

# World Economic Outlook and the Impact on Global Copper Demand, Trade and Inventories

Paul Settles, Principal Consultant – Copper Team, CRU

ICSG Thirty-second Regular Meeting

Lisbon, 26 April 2012

## Structure of presentation

1. Economic outlook

---

2. Semi-fabricated demand outlook

---

3. Refined and Scrap Supply outlook

---

4. Inventory and price outlook and risks

---

# Rebound expected from 2012 slowdown

World GDP Growth, %						
	2011	2012	2013	2014	2015	2016
<b>OECD</b>	<b>1.6</b>	<b>1.1</b>	<b>1.8</b>	<b>2.5</b>	<b>2.7</b>	<b>2.8</b>
US	1.7	2.3	2.5	3.0	3.0	3.0
Japan	-0.7	1.6	1.9	2.0	1.9	1.9
Eurozone	1.5	-1.0	0.2	1.3	1.9	2.5
<b>Emergers</b>	<b>6.2</b>	<b>5.3</b>	<b>6.0</b>	<b>6.2</b>	<b>6.1</b>	<b>6.0</b>
Brazil	2.7	3.1	4.6	4.0	4.3	4.8
Russia	4.3	3.9	3.3	3.4	2.6	3.1
India	7.1	6.3	8.2	8.4	8.5	8.3
China	9.2	8.3	8.8	8.1	8.0	7.6
<b>World</b>	<b>2.8</b>	<b>2.2</b>	<b>3.0</b>	<b>3.5</b>	<b>3.7</b>	<b>3.8</b>

A two-speed world

China slows and is overtaken by India

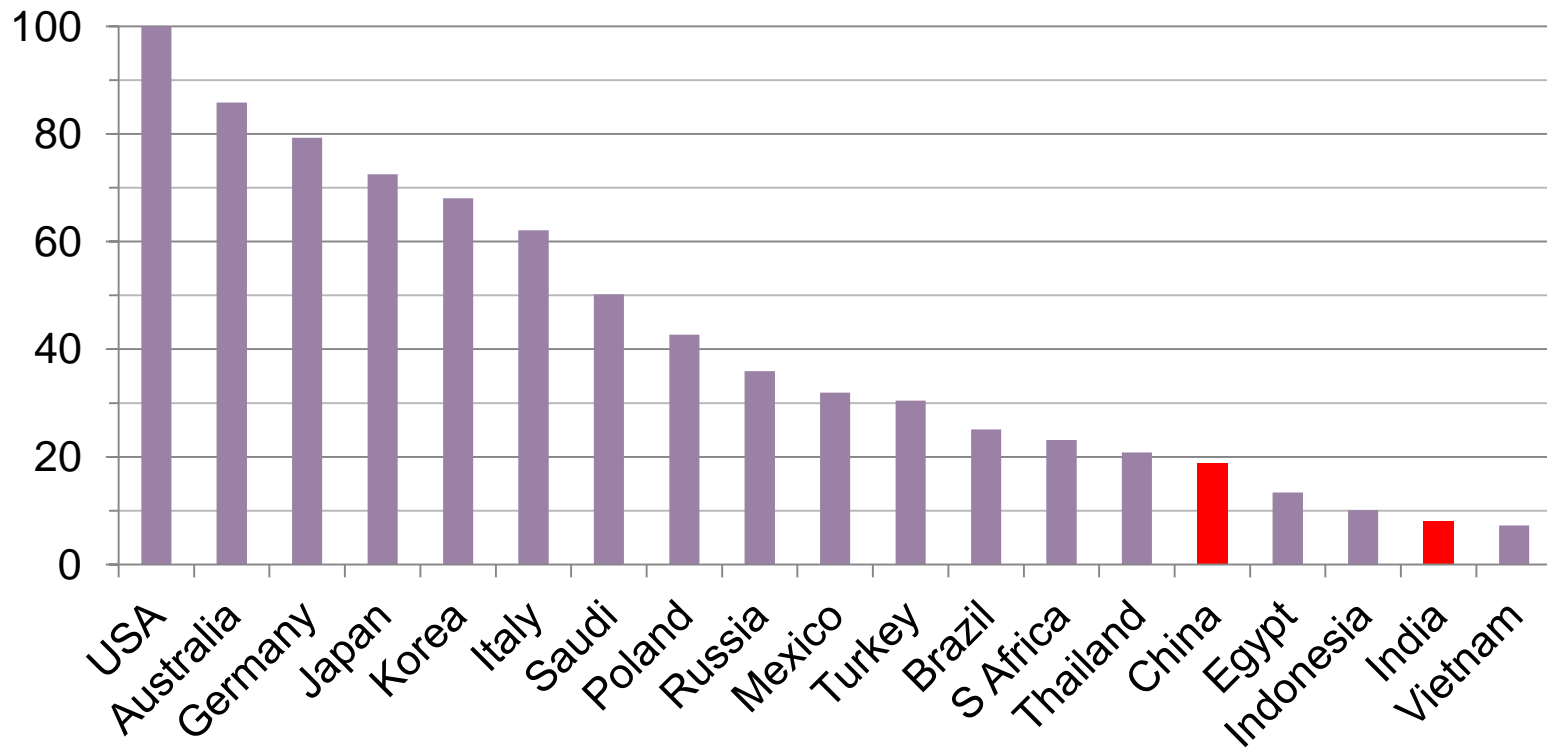
A general slowdown

GDP measured at year 2005 prices and market exchange rates.

