



# BA Smelters Update

Svante Nilsson

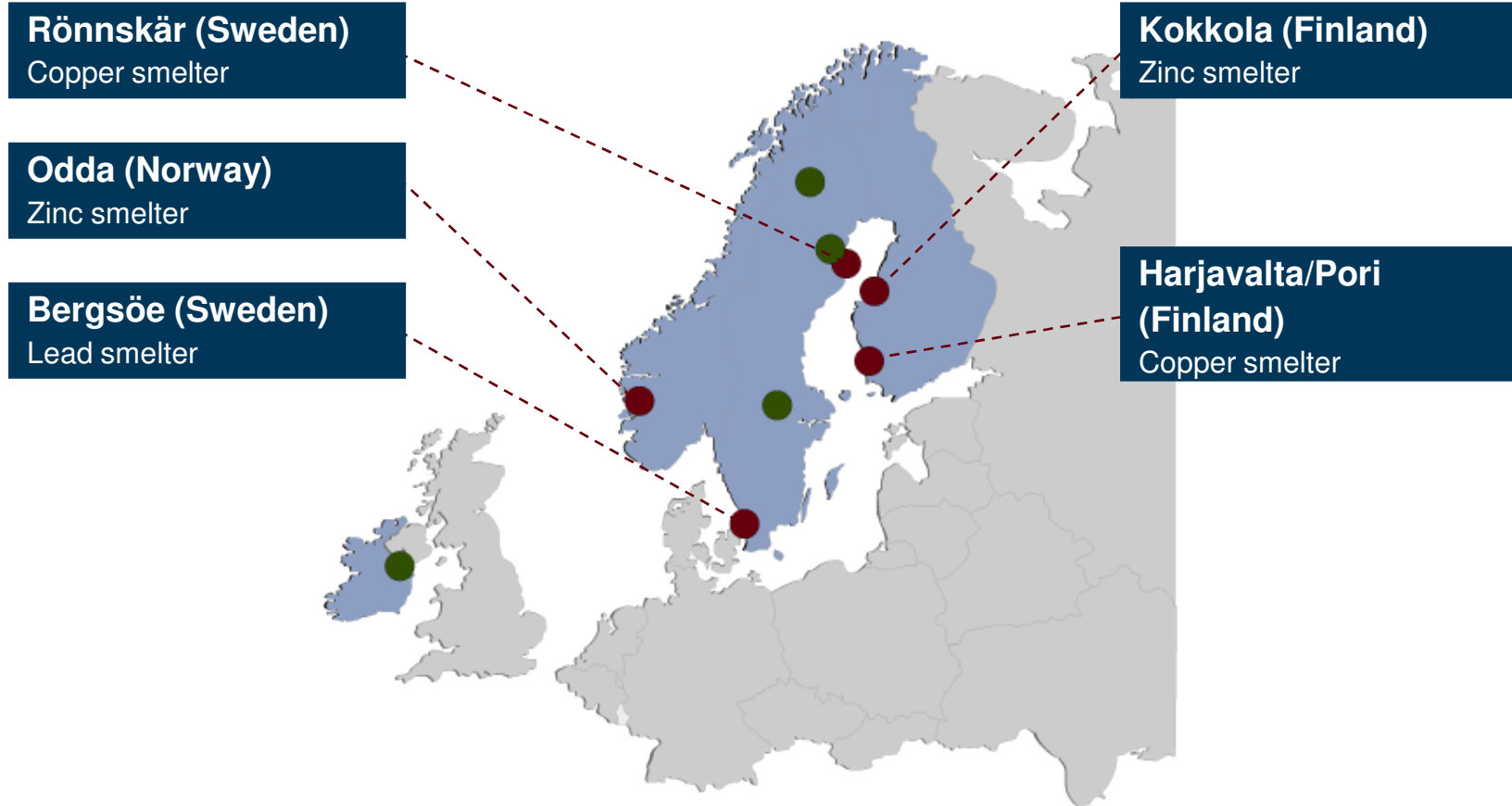
President BA Smelters

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# Content

- Business Area Update
- Earnings models
- Gross profit development

# Smelters Production Units



# Kokkola

## Production 2009

- Zinc 295,000 t
- Sulphuric acid 300,000 t (from 2010)
- Operational focus:
  - NBW
  - New Acid Plant



