

The impact of China's growth on minerals supply and demand

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China – will demand overwhelm supply?

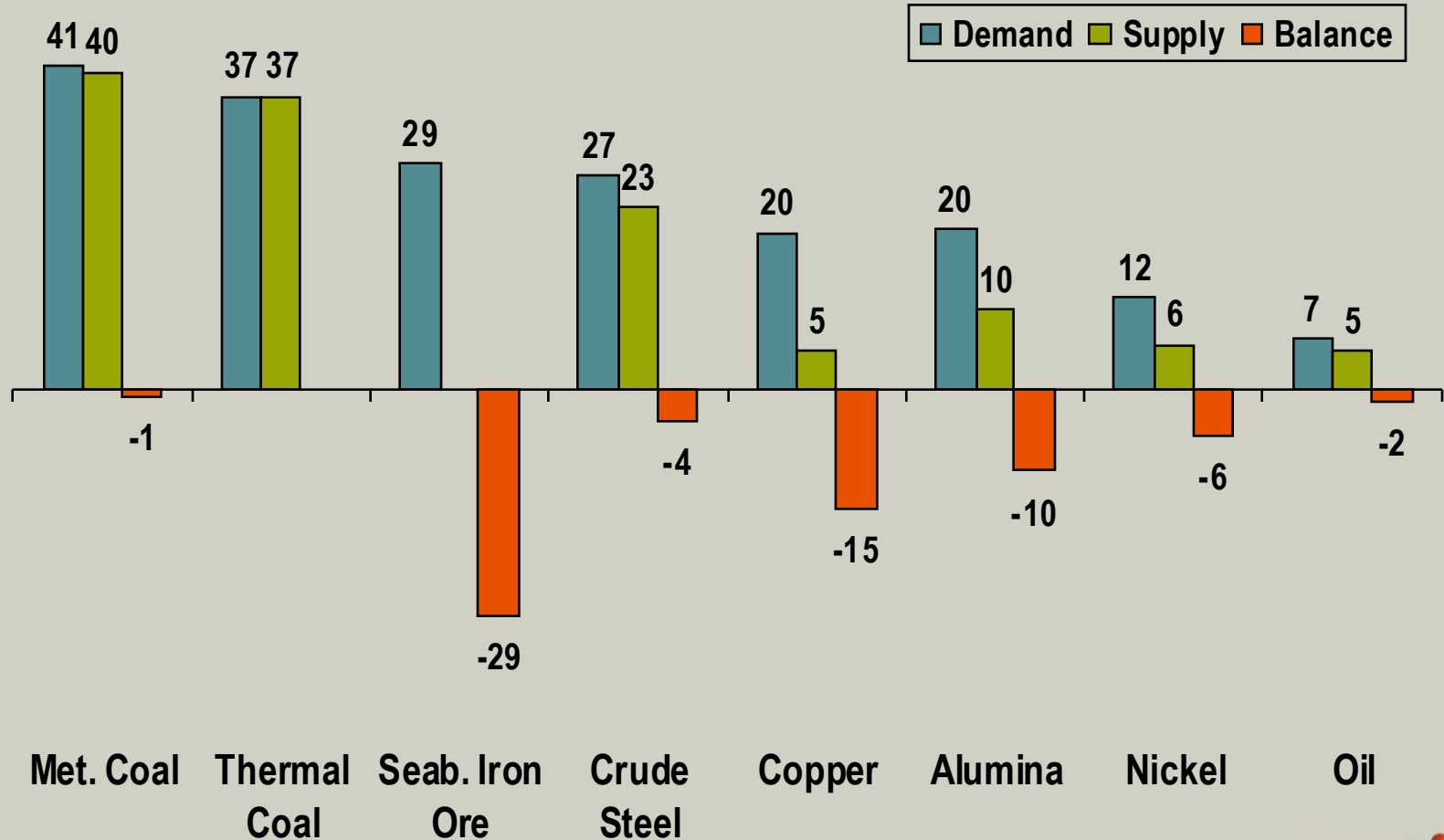
- **We expect China to be a large, sustainable, consumer of imported raw materials**
- **While short term spikes may exist, we expect supply to meet demand**
- **A longer term global power shift should not be ignored when thinking about consumption of raw materials**

We expect China to be a large, sustainable, consumer of imported raw materials

- **China is a large consumer but short of resources**
- **Consumption as % of world total doubles each decade**
- **Urbanisation and associated infrastructure the key drivers**
- **Likely economic development model “continental-maritime” not “export” in style**
- **China’s growth is not a short term phenomenon**

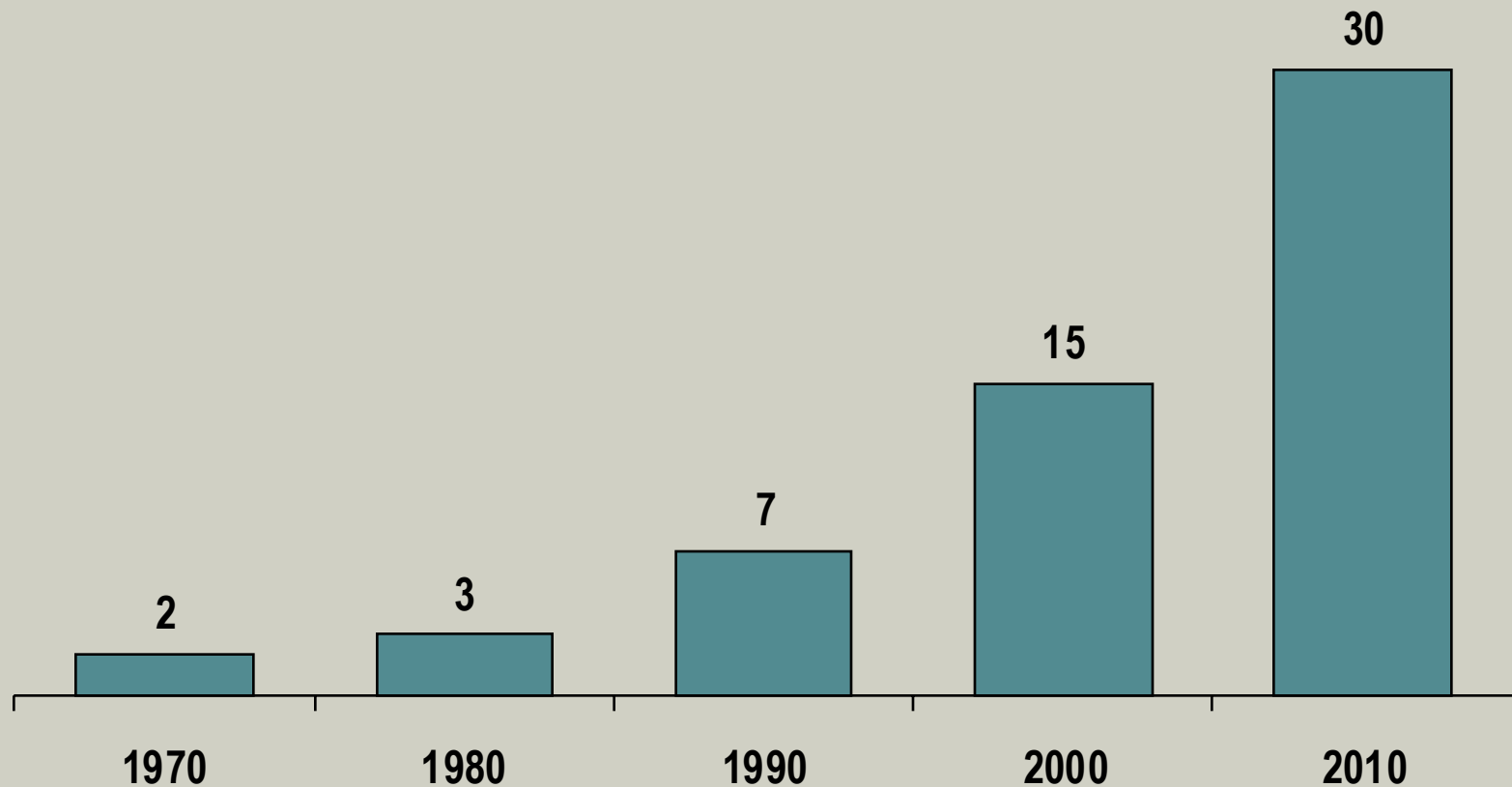
China is a large consumer but is short of resources

