

***Commodity risk management in steel industry:
iron ore***

28 June 2017

Agenda

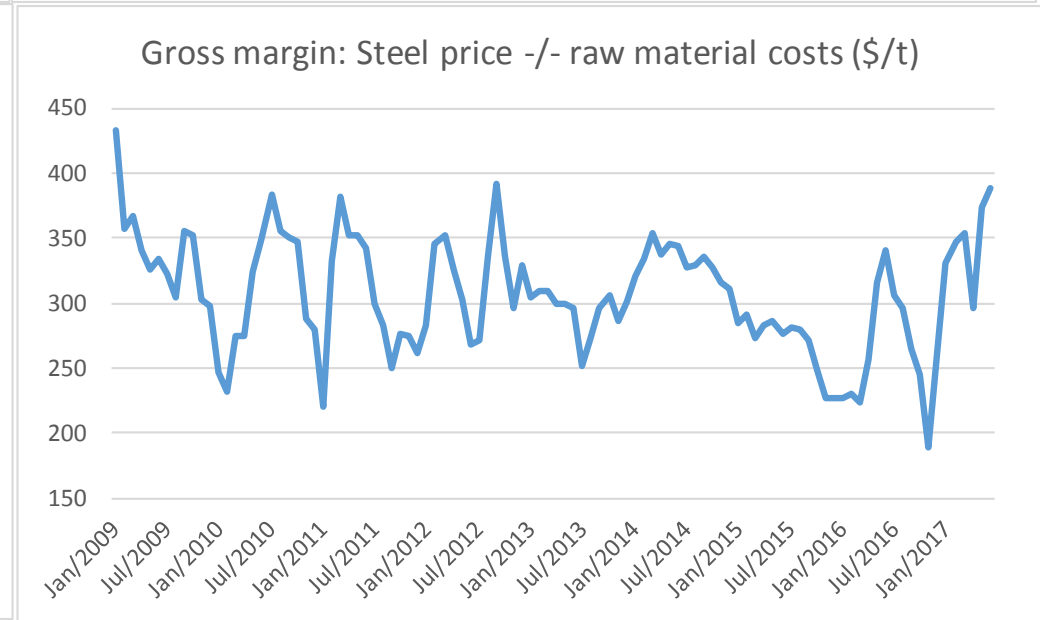