Data: CRU

## The scope for Chinese and Indian economic catch-up remains substantial

GDP per capita, USA = 100

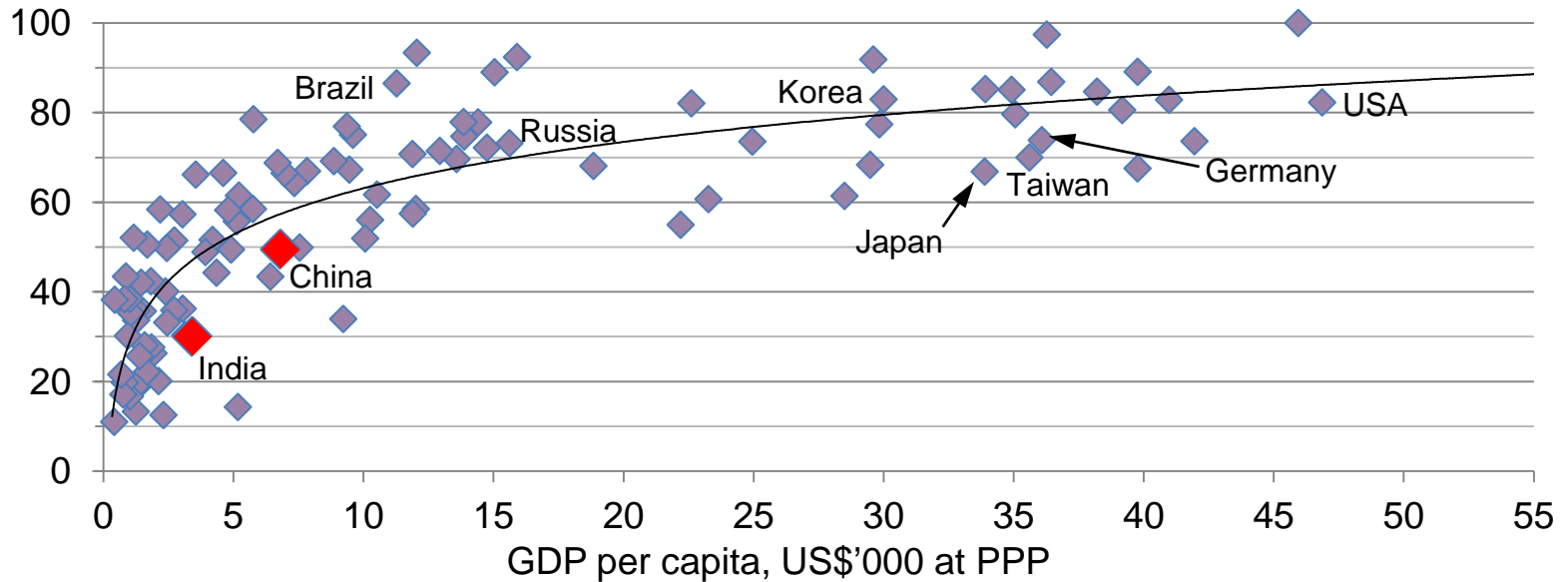


Note: GDP measured at Purchasing Power Parity (PPP)

Data: IMF, CRU

# In developed economies urbanisation is 70% or more – China & India have a long way to go

% of population that is urban



Note: Countries with a population greater than 5mn  
Data: UN, Taiwan National Statistics, IMF, CRU. Data are for 2010.

## Risks: not all one way

- **Downside risks:**
  - Confidence in Eurozone firewall misplaced, other peripherals engulfed in wake of Greek default
  - Middle East tensions boil over, sending oil skywards
  - Policy gaffe in China
- **Upside risks:**
  - Monetary policy is powerful counter to fiscal retrenchment
  - Animal spirits revitalised in USA, prompting investment boom
  - Policy prescriptions for Europe boost confidence, especially in Germany, and encourage consumer-led revival