China's % of world production and consumption in 2003



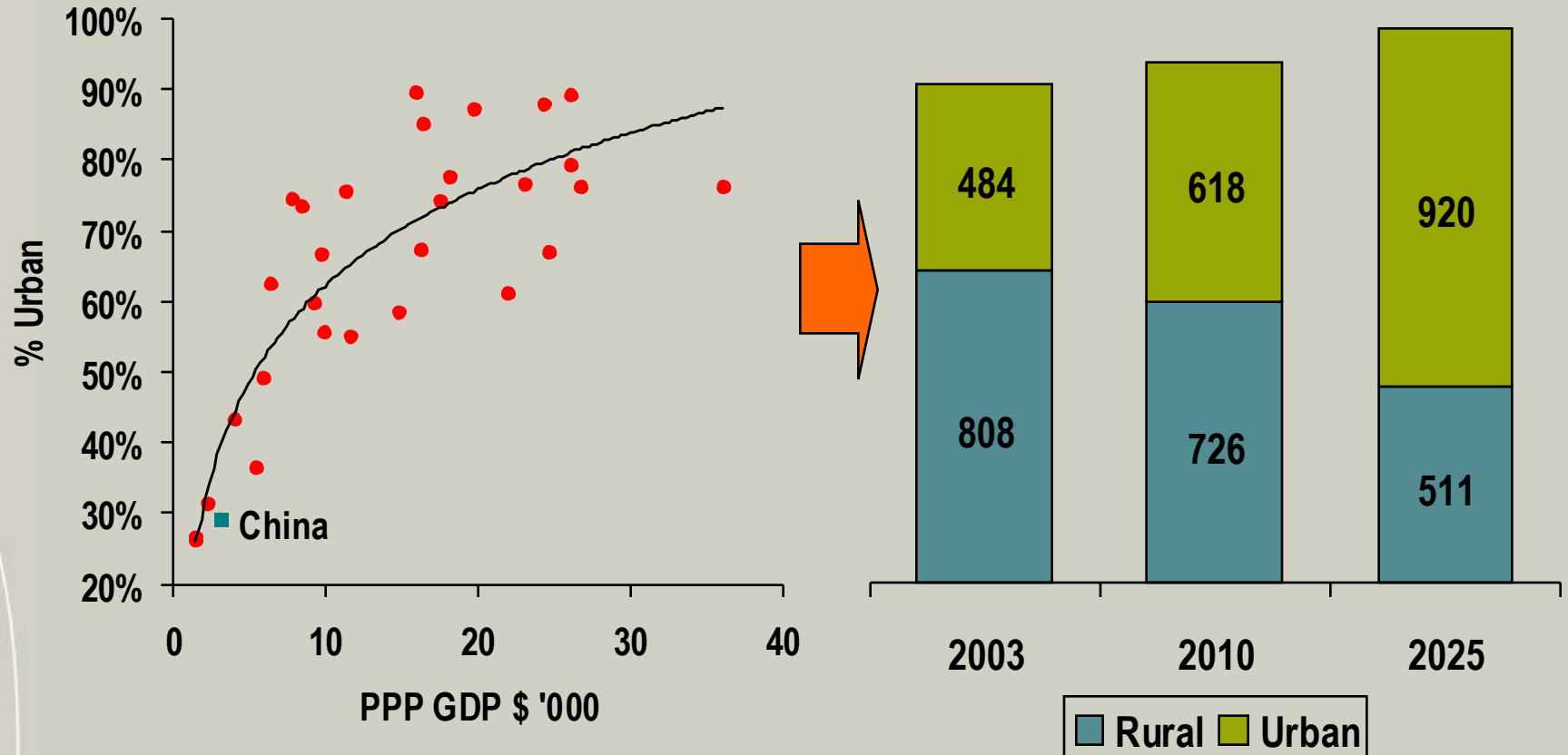
Consumption as % of world total doubles each decade

China % of world consumption (Al, Cu, Fe Ore, Ni)



Urbanisation and associated infrastructure the key driver

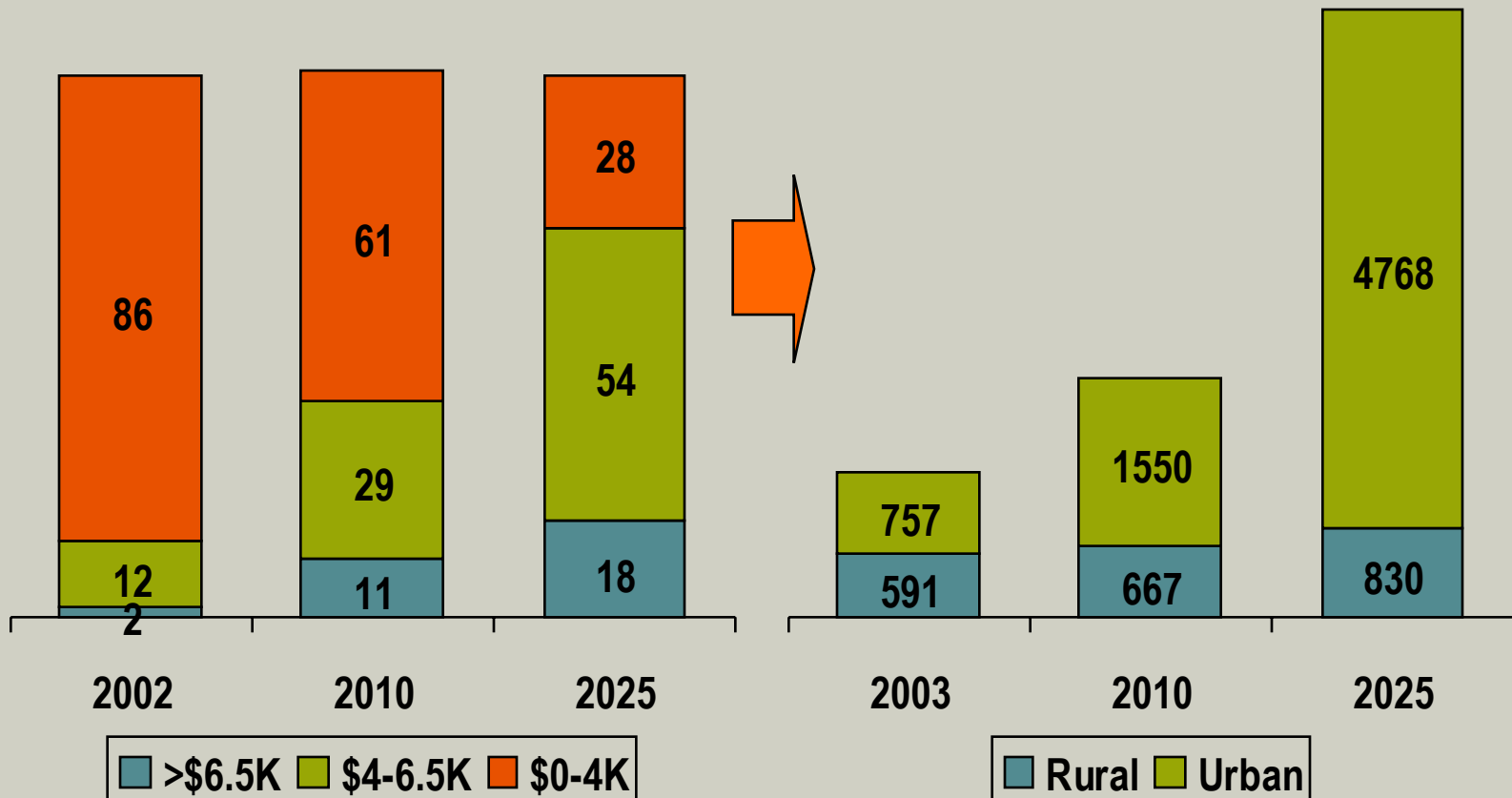
China urbanisation - %; population in millions