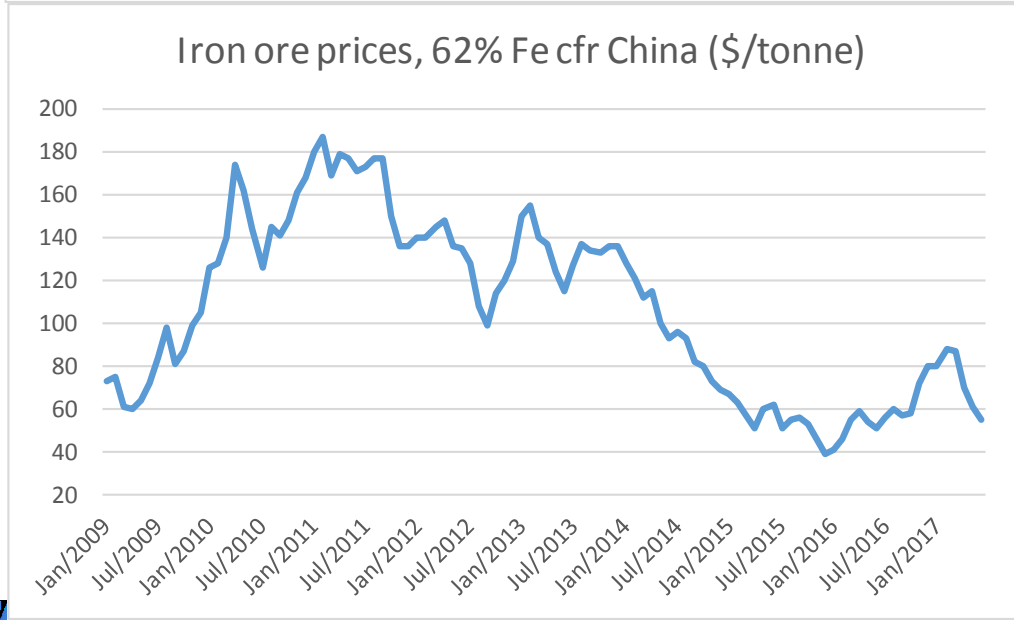
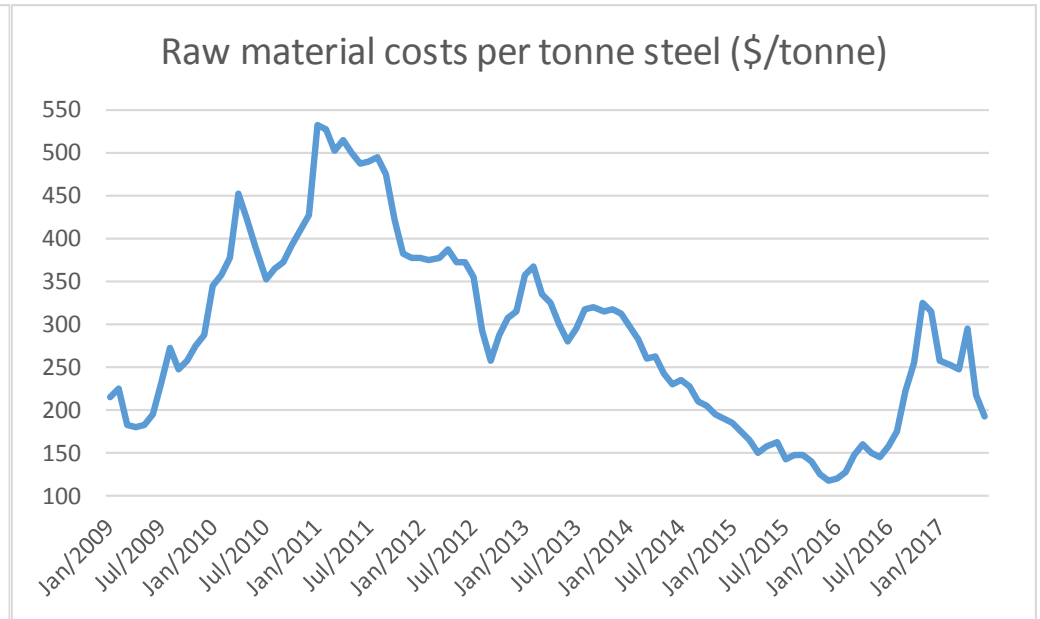
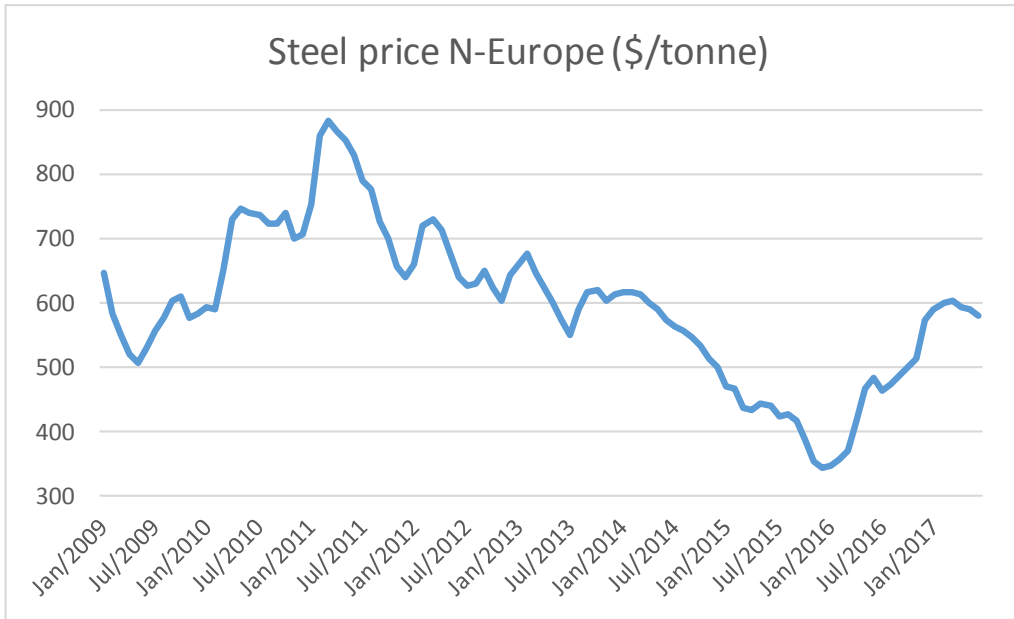