## Structure of presentation

1. Economic outlook

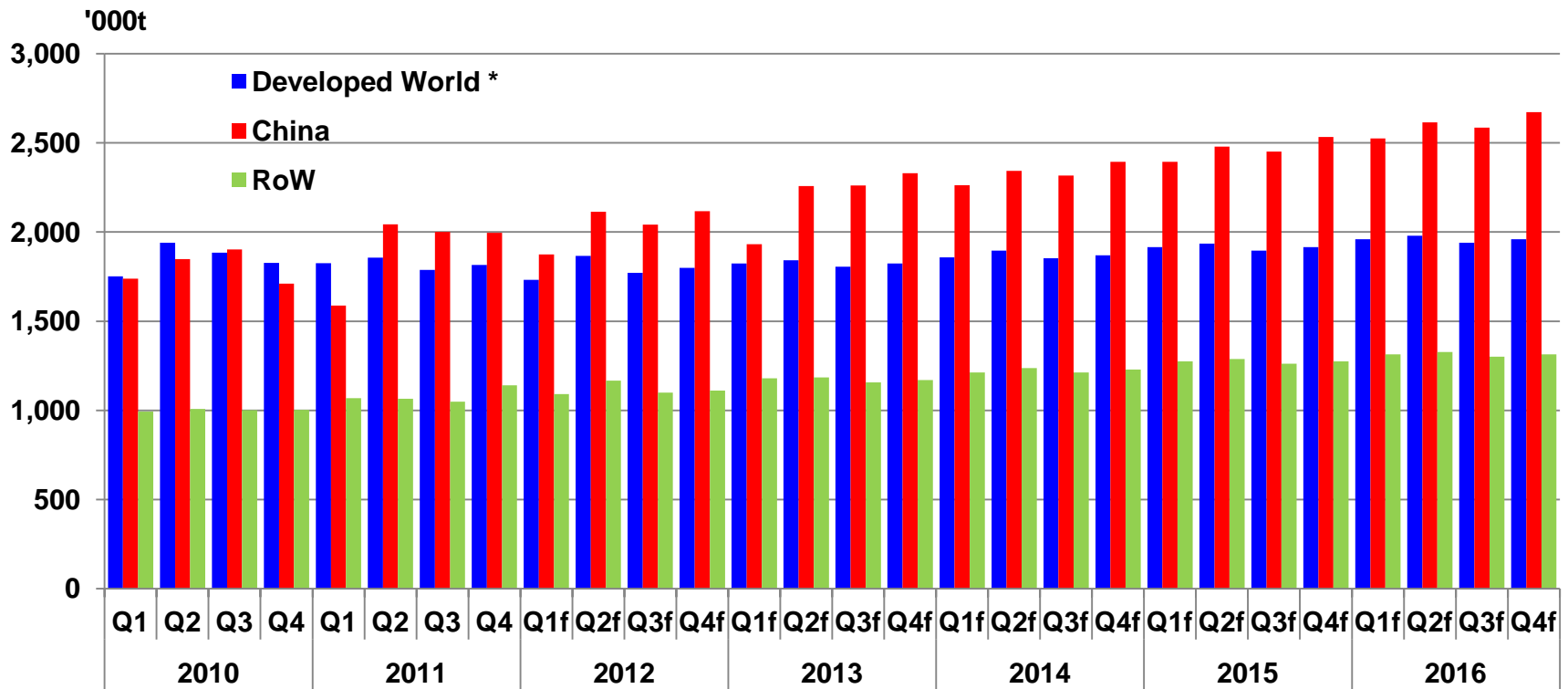
2. Semi-fabricated demand outlook

3. Refined and Scrap Supply outlook

4. Inventory and price outlook and risks

# China continues to spur global growth in 2012-16

Refined copper consumption of selected country groupings, 2010-2016

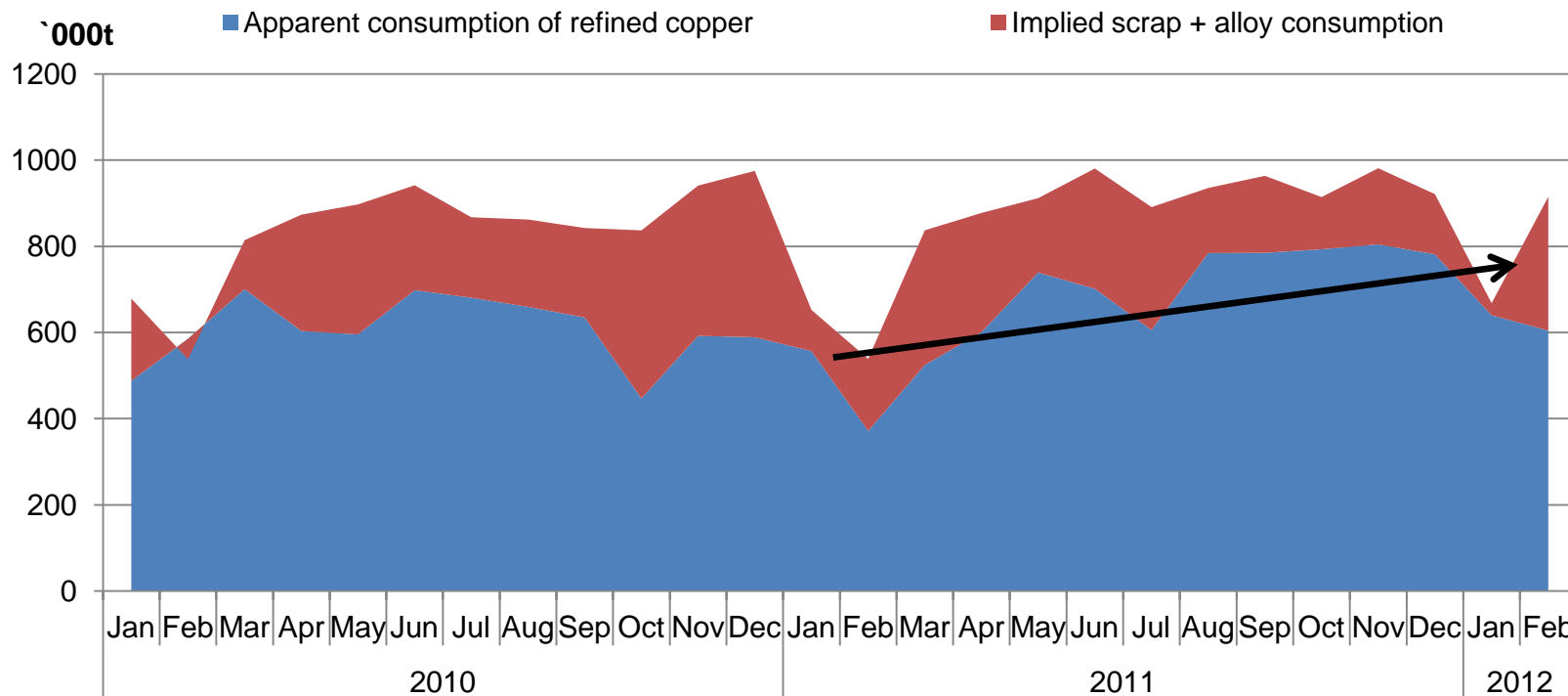


Data: CRU \* North America, Western Europe, Japan, South Korea, Taiwan, Australasia



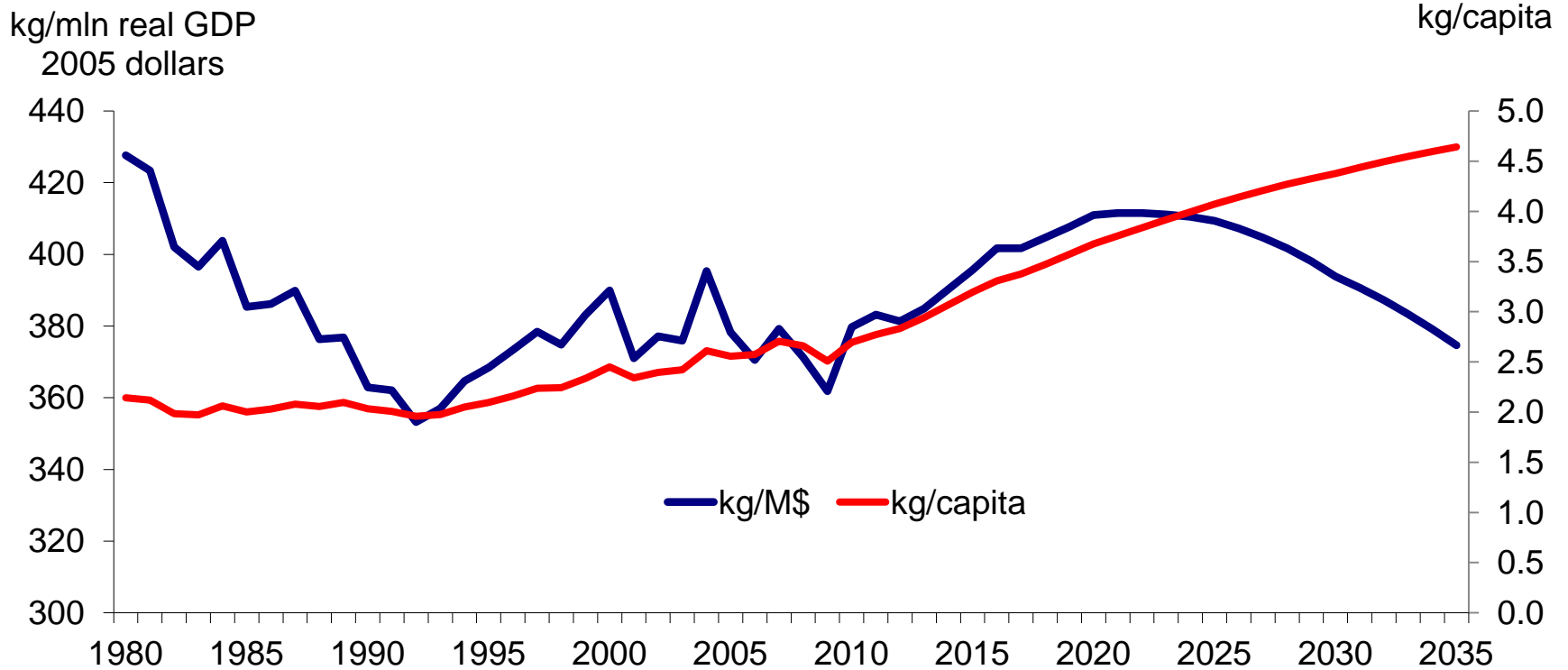
# Chinese refined consumption rose significantly in H2 2011 as fabricators used cathode instead of scrap copper

