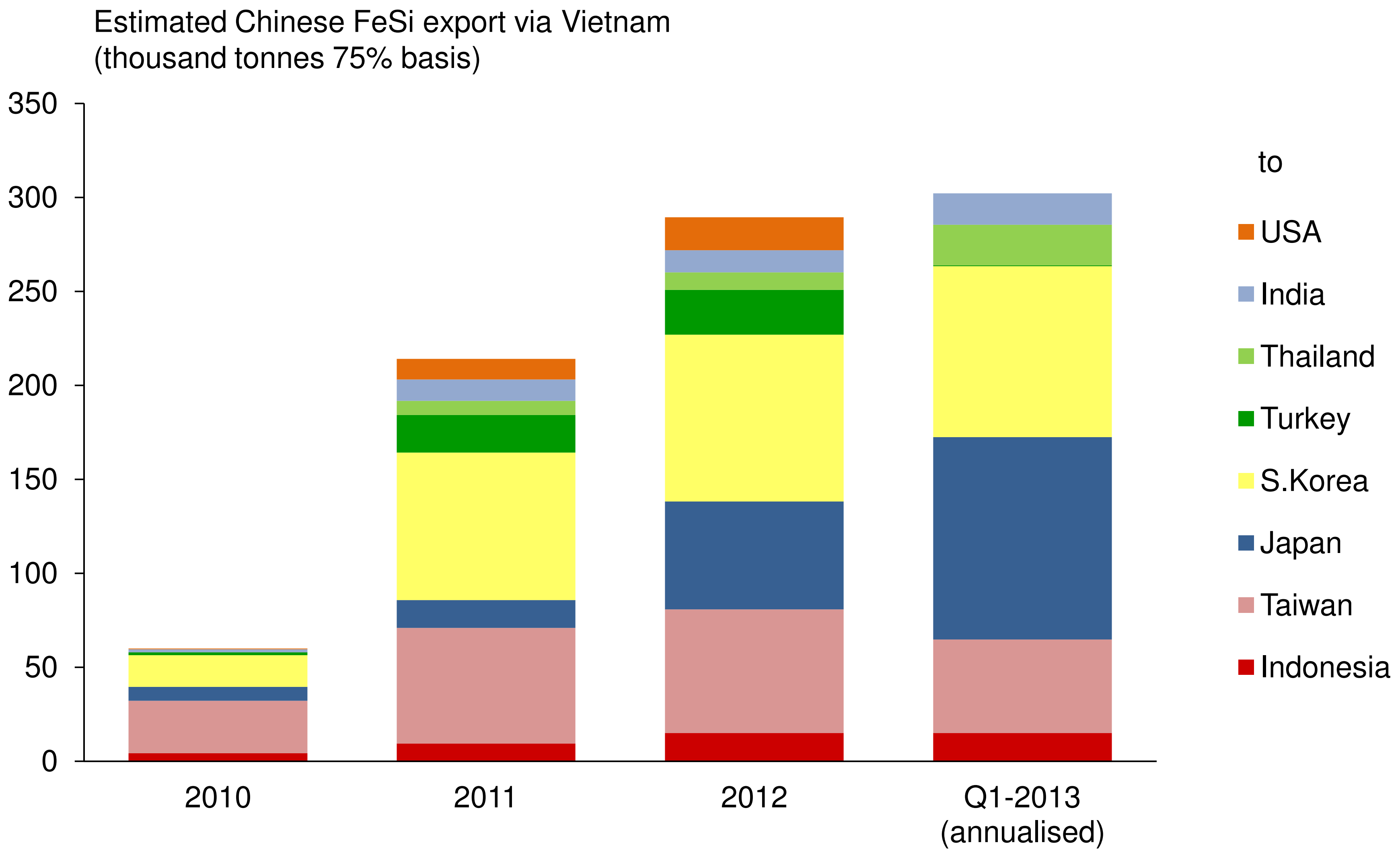
Smuggled material via Vietnam now accounts for around 50% of total Chinese FeSi exports, although total export volumes continue to fall