Urbanisation and associated infrastructure the key driver

China urbanisation (%) per GDP/capita category

GDP (US\$bn) breakdown



1600 km west of Shanghai
Chongqing: pop. 7 million...and rising





...20 mill. sq metres added in 2004 in Chongqing Province

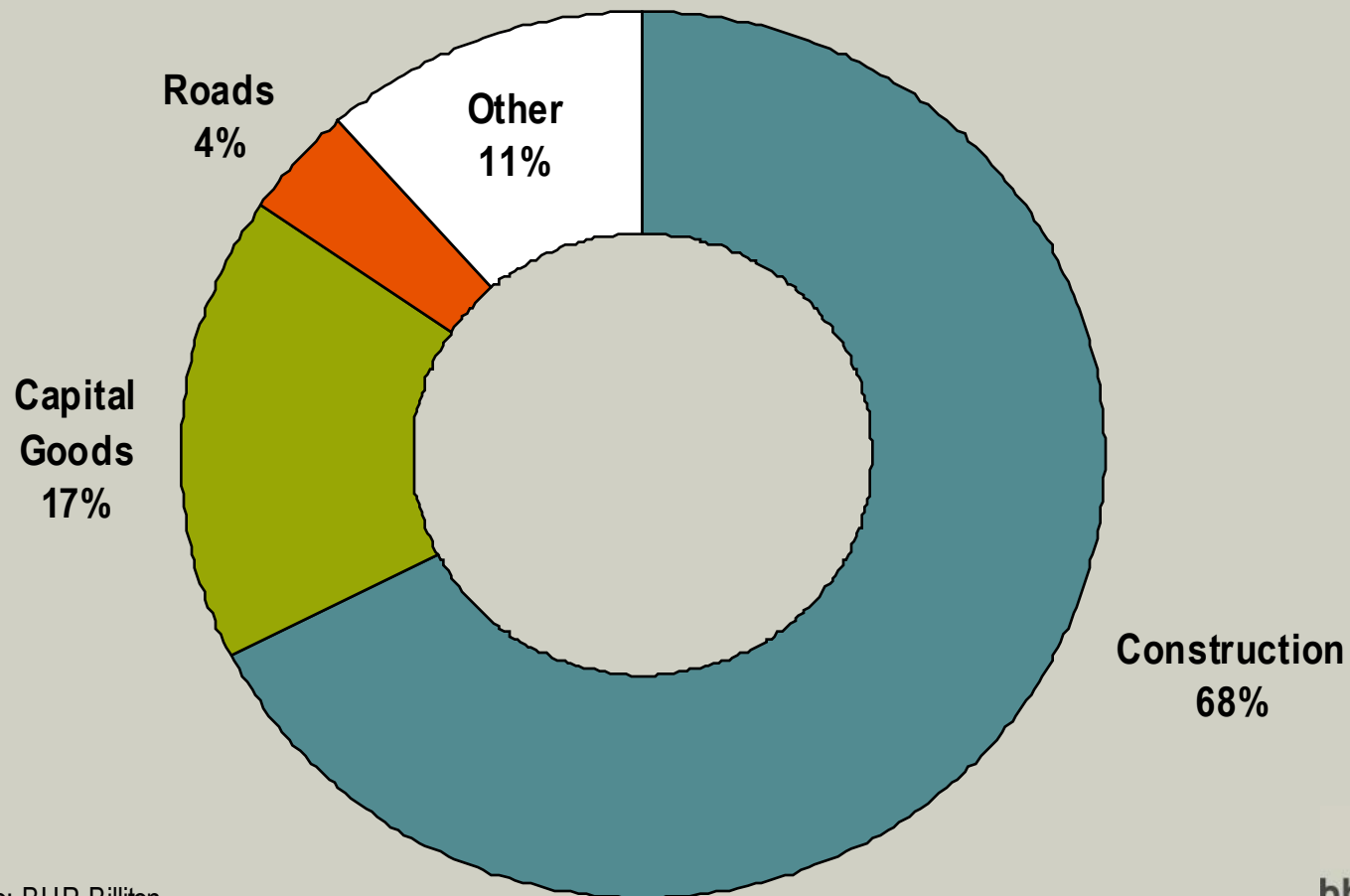




Likely economic development model “continental-maritime” not “export” in style

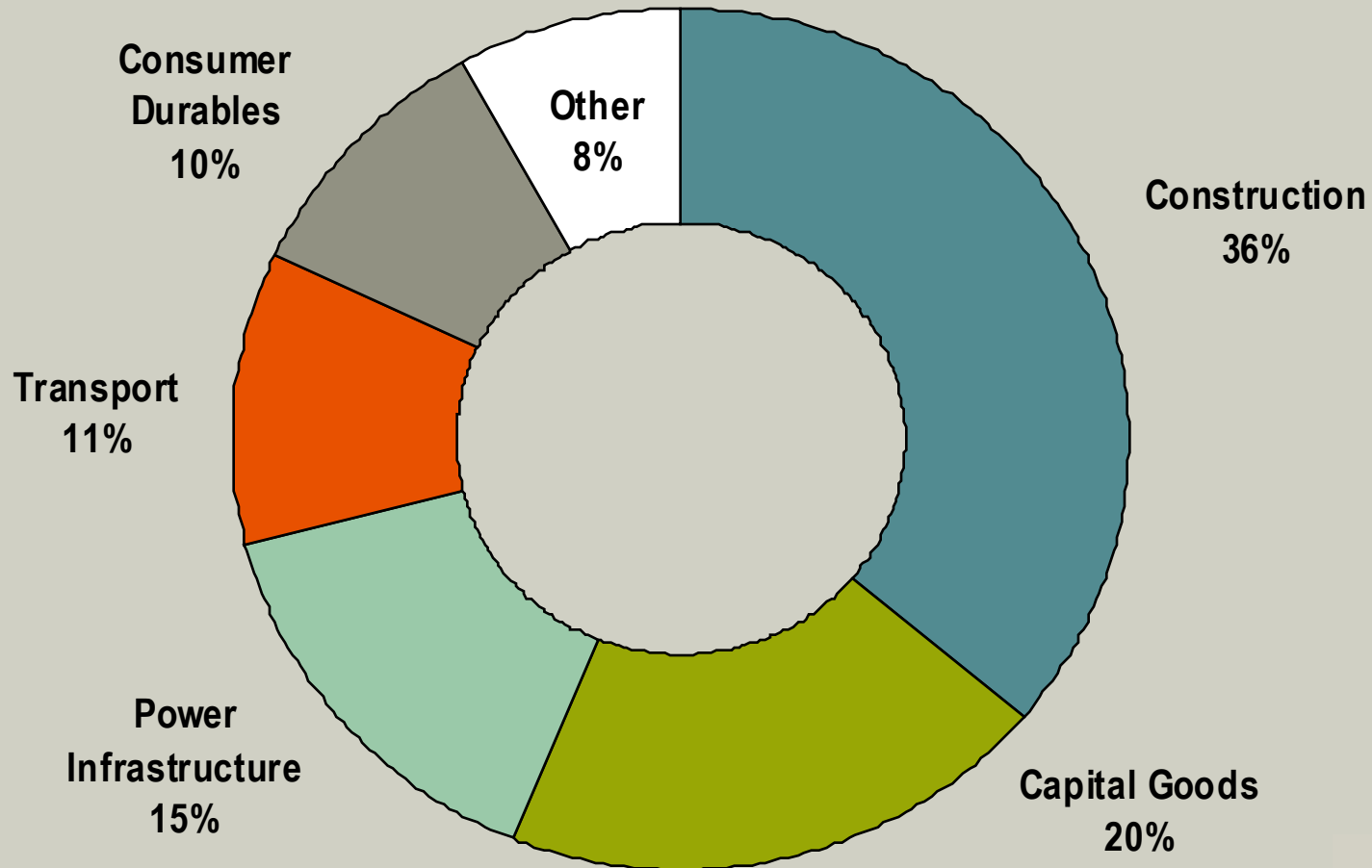
...High resource intensity in fixed investment