- Introduction – Tata Steel and market volatility
- Exposure and possibilities to mitigate
- Hedging process
- Governance

Introduction: Tata Steel

- 24.5 mt steel production in 2016, ranking no. 10 in the world
- Steel production in India, NL, UK, Thailand and Singapore
- c 11 mt production and sales in Europe
- In Europe, long-term fixed (often annual) price steel contracts are common in Automotive and Packaging
- In India, contract durations are shorter and captive iron ore is available
- Group Strategic Procurement (“GSP”) procures all iron ore and coking coal for the Tata Steel Group
- I’m responsible for Market Intelligence and Risk Management

Introduction: price volatility steel and raw material markets



Exposure – first considerations

- Is there a mismatch between duration and or timing of conclusion of sales and procurement contracts at fixed prices?
- Tata Steel Europe: c. 25% of sales contracts is long-term (of which c. 2 mt annual)
- Since 2010, long-term iron ore contracts are volume contracts with price formulas that link to a spot index (often quarterly averages)
- Clearly, there is an exposure, but how big is it?
- Ball-park calculation would be 2mt steel equals 3.2 mt iron ore, so a \$20/t swing in iron ore prices would have a \$64m impact
- **THIS IS NOT CORRECT**

Exposure – additional points

- Being specific about your company's exposure is necessary
- "P&L" lag – difference in timing of revenue and cost recognition
- For TSE, there is a c. 3 months gap, whereby costs are lagging
- So, costs are known c. 3 months ahead – hedging should apply to future quarters, as hedging in Q2 provides cost certainty for Q3
- Other considerations – how firm are the sales contracts?
- Other considerations – impact of sales mix duration?

- These points explain why we avoid hedging more than the calculated requirements. And cover only 60% of the exposure calculated as ball park number!

Exposure – mitigation options

Following the abolishment of the annual benchmark pricing system for iron ore, several mitigation options proposed/piloted included:

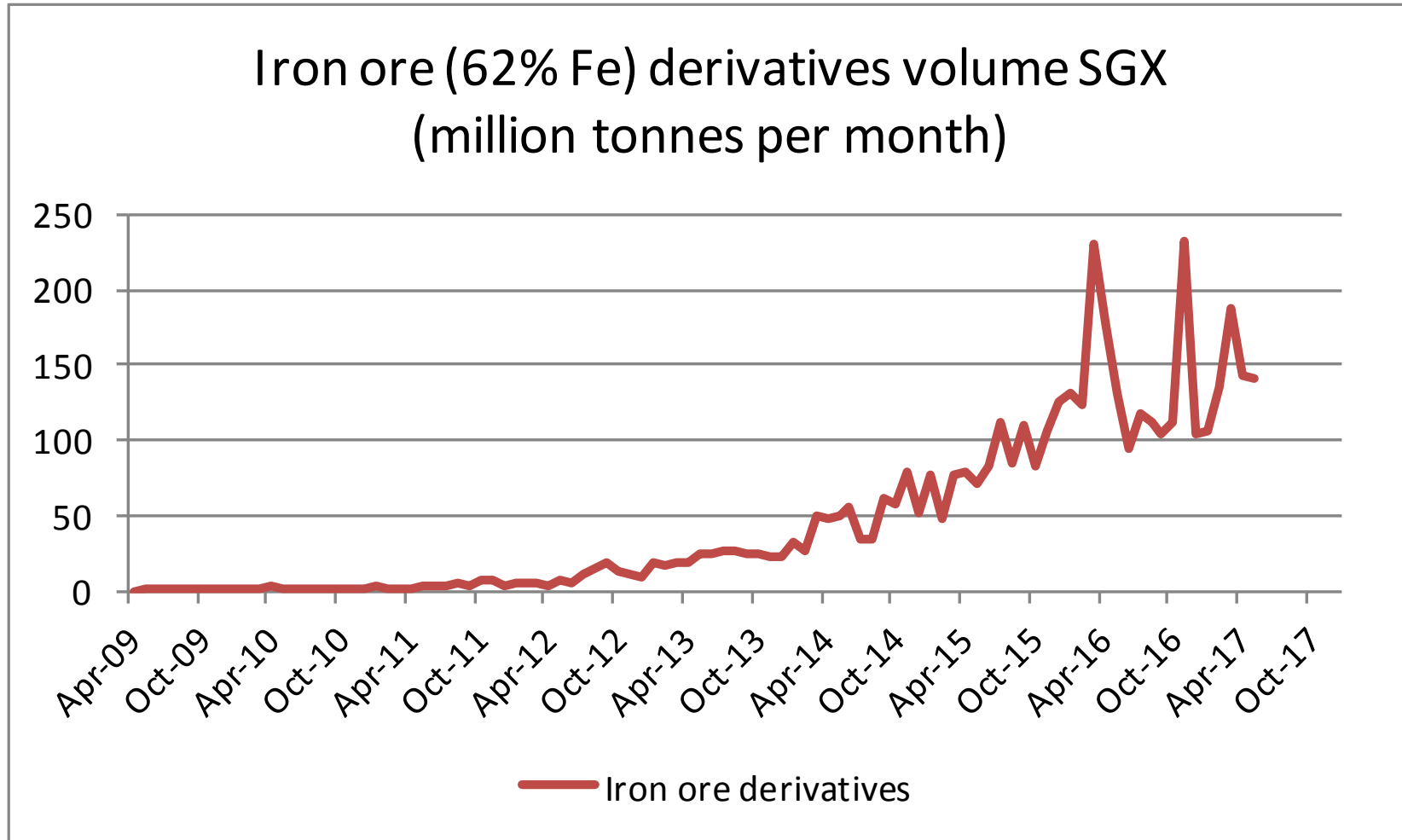
- Shorten fixed price sales contract durations
- Link selling prices to raw material price indices
- Raw material price index clauses in sales contracts
- Renegotiation clauses (price thresholds)
- Long(er) raw material contract maturities (physical hedges)
- Risk budgets/premia (based on the company's risk appetite/tolerance)
- **Derivatives (financial hedges)**

