# Capital Markets Day
# 2 September 2009

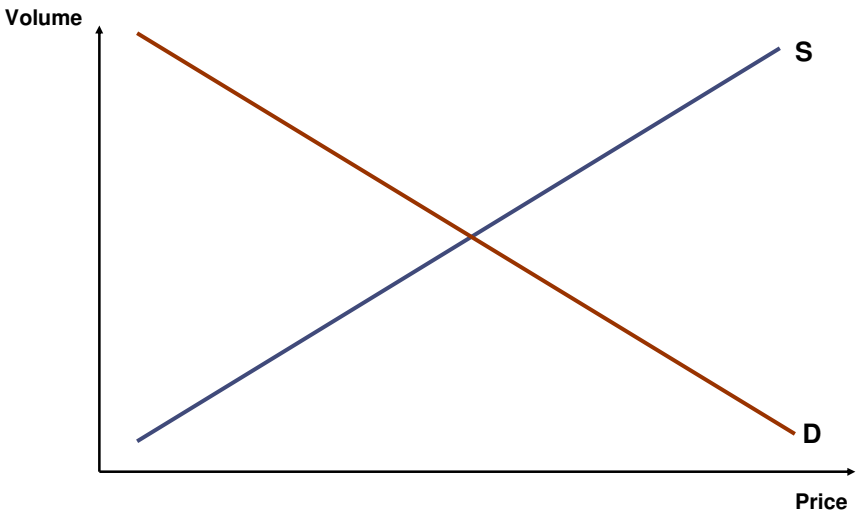
## Market Update

**Lennart Evrell**
President & CEO

BOLIDEN



## Supply and demand

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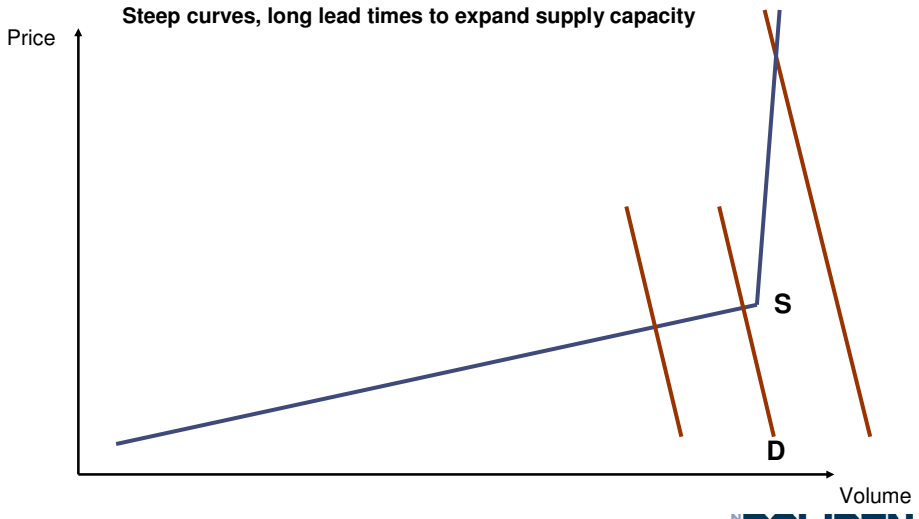
# Supply and demand in metal and mining

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# Metal markets and prices…

- Reductions
  - Care and maintenance when cash flow is more negative at producing than at closing
- Low prices
  - Related to cash-cost curves and percentiles
  - Steep cash-cost curves basis for price volatility
- Expansions
  - DCF Life-of-mine and IRR
  - Mine plans, long term prices, currencies and interest
  - Timing
- High prices
  - Demand curves are very steep
  - Prices set by highest cash-cost producer
  - No theory for upside at deficit
  - Steep cash-cost curves support high prices

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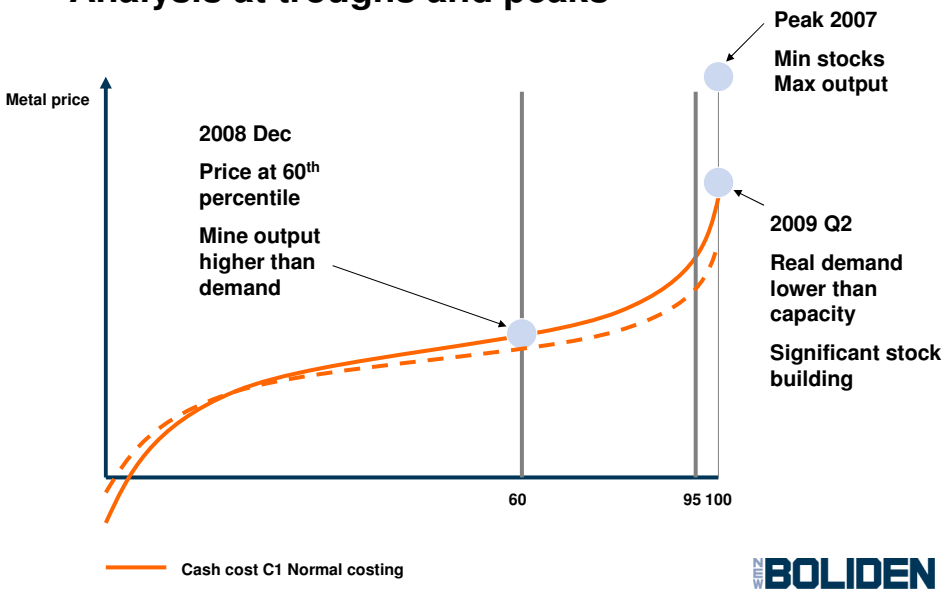
# Analysis at troughs and peaks

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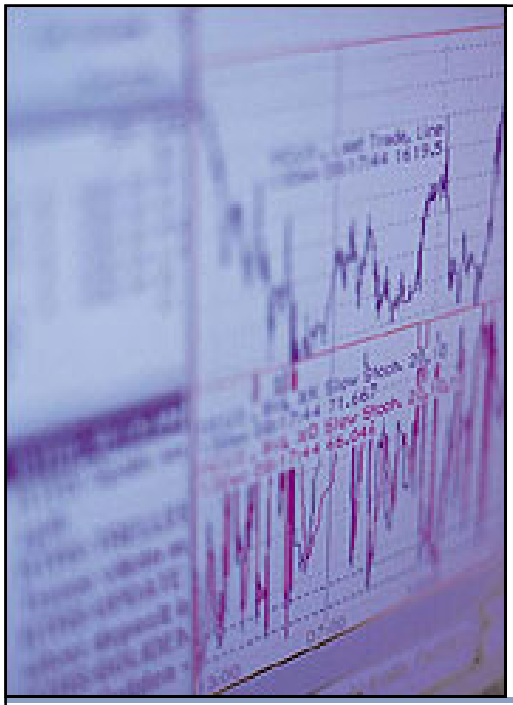