China steel consumption by category in 2003



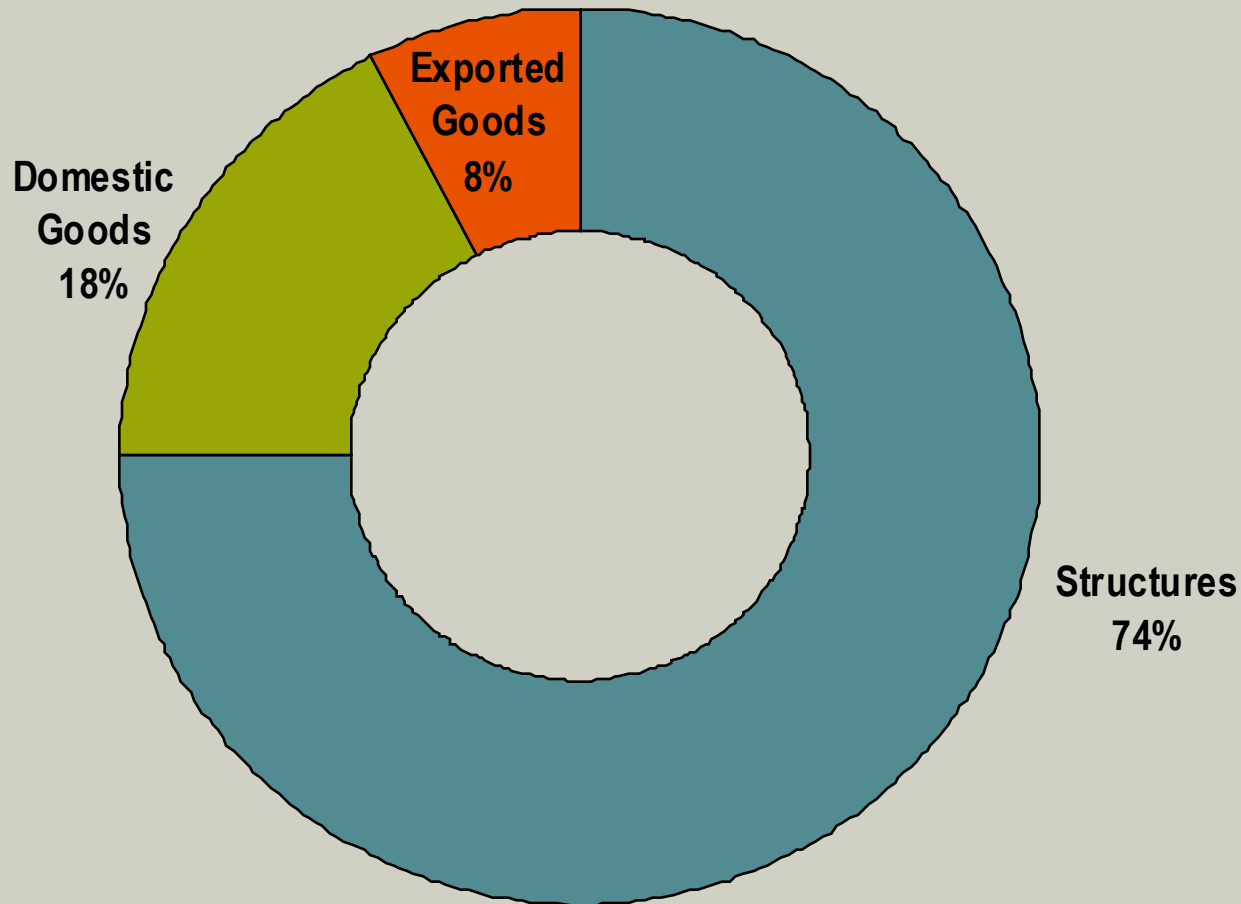
Likely economic development model “continental-maritime” not “export” in style

