



Operational excellence

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BOLIDEN

Metals for Modern Life

We are

- Base and precious metals
- Mines and Smelters
- Technology and Responsibility

Goal to be a leader in our industry

- Value creation
- Environmental performance
- Social responsibility

Strategy to grow with low risk, limited volatility and focus on next downturn

- Operational excellence
- Organic growth
- Acquisitions

Strategy

**Selective
acquisitions**

**Organic
growth
investments**

**Stable and
efficient
operations**



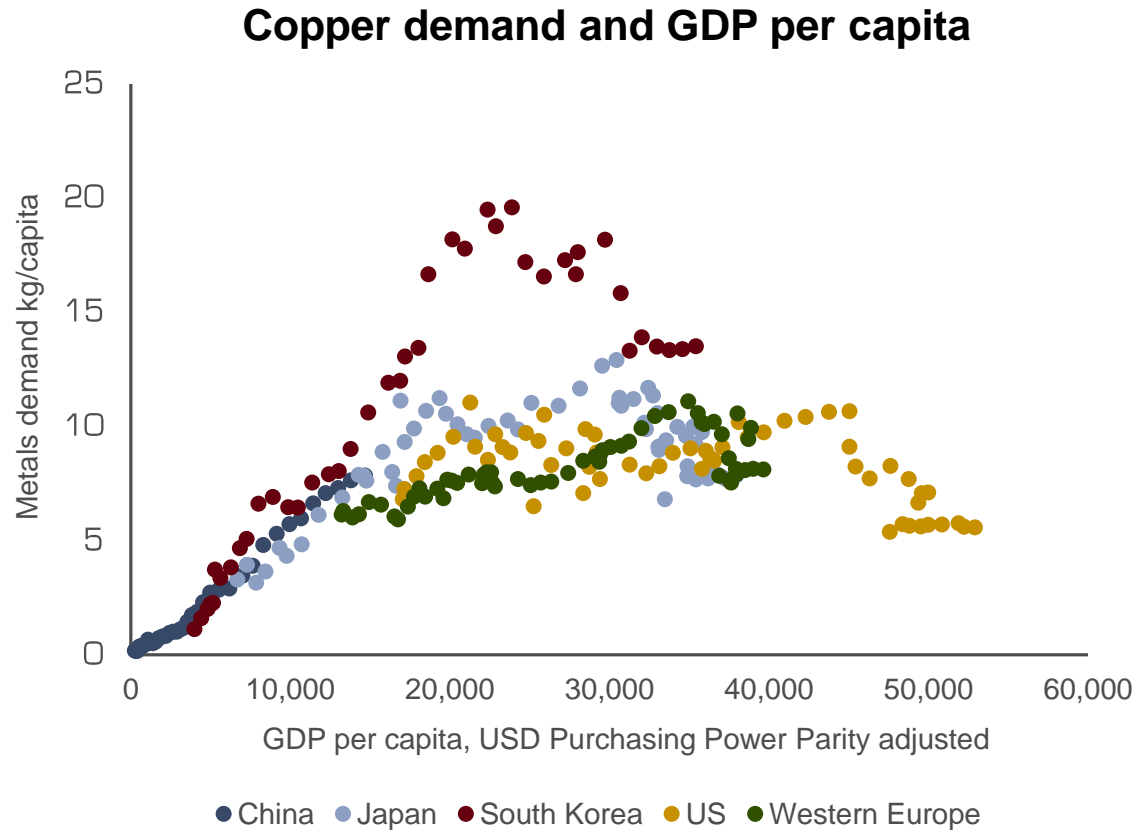
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Cycles



WMZ BOLIDEN

Metal demand – developing markets

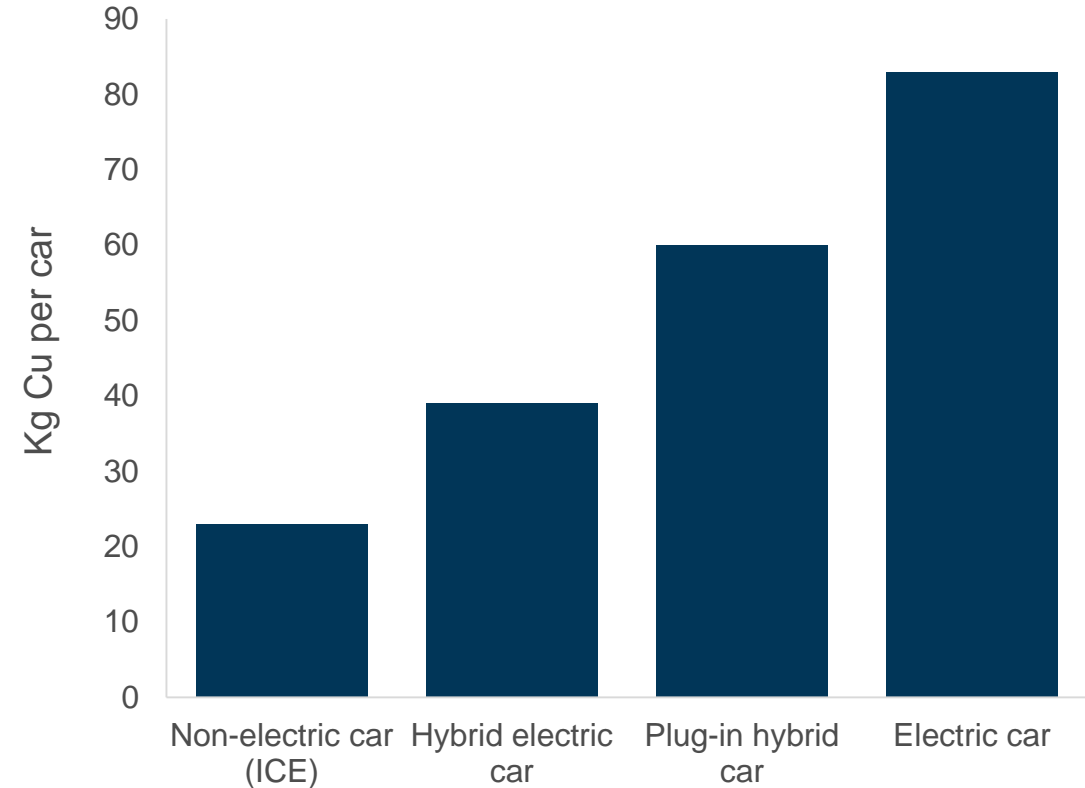


Source: US Census Bureau, Oxford Economics & Wood Mackenzie.

Note: Data for the period 1960-2017, with the exception for South Korea Copper graph (1976-2017) and South Korea Zinc graph (1970-2017).