Semis production split by raw material type



Data: CNIA, CRU

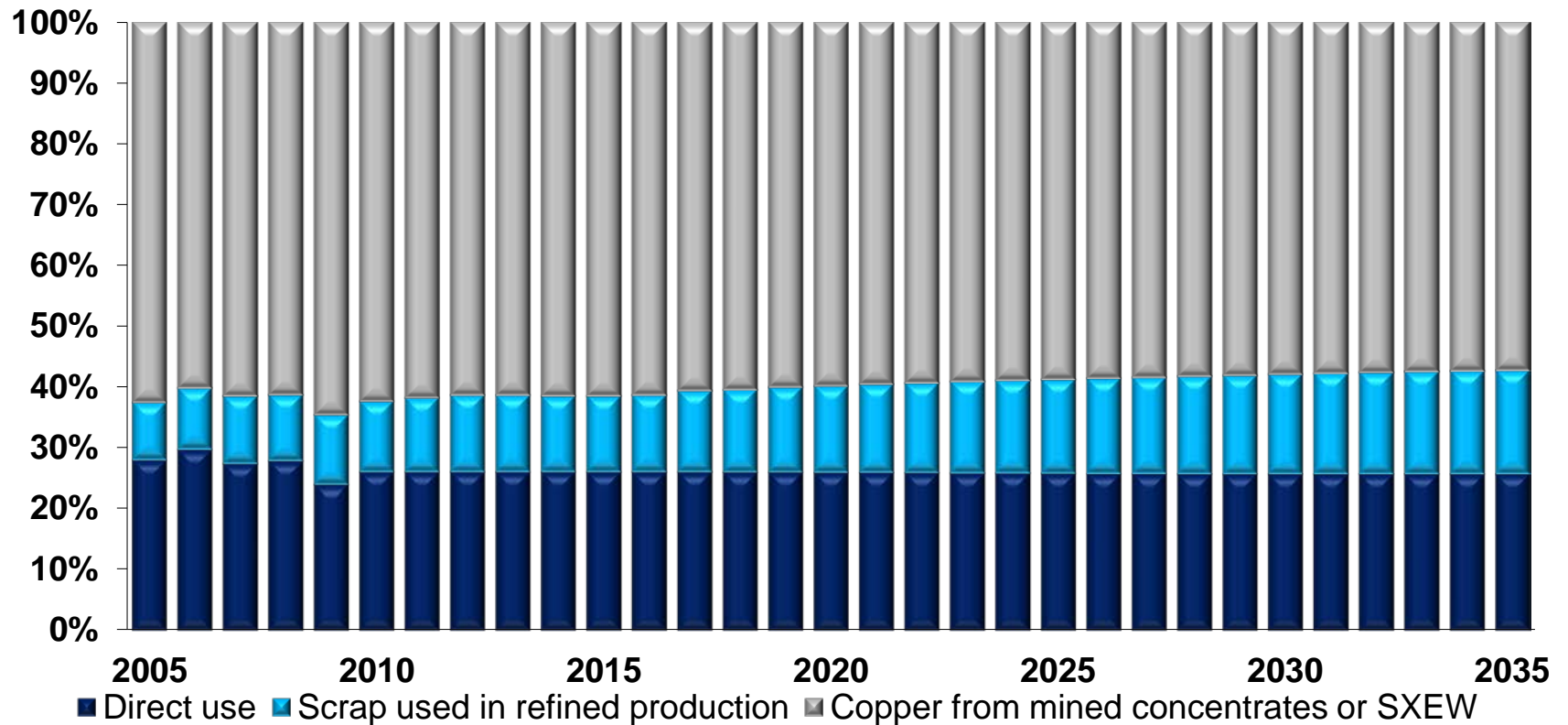
## World economic intensity of copper use to recover and peak in 2025, while per capita intensity grows



Data: CRU

# Overall scrap usage share in semis production to rise slightly with direct use falling and refined rising

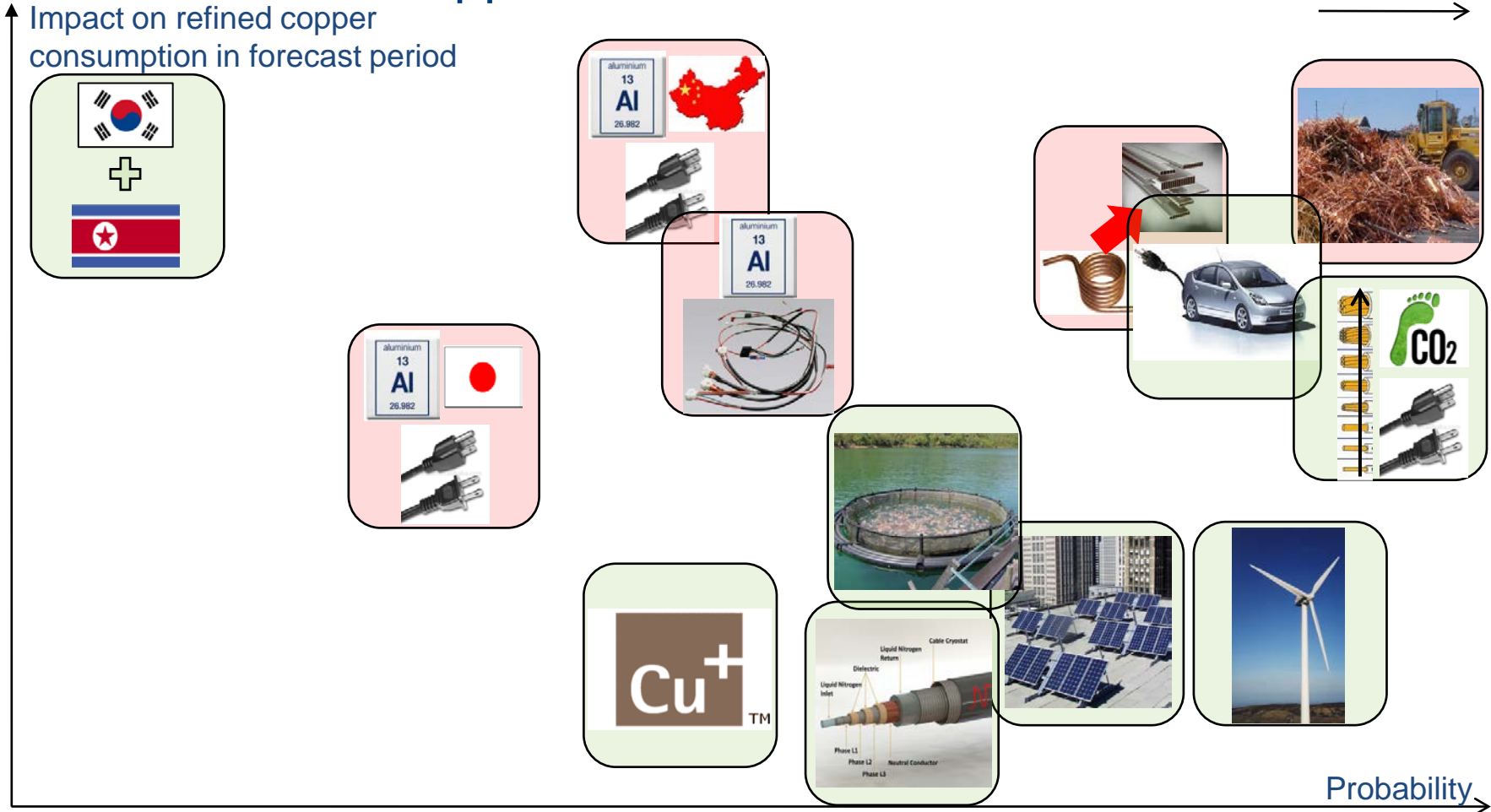
Share of copper content in semis production by source