China aluminium consumption by category in 2003



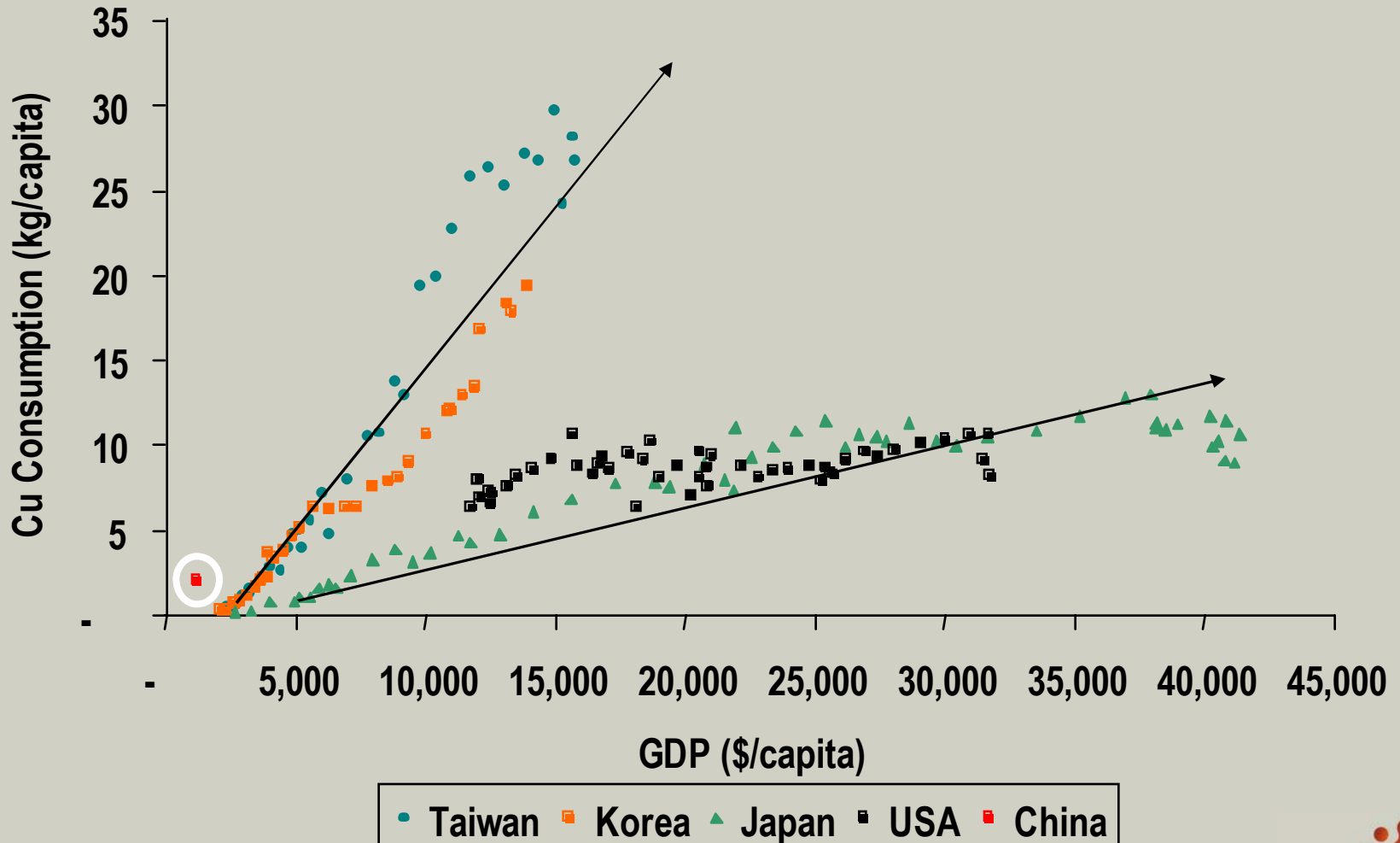
Likely economic development model “continental-maritime” not “export” in style

China copper consumption by category in 2003



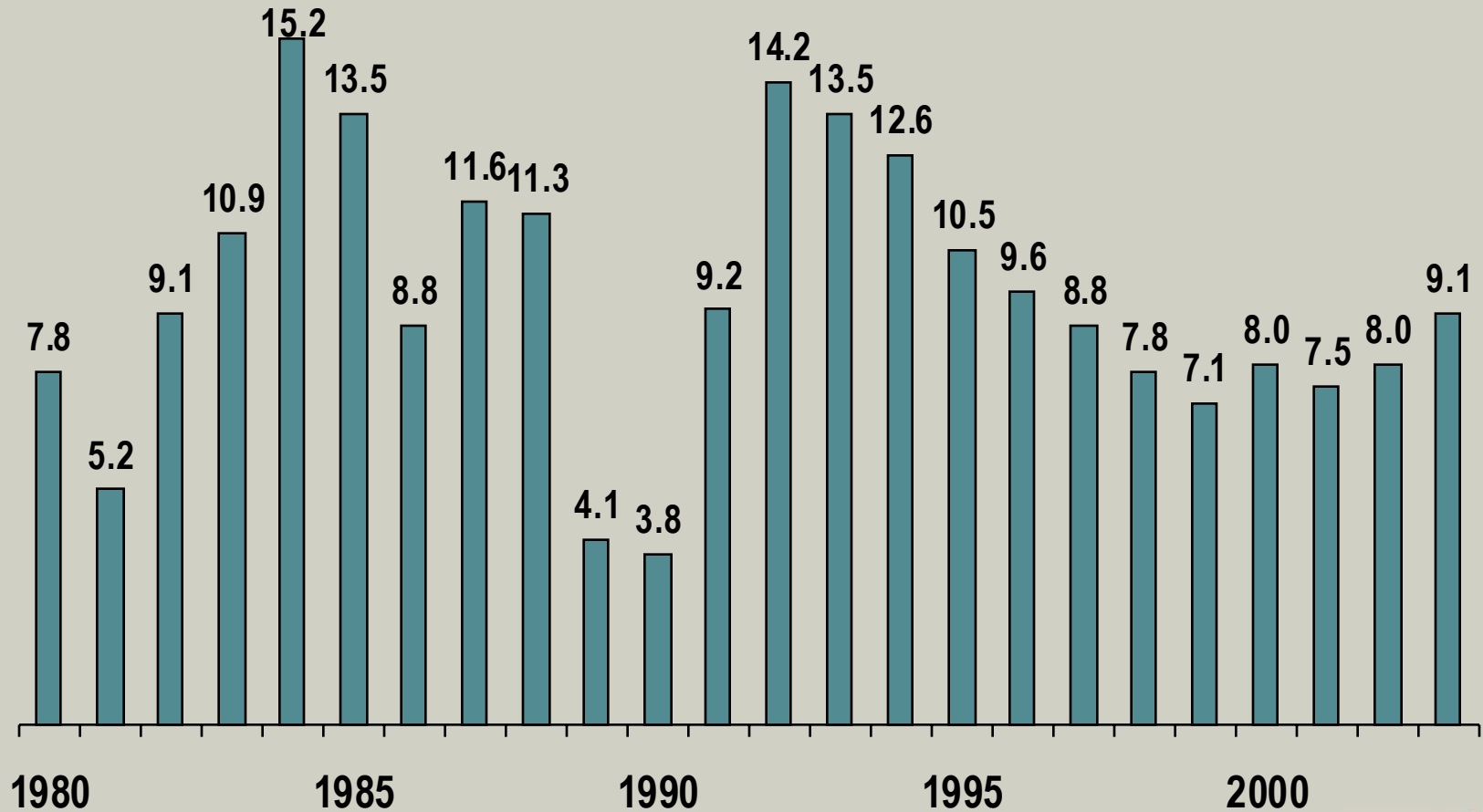
Likely economic development model “continental-maritime” not “export” in style

...China following a resources intensive path



China's growth is not a short term phenomenon (but it is cyclical)