Technology will change the landscape

- Electric vehicles
- Renewable energy
- Smart cities
- Energy saving
- Battery technology - Li, Co, Ni

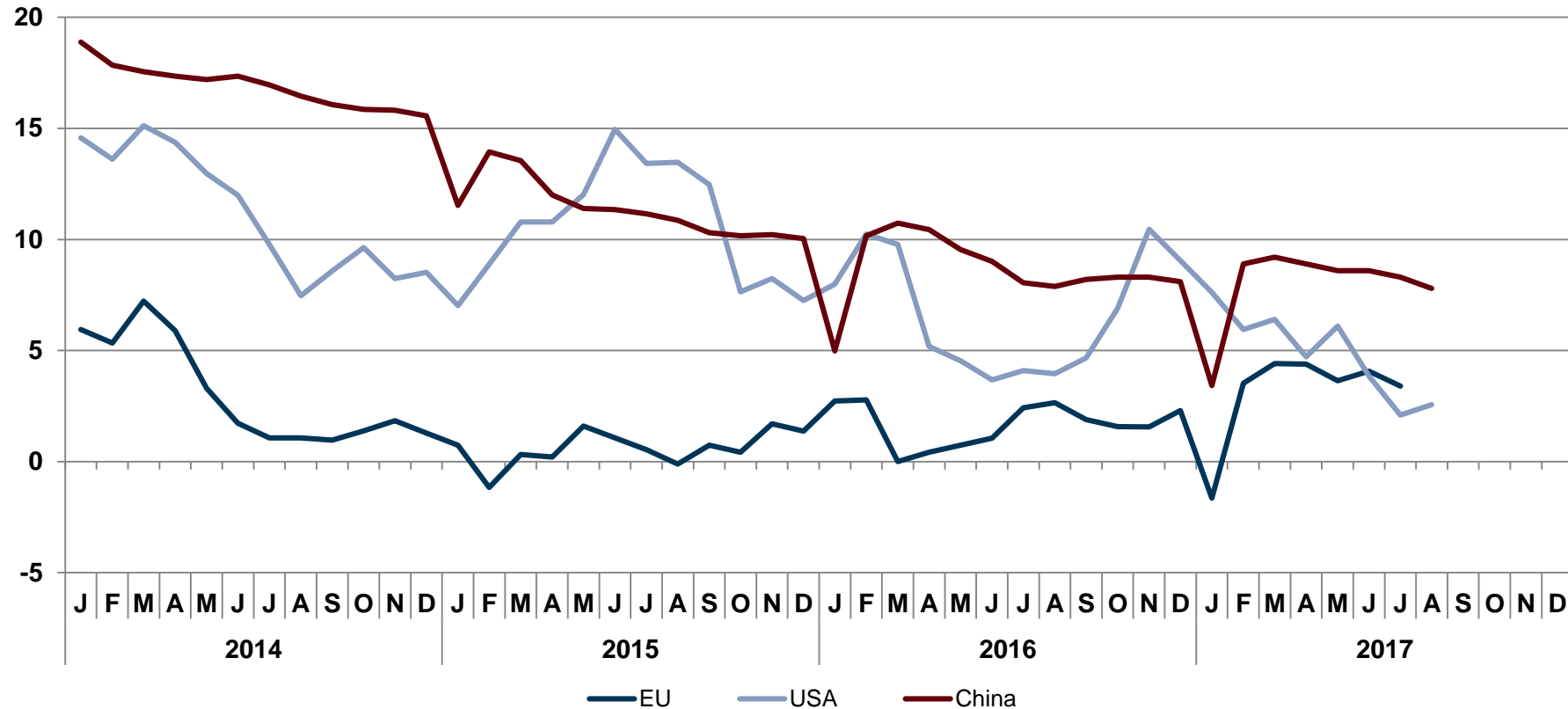


Source: International Copper Association, IDTechEx report 2017

Construction – largest segment for Cu and Zn

Normalized demand

Activity, year on year %



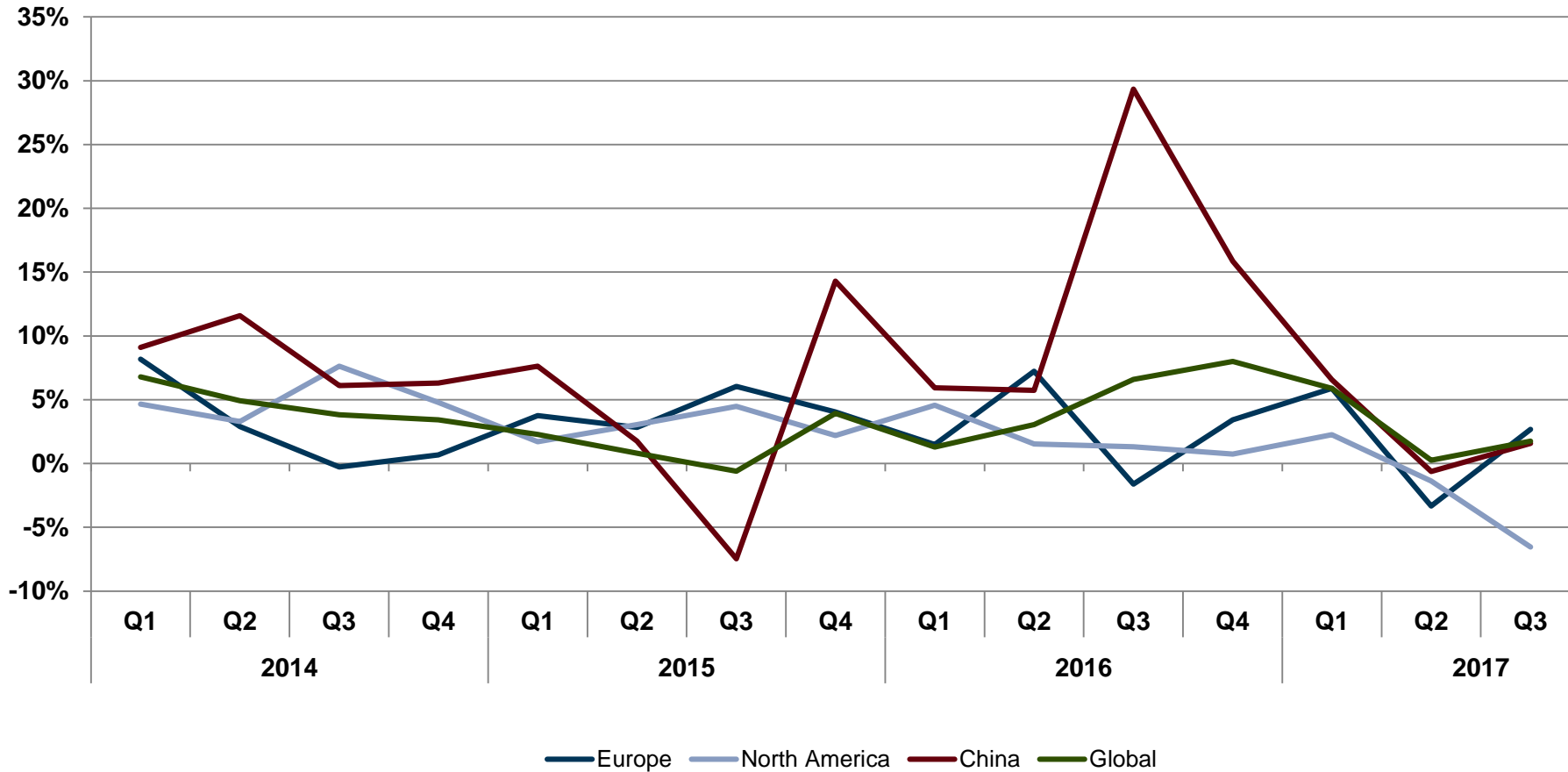
China: year on year based on cumulative investments at each point
 Source: Reuters Datastream