Data: CRU

# Positive (green) and negative (red) long term risk factors for the refined copper market

Impact on refined copper consumption in forecast period



## Structure of presentation

1. Economic outlook

---

2. Semi-fabricated demand outlook

---

3. Refined and Scrap Supply outlook

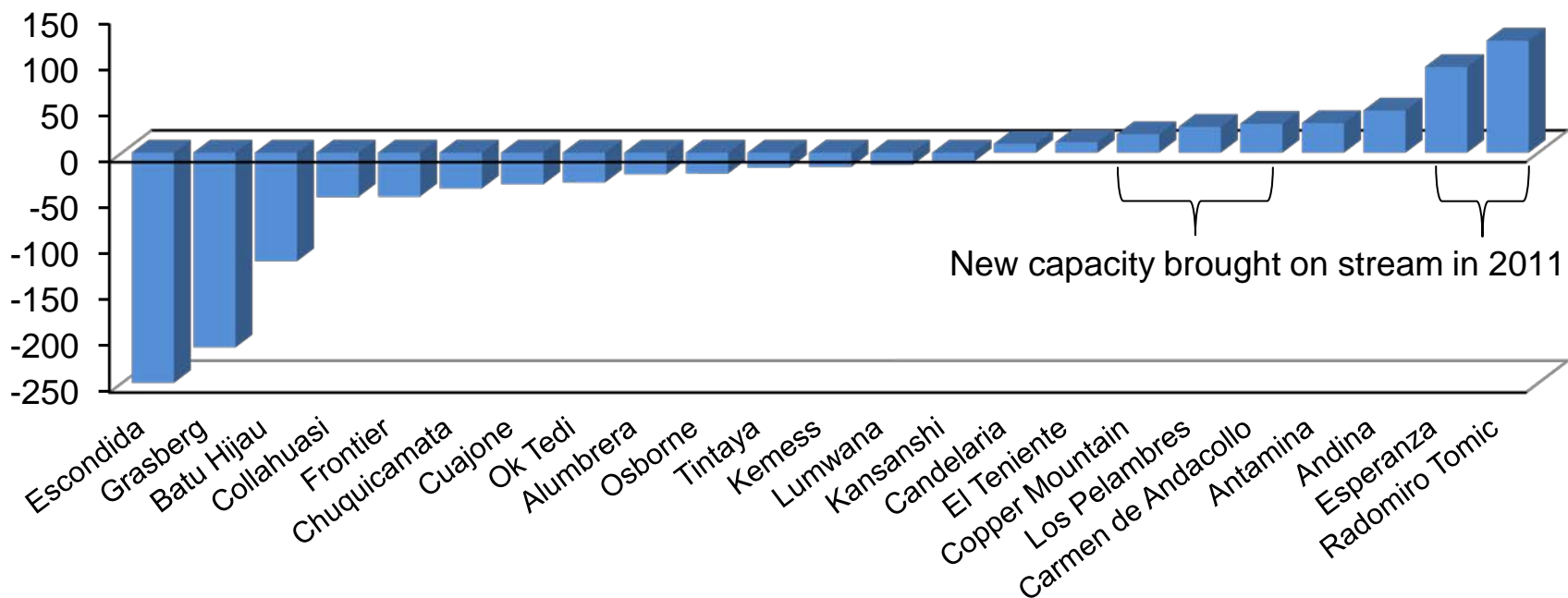
---

4. Inventory and price outlook and risks

---

# Major custom concentrate mines underperformed in 2011

Year on year change in mine output, 2010-2011, '000t Cu in concentrate



Data: Company reports, CRU

## Disruption risks – resource nationalism and labour unrest are the key threats

### Labour

- 3-month strike at Grasberg ends but intermittent labour unrest continues.
- 2-month strike at Cerro Verde ends.
- Wave of strikes sweeps through Zambia.

### Governance

- Tax and royalty increases in Poland and Peru.
- Reko Diq and Tampakan projects blocked by local authorities.
- Resource nationalism continues, with latest incidents in Zambia and Mongolia.

### Ore Grades

- Slight uptick in ore grades.
- We are expecting for ore grades to remain flat in 2012.
- Low ore grades at projects may deflate future ore grades.

### Natural Hazards

- Unseasonably severe weather in northern Chile disrupts production.
- Flooding in northern Australia.

### Mergers & Acquisitions

- Company takeover activity continues.
- Increasing interest in copper investment by trading companies.

### Infrastructure

- Zambia to invest heavily in power infrastructure.
- Transport network affected by severe weather in Chile and Australia.

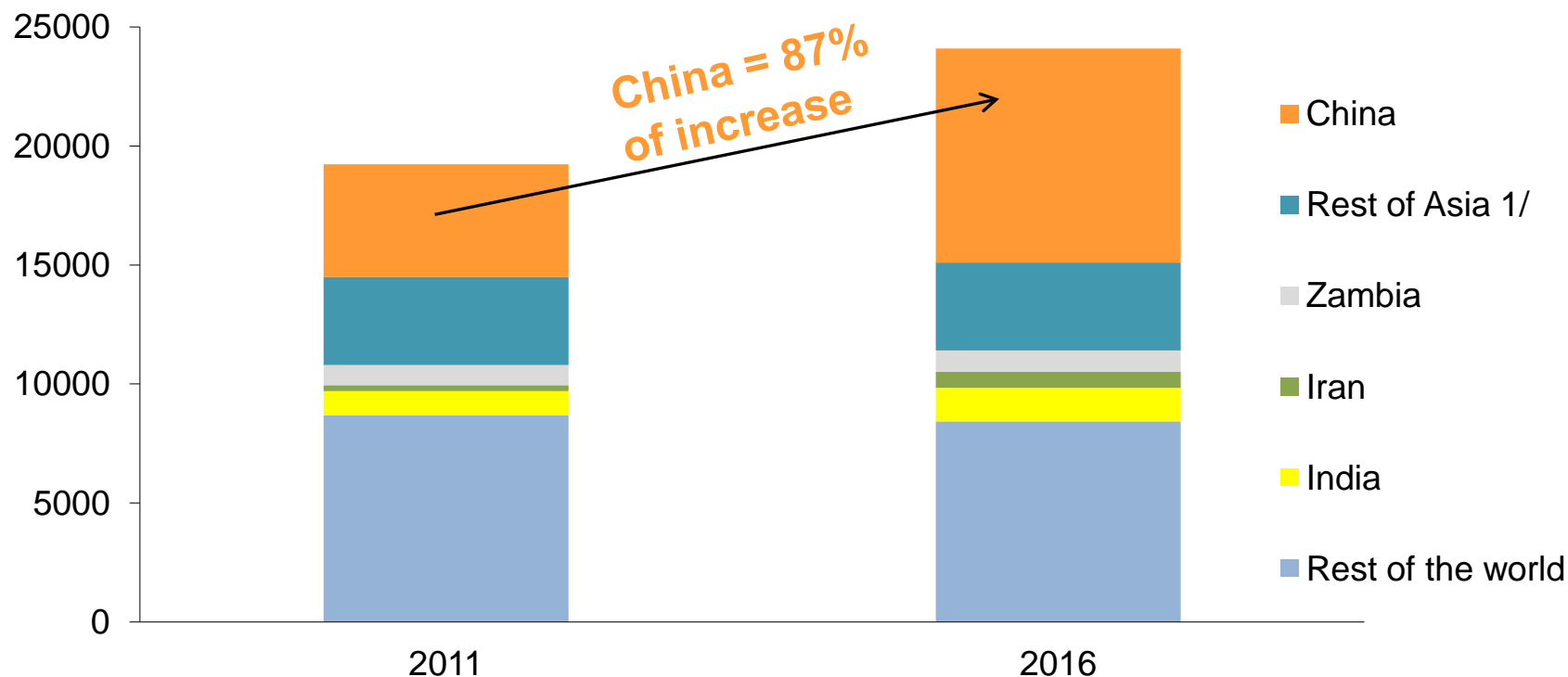
High likelihood of problems for the next few months

