

Future of the mining industry

Tim Goldsmith

PwC Global Mining Leader

The Growing Disconnect

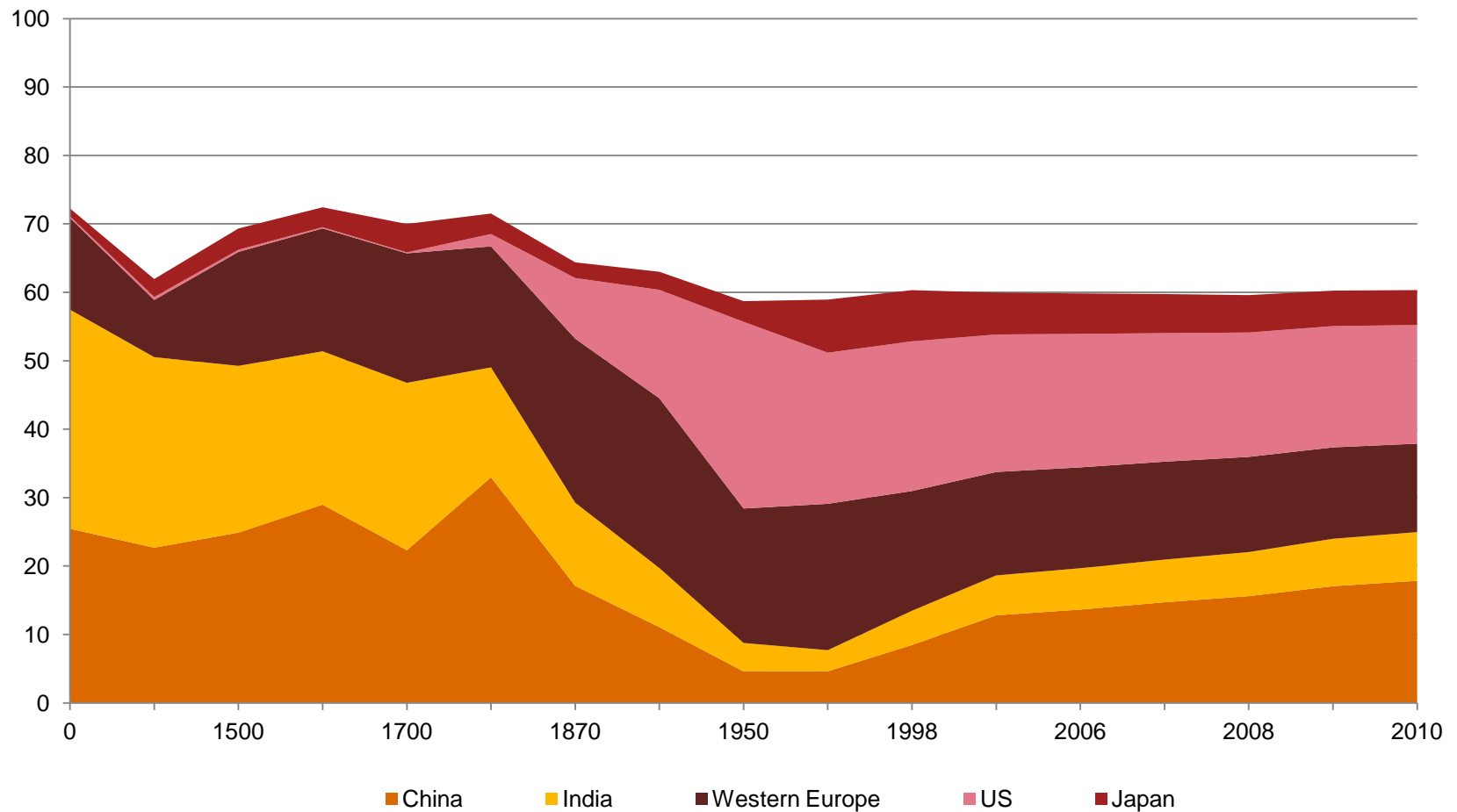


The current state of the mining industry

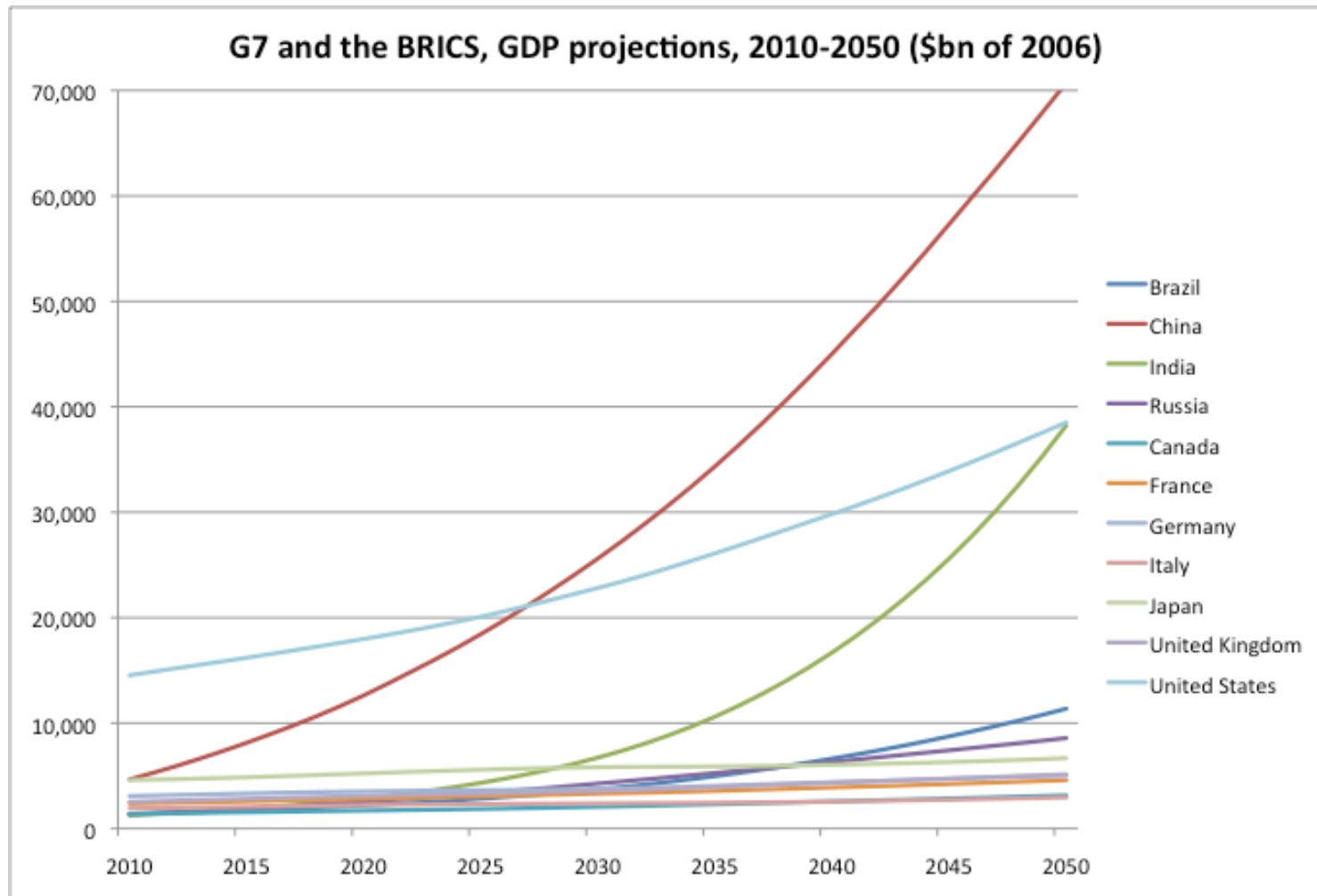
- Doubts over the Chinese growth and urbanisation story
- Demand will be there – % increases may not be as high as before, but will off a larger base
- Continued structural change to historically high commodity prices, underwritten by higher production costs and lower grades. However, this does not guarantee increasing gross margins
- Future will be about bringing on supply through the right projects
- Large miners invested \$98 billion in capital projects in 2011 - plan for a further \$140 billion in 2012
- There is still a great future for mining