# Macro

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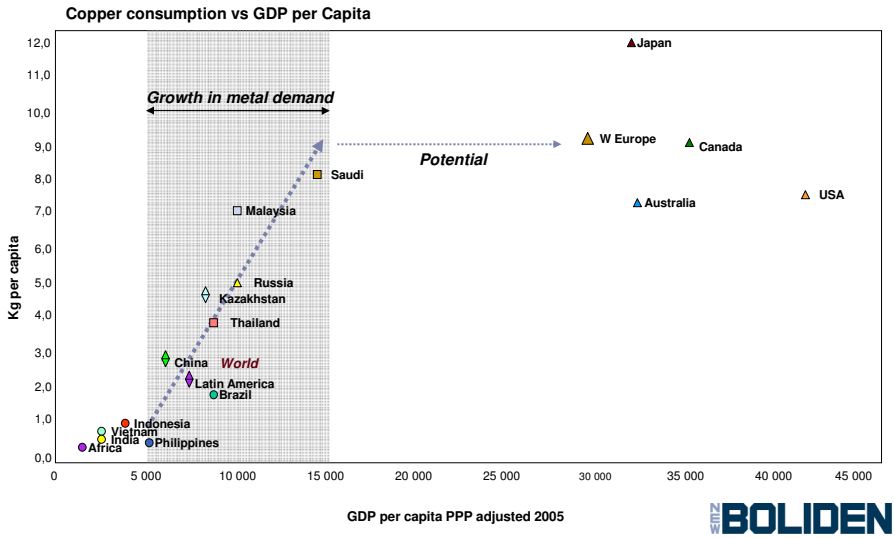
# The “Supercycle” model

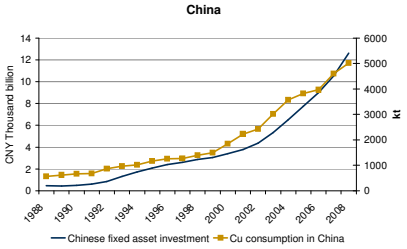



Source: FN, Brook Hunt



# Investments (LHS) drive consumption (RHS) in China


**Zinc**

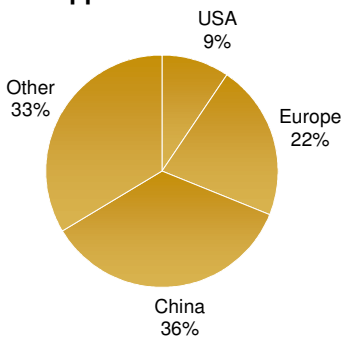



**Copper**

Source: Based on data from © Brook Hunt June 2009, Reuters Ecowin, calculations by Boliden

# China's importance has grown further

**Refined Copper - Global demand Q209**




Source: CRU, Brook Hunt, ICSG

- China accounted for 36% of global demand in Q2 2009
- Chinese market is now larger than EU + US

Source: Based on data from CRU, calculations by Boliden



# Trends in zinc and copper

- Metal consumption
  - First use segments down in west, growing in new economies
- Smelter capacity
  - Zn and Cu capacity over consumption and mine capacity
  - Capacity build in developing countries
- Mine capacity
  - Head grades declining, mines depleting
  - New capacity needed to meet demand (Zn by 2013*, Cu by 2016*)

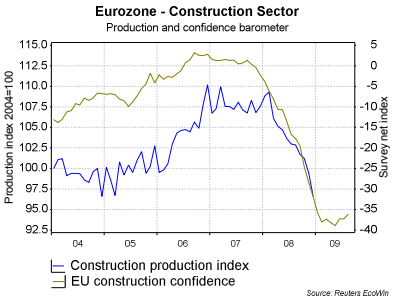
* © Brook Hunt June 2009

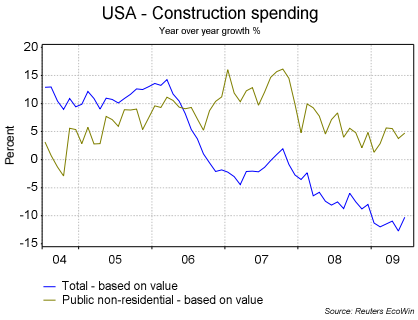
# Construction and automotive users of zinc and copper

| | Zinc | Copper |
|---|---|---|
| Construction | 49% | 35% |
| Automotive | 23% | 11% |



# Construction markets

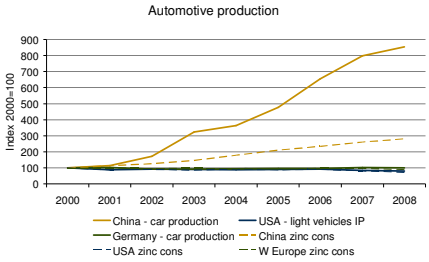


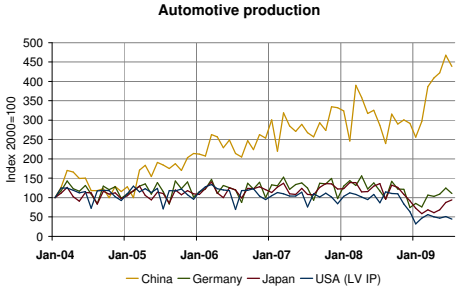


- Non-residential still growing in USA (upper right)
- Strong trend in China (lower left)
- Weak European market (upper left)