* 2013-Q1 data annualised

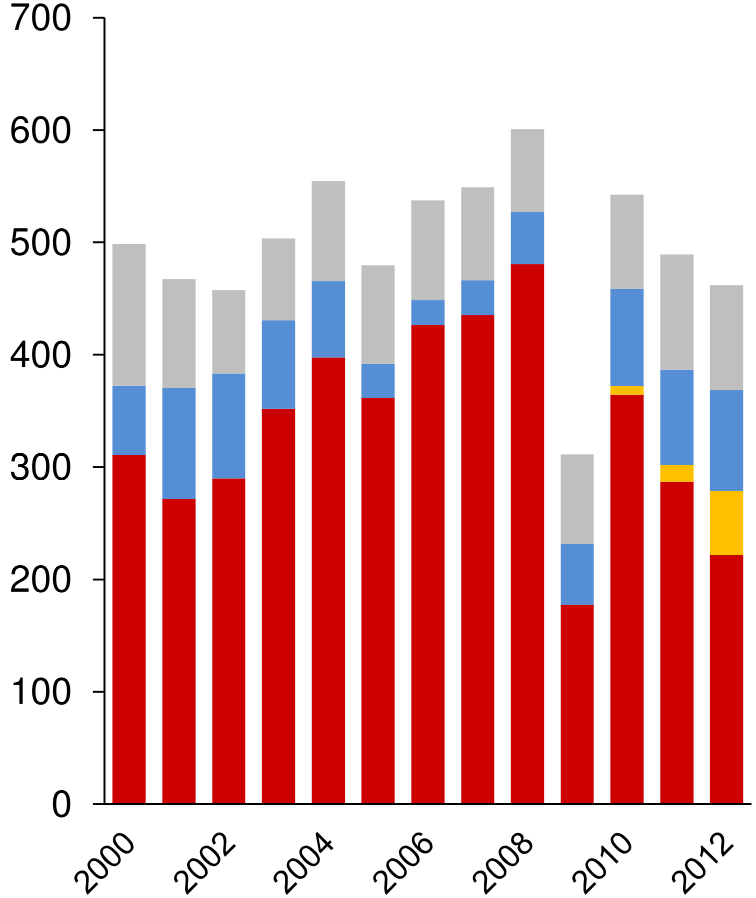
On a quarter-by-quarter basis, smuggling via Vietnam peaked in Q2-2012 – however it appears smuggled FeSi volumes are rising again

On an annualised basis, smuggling via Vietnam remains at ~300ktpa. Japan, S.Korea and Taiwan are the main markets for smuggled FeSi