The world's GDP

Source: Maddison, Deloitte Access Economics

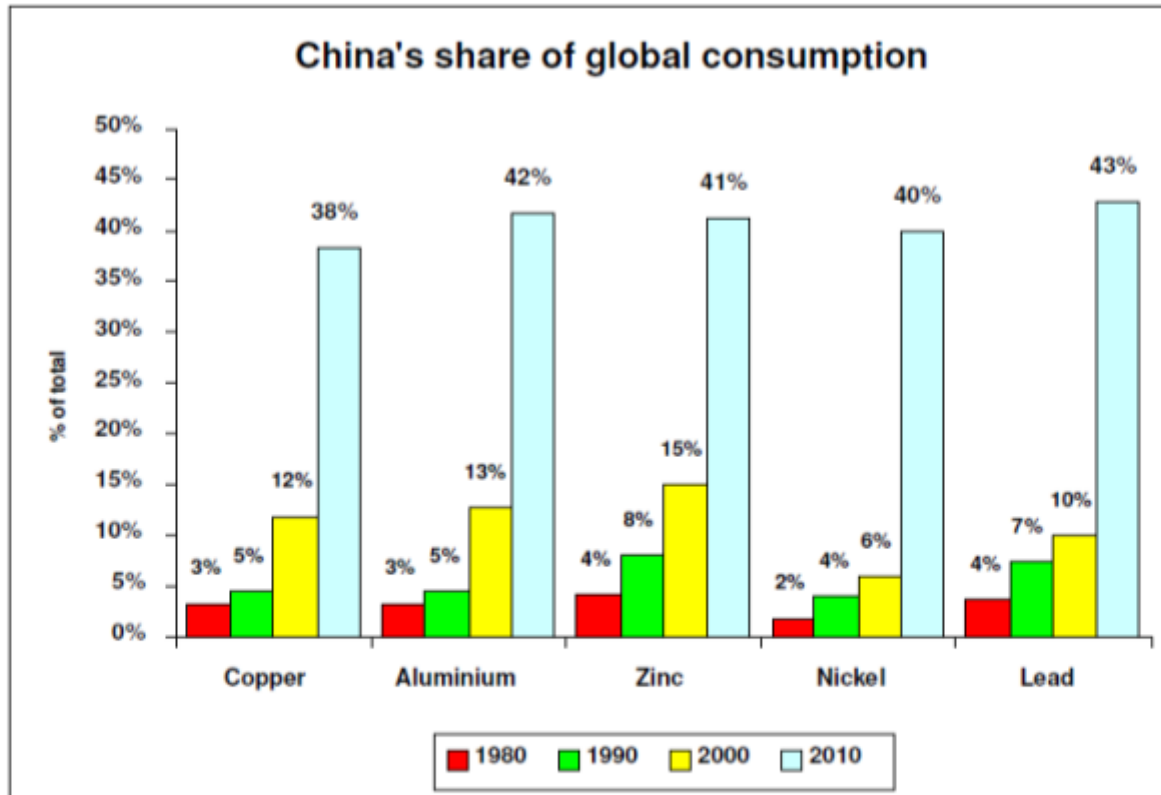


2010-2050



Source: Goldman Sachs

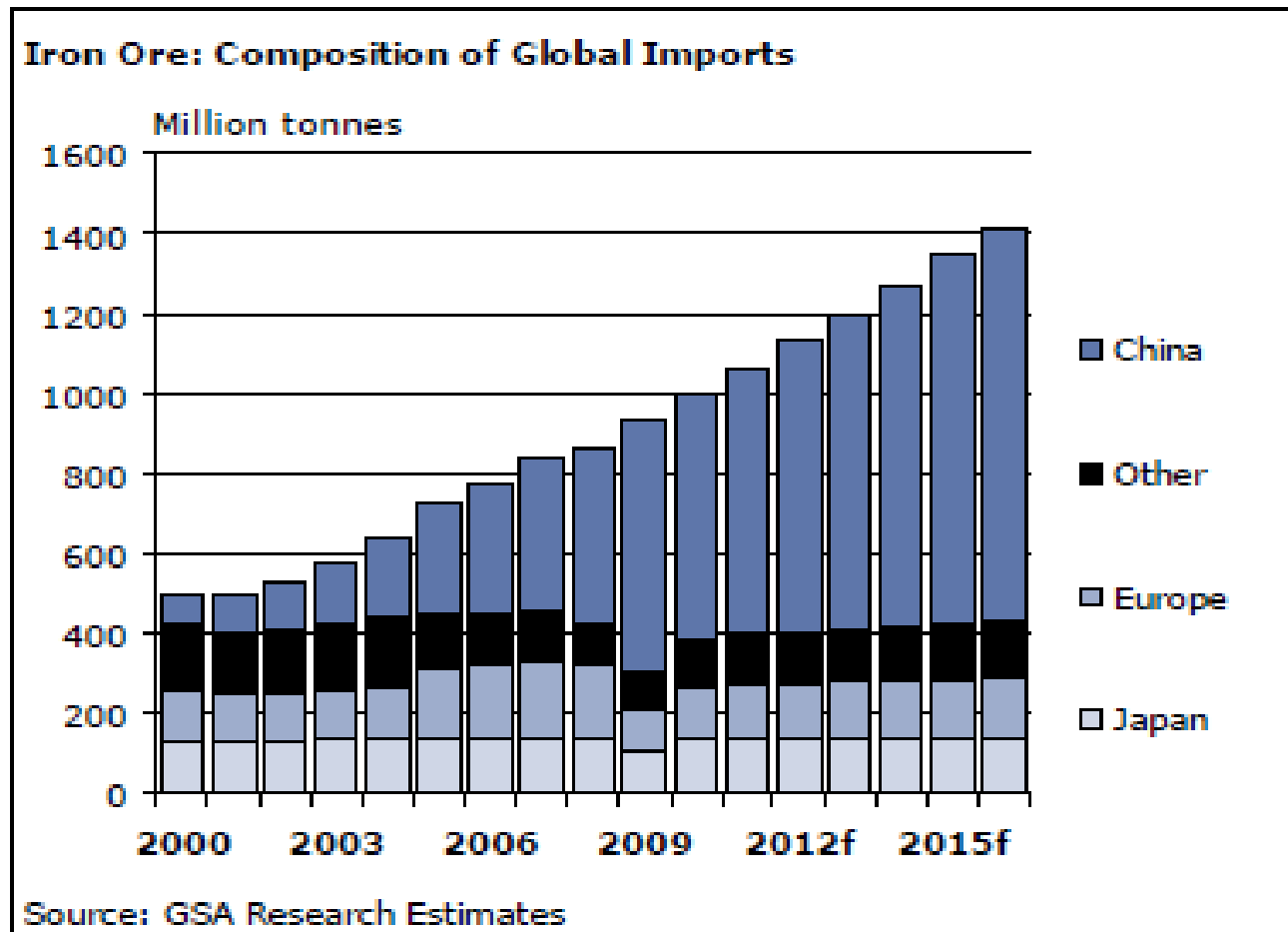
It's all been China for demand over the past decade....



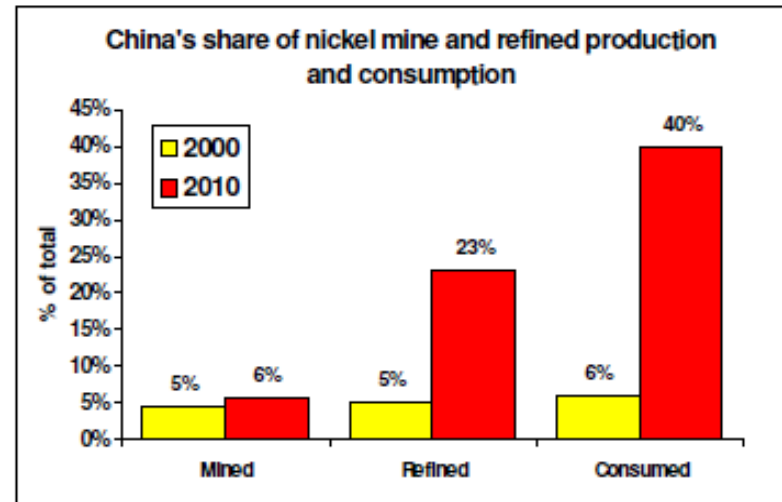
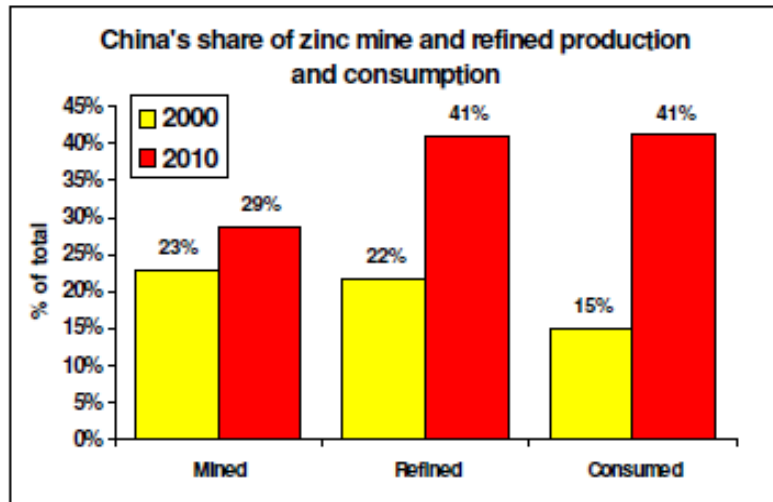
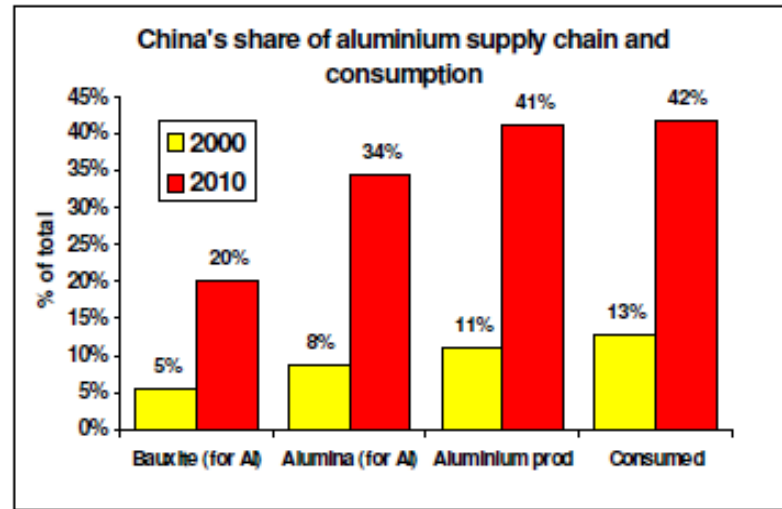
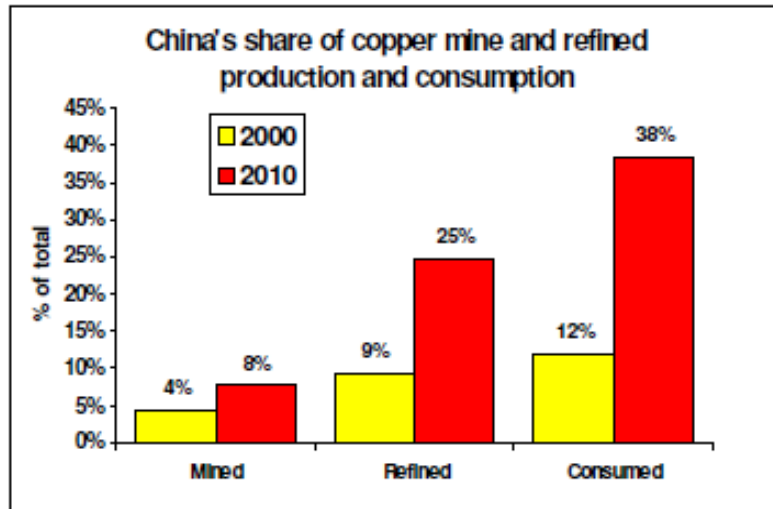
Source: Antaika, ICSG, ILZSG, INSG, IAI, Brook Hunt, Macquarie Research, October 2011