# Automotive market



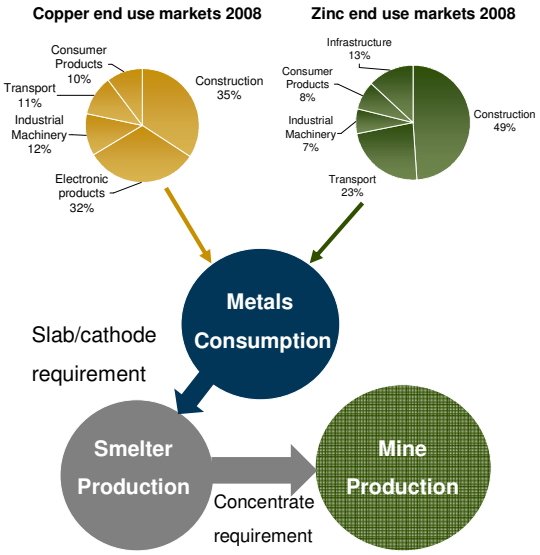

Transfer of world production to Asia




Dramatic down-turn in this recession – China back on track



# Metal market forecast methodology



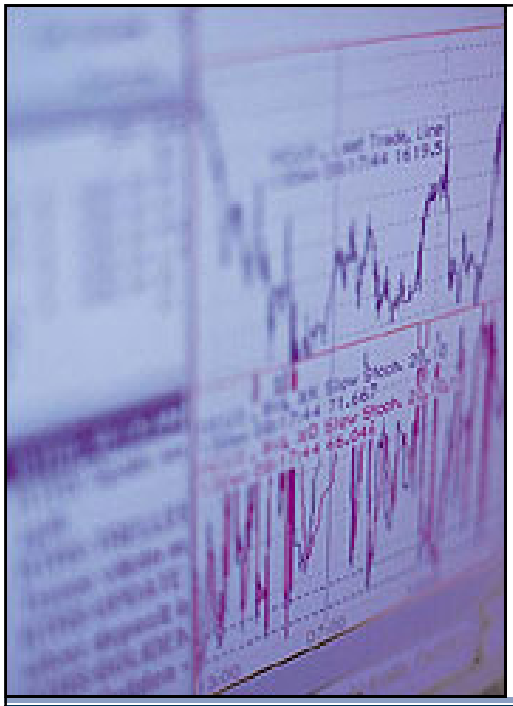

## Supply scenarios

**Base case production:**

- Existing operations
- Mine closures (depletions)
- Projects under construction or board approval and financing

**Highly probable projects:**

- Projects without board approval but likely to start within indicated time



# Zinc market

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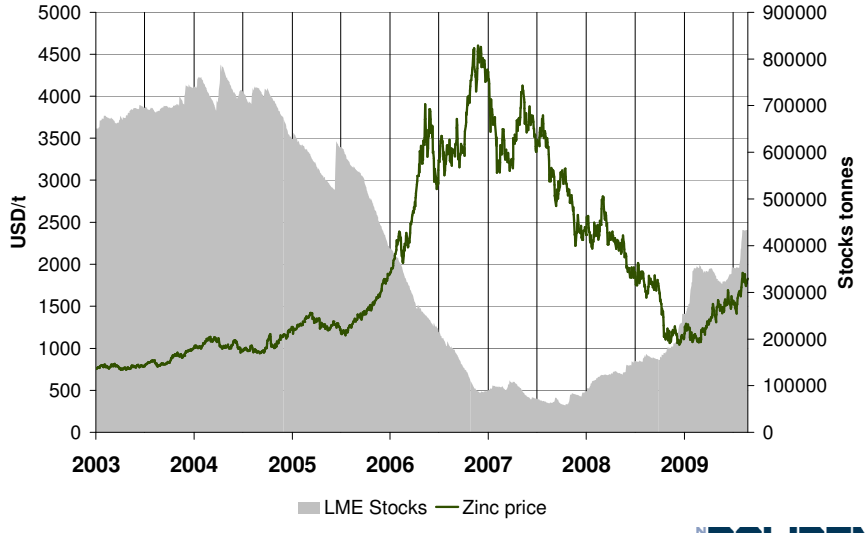
# Zinc price and stocks

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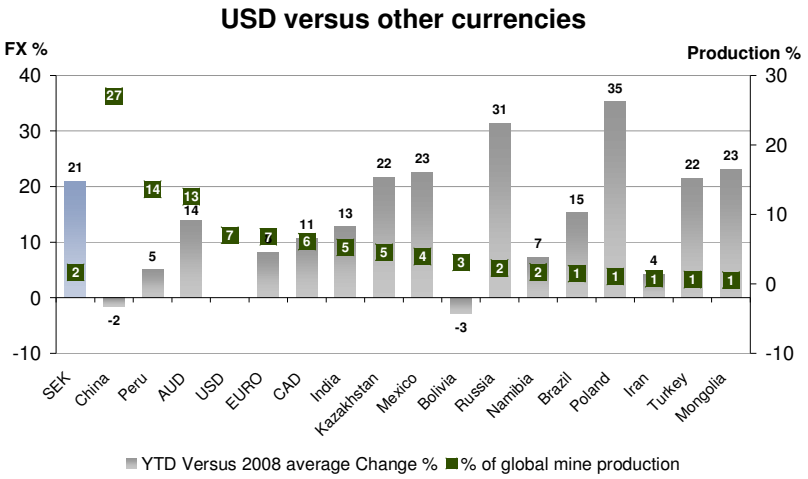
Source: Reuters Ecowin

