

# Changing dynamics of the lead industry

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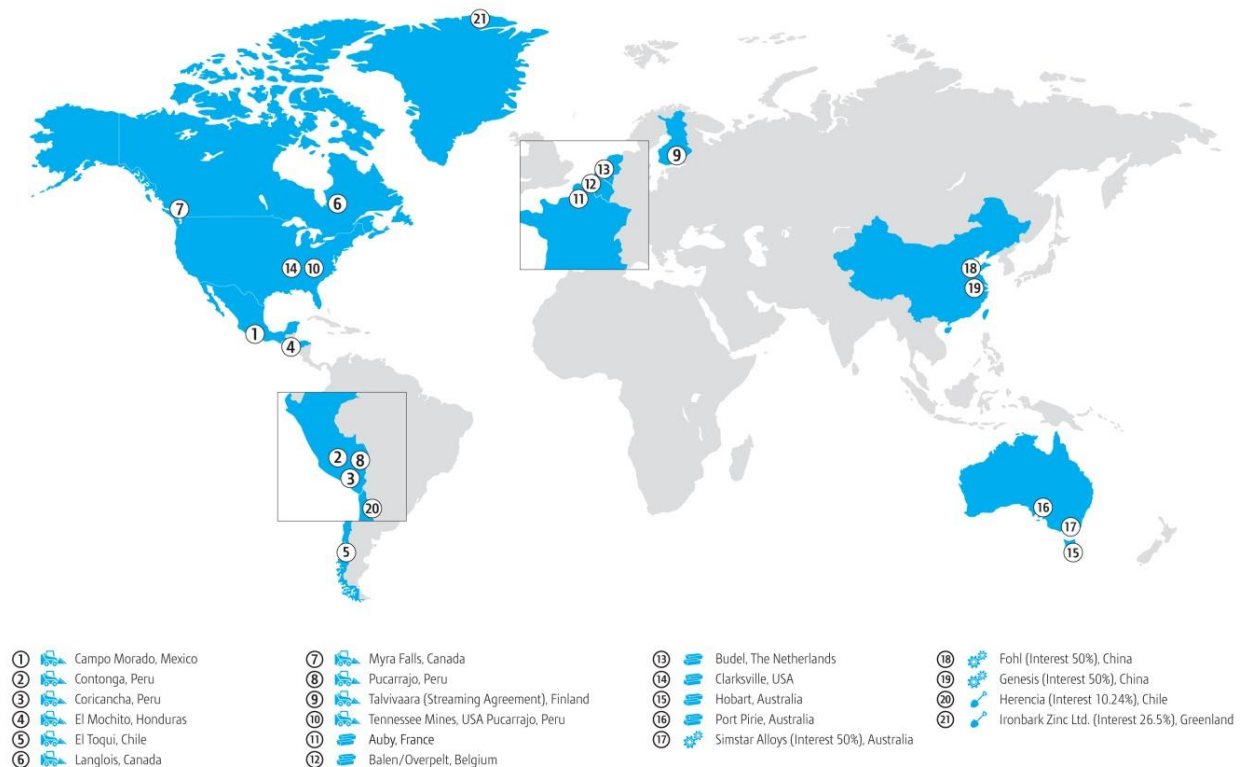
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## Nyrstar at a glance

Nyrstar is an integrated mining and metals business, with market leading positions in zinc and lead, and growing positions in other base and precious metals; essential resources that are fuelling the rapid urbanisation and industrialisation of our changing world. Nyrstar has its corporate office in Switzerland and is listed on NYSE Euronext Brussels under the symbol NYR.

### Geographically diverse multi-asset footprint

- One of the world's largest integrated zinc producers
  - 1.1 million tpa zinc metal
  - 475,000 tpa zinc in concentrate<sup>1</sup>
- Market leading position in lead
- Expanding multi-metals footprint
  - Copper, gold, silver and lead
- Nine mining operations
- Five zinc smelters, one lead smelter
- Employing over 7,000 people across five continents