Automotive – no 2 segment for Cu and Zn

Low growth 2017

Production of light vehicles, year on year, quarterly data



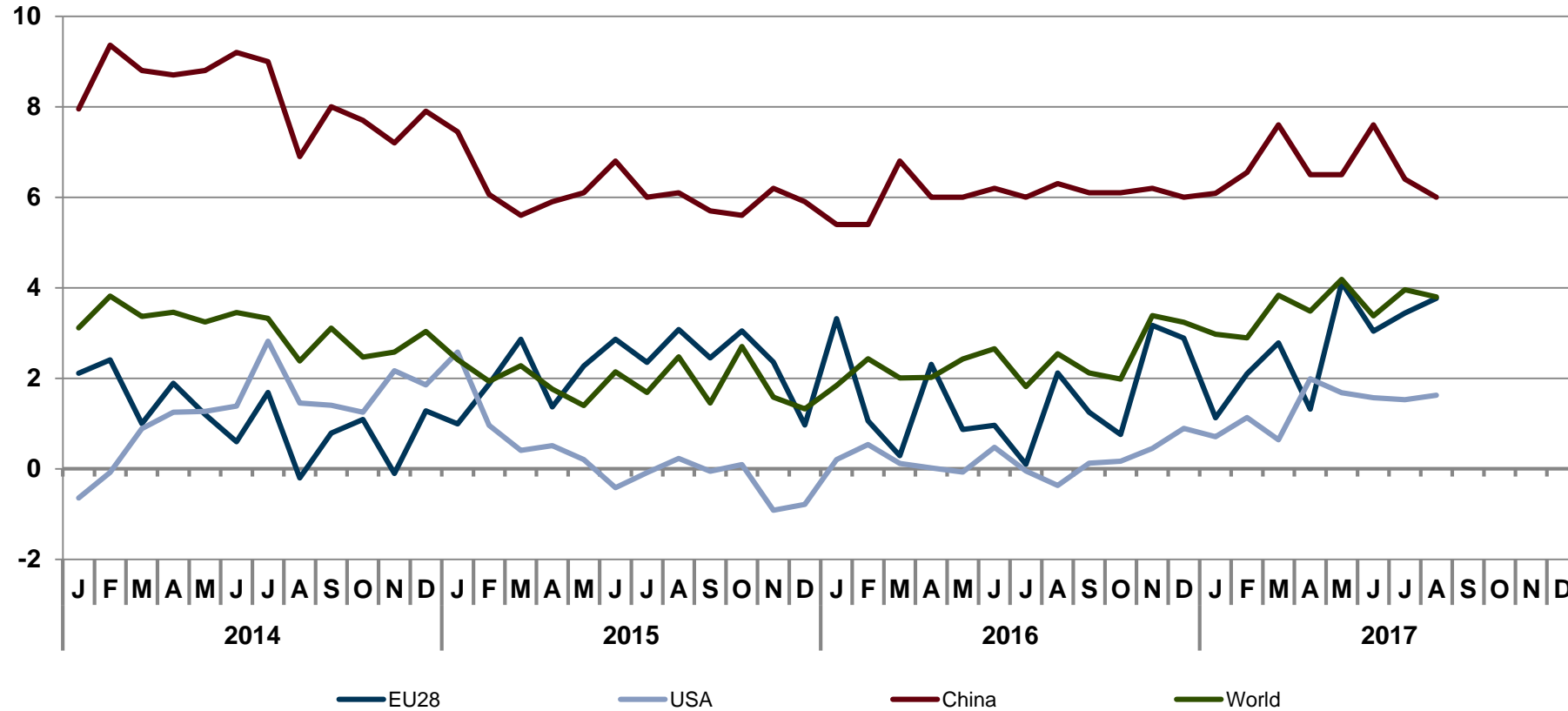
Source: LMC Automotive



Economic development

EU improving

Industrial production, year on year %

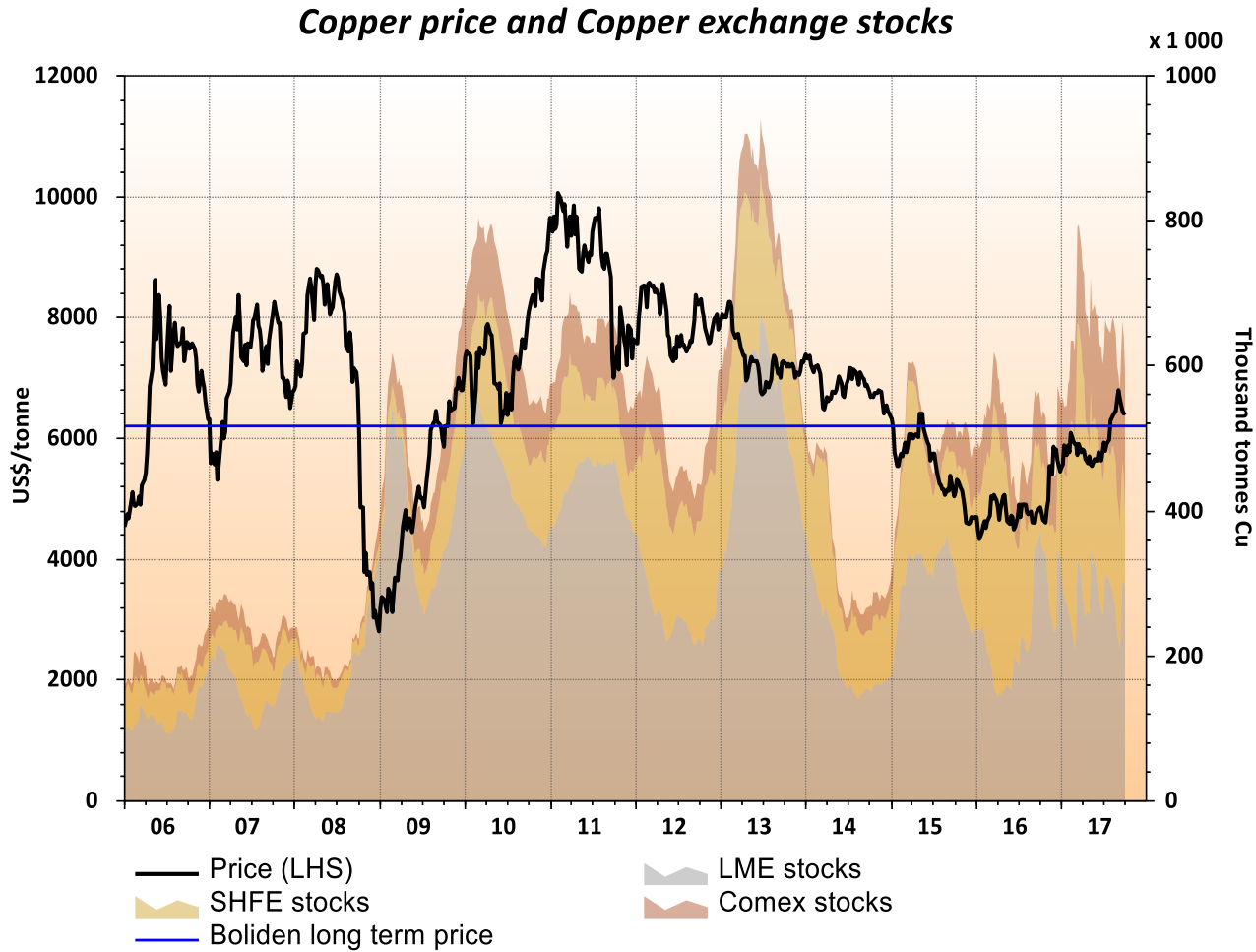


Source: Thomson Reuters Datastream, world data calculated by Boliden



Copper fair price

3% inventory