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# Odda

## Production 2009

- Zinc metal 139,000 t
- Aluminium Fluoride 33,200 t
- Operational focus:
  - NBW
  - Process Stability





# Rönnskär

## Production 2009

- Copper 205,700 t
- Gold 13,300 kgs
- Silver 481,200 kgs
- Lead 13,000 t
- Zinc clinker 38,500 t
- Sulphuric acid 514,700 t
  
- Operational focus:
  - NBW
  - E-scrap expansion
  - Other SRMs
  - Impurity handling



# Harjavalta

## Production 2009

- Cathode copper 96,600 t
  - Gold 1,700 kg
  - Silver 58,300 kg
  - Sulphuric acid 500,800 t
- 
- Operational focus:
    - NBW
    - Process Stability
    - Nickel
    - SRM



# Bergsöe

Metal production 2009

- Lead and lead alloys 38,600 t
- Operational focus:
  - NBW
  - Battery supply



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# Base case Smelting

- Operational excellence
  - NBW
  - Cost / Revenues
  
- Secure primary feed
  - Traders take larger share – more volumes spot
  - Impurity capacity
  - Lever on know-how
  
- Broaden customer base
  - Actively take market share
  - Medium sized customers

# Feed flexibility – margin management

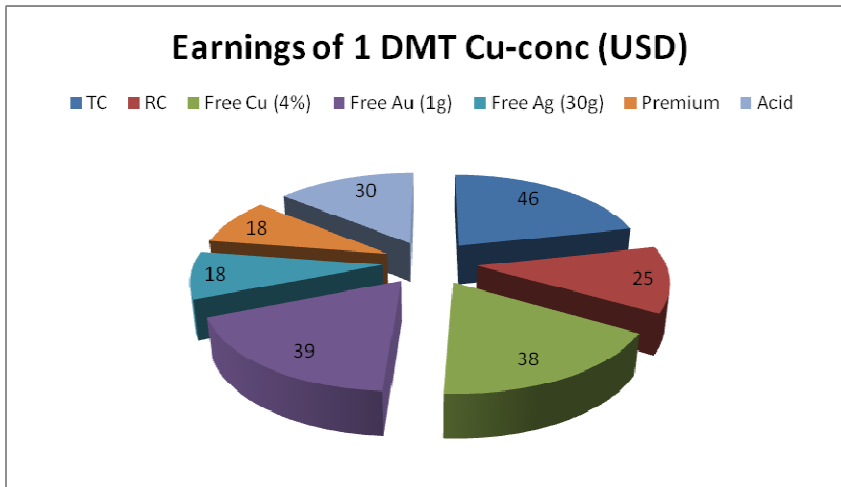
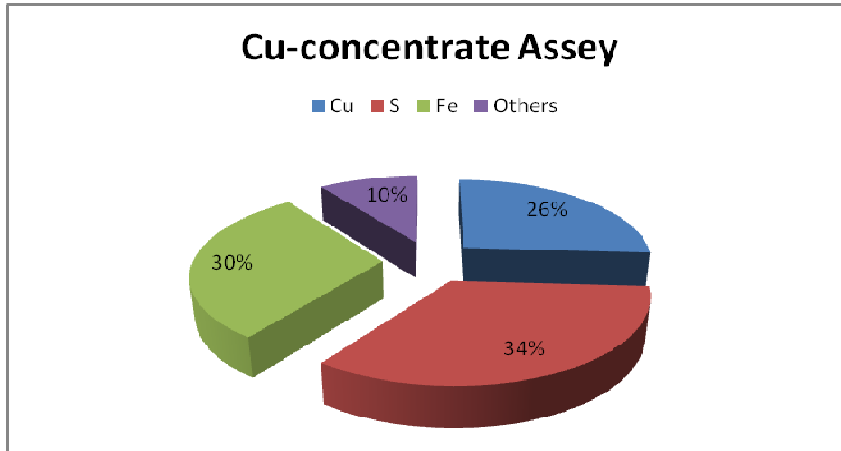
- Max volume not always the most important
  