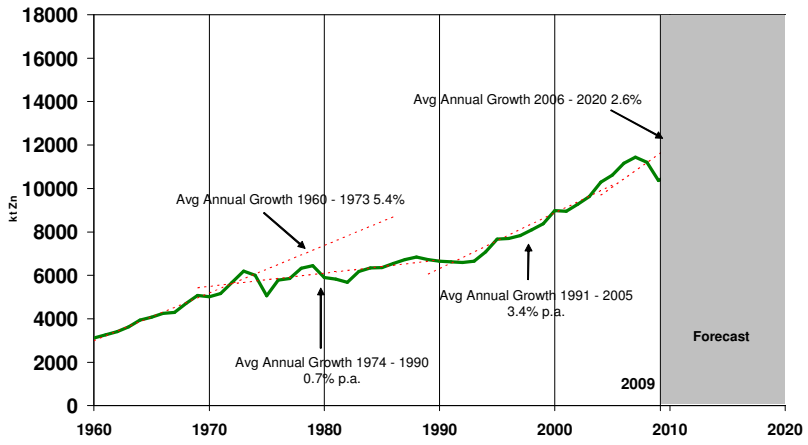
# Zinc production and exchange rates




Source: Based on CRU and Reuters Ecowin data, calculations by Boliden

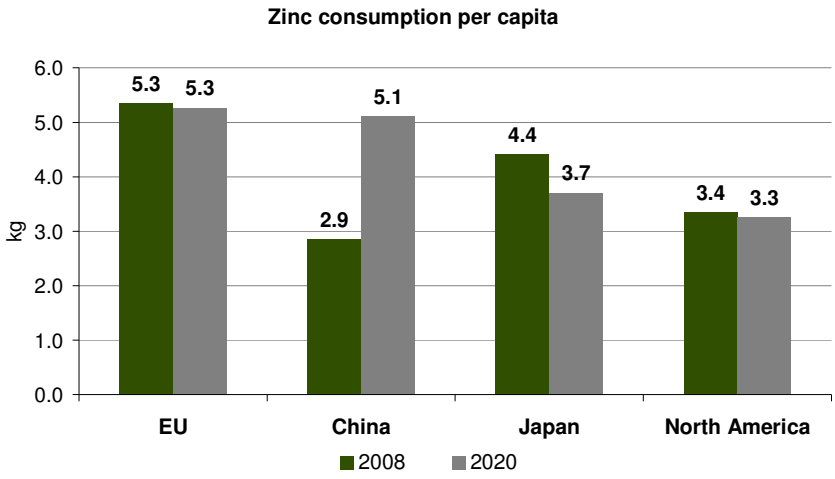


# Developing world drives growth to 2020



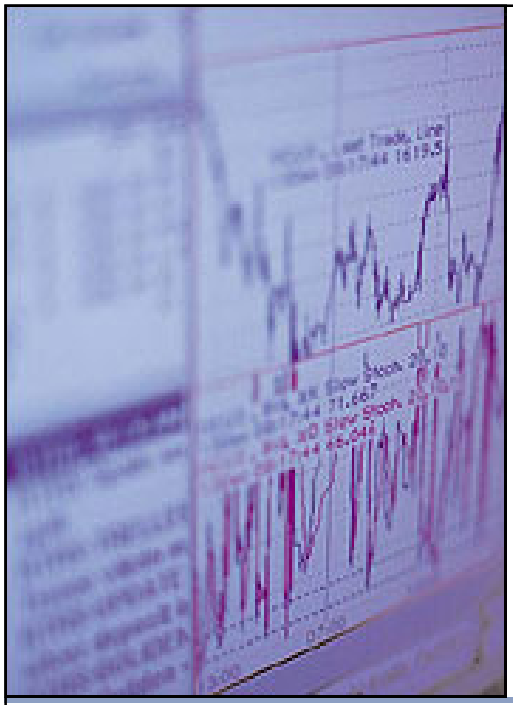

Source: © Brook Hunt June 2009

# China could be closer to mature levels by 2020



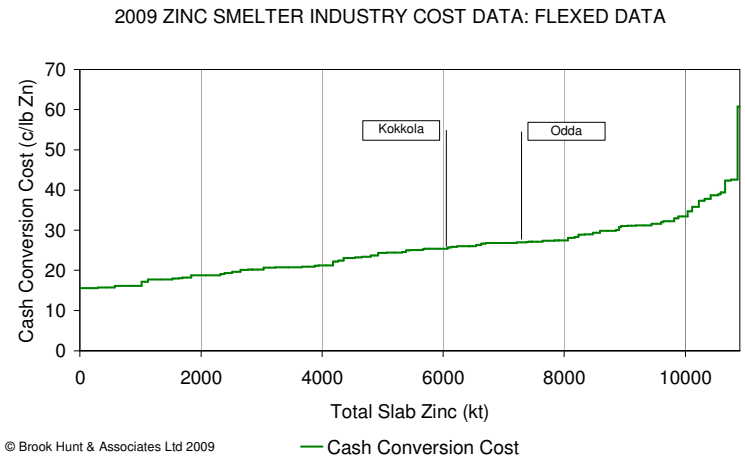

Source: Based on © Brook Hunt data, Reuters Ecowin, calculations by Boliden





# Zinc smelters

# 2009 zinc smelter cash cost curve

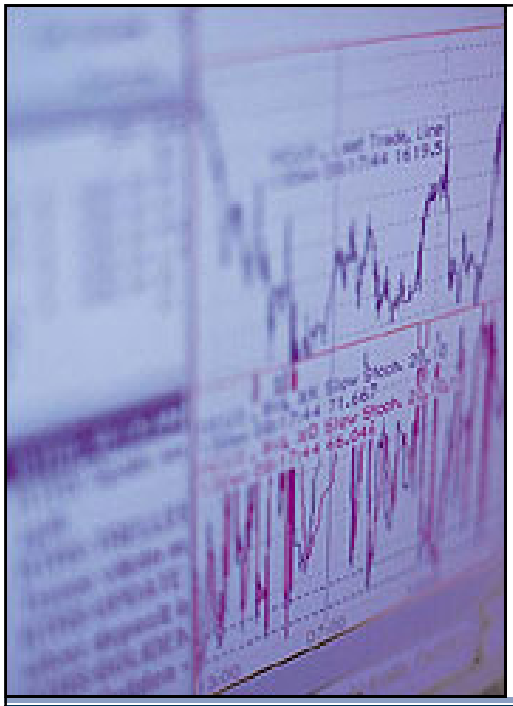



Assumptions based on Cost level as 2007 adjusted for FX and inflation, S acid price 20 USD higher than 2007



# Smelter closures

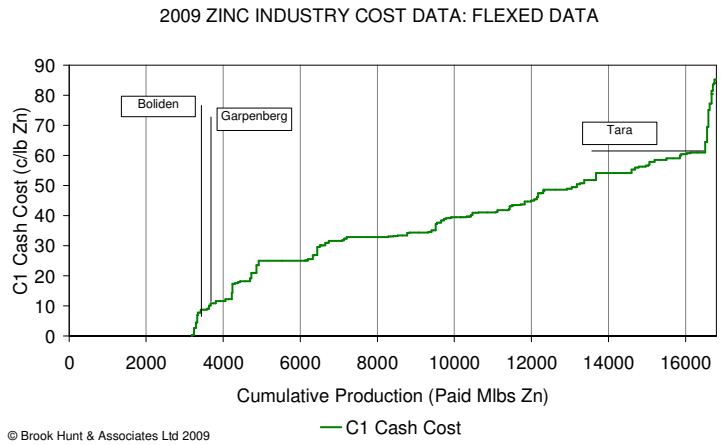
- Limited info on planned closures
- Some smelters will close
  - Financial situation and outlook
  - Environmental pressure