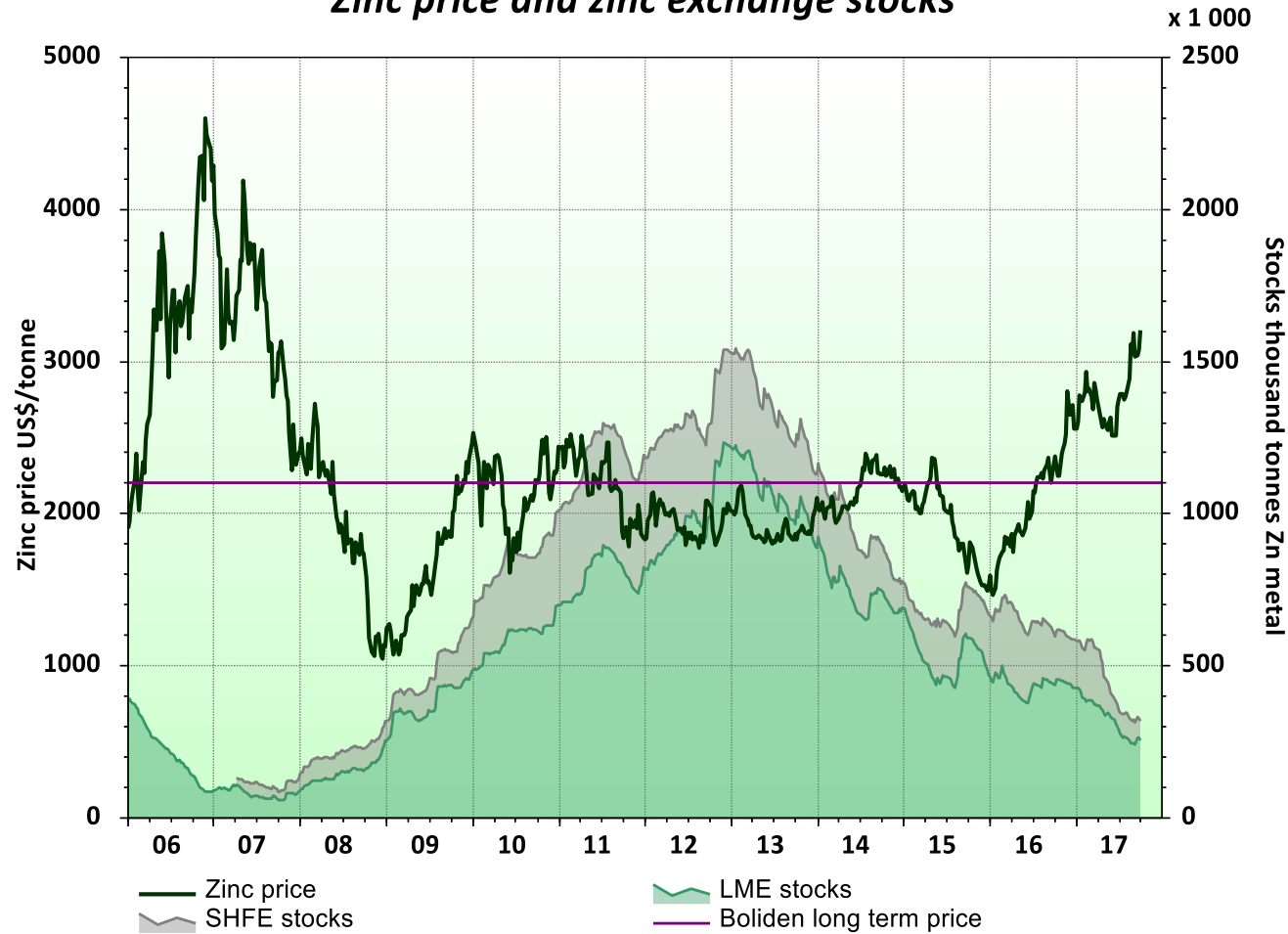


Källa: Thomson Reuters Datastream

Zinc high price

2% inventory

Zinc price and zinc exchange stocks

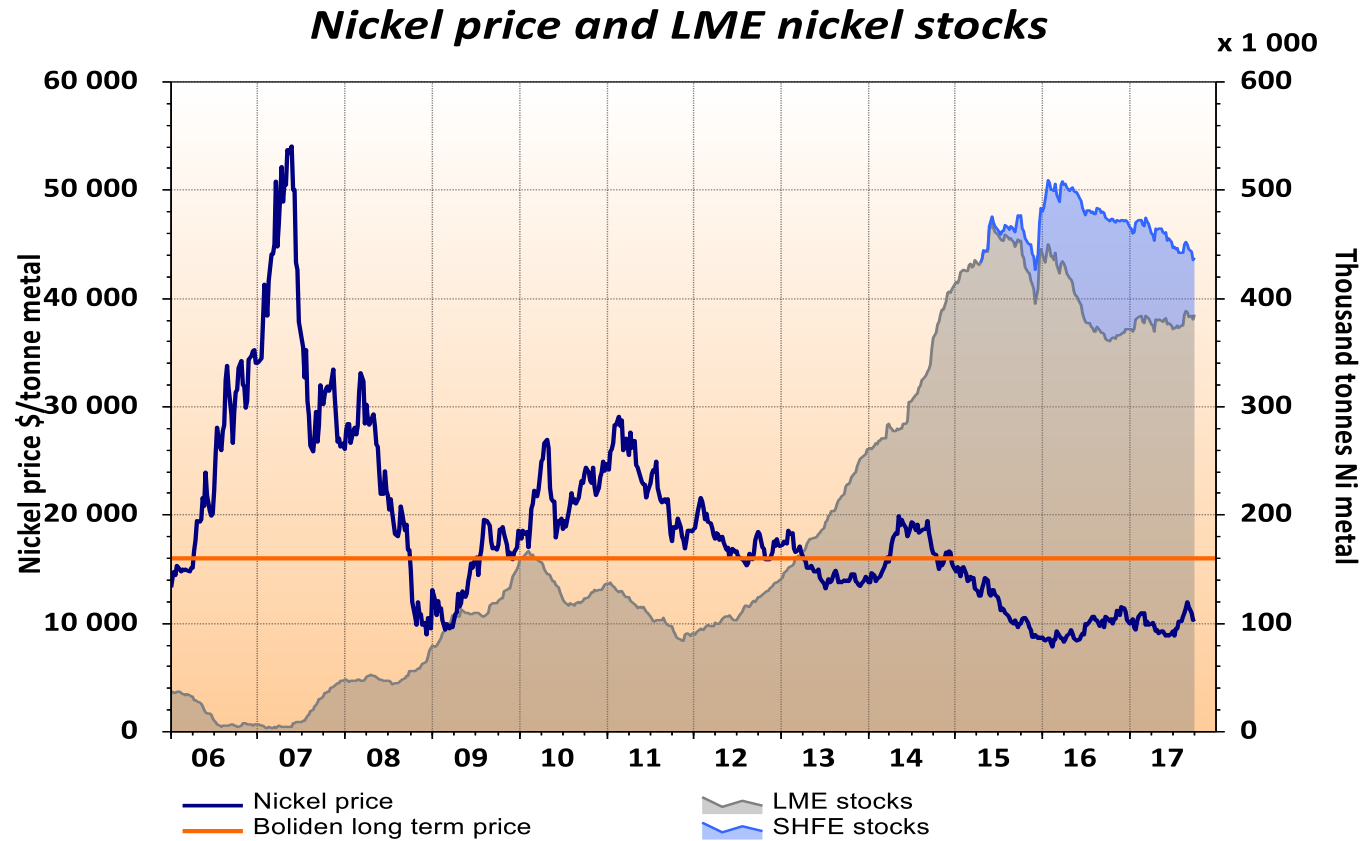


Källa: Thomson Reuters Datastream



Nickel low price

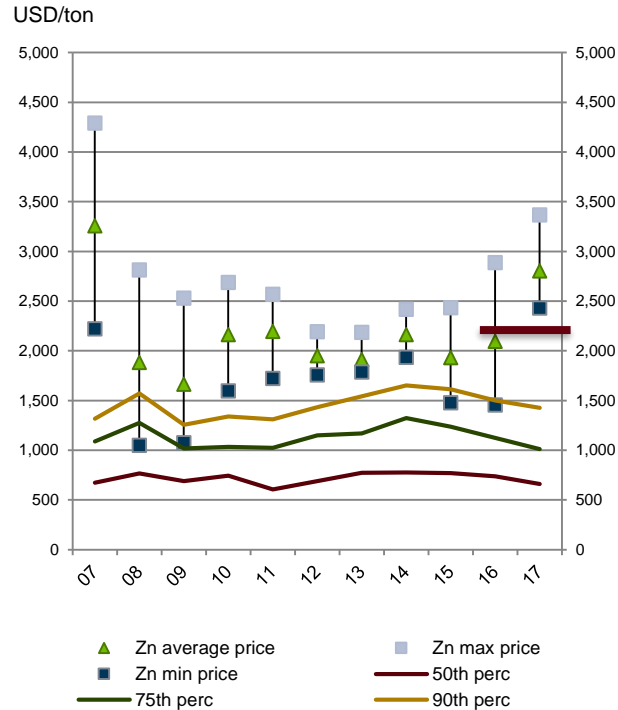
21% inventory



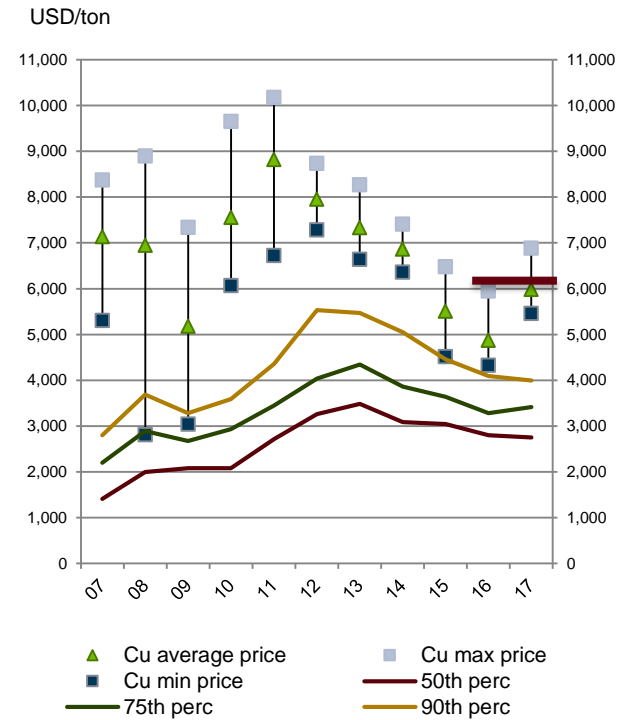
Källa: Thomson Reuters Datastream

Prices and Cash Cost