- Boliden has flexibility to handle many materials
  - Equipment
  - Know-how
  - Environmental performance
  
- Electronic scrap expansion
  
- Increase other secondary feed
  - EAF-dust
  - Drosses, ashes and reverts
  - PGM-bearing materials



## Earnings models

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# Copper earnings model



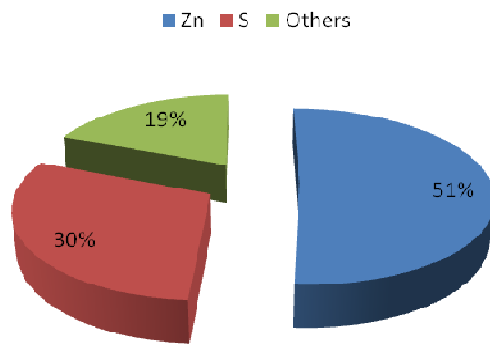
## Assumptions:

- TC/RC = 46 / 4,6
- Cu-price = 7,250 \$/t
- Au-price = 1,200 \$/tr.oz
- Ag-price = 19 \$/tr.oz
- Acid-price = 30 \$/t
- Premium = 70 \$/t
- Penalties



# Zinc earnings model

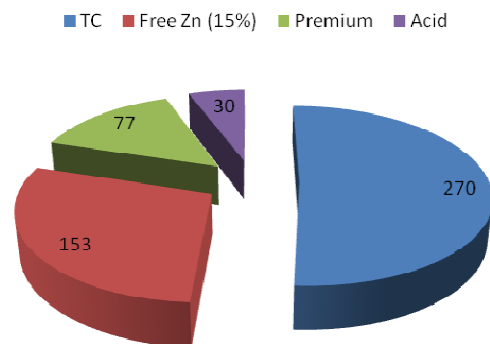
Zn-concentrate Asses



Assumptions:

- TC-base = 270 \$/t
- Escalator = 2,500 +9 / -4
- Zn-price = 2,500 \$/t
- Acid-price = 30 \$/t
- Premiums = 150 \$/t
- Penalties

Earnings of 1 DMT Zn-conc. (USD)



# Earnings others

Approximately 30% of total GP comes from non-transparent bilateral terms.