# Zinc mines



# 2009 zinc mine cash cost curve






Assumptions based on actual prices and terms

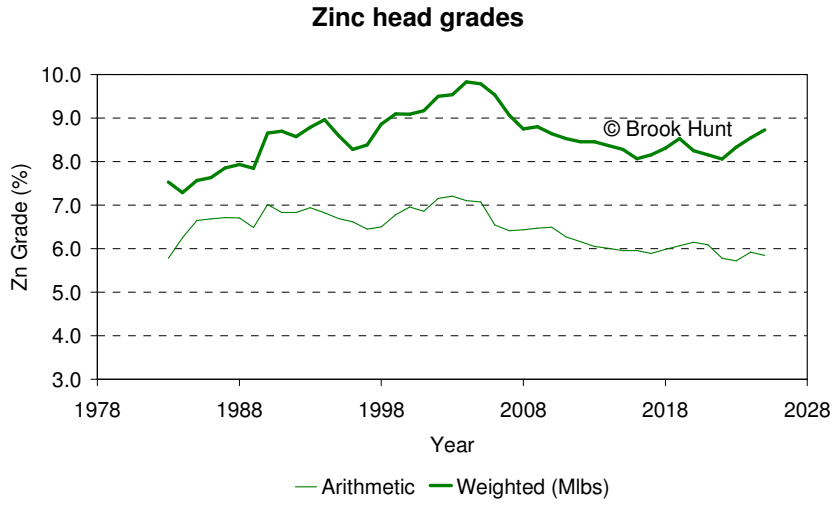
Cu 190 c/lb (4186 USD/t)

Pb 60 c/lb (1331 USD/t)

Exchange rates YTD 2009

Source: © Brook Hunt

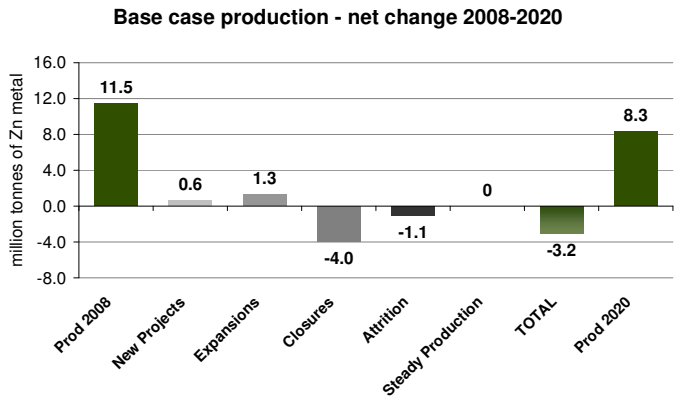
# Head grades are declining




Source: © Brook Hunt



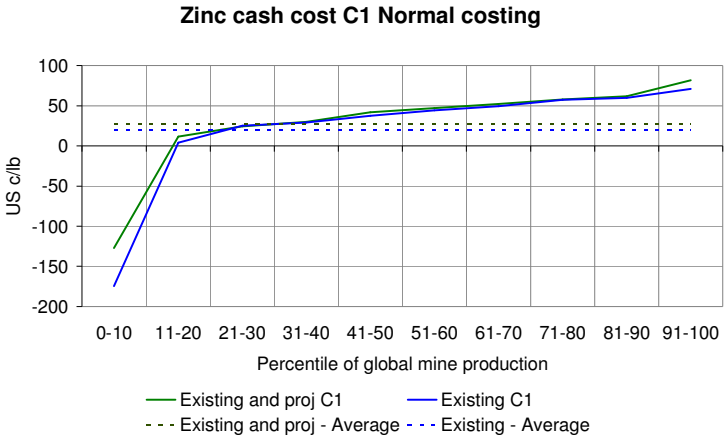
# Zinc mine capacity by source 2008-2020




- 30 new mines to enter but 12 closed before 2020 (+0.6 mt) – peak 2012
- 51 mines to expand output (+1.3 mt)
- 100 existing mines to close on depletion (-4 mt)
- 33 mines to decrease output (-1.1 mt)

Source: Based on © Brook Hunt June 2009, calculations by Boliden

# Cash cost to increase



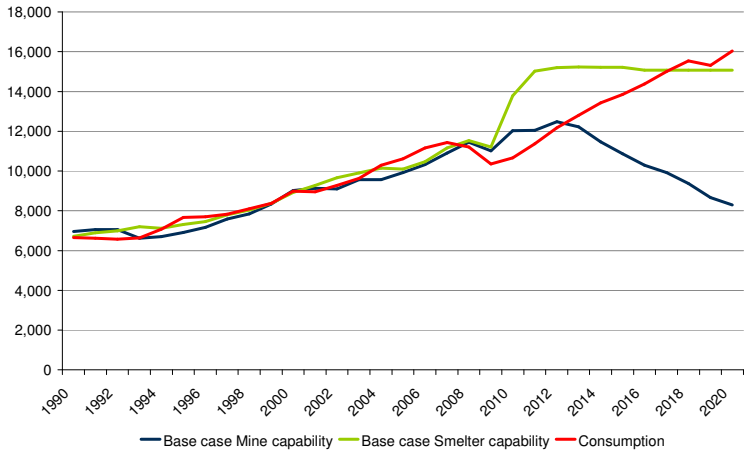

Based on Brook Hunt 2015 simulation on mines in operation, probable and possible projects using long term price assumptions

- Higher cost across the percentiles

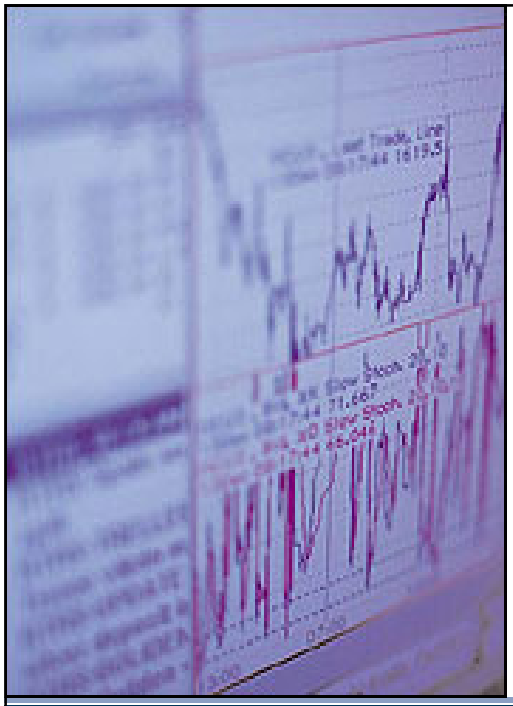
Source: Based on © Brook Hunt data June 2009, calculations by Boliden