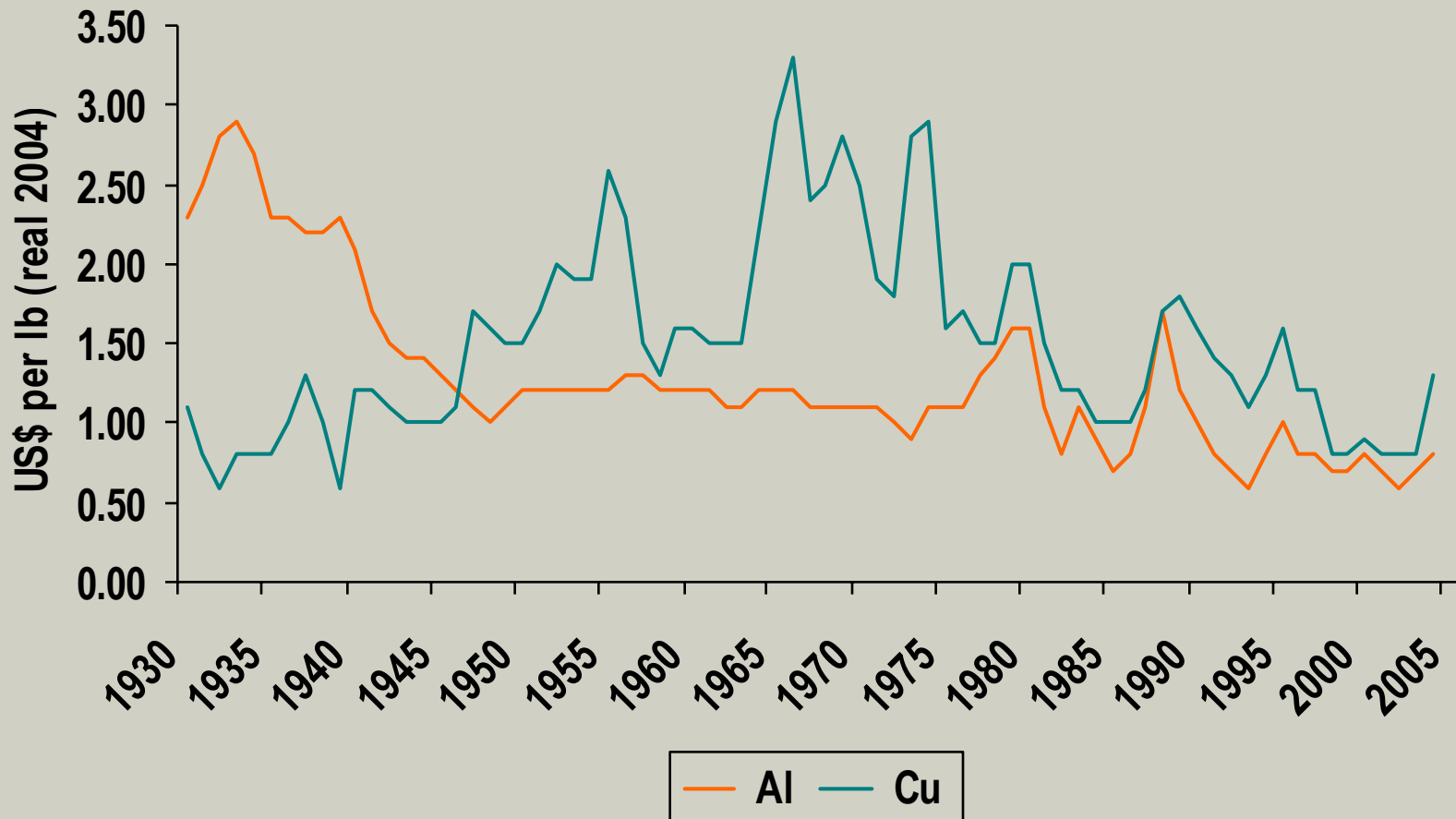
China GDP growth (%)



While short term spikes may exist, we do not expect permanent shortage of supply

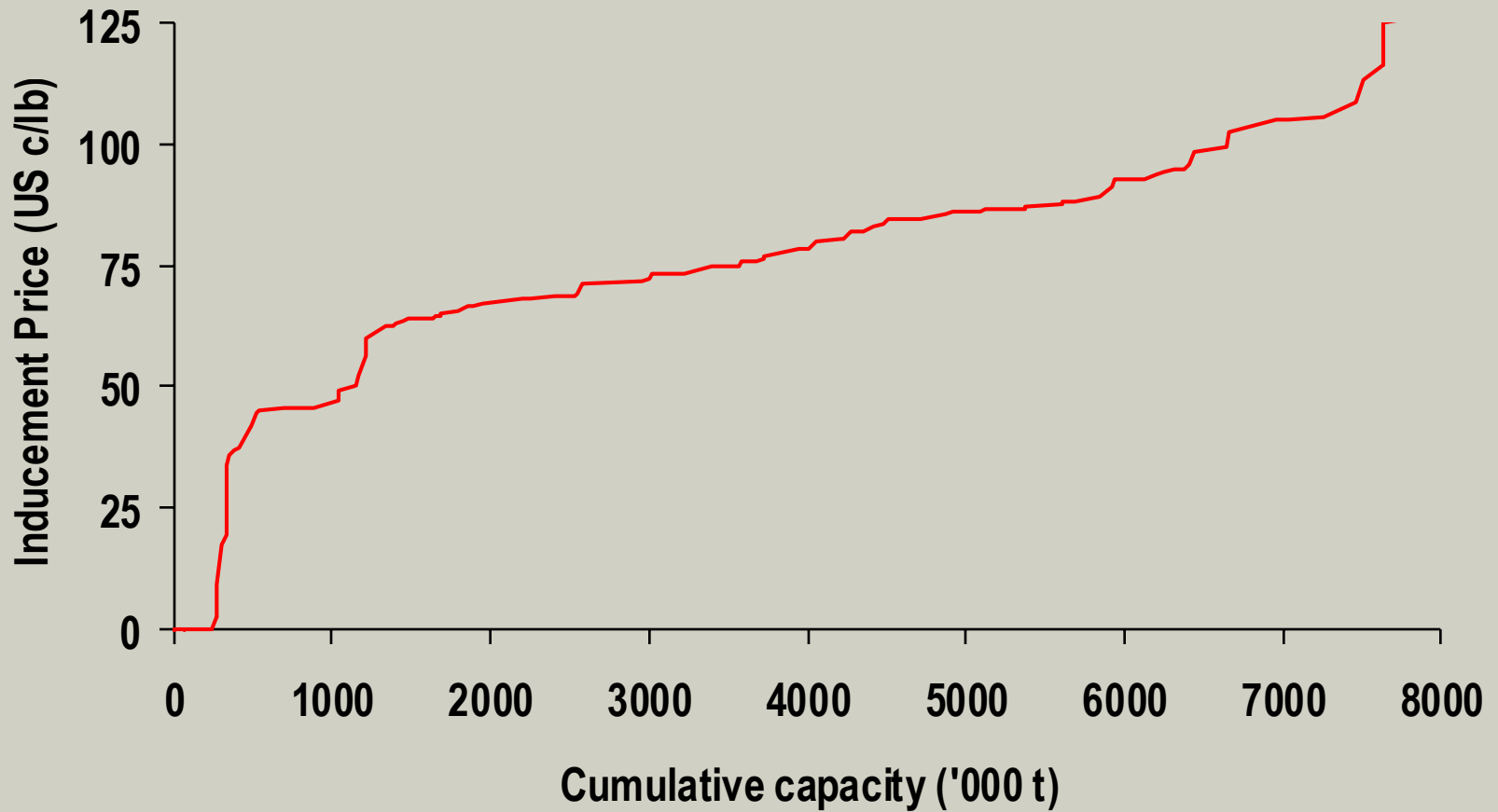
- **Price development will be different per commodity**
- **Prices (and expectations) are powerful inducers of capacity**
- **The gap between supply and demand can be filled**