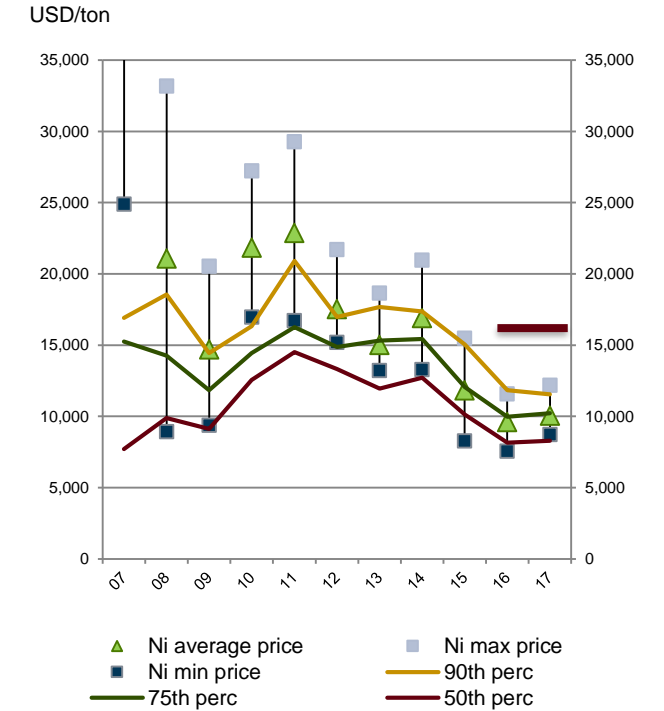
Normal C1 – Zinc



Normal C1 – Copper



Normal C1 – Nickel



Source: Wood Mackenzie 2017, Thomson Reuters Datastream October 11, 2017



Future raw material cycles

Business fundamentals

- Capital intense
- Cyclical
- No pricing power

Future different

- Longer lead times for expansions
 - Permitting
 - Higher capital intensity
- Price peaks may be higher
- High price periods longer