Iron Ore: Composition of Global Imports



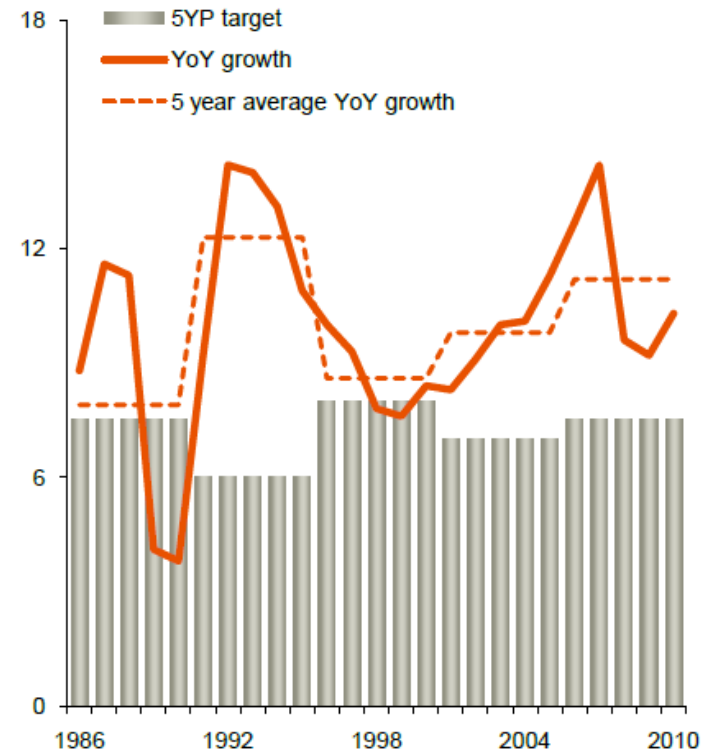
China has met a lot of its own requirements, especially in smelting/refining



China – a history of delivery

- The market continues to be nervous about China's ability to manage its economy
- Historically China has outperformed 5 Year Plan targets
- 7% growth target in 5 Year Plan a floor
- Not a ceiling

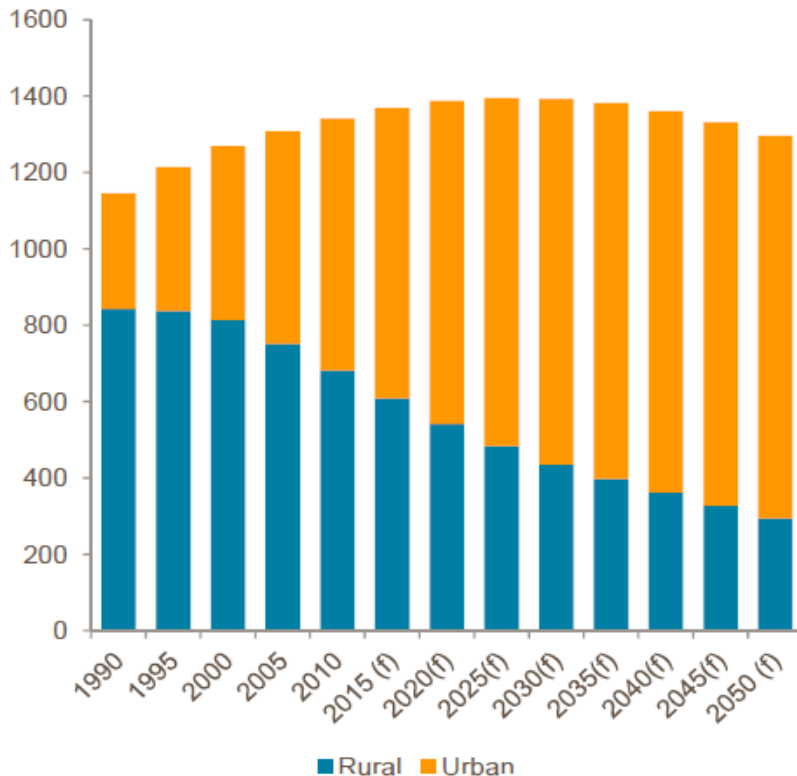
GDP growth target versus actual growth (%)



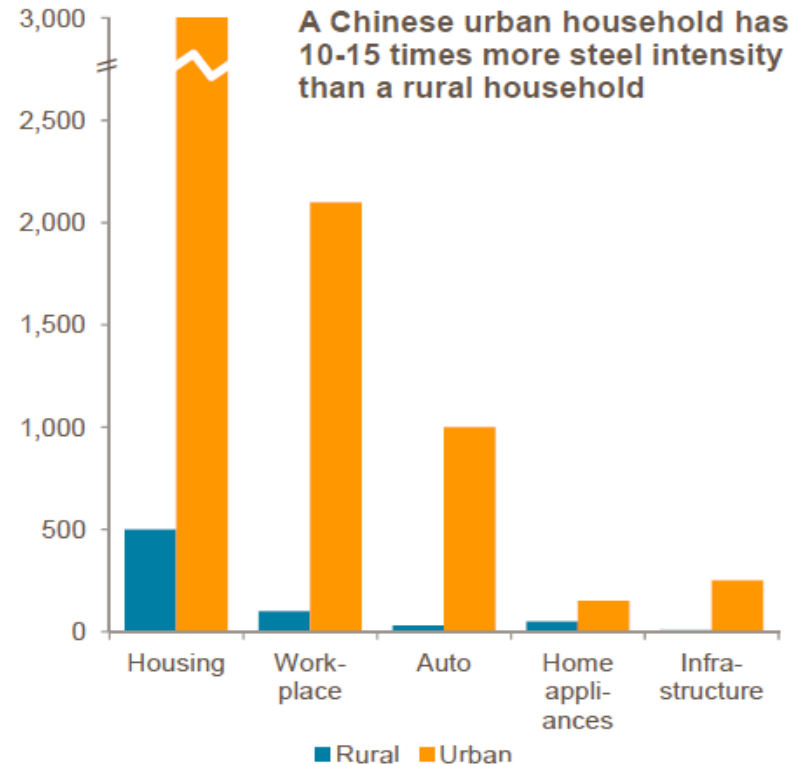
Source: China National Bureau of Statistics.