Iron ore hedging - context

- Iron ore derivatives were launched in 2009
- This was before l.t. fixed price iron ore contracts ceased to exist
- The steel industry is a “physical” industry, with little perception about and knowledge of financial instruments (except for Treasury)
- While hedging as such is a simple concept, the process involves several departments and legal entities (in different geographies)
- Hedging requires cash or credit lines
- Use of (additional) financial instruments requires Exco and Board approval (TSE and TS India level)
- Lack of market liquidity - it took several years before the iron ore paper market became liquid – see next slide

Development of iron ore derivatives market

- Iron ore paper trading commenced in 2009 and really started to become relevant from 2013/4 onwards



Iron ore hedging process and governance

Process

- *TSE sells fixed price steel, a Tata Steel subsidiary in Singapore buys raw materials and sells these on to Europe (NL or UK)*

- Reporting of and calculation of exposures

Includes volumes and cost price assumptions used – the latter provide guidance for the execution of the hedges. A maximum of 80% of the exposure is hedged.

- Execution of hedges

Instruction by Group Strategic Procurement, execution by Treasury

- Linking hedges to physical raw material contracts

Jointly decided between GSP and Singapore, the latter sells part of the iron ore volumes at fixed prices to TSE

- Hedge accounting

Necessary in Singapore to avoid undesired P&L effects, MI support

Iron ore hedging process and governance

Process

- Invoicing

Verification of invoices between Singapore and Europe. Sufficient detail is required for disclosure of cost price information for US authorities (in case of anti-dumping)