# Zinc mine capacity down, smelter up – Base Case



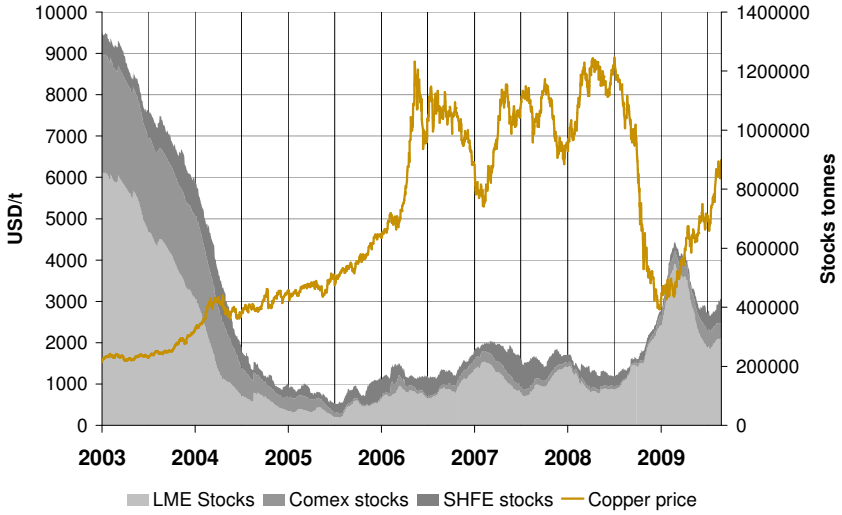

Source: Based on © Brook Hunt data June 2009



# Copper market

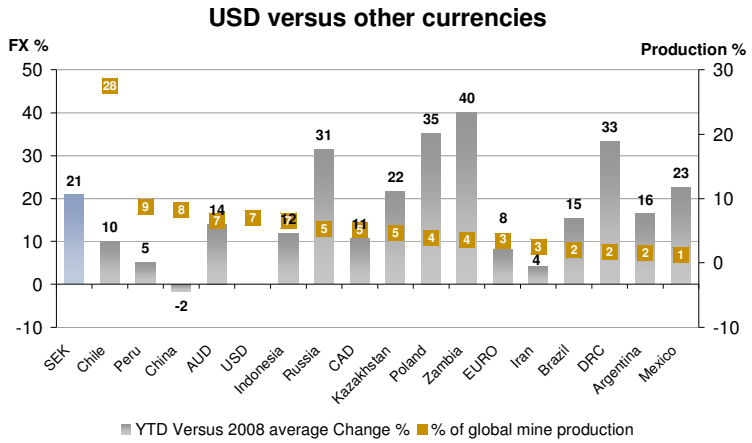


## Copper price and stocks




Source: Reuters Ecowin

# Copper production and exchange rates




Source: Based on CRU and Reuters Ecowin data, calculations by Boliden



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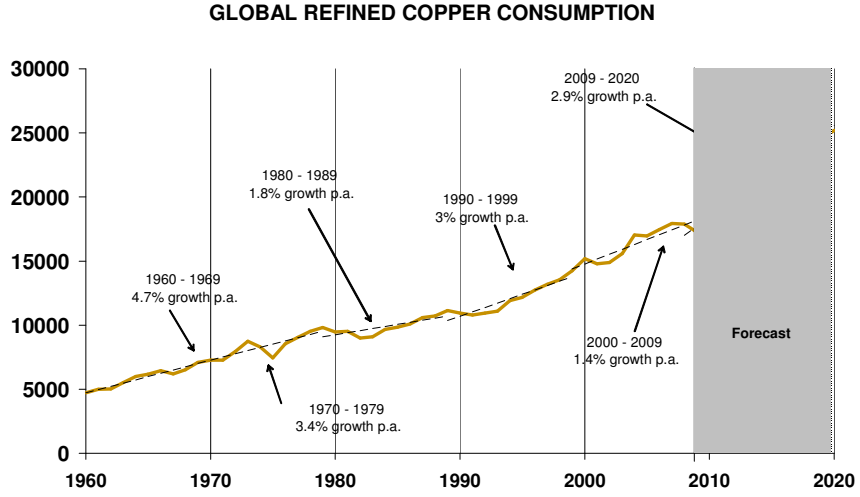
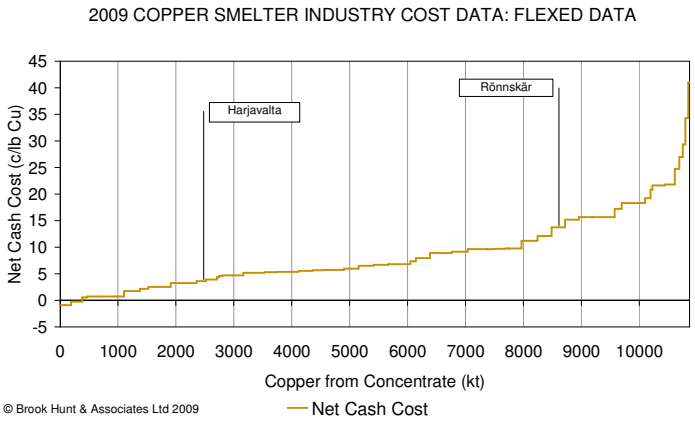



Source: © Brook Hunt June 2009

# Copper smelters



# Copper smelter cash cost curve (flexibility and ability to extract by-products not reflected)






Assumptions based on Cost level as 2007 adjusted for FX and inflation, S acid price 20 USD higher than 2007

## Copper smelters are complex…

- Fundamental characteristics for competitive position
  - Flexibility to different feeds
  - Recycling capability, E-scrap
- Limited info on planned closures
  - Financial situation and outlook
  - Environmental pressure