China's urbanisation will continue apace

China urban/rural population
(million persons)



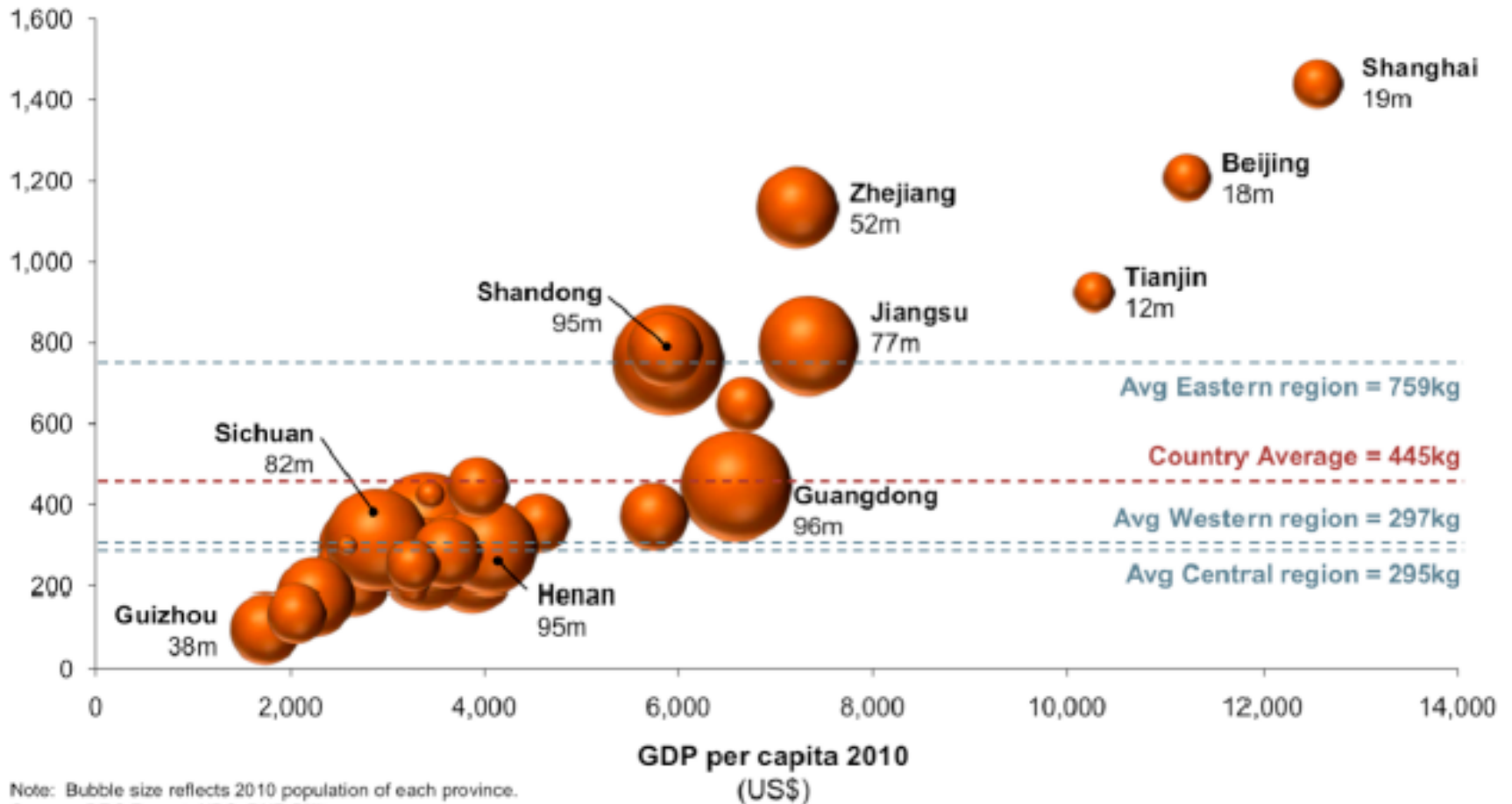
Chinese household steel intensity
(kilograms)



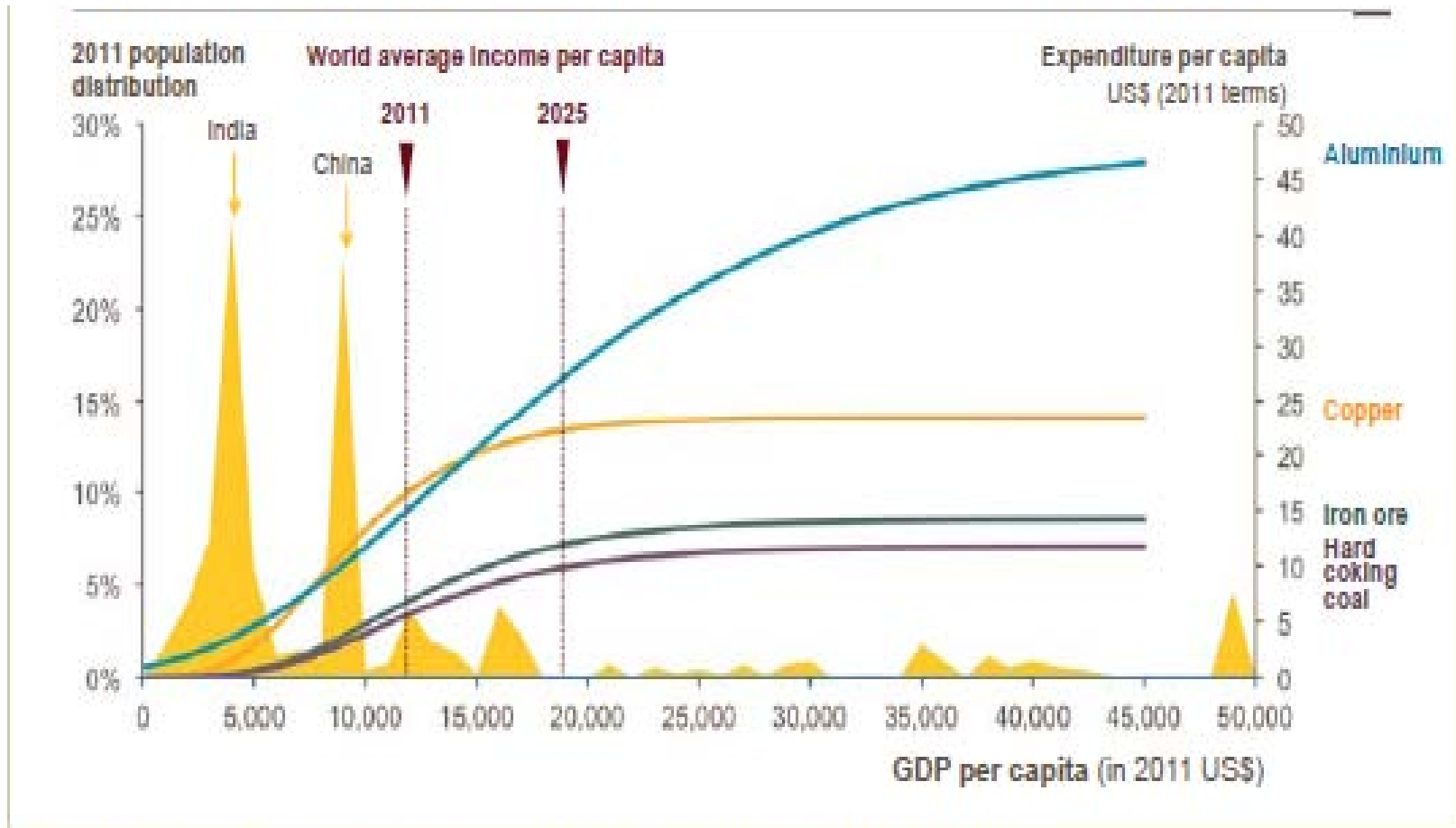
Source: Rio Tinto Economic outlook and commodity prices presentation 29 June 2012

Chinese steel intensity by province vs. GDP per capita

Finished steel consumption per capita 2010 (kg)