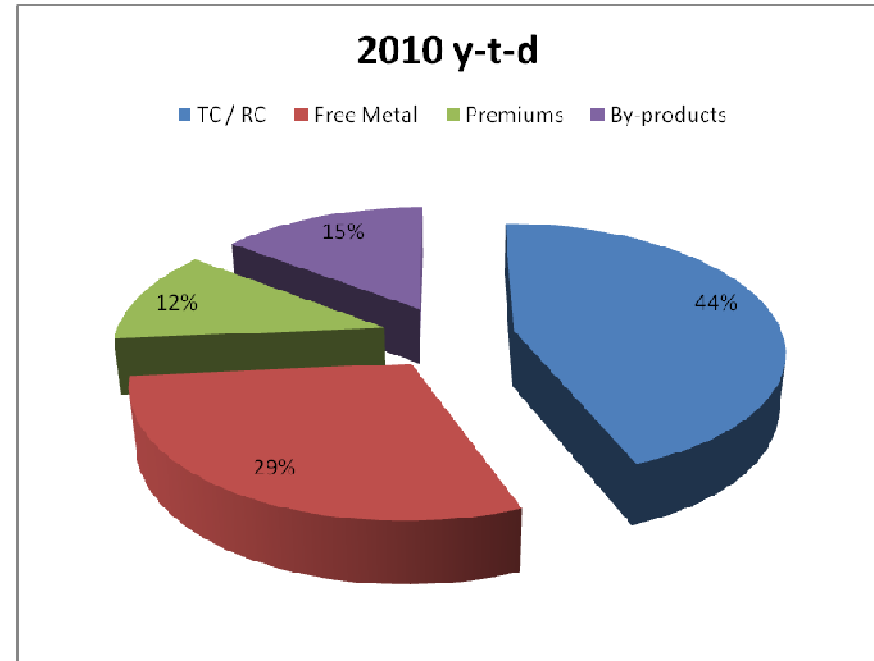
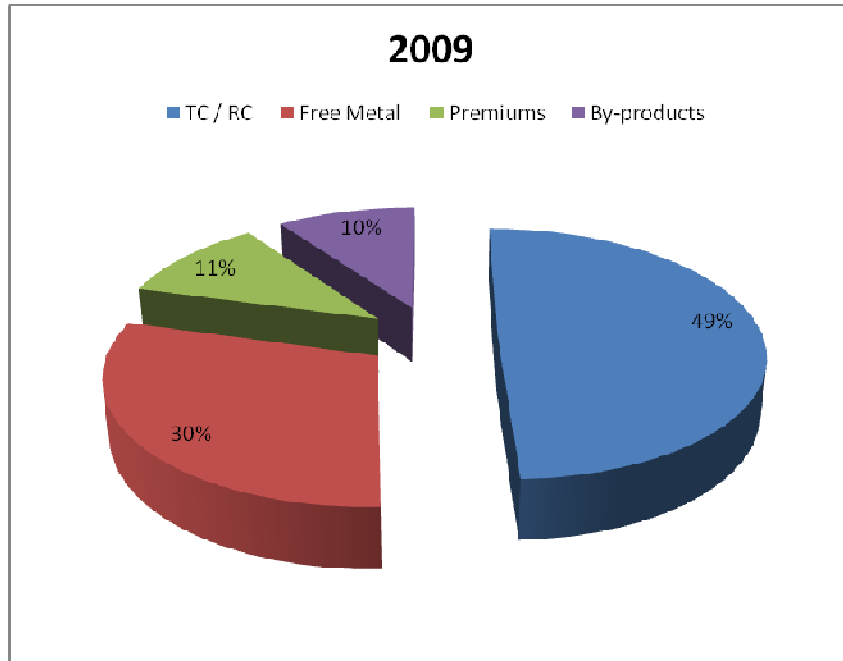
- Secondary lead
  - Free metal business
  - Lead price
- Secondary raw-materials
  - Better margin than concentrates
  - TC/RC's less volatile
  - Free metals
  - PM- and PGM- prices
- Ni-smelting
  - Fixed TC (indexed) over several years
- Aluminum fluoride
  - Product priced



## Gross Profit Development

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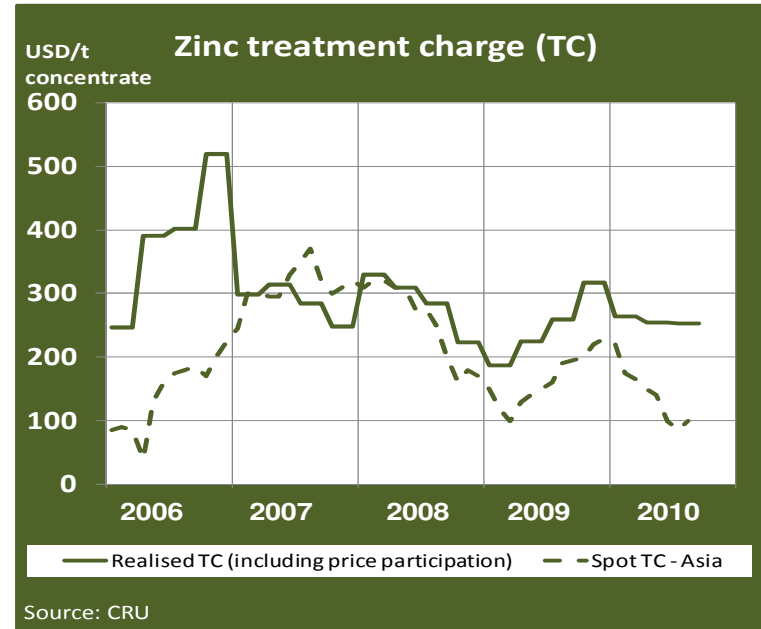
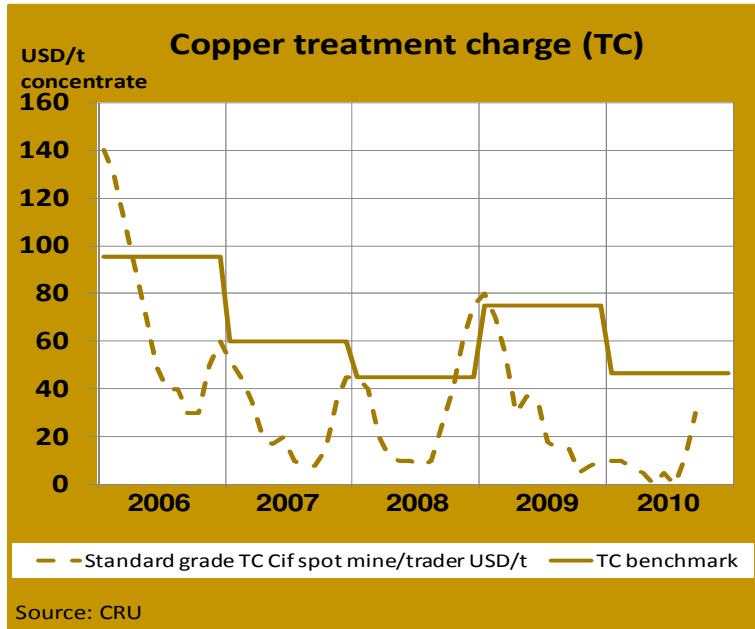
# Gross Profit Distribution