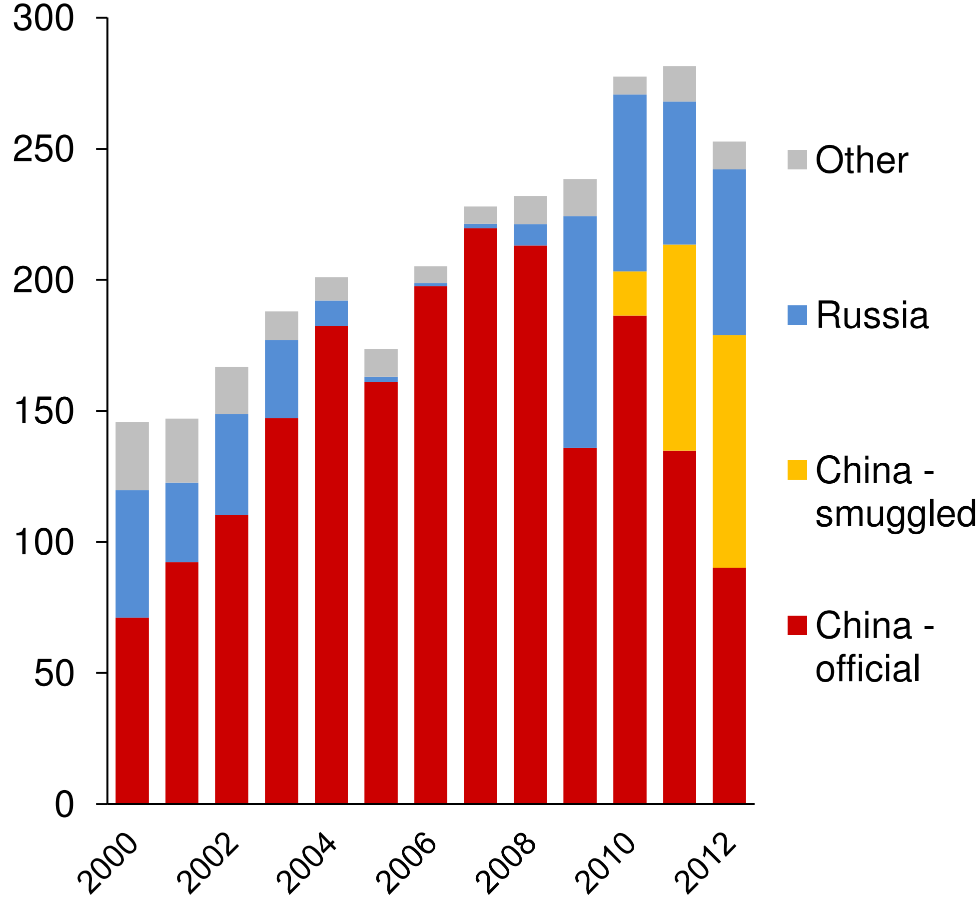


Smuggled Chinese material made up the largest share of S.Korean FeSi imports in 2012. The impact is less widespread in Japan

Japan FeSi imports
(thousand tonnes 75% basis)

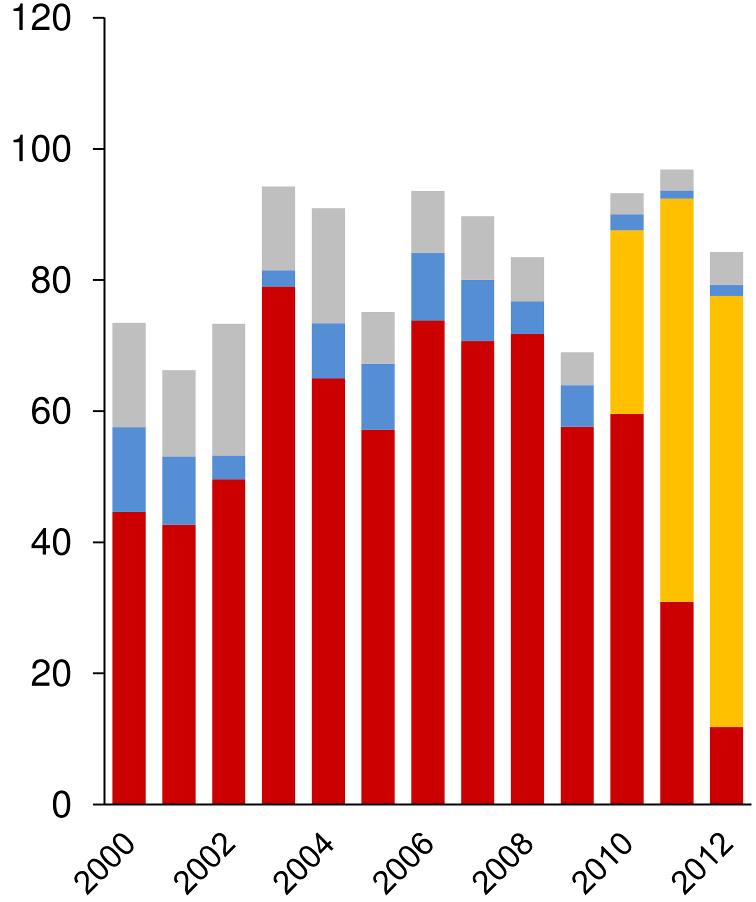


South Korea FeSi imports
(thousand tonnes 75% basis)