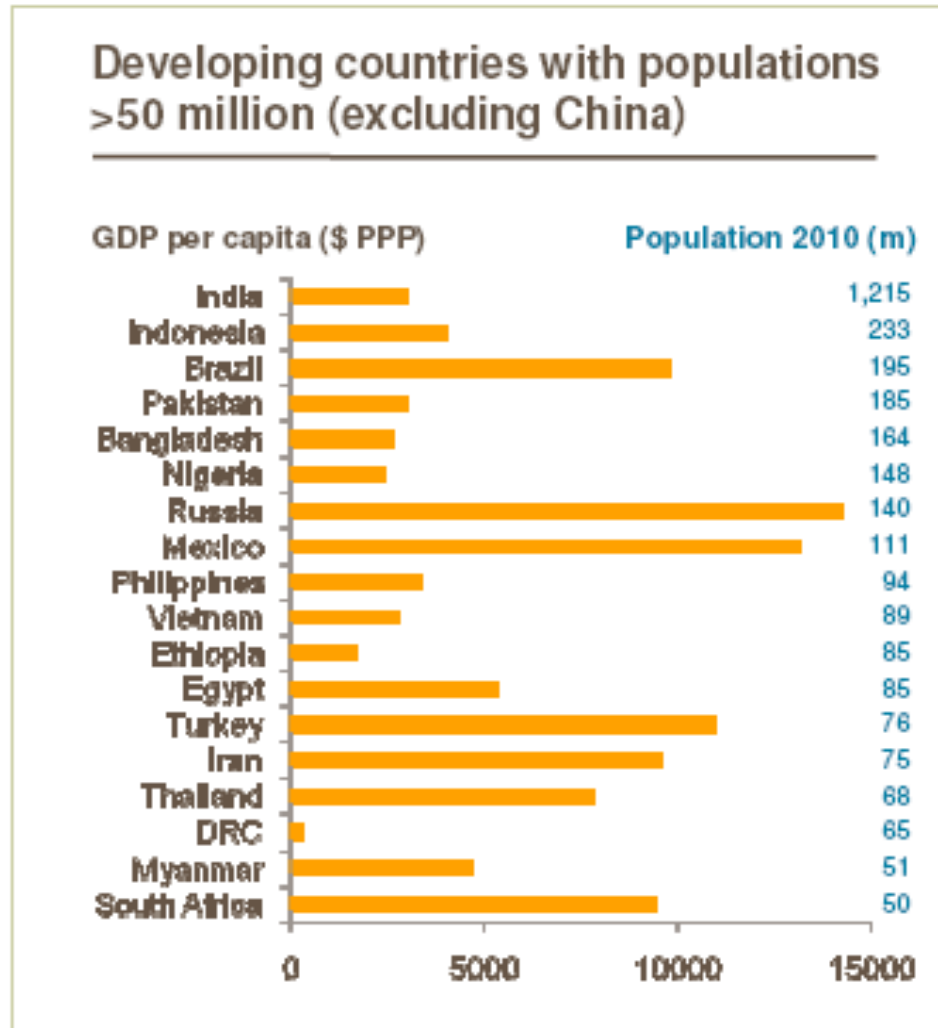


Consumption of metals increases in line with increasing income



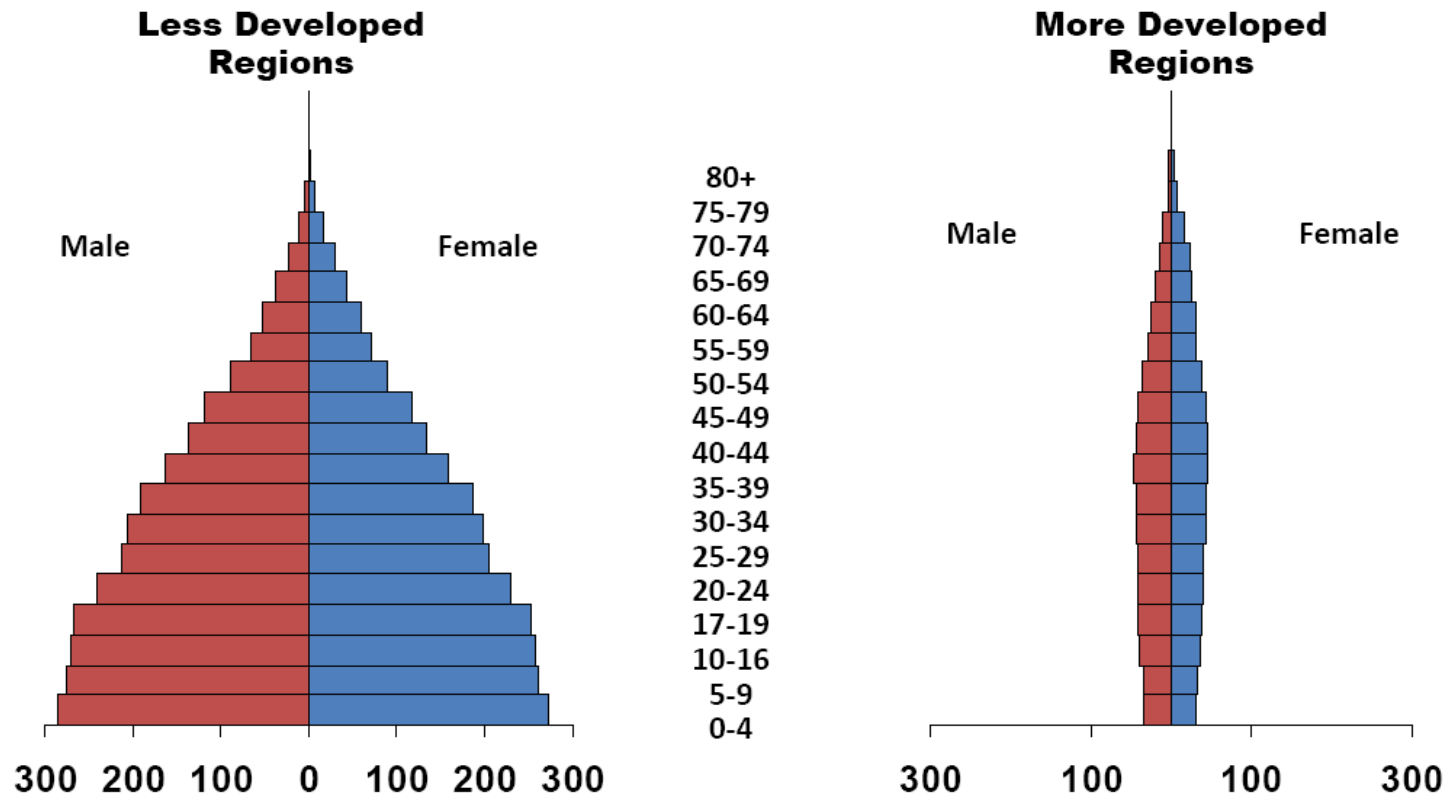
Source: Global Insight for population distribution; Rio Tinto estimates for commodity expenditure profiles.