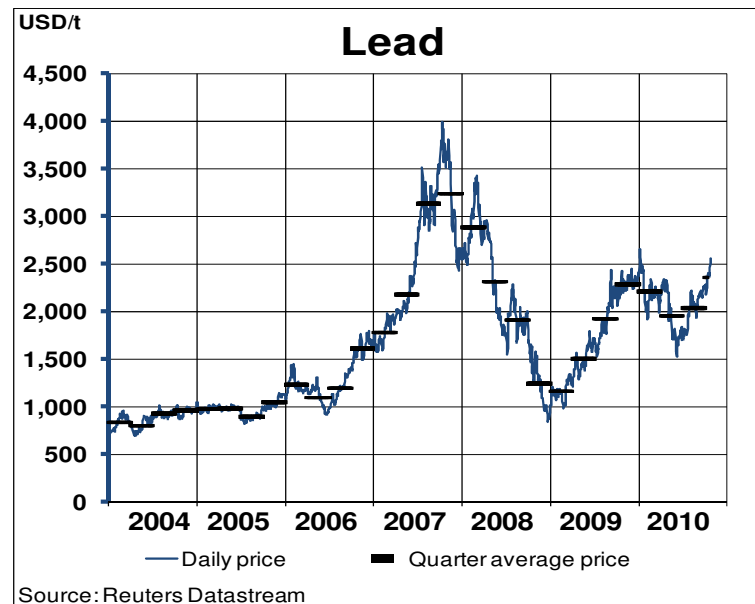
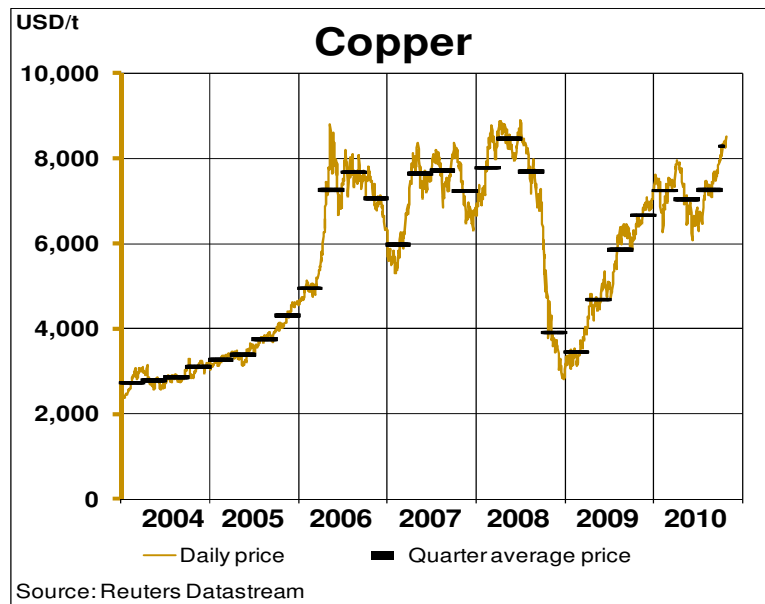
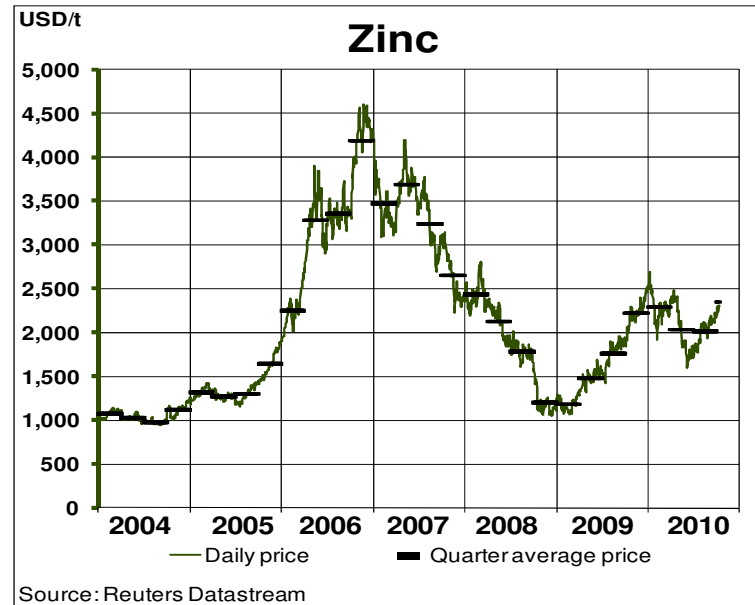
# Treatment and Refining Charges