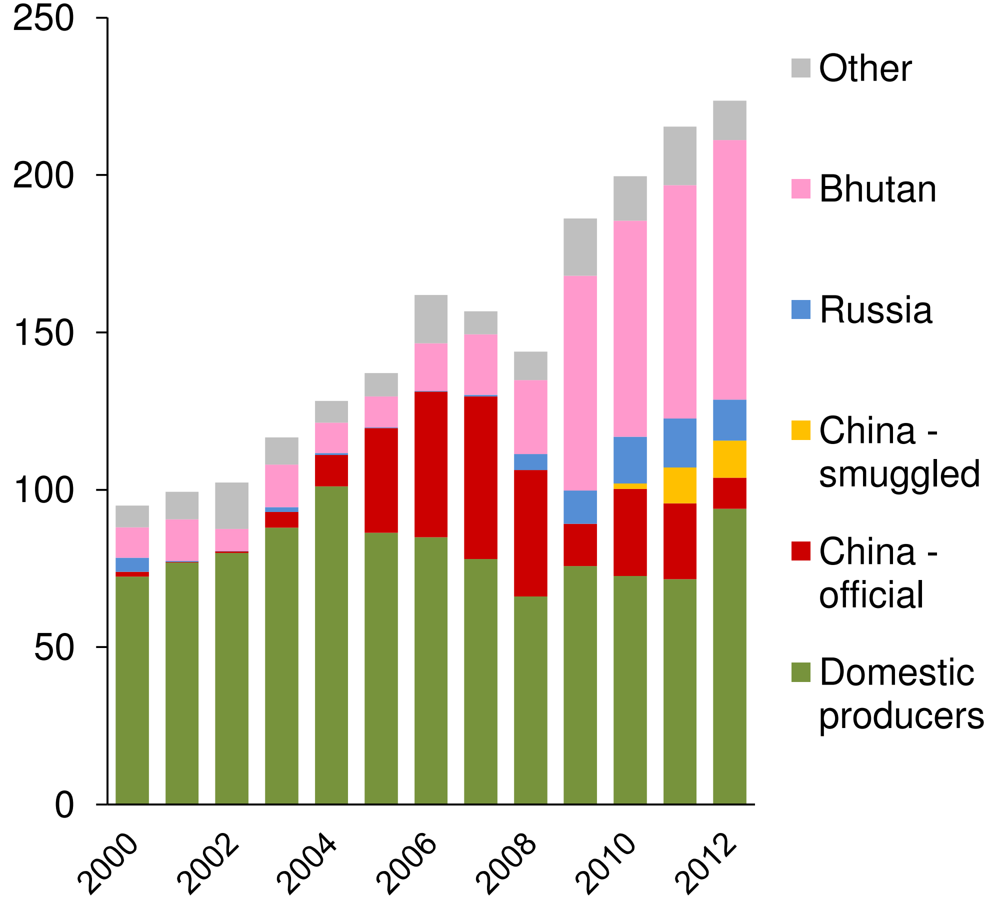


Most of Taiwan's FeSi supply is now smuggled from China. The Indian FeSi market is dominated by domestic output and imports from Bhutan

Taiwan FeSi imports
(thousand tonnes 75% basis)



India FeSi supply
(thousand tonnes 75% basis)



FeSi smuggling via Vietnam - summary

- Smuggling of FeSi from China is incentivised by many Chinese producers having a globally competitive cost position if duties are disregarded (unlike Mn alloys or FeCr)
- Most smuggled material is recorded at the port of origin as being from China. Only a minority states origin as Vietnam
- Burden of illegality rest solely with the Chinese producers and distributors involved – customers buying smuggled FeSi are not breaking the law
- Chinese authorities have recognised the issue and floated the idea of reducing export tax – nothing has happened so far however, and smuggling of FeSi via Vietnam remains at the 300,000 tpa level

EU FeSi anti-dumping update

- Anti-dumping duties on FeSi imports into the EU, first imposed in 2007/2008, now under review
- Application to renew duties against China and Russia for a further 5-year period has been submitted and was "accepted" by the European Commission in February 2013
- Duties on imports from China and Russia to remain in place for 15 months from acceptance of case – ie. until Q2-2014
- Duties on other countries in the original case – including Kazakhstan and Egypt – have now expired completely

Thank you for your attention