Medium likelihood of problems for the next few months

Low likelihood of problems for the next few months

## New smelters mostly going to be located in China in medium term

Expected total blister capacity at all smelters, 2011 and 2016, '000t



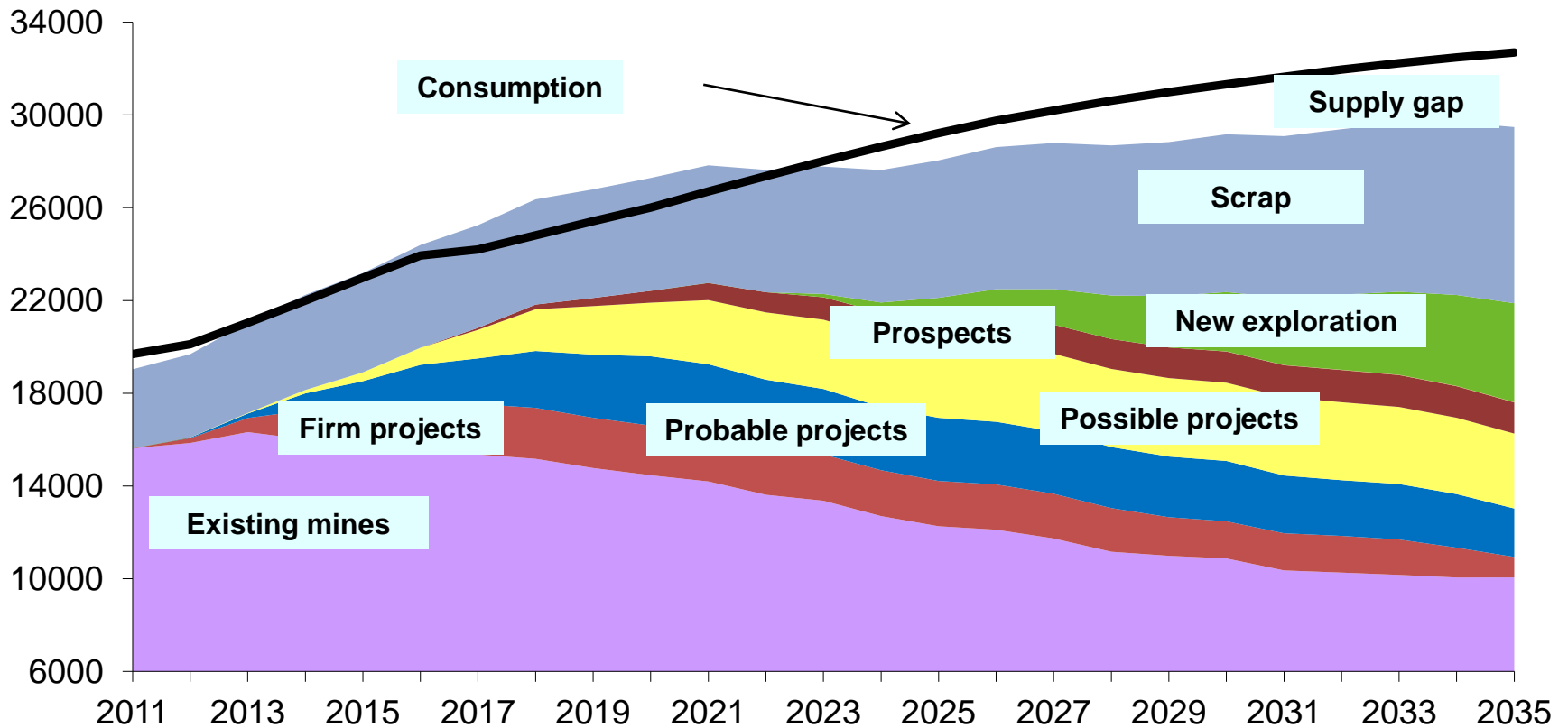
Data: CRU 1/ Asia except for China, India and Iran



# Secondary materials will account for growing share of copper supply

## World production and demand 2011-2035

(‘000t contained copper in concentrates, SXEW cathode and secondary materials)