Price development will be different per commodity



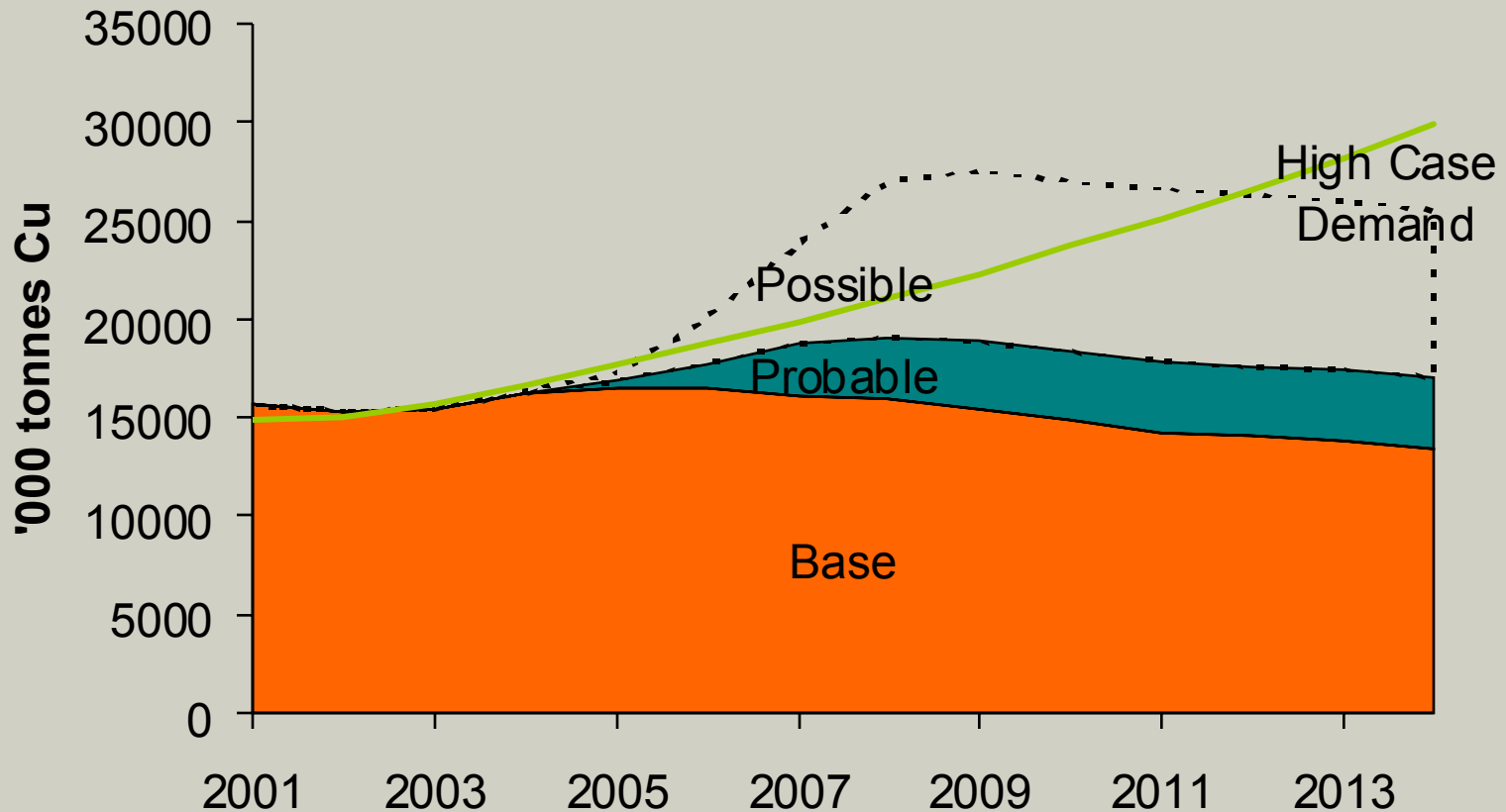
Prices are powerful inducers of capacity

Latent capacity - copper example



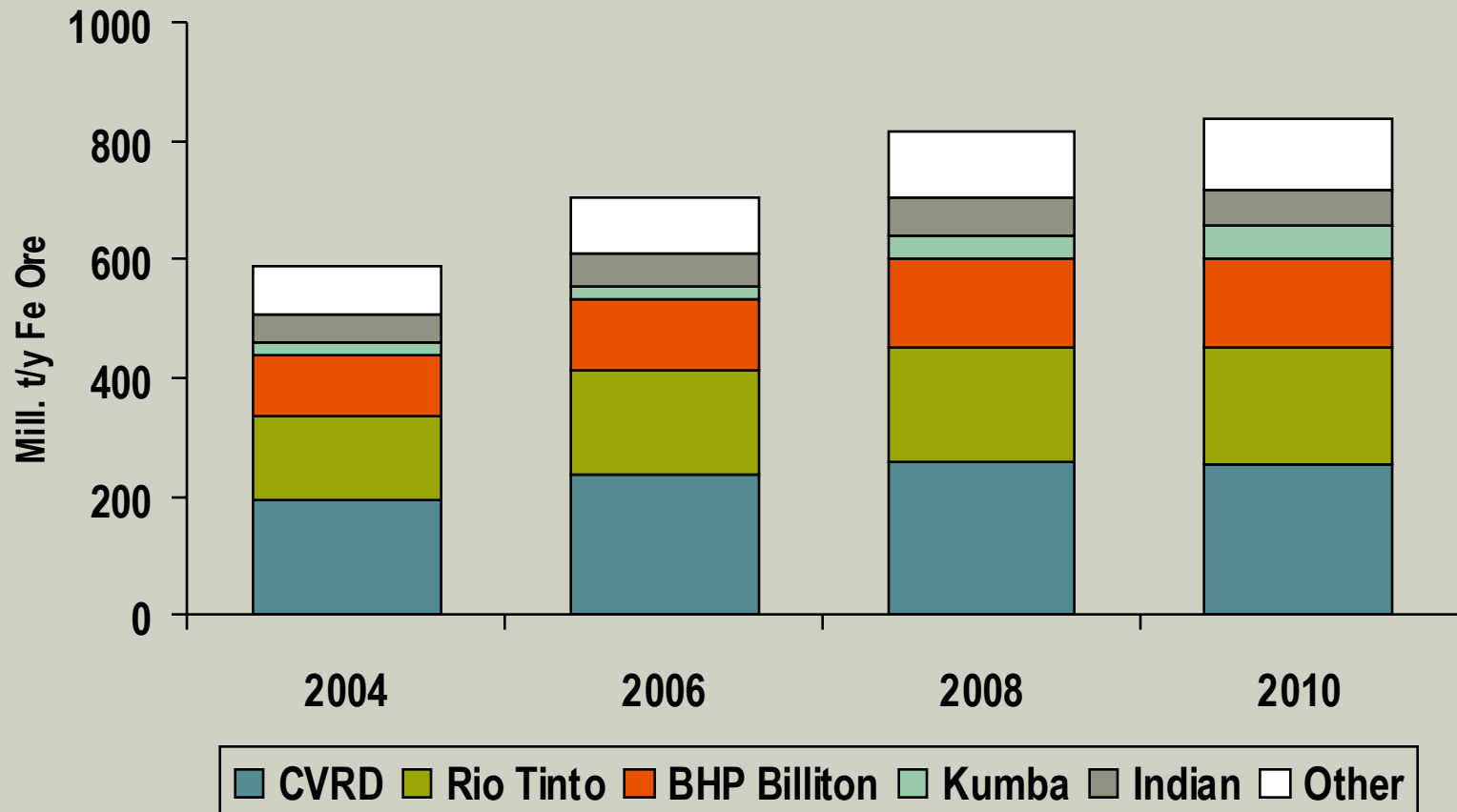
The gap between supply and demand can be filled