- Low price periods longer
- Cash cost floors remain on 90 percentile

Through-cycle value creation

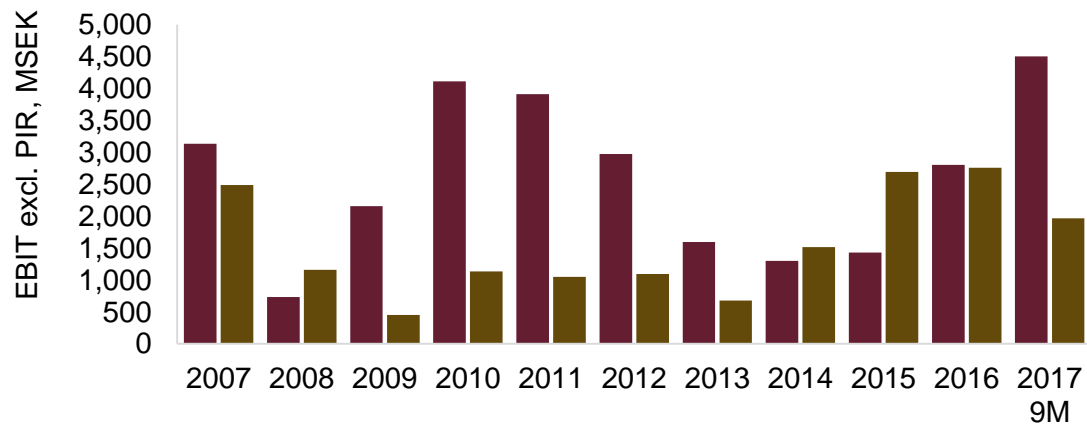
- Correlations – negative correlations
- Scenario planning
 - Price floors
 - Long term prices
 - Project Incentive Prices
- Capex planning
- Financial planning
- Dividend policy
- NPV simulations may not lead to max value
 - Unrealistic capacity plans
 - Value destruction at recessions
 - Stability, visibility

To be robust at difficult times...

Stability through cycles

- Smelters and Mines
 - Base and precious metals
 - Operational excellence
 - Industry adapted dividend policy
-
- Past 10 years earnings
 - Smelters higher 3 years
 - Mines higher 6 years

Earnings mix



People and Technology



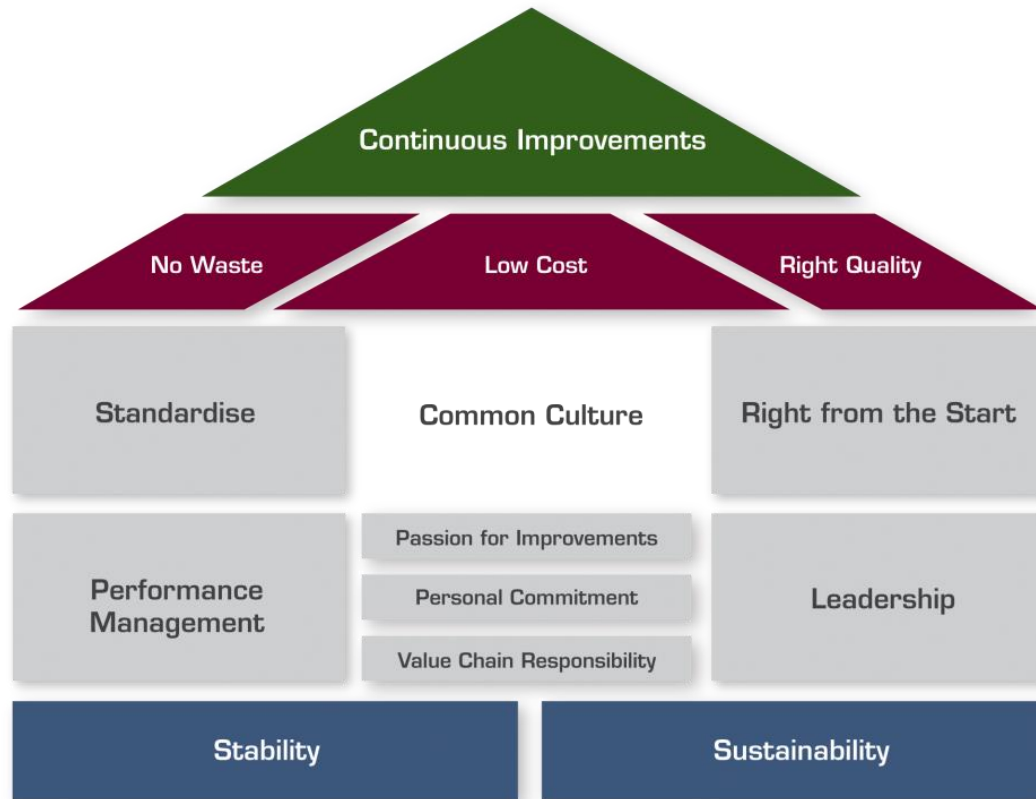
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Operations management and the Mine of the Future

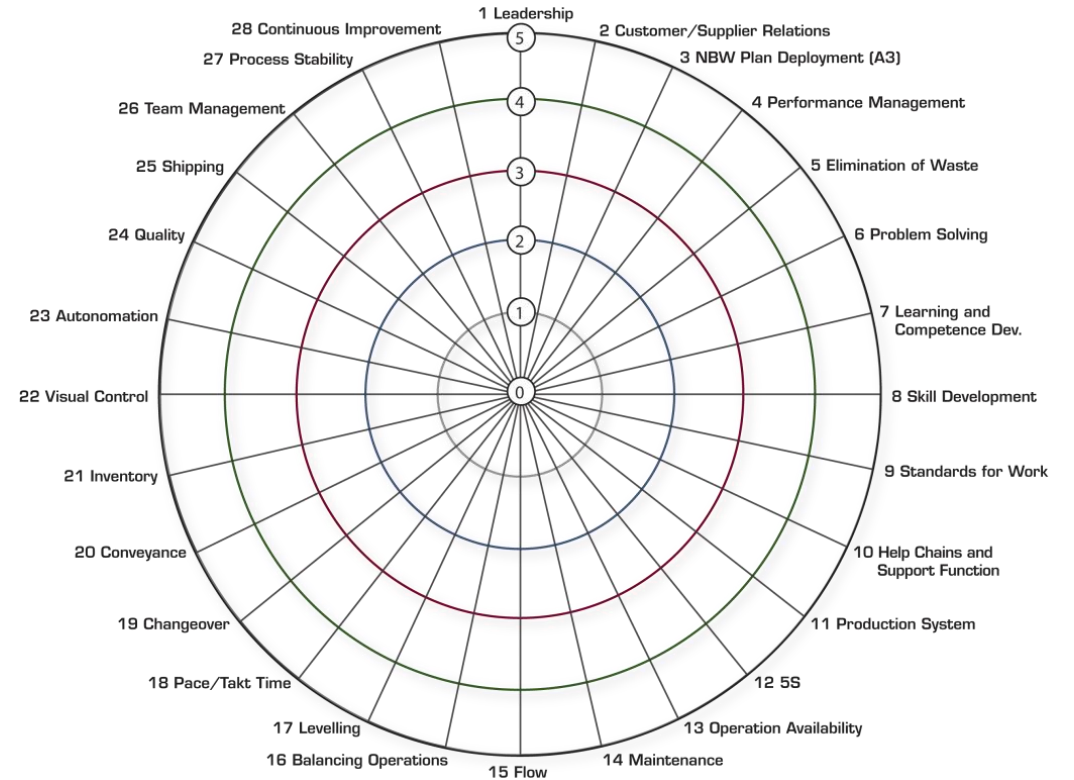
- Mobile information to all, real time
- Decentralised organisation
- In-house expertise in core disciplines
 - Metallurgy, tech, exploration, environment
 - Project management