- Copper-TC/RC
- Zinc-TC
- Nickel-TC (tolling)
- Secondary raw materials-TC
- Precious metals-RC



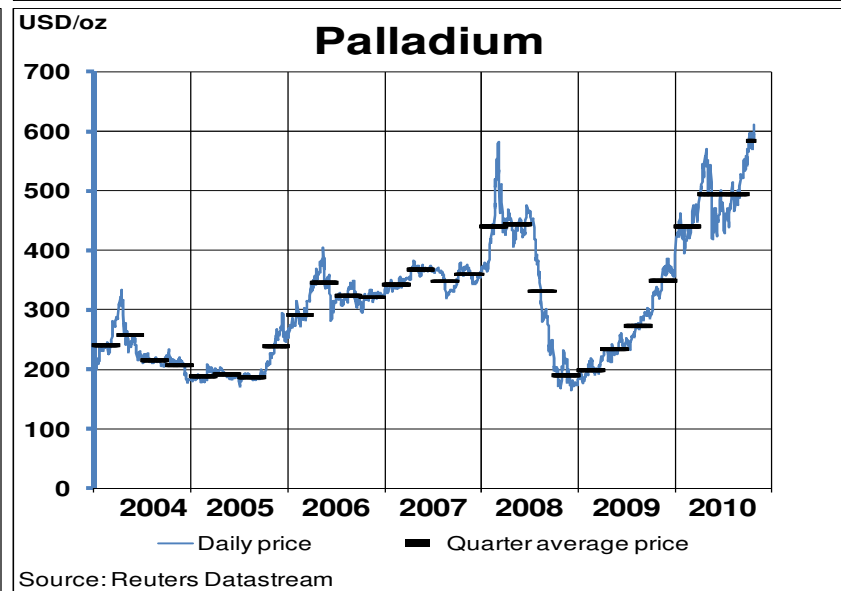
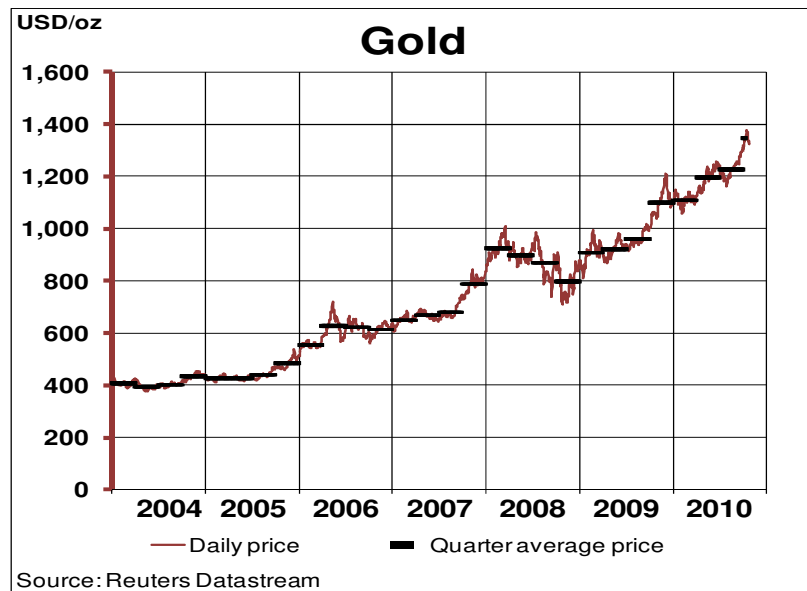
# Free metals