Data: CRU

## Structure of presentation

1. Economic outlook

---

2. Semi-fabricated demand outlook

---

3. Refined and Scrap Supply outlook

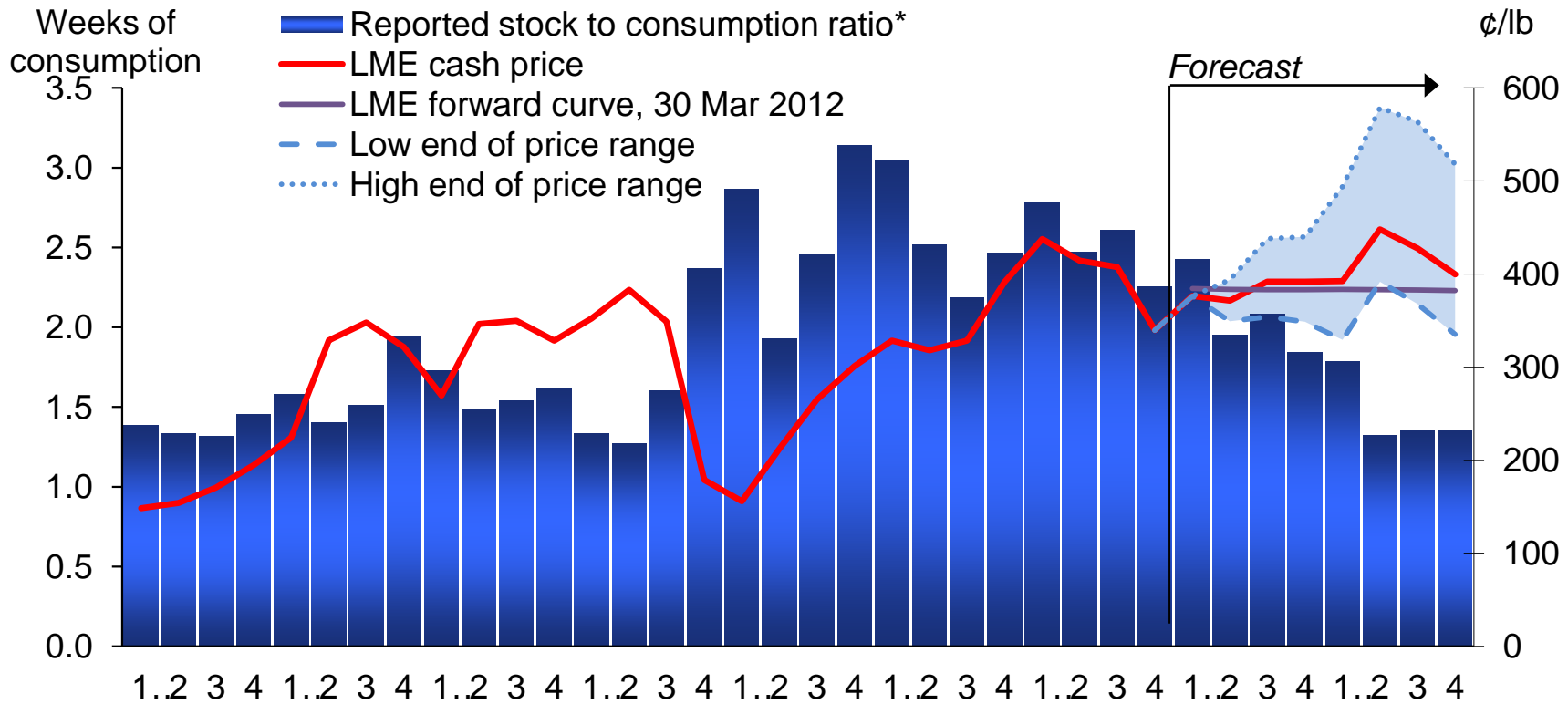
---

4. Inventory and price outlook and risks

---

# Prices to peak in 2013, as deficits lower stocks and tighten the market

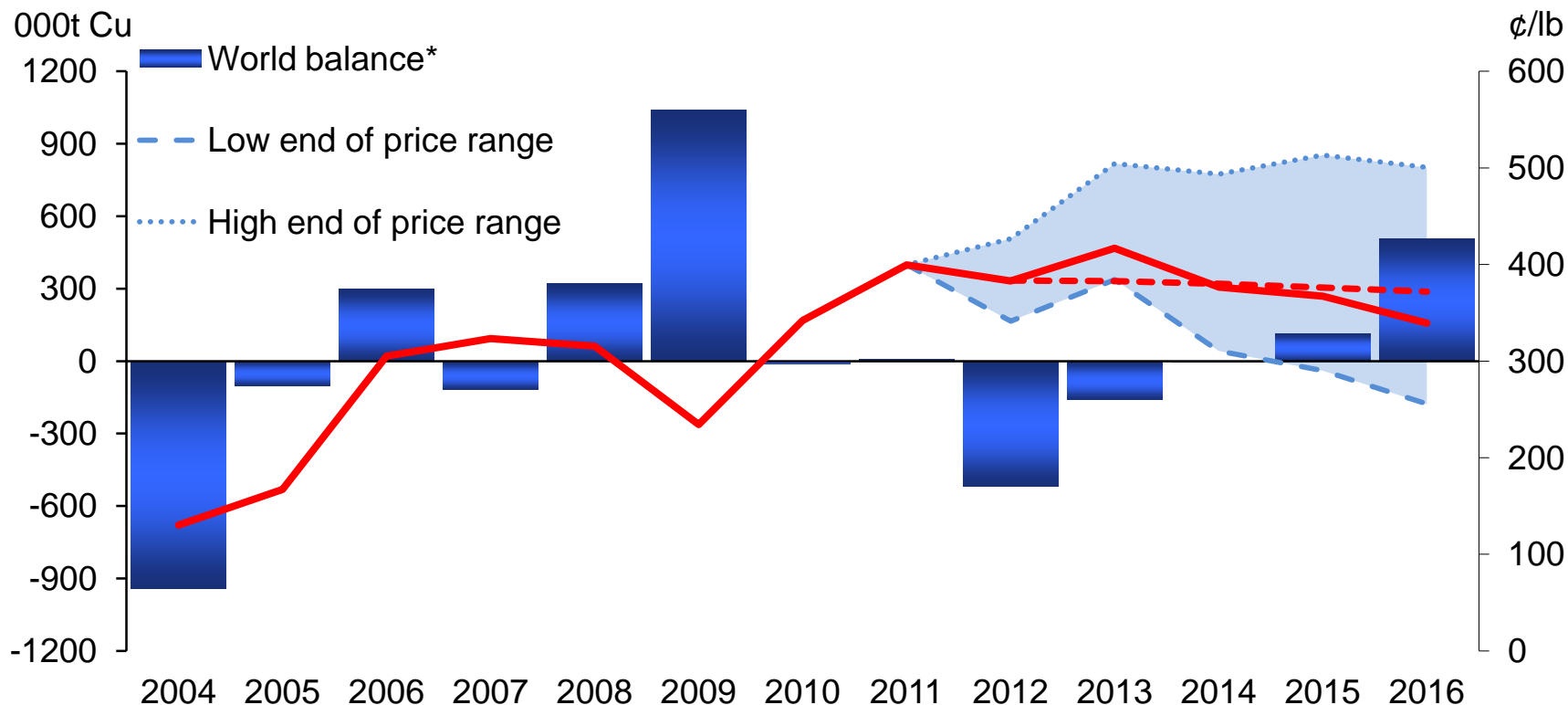
LME cash price and supply/demand balance\*, quarterly, 2005-2013



Data: CRU, \*adjusted for estimated SRB and Shanghai bonded warehouse stock changes in 2009-12