Latent capacity - copper example



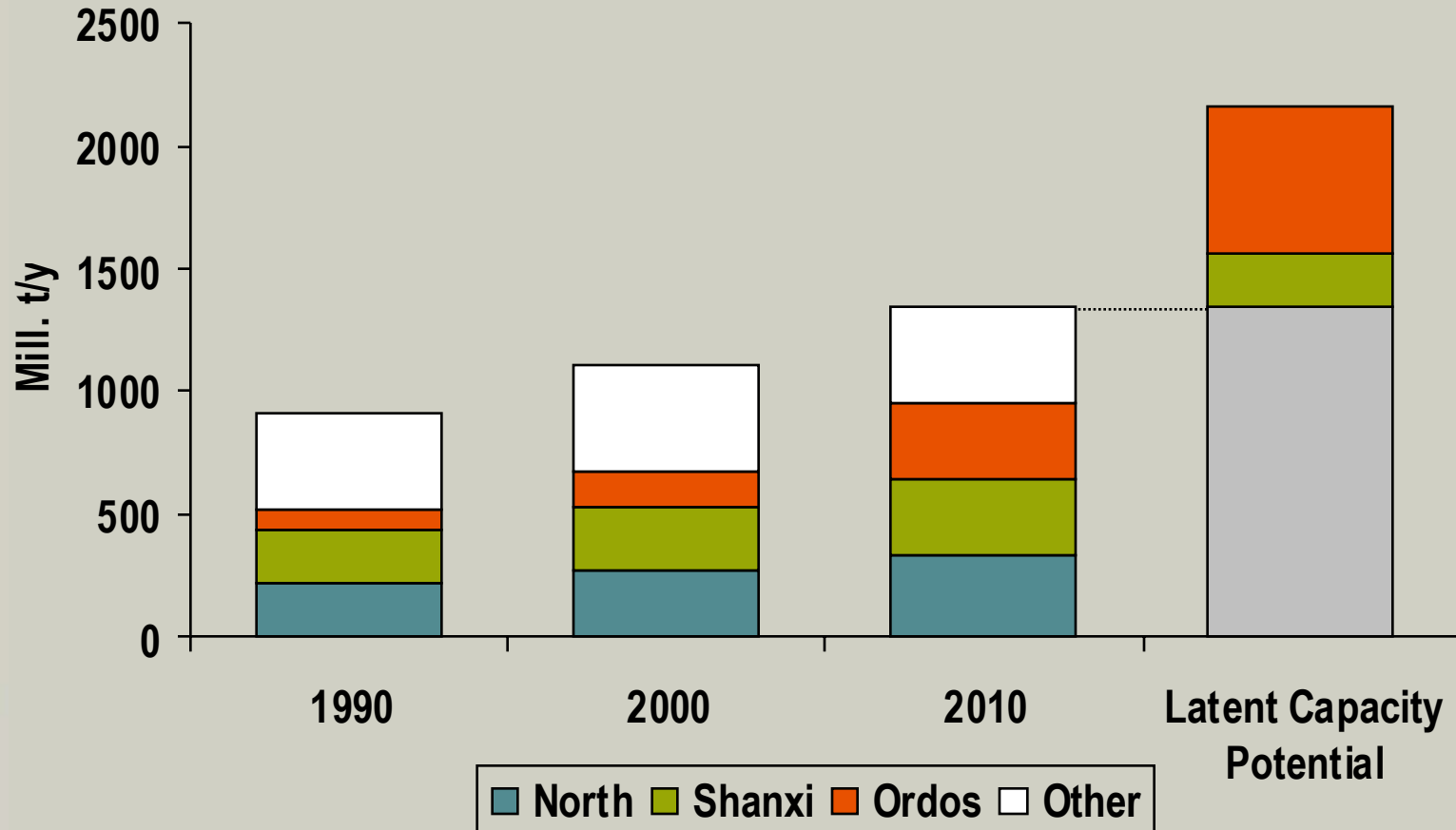
The gap between supply and demand can be filled

Latent capacity - iron ore example



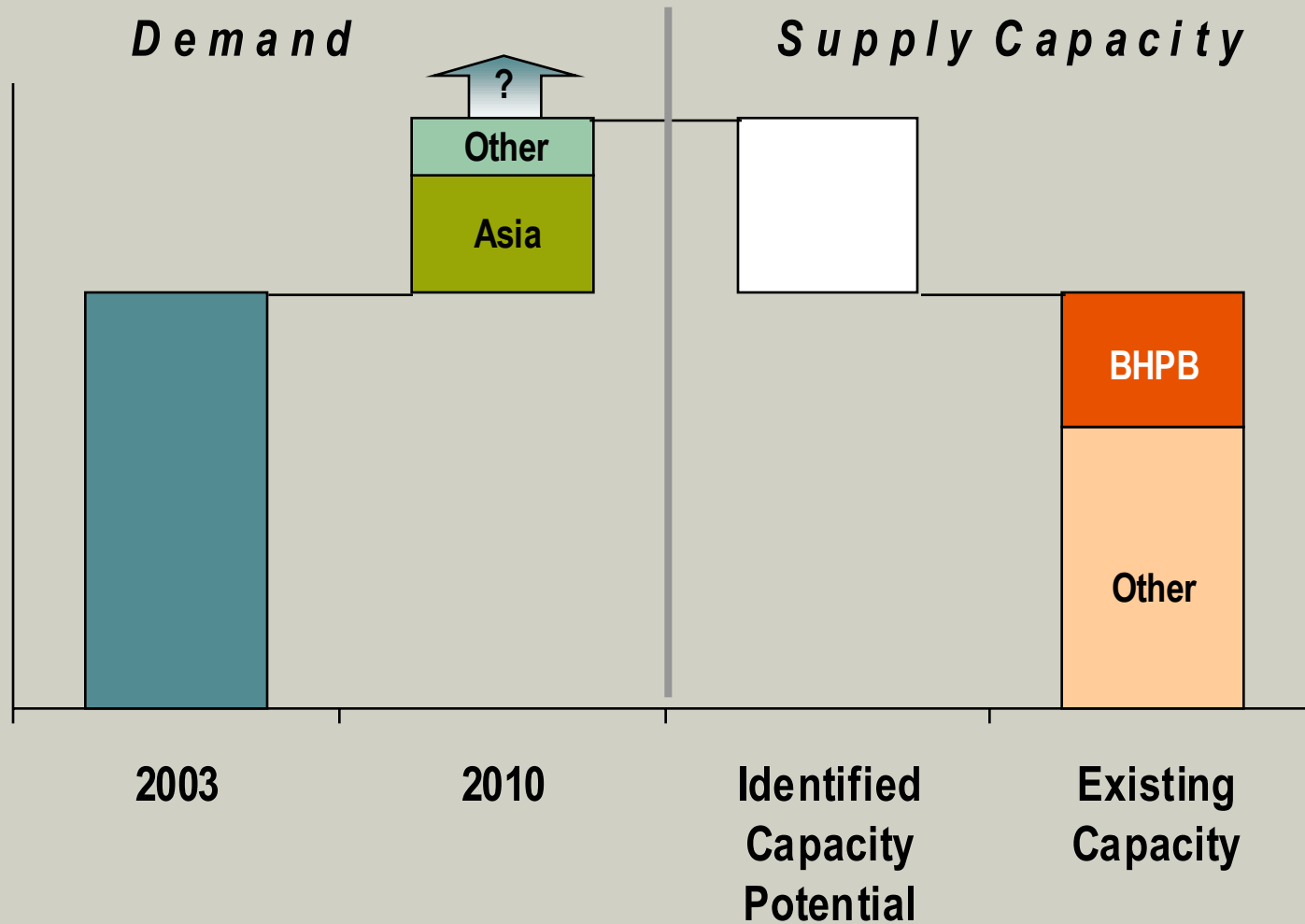
The gap between supply and demand can be filled

Latent capacity – energy coal in China



The gap between supply and demand can be filled

Latent capacity – seaborne hard coking coal example



Longer term global power shift should not be ignored when thinking about Chinese consumption...

...and demand 'S curves' for different minerals will not be identical