- Zinc
- Copper
- Lead



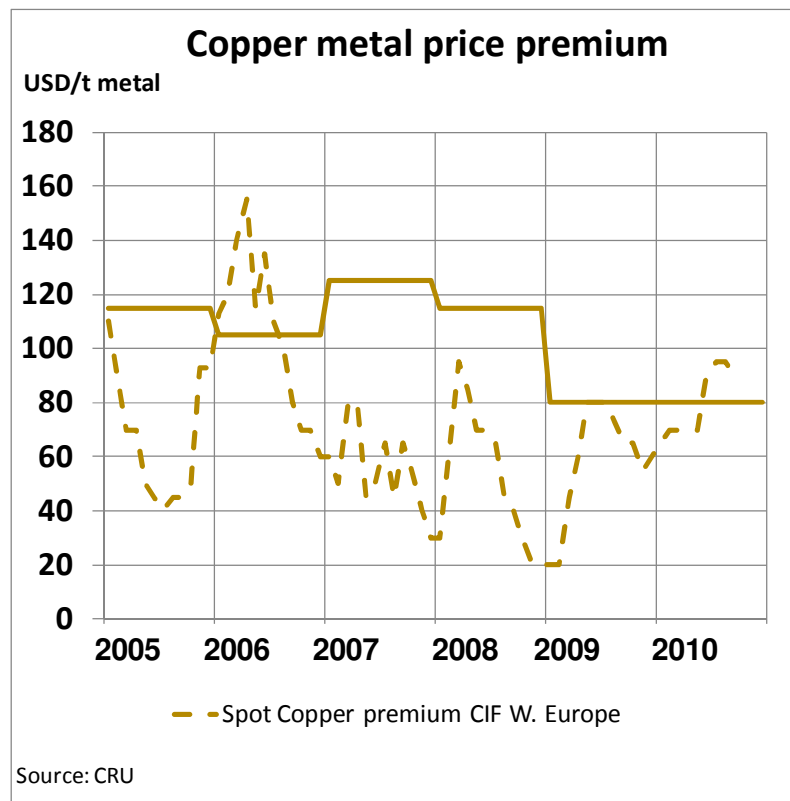
# Free Metal

- Silver
- Gold
- Platinum group metals (PGM)