New Boliden Way – Stable and Efficient Operations



WHO WE ARE



HOW WE DO IT



Passion for improvement



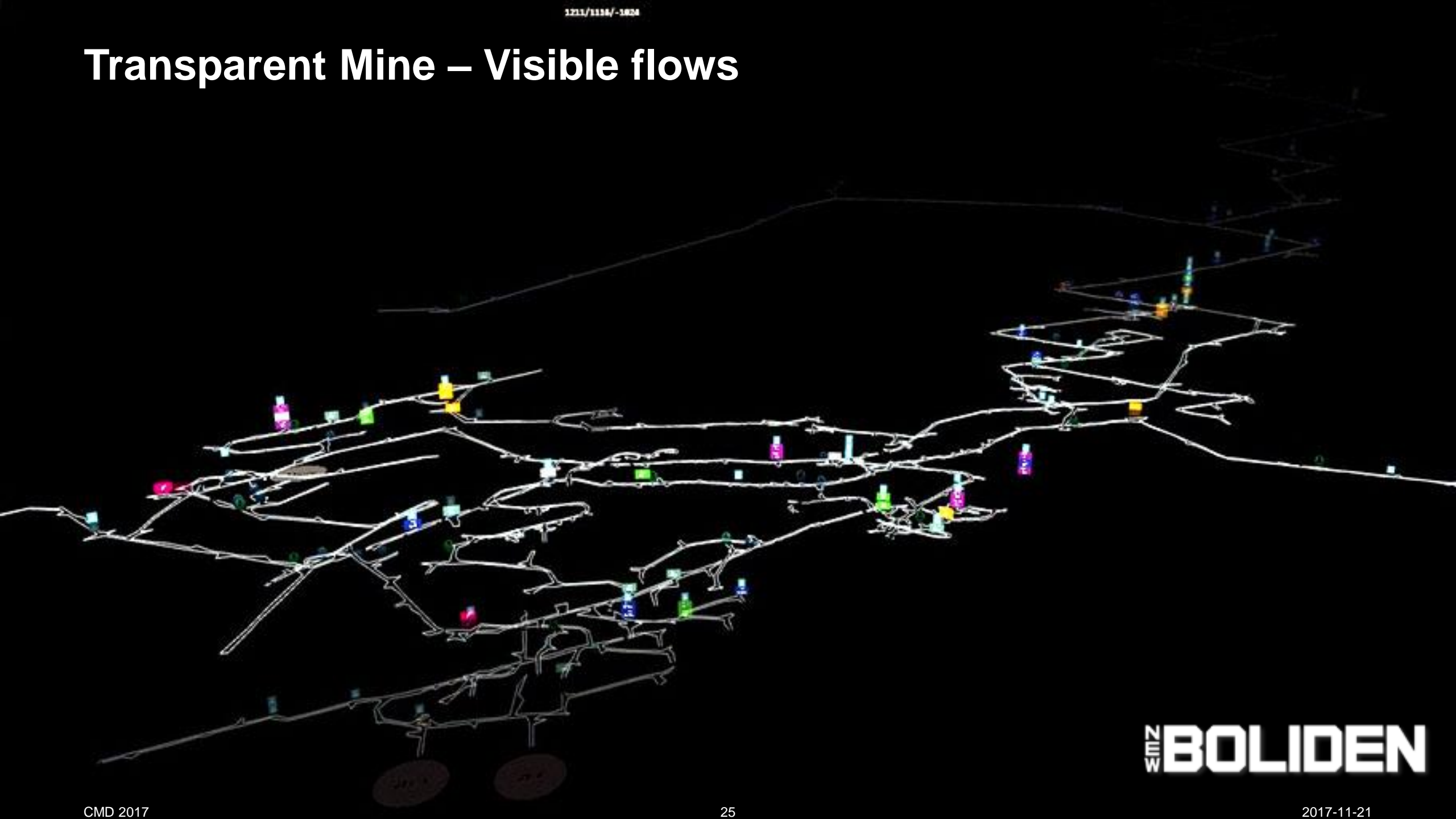
Personal commitment



Value chain responsibility



Transparent Mine – Visible flows



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Excellence with mature equipment



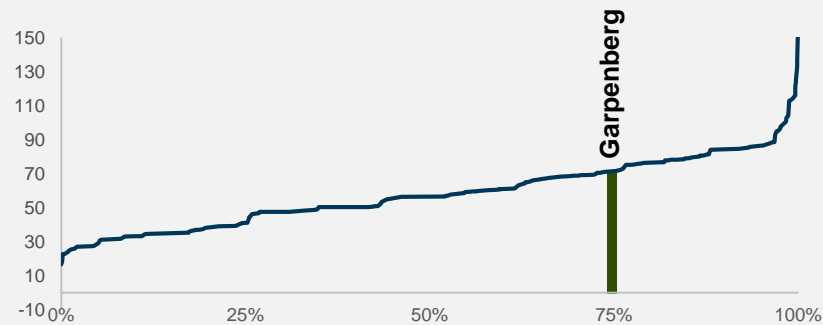
Organic Growth Investment – Garpenberg

	FY 2016	9M 2017
EBIT, MSEK	2100	1800
ROCE, %	40	46

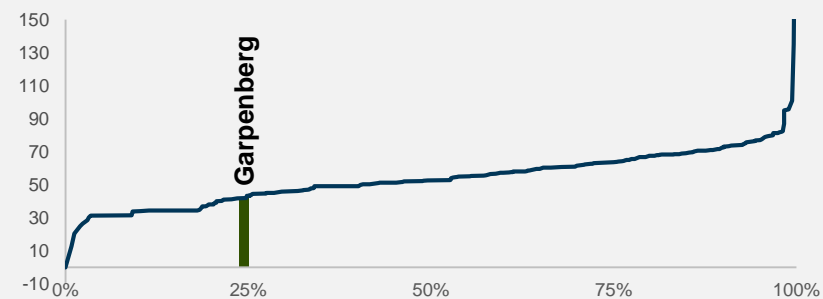
Improved competitive position

Before

Zn



After



Note: C1 cast cost, US Cents/lb. Pro Rata Garpenberg. Source: Wood Mackenzie Q4 2016.