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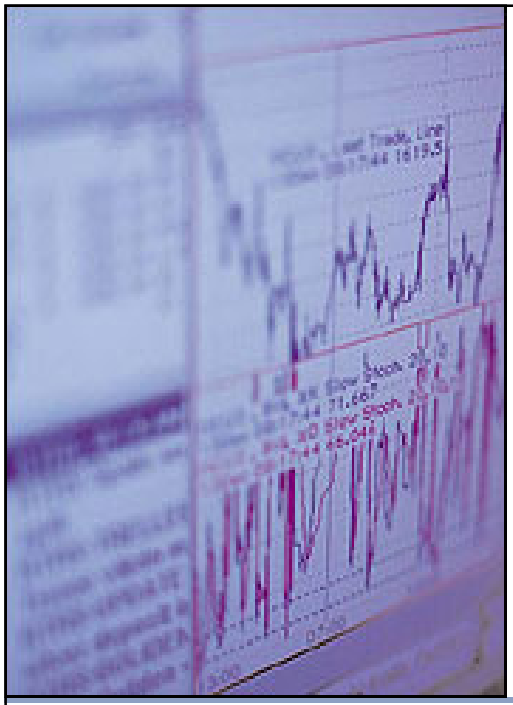

## Copper mines

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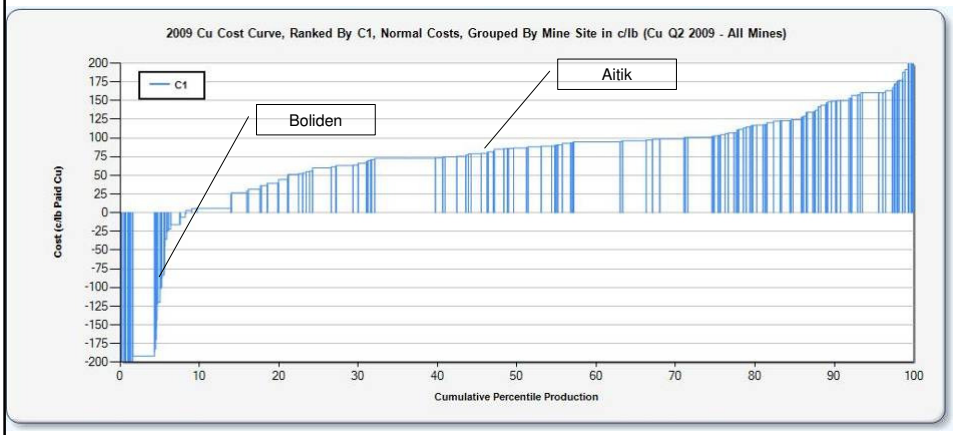
# 2009 Copper mine cash cost curve




Assumptions based on actual prices and terms

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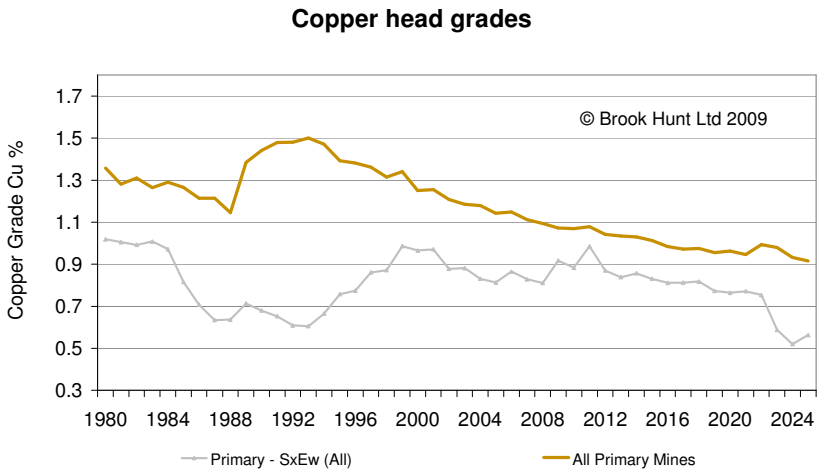
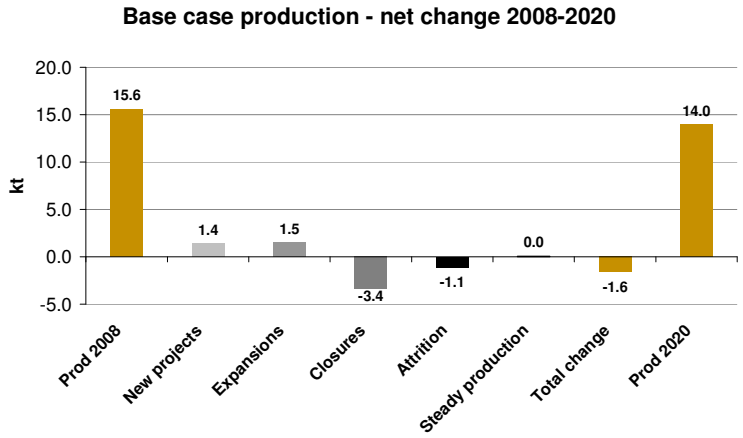
# Head grades are declining




Source: © Brook Hunt

# Base case, copper mine capacity by source 2008-2020

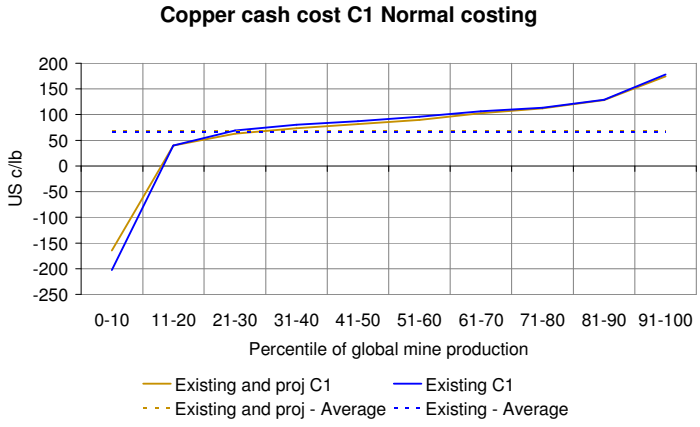



- New projects and expansion cannot make up for closures and attrition
- Grades decline and mines are depleted