Many countries set to follow China



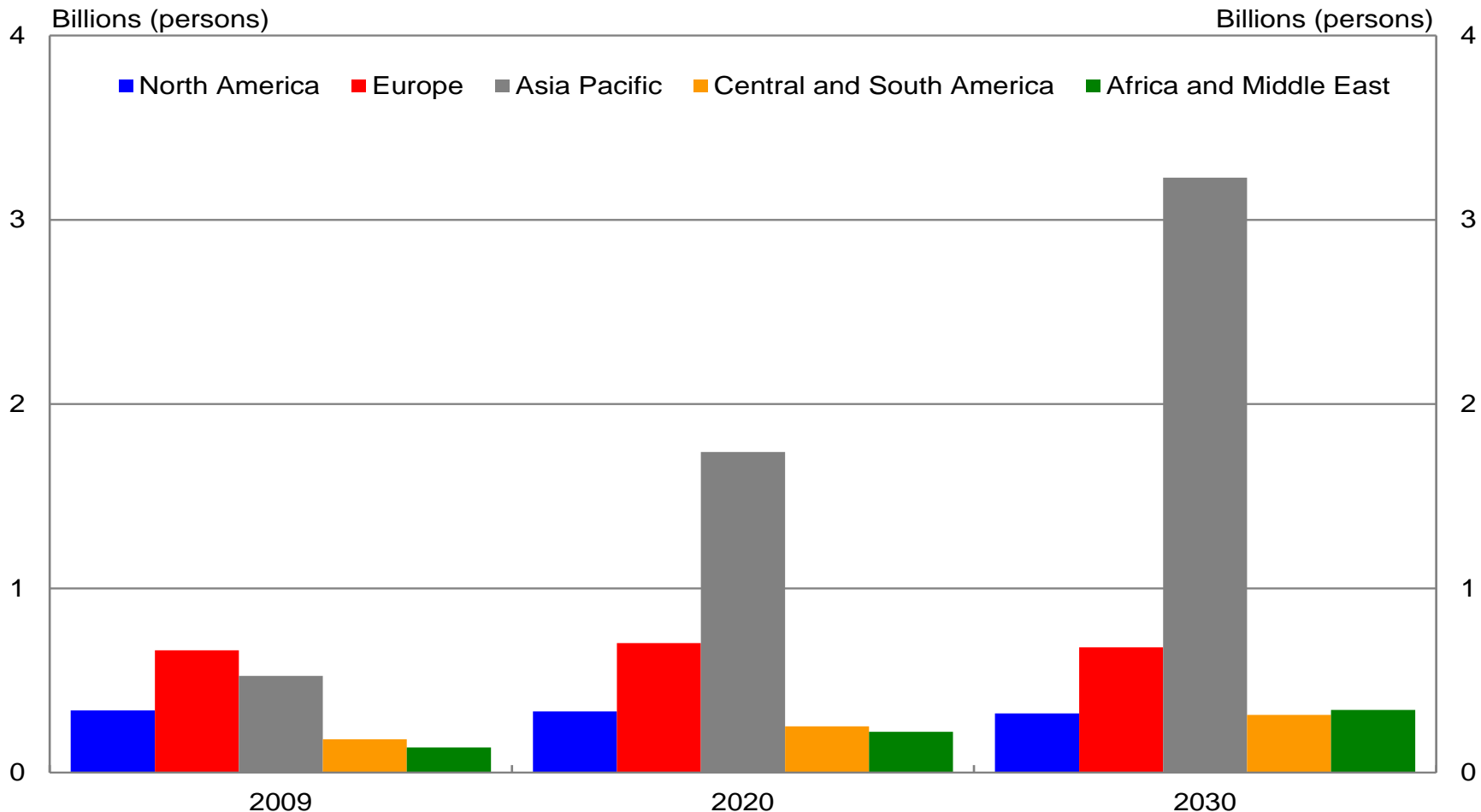
Source: Global Insight

Population distribution



Source: United Nations, *World Population Prospects: The 2002 Revision*

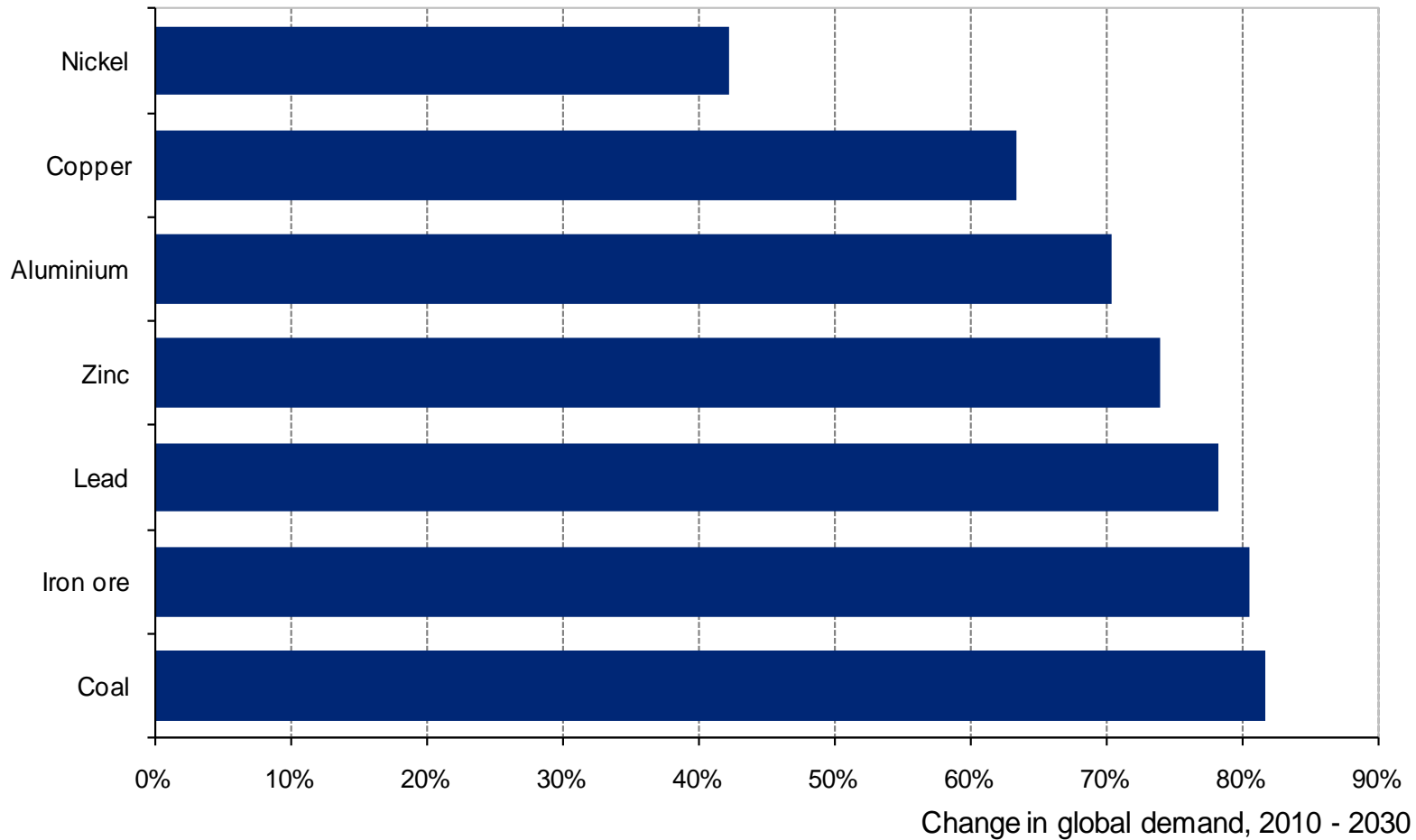
Projections of the global middle class by region



Note: The global middle class is defined as those households with daily expenditures between USD10 and USD100 per person in purchasing power parity terms. The lower bound is chosen with reference to the average poverty line in Portugal and Italy.

Source: Kharas, H, 2010, 'The emerging middle class in developing countries', OECD Development Centre, Working Paper No. 285.

“Super” to “Mega” Demand Cycle

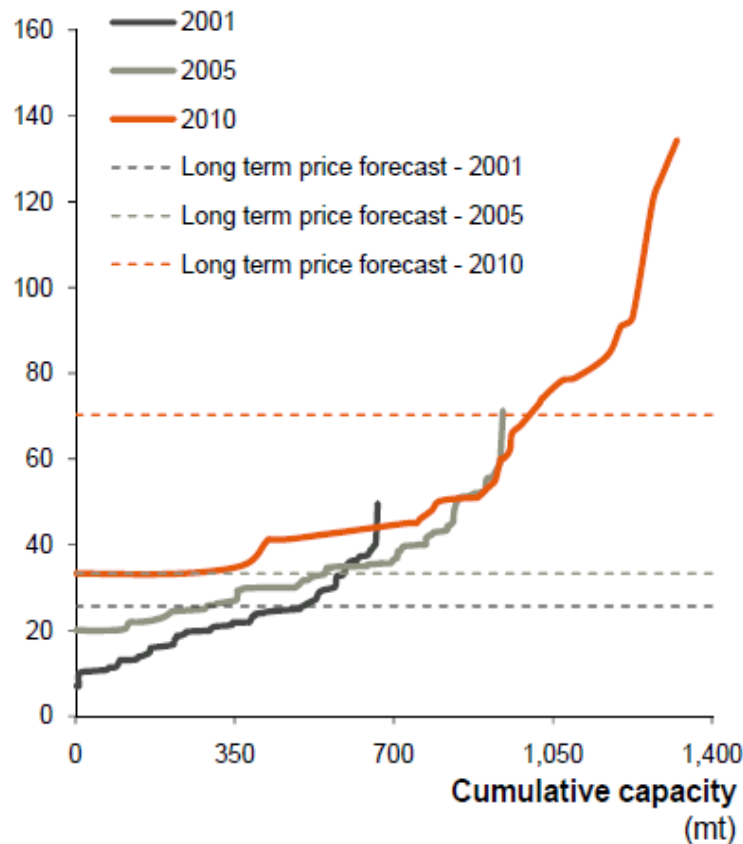


Source: ABARES, Deloitte Access Economics
Commissioned by Minerals Council of Australia

Cost pressures felt by all

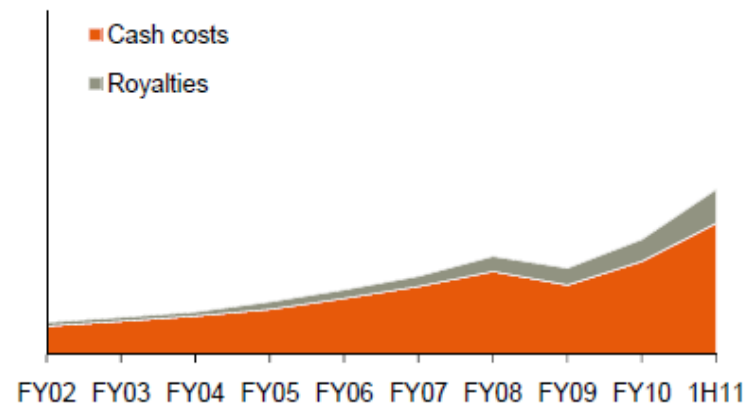
Iron ore cost curve

(US\$/t, 62-63% Fe, CIF China equivalent basis)



- The cost curve has steepened dramatically over time
- Long term price estimates have grown at a similar rate, reflecting the shift in shape of the cost curve and development costs

BHP Billiton Western Australian Iron Ore cash costs (US\$/t)



Bringing supply to market as promised is challenging

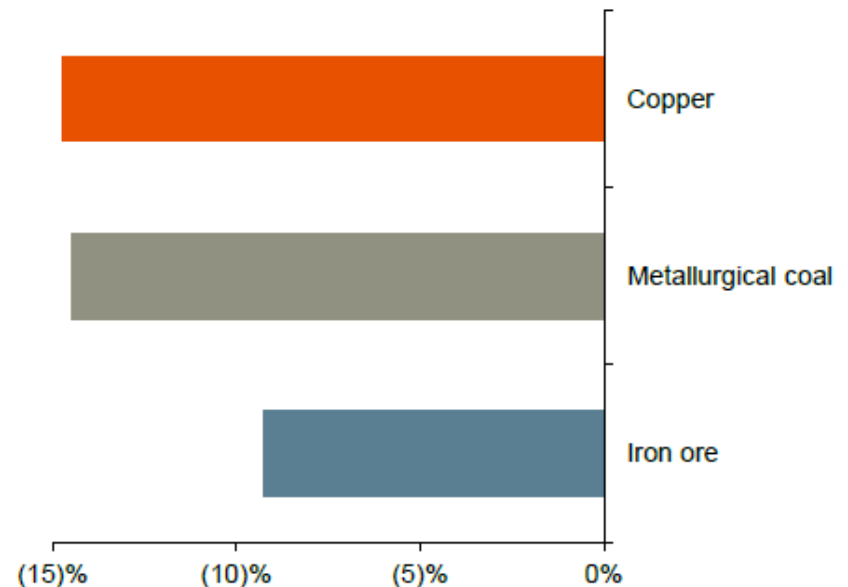
Providing supply to meet the demand has proven problematic