- Tax

Cross-border transactions imply involvement of the Tax department is advised

- Reporting

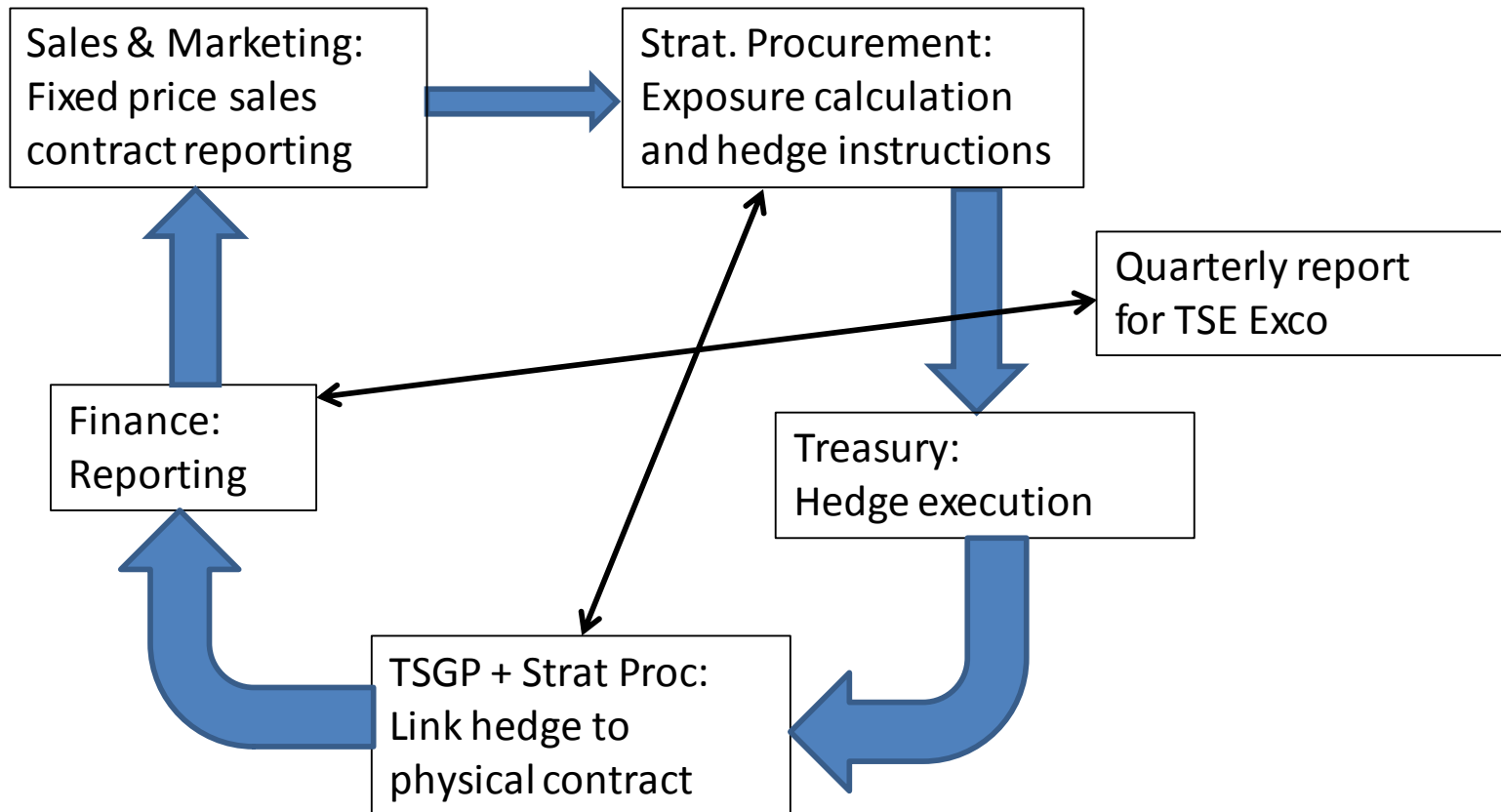
Mark-to-market reports per month, versus the hedge price ceilings set, sufficient detail to allow for linking hedges to specific contracts for margin analysis.

Weekly report to track the progress of hedging

Iron ore hedging process and governance

Process

Flow chart commodity hedging



Iron ore hedging process and governance

Governance

- Iron ore hedging is governed by a Commodity hedging policy (piloting coking coal is planned), approved by TSE and TSG Boards
- Objective is **to lock in** (part of) the margin
- Iron ore swaps or futures are preferred instruments (low cost)
- The hedging process is overseen by a “Commodity Policy Committee”, consisting of:
 - Group Executive Vice President Finance (Chair, Mumbai based)
 - Group Director Strategic Procurement (IJmuiden based)
 - Finance Director Sales & Operations, TSE (IJmuiden based)
 - Director Pricing TSE (UK based)
 - Head Commodity Risk Policy & Intelligence (IJmuiden based)
- Challenge is to inform all stakeholders and include relevant parties in the approval process

Conclusion

Commodity hedging is not difficult, but requires:

- A profound insight in the exposures of a company;
- Buy-in from the top-level of the company;
- Engagement and understanding of all departments involved;
- Strong governance.

QUESTIONS?