Source: Based on © Brook Hunt data June 2009, calculations by Boliden



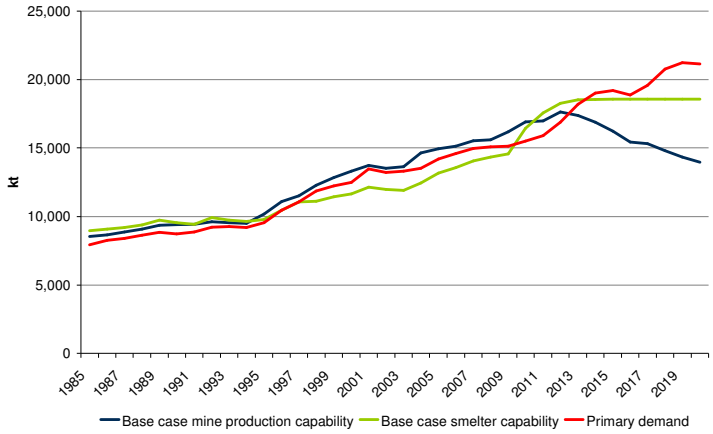
# Cash cost virtually unchanged (highly probable, probable and possible included)




Based on Brook Hunt 2015 simulation on mines in operation, probable and possible projects using long term assumptions for prices and terms

Source: Based on © Brook Hunt data June 2009, calculations by Boliden

# Copper mine capacity down, smelter up – Base Case




- Substantial smelter capacity build over the last few years

Source: Based on © Brook Hunt data June 2009, calculations by Boliden

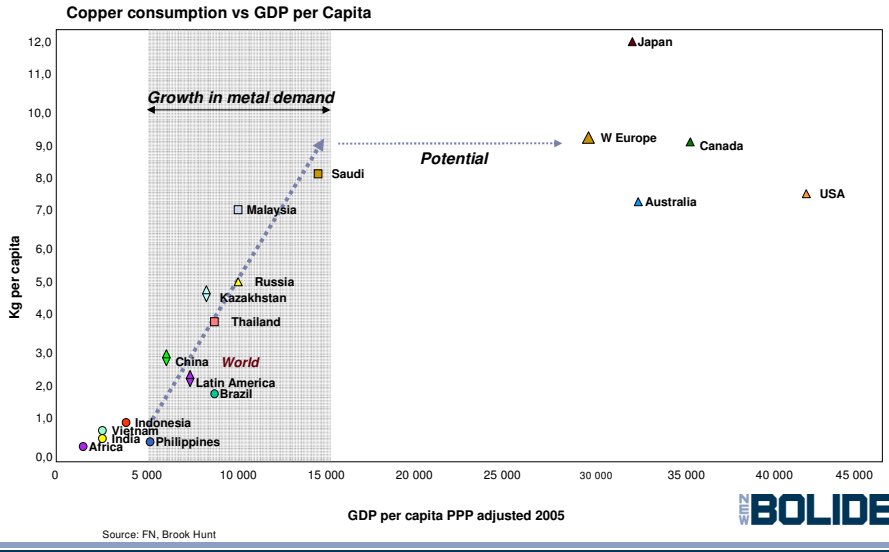


# Conclusion

- Most analysts suggest mine deficits again for Zn and Cu
- Smelter capacity will not be the limiting factor in near term
- Smelters will have to cope with stricter environmental legislation
- With limitations in the supply, prices are expected over the cash cost for the high cost producers in next peak
- High metal prices drive exploration and mine projects

- Risks
  - China growth
  - Economic and financial stability in old economies
  - TC etc for Smelters
- Opportunities
  - China goes on
  - Upturn in old economies
  - Other developing countries

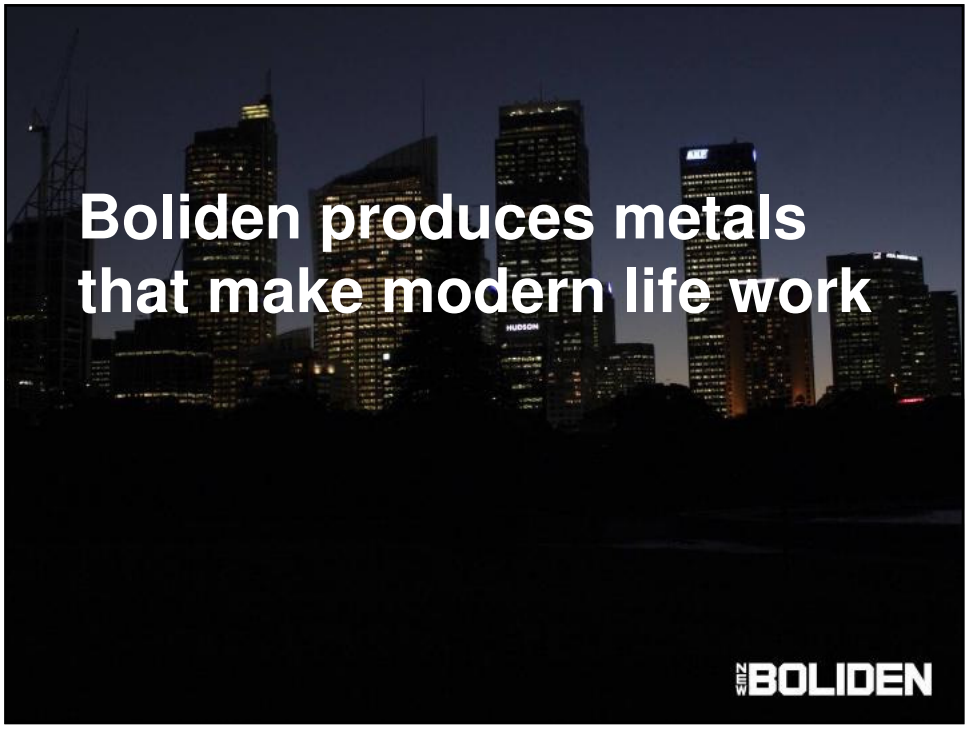
## Conclusion: Development in China fundamental to the market development




Source: FN, Brook Hunt

## Forward-looking statements

**Certain statements in this presentation are forward-looking, and the actual outcome could be materially different. Such forward-looking statements are based on Boliden's present plans, estimates, assumptions, projections and expectations and are subject to risks and uncertainties. In addition to the factors explicitly discussed, other could have a material effect on the actual outcome. Such factors include, but are not limited to, general economic or political conditions, fluctuations in exchange rates, interest rates and in metal prices, production disruptions, technological issues, interruptions in supply, actions of courts, regulators, government agencies, competitors, customers, suppliers, employees and other third parties.**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