Supply has fallen below forecast

As BHP highlighted - multiple disruptions:

- Queensland metallurgical coal
- Indian iron ore
- Chilean copper

Under delivery of production forecasts¹
(%)

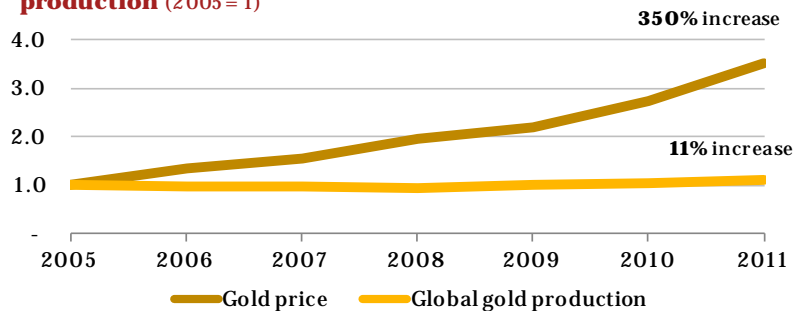


Source: Macquarie Commodities Research, August 2011.

1. Denotes shortfall in global CY11 production as forecast by Macquarie Commodities Research in August 2011 compared with June 2008. Production refers to seaborne iron ore, seaborne metallurgical coal (ex-USA supply) and mined copper (including SX-EW production).

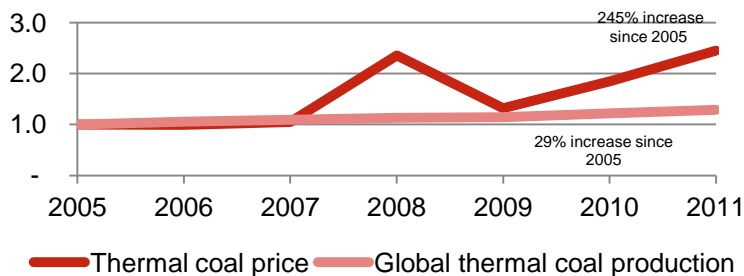
Despite record commodity prices, the industry has faced challenges in bringing on new supply

Annual average AME gold prices, total global gold production (2005 = 1)



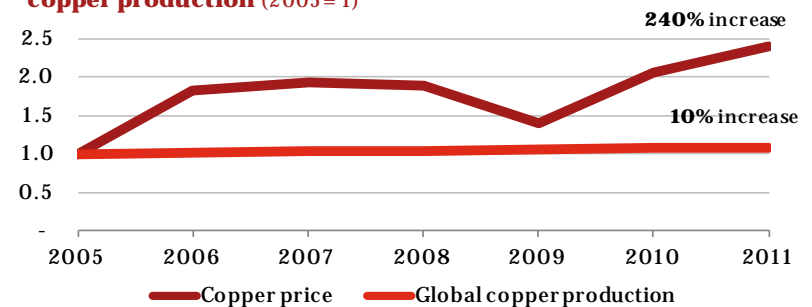
Source: The World Bank, World Gold Council

Annual average thermal coal prices, total global thermal coal production (2005 = 1)



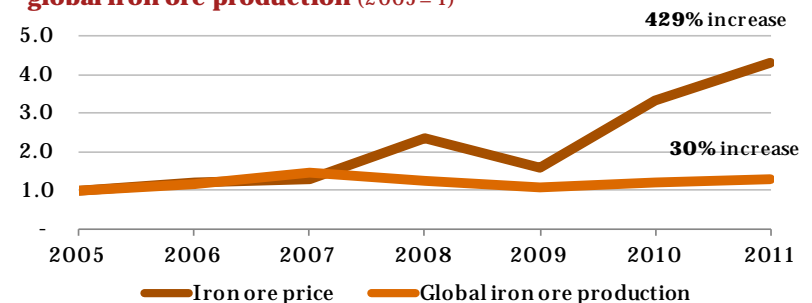
Source: The World Bank, BP Statistical Review of World Energy June 2012

Annual average AME copper prices, total global copper production (2005 = 1)



Source: The World Bank, International Copper Study Group

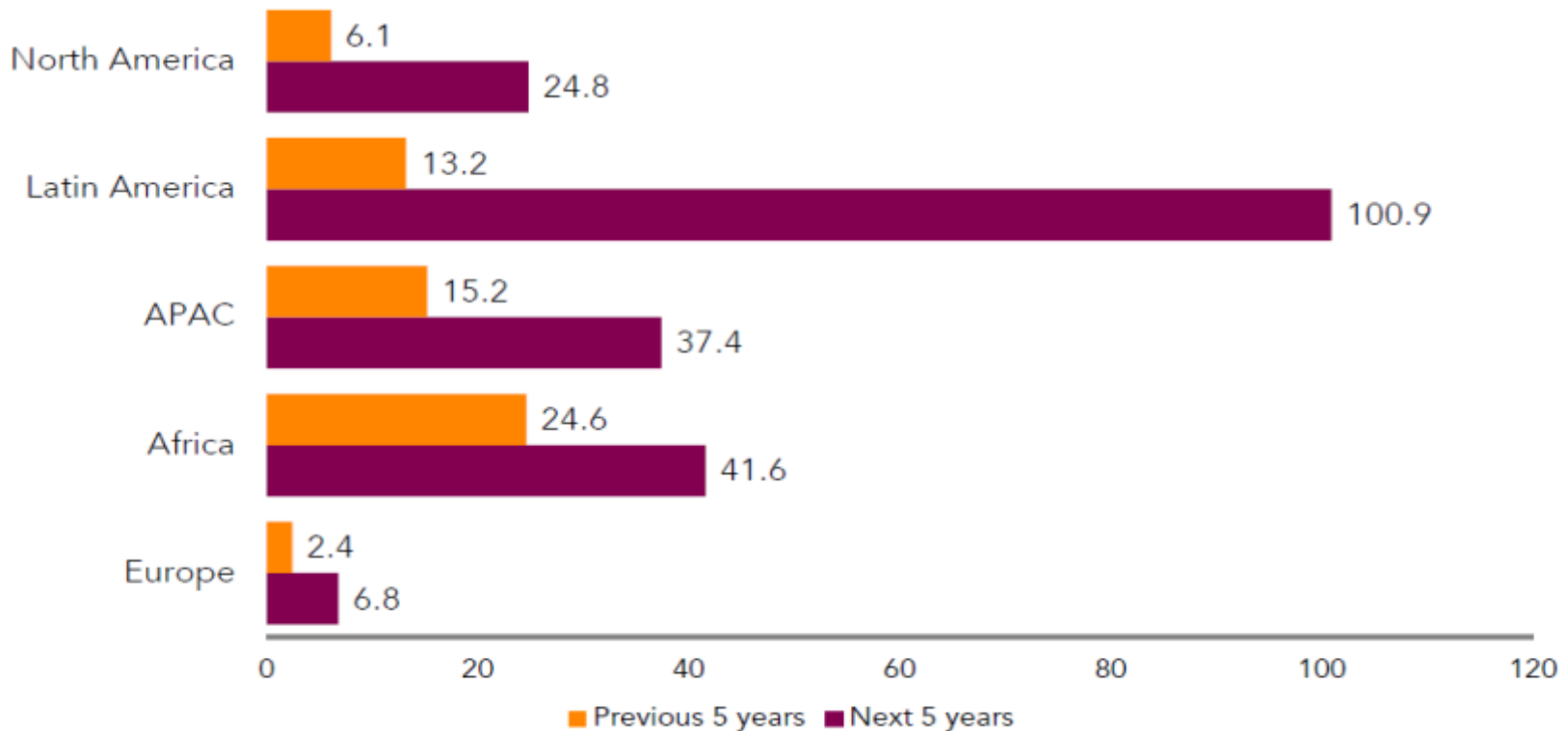
Annual average CFR China iron ore prices, total global iron ore production (2005 = 1)