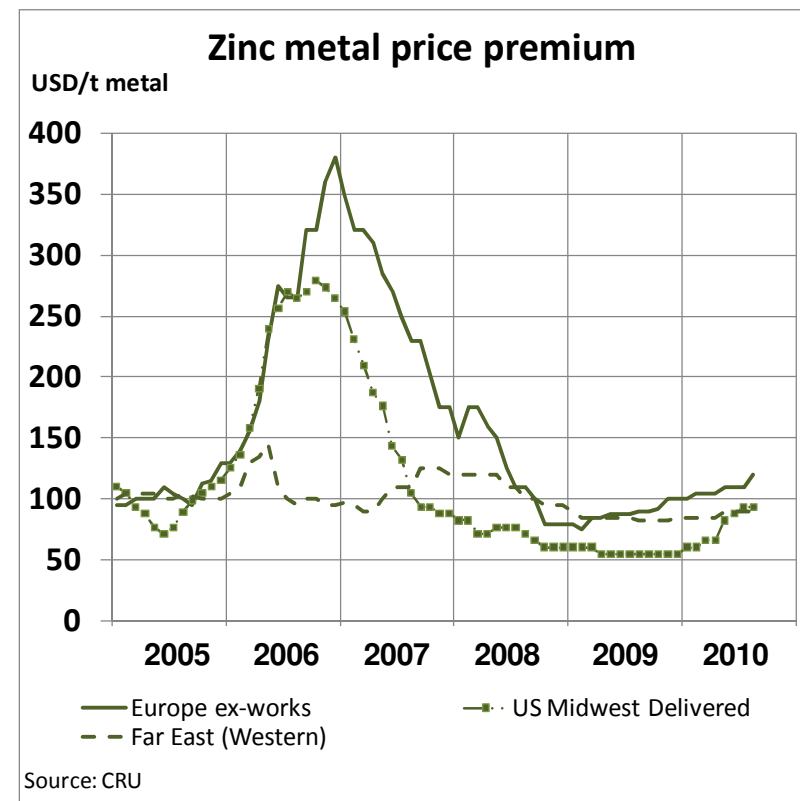


# Premiums

- Copper



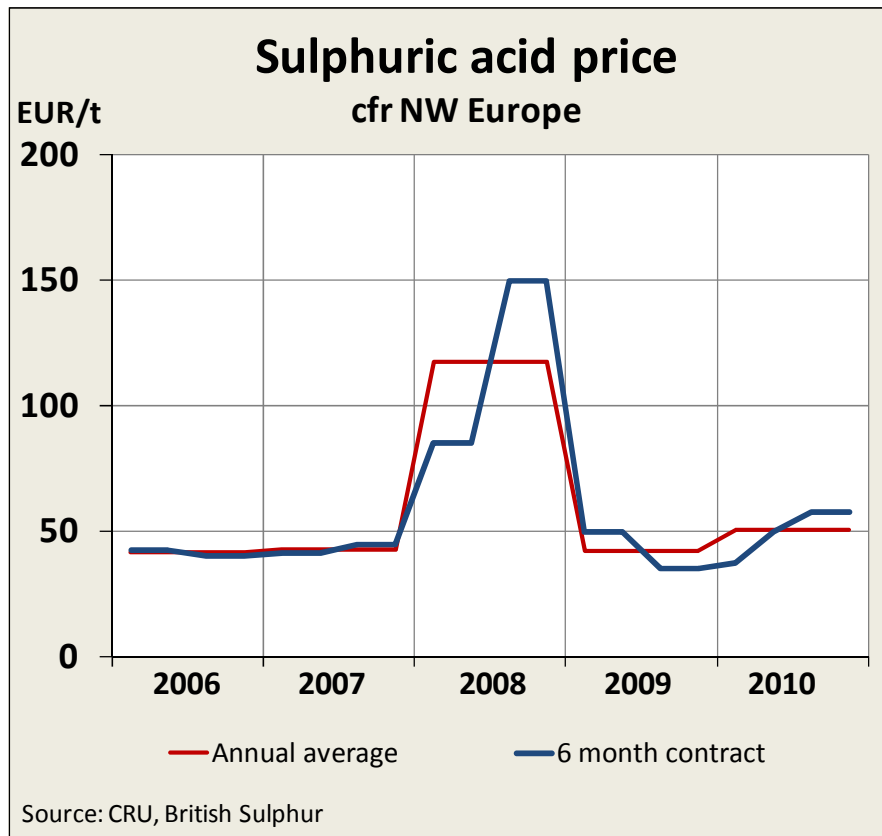
- Zinc





# By-products

- Sulphuric acid ( $H_2SO_4$ )



# Conclusion

- Copper smelters
  - Challenging concentrate situation
  - Significant revenue from secondary feed
  - Electronic scrap expansion
- Zinc smelters
  - Kokkola is a world class zinc smelter
  - Odda has challenging size and cost structure
  - Internal feed

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