Nickel Finland



Finland is copper-nickel

Building case, geology in Finland – Nickel	2010-2015
Discontinue exclusive cooperation – Tolling	2015
Building customers and suppliers	2015-2017
Capex for long term position	2015-2020
Kevitsa acquisition	2016
EBIT improvement 2017 vs 2014	1 BSEK/y
Capex 2014-2017 incl. acquisition	8 BSEK

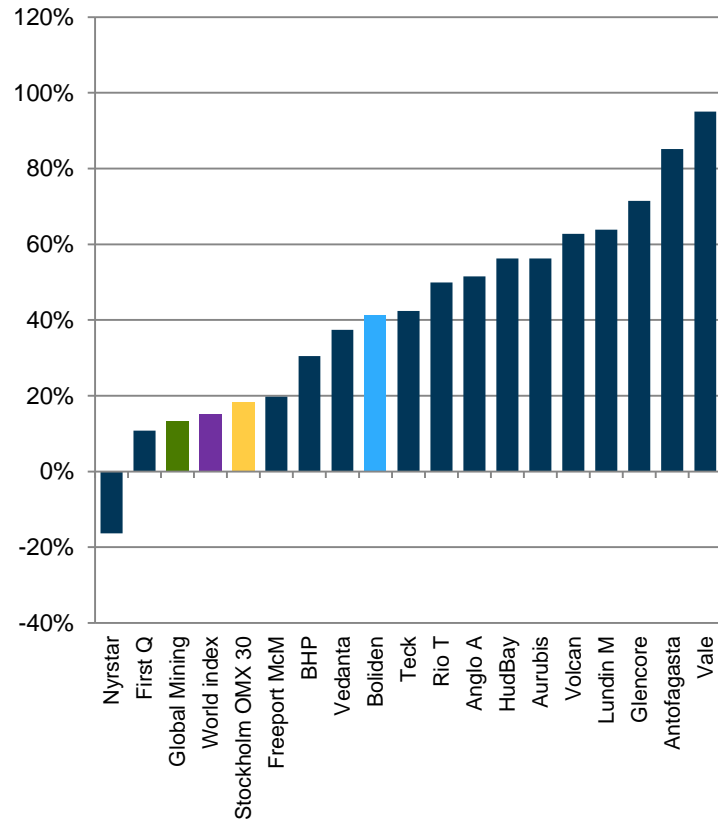
Kevitsa – acquisition in line with strategy

- ✓ Excellent operational and geographical fit
- ✓ Expansion potential in attractive geological region
- ✓ Synergies with smelting operations
- ✓ Timing

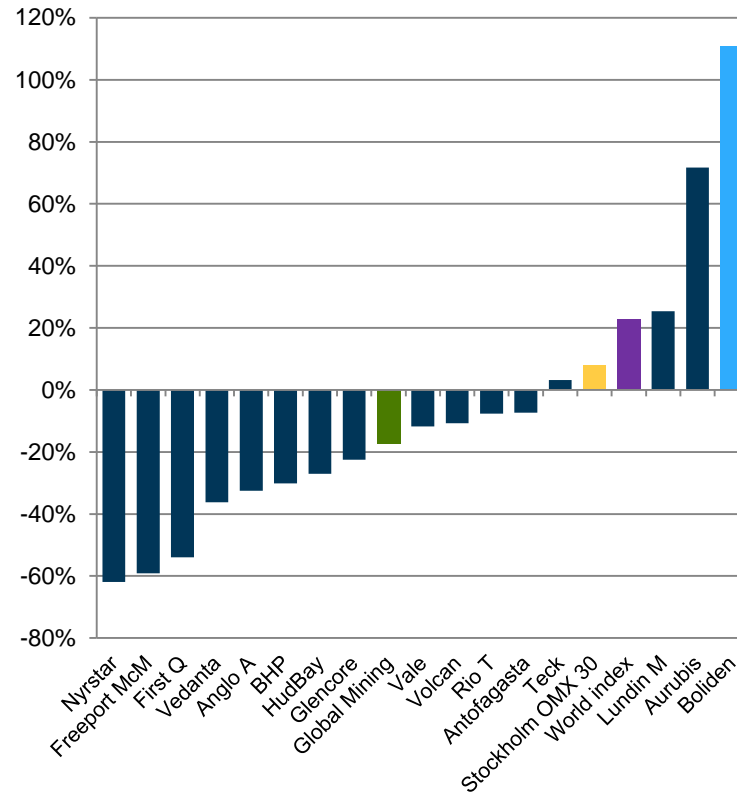
	1 st FY post acquisition	PY
Nickel, ktonnes	13.3	9.4
Copper, ktonnes	26.5	16.5
EBIT, MEUR	53	-22

Total Shareholder Return (USD)

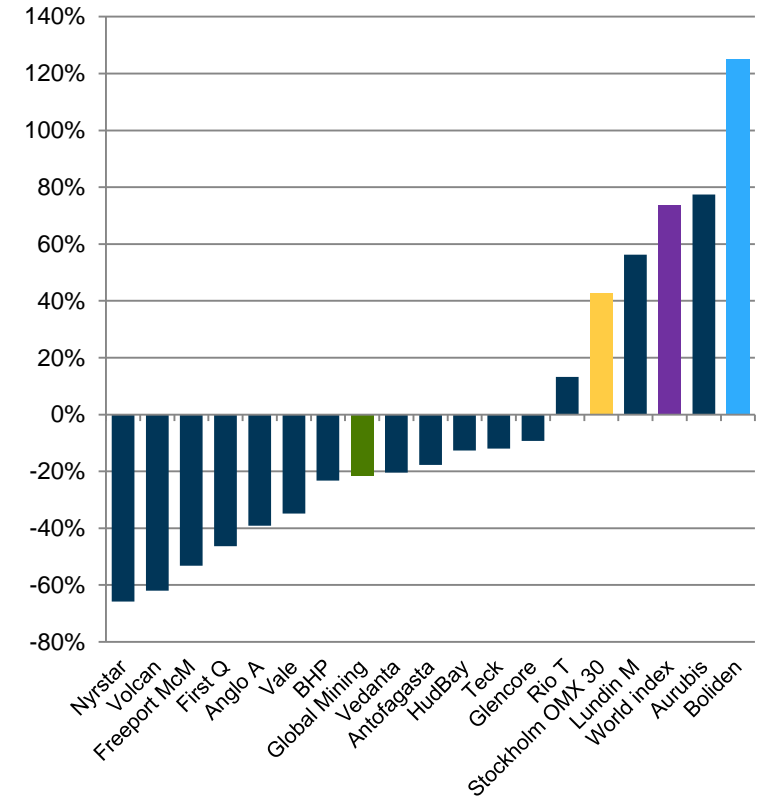
1 year



3 years



5 years



Source: Thomson Reuters Datastream August 14, 2017



**Delivering value through
operational excellence**



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