Source: The World Bank, AME Outlook

Capital expenditure by region

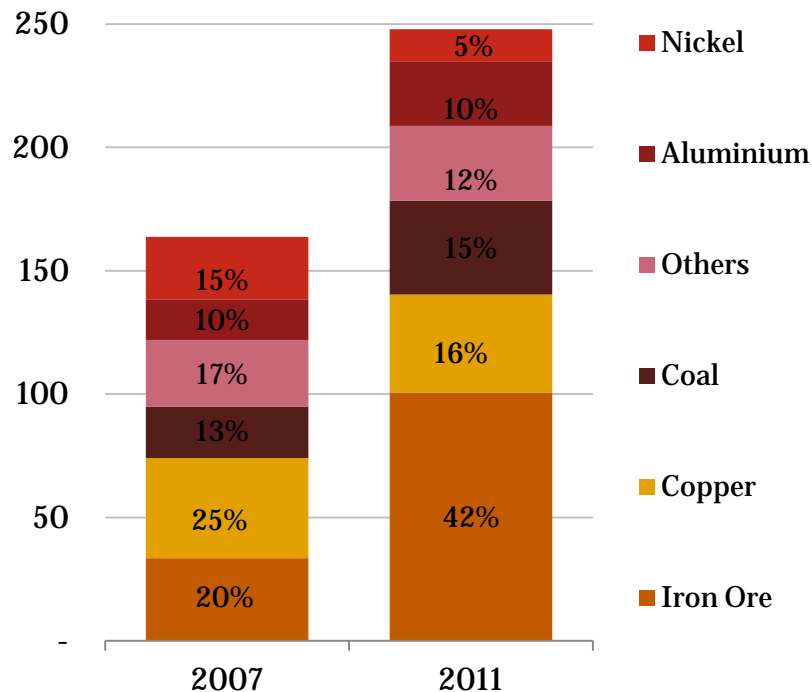
Value of Au, Cu, Ni, Fe projects started \$bn



Source: Xstrata Presentation to Bank of America Merrill Lynch Conference May 2012

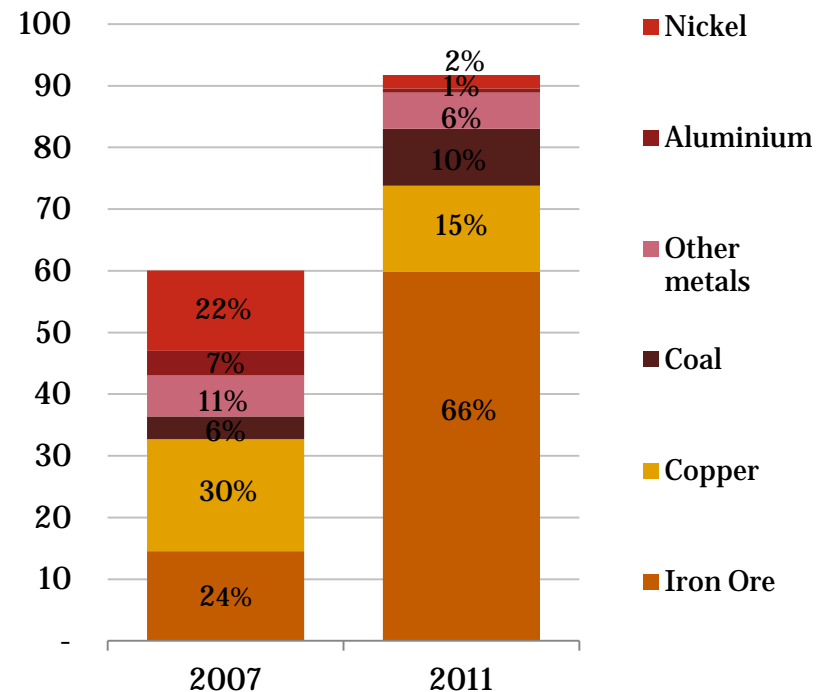
Among the Top 5 Diversified miners there is much more iron ore and comparatively less diversity

**Top 5 Diversifieds - 2007 and 2011
Segment Revenue (\$ billion)**



Source: PwC Analysis

**Top 5 Diversifieds - 2007 and 2011
Segment EBIT(\$ billion)**



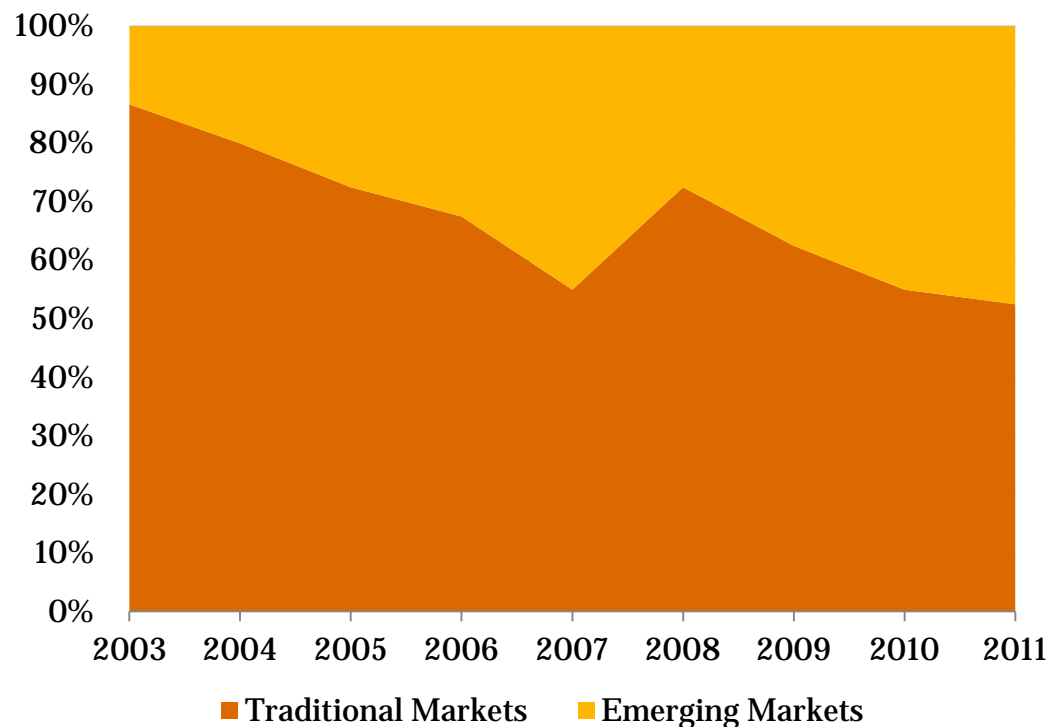
Source: PwC Analysis

Due to Glencore's significant marketing activity, they have been excluded from this particular analysis, although they are a large diversified company.

Supply from emerging markets continue to have a larger presence in the Top 40

- Composition of Top 40 continuing to shift to emerging markets
- 19 of the Top 40 are either from or primarily concentrated on emerging markets

Mine - Composition of the Top 40



Outlook

- Future will be about bringing on supply through the right projects
- Demand will be there – % increases may not be as high as before, but will off a larger base
- Continued structural change to historically high commodity prices, underwritten by higher production costs and lower grades. However, this does not guarantee increasing gross margins
- The market doesn't seem to be buying the industry's long-term growth story, sending share prices lower - 2012 has shown *the growing disconnect*

Mine 2012

The growing disconnect

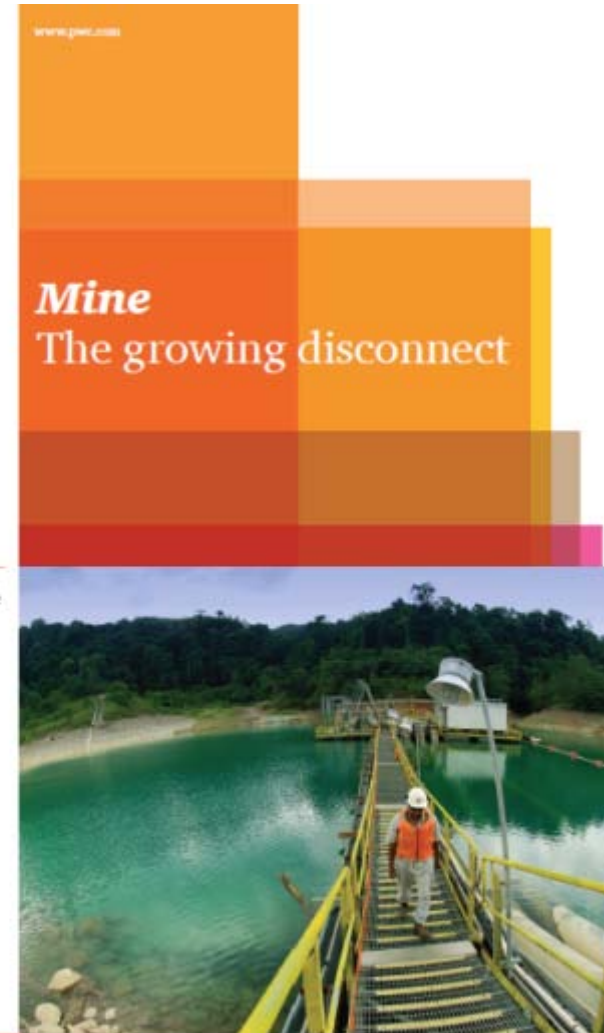
Tim Goldsmith

*PwC Global Mining Leader & National
China Practice Leader*

T: +61 3 8603 2016

M: +61 419 201 877

E: tim.goldsmith@au.pwc.com



*Review of global trends in
the mining industry—2012*

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Thank you