# Prices to retreat in 2014-2016 as mine supply growth leads to surpluses and higher stocks

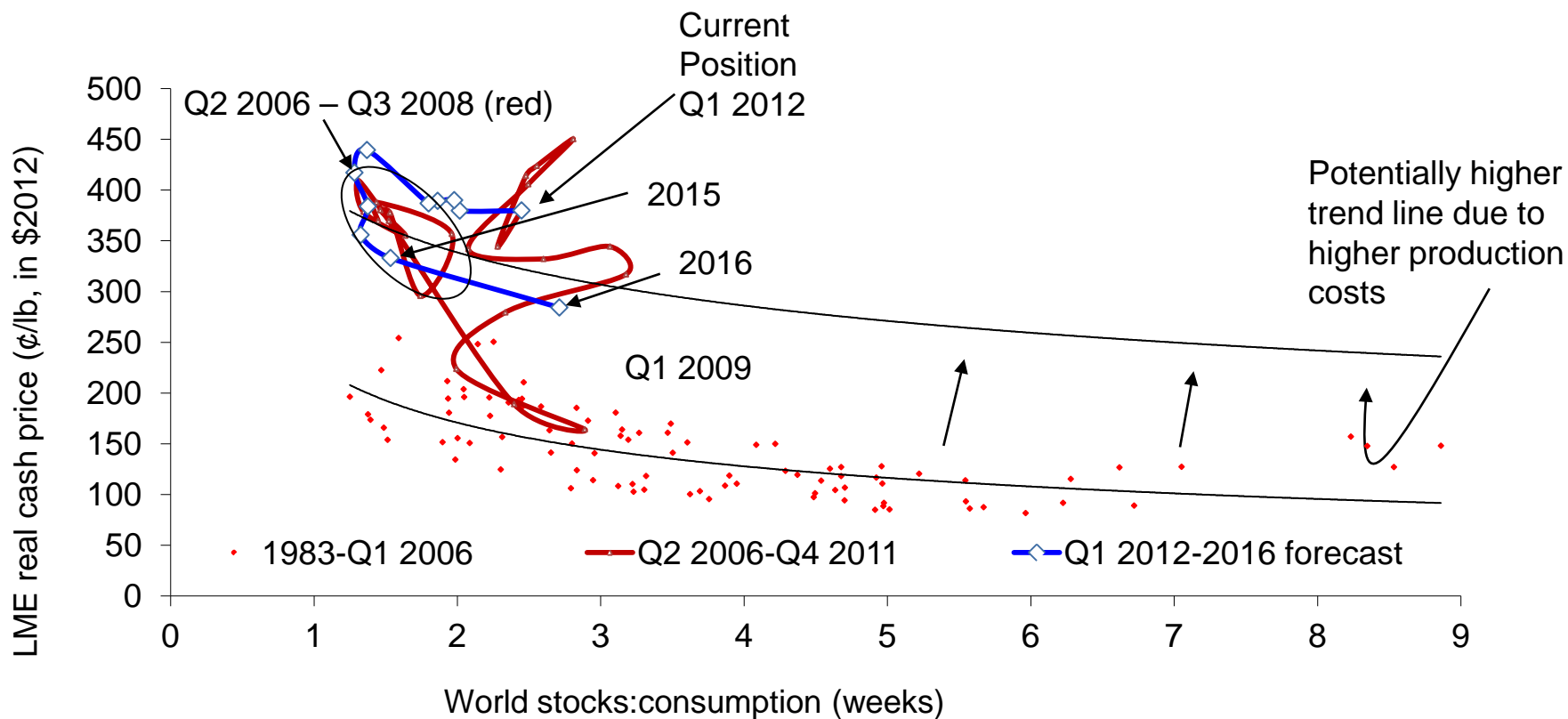
LME cash price and global supply/demand balance, 2004-2016



Data: CRU, \*adjusted for estimated SRB and Shanghai bonded warehouse stock changes in 2009-12

# Price:stock relationship expected to normalise following the gyrations in 2009-11

Data points: historical 1983Q1-2012Q1, forecast 2012Q1-2013Q4, 2014-2016 (annual)



Data: LME, CRU

## Key risks to the price outlook

**Production:** Most supply risks to the price are to the upside. Tight availability of equipment, qualified personnel, water, power, etc. mean that **sequencing of projects** (at both the company and industry levels) will be a serious challenge. There is some downside risk from production. If our **macroeconomic forecast turns out to be too optimistic**, then demand could be less and the wave of mine projects could come on just in time to swamp the market and drive down prices sooner than in our base case.

**Macroeconomic and financial:** The key risk to the copper price is the uncertainty of how the global economy will perform. The apparent **improvement in the US could prove short-lived and China could possibly not see a return to growth in H2 2012**. The Eurozone crisis could also still prompt more financial market turmoil. On the other hand, economic growth in both the **US and China could prove stronger than forecast** in the base case. This would be positive for growth directly, but also in those emerging markets which export to these two large economies.

**Consumption downside:** We now expect that **aluminium will make more inroads into the insulated power cable market** as a result of an increase in aluminium wirerod capacity available to target this segment by 2015. CRU forecasts that the ratio of the **copper price to that of aluminium will average close to 4:1**, which will weigh on consumers' strategic decision-making.

**Consumption upside:** In 2012, the wire and cable manufacturers may start to find aluminium wirerod harder to get hold of, and may be forced to use greater quantities of copper wirerod as a raw material. Any scrap shortage for direct use would lead to higher refined consumption. A double-dip recession in the developed world would accelerate the de-coupling of emerging markets and favour copper-intensive domestic demand. Any substantial fall in the price could also lead to buying by the SRB or some Chinese consumers or speculators that rate copper as a bargain.

## CRU Analysis Copper and Wire & Cable team

- Vanessa Davidson - Group Manager Copper and Wire & Cable, ext. 2207
- Paul Settles - Principal Consultant, Copper Market, ext. 2227
- Christine Meilton - Principal Consultant, Copper Production, ext. 2098
- Rob Daniels - Principal Consultant, Copper Semis, Wire & Cable, ext. 2118
- Rich Mack - Principal Consultant, Copper Semis, Wire & Cable, USA
- Lisa Morrison - Principal Consultant, Copper Market, USA
- Wan Ling - Manager, China Nonferrous Metals, Beijing +86 10 6510 2183
- Patrick Fay - Senior Consultant, Copper Semis, Wire & Cable, USA
- Alicia Polo y La Borda - Senior Consultant, Copper Prod & Market, Santiago +56 2 2313 900, ext. 12
- Vivienne Lloyd - Senior Consultant, Copper Production and Mine Costs, ext. 2182
- Sushila Colquhoun - Senior Consultant, Copper Production, ext. 2016
- Ruth Chapman - Editor, Cables Industry Analyst, [ruth.chapman@crugroup.com](mailto:ruth.chapman@crugroup.com)
- Brennan DiBasilio - Consultant, Copper Market, USA
- Piotr Ortonowski - Consultant, Copper Market, ext. 2325
- James Wright - Consultant, Copper Market, ext. 2052
- Miljan Sladoje - Research Analyst, Copper Production and Mine Costs, ext. 2062
- Catherine McKee - Administrator, Base Metals, ext. 2043

In the first instance, clients should address any enquiries to:

Paul Settles: [paul.settles@crugroup.com](mailto:paul.settles@crugroup.com), +44 (0)20 7903 2227

To contact other team members: Email: [firstname.lastname@crugroup.com](mailto:firstname.lastname@crugroup.com), Tel: +44 (0)20 7903 + ext.