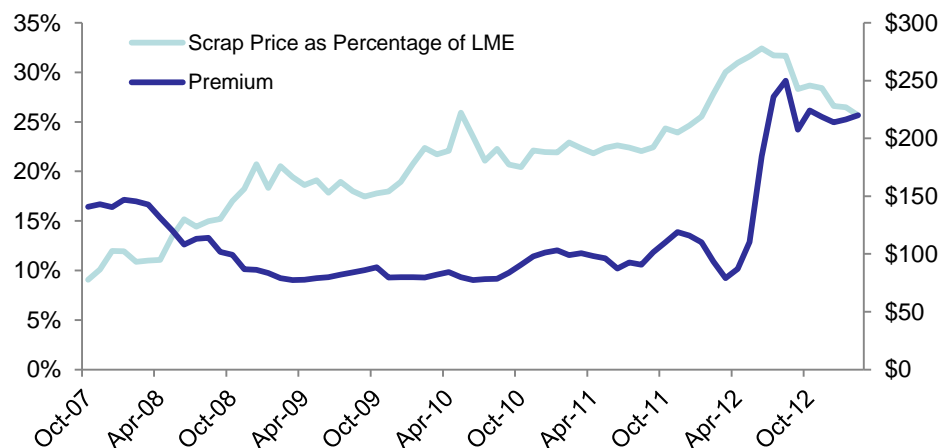


MINES/STREAMING AGREEMENTS
 SMELTERS
 OTHER OPERATIONS
 DEVELOPMENT

## 2012 review: Main reason lead premiums ticked up was response to rising scrap costs and strong regional demand

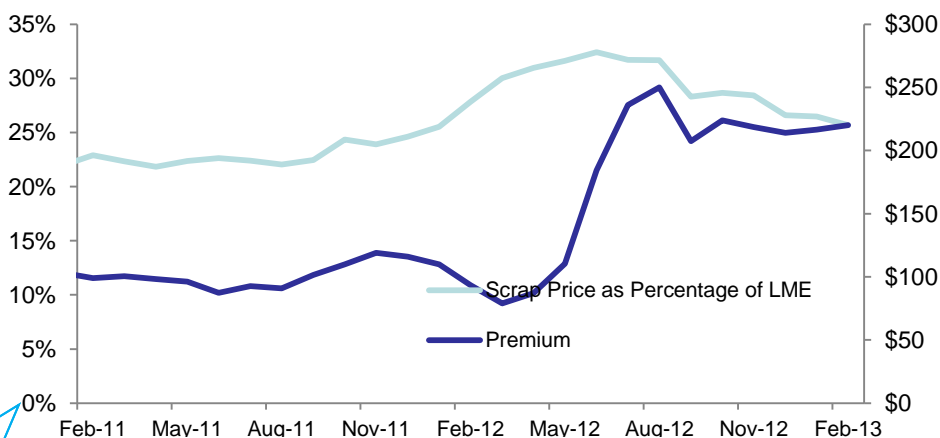
**Scrap Price**  
Percentage of LME

**Western Lead Premium**  
Dollars per ton



**Scrap Price**  
Percentage of LME

**Western Lead Premium**  
Dollars per ton



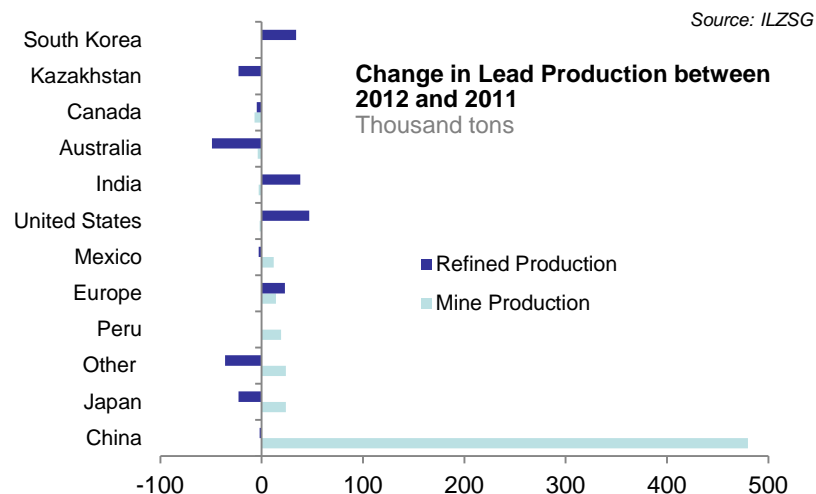
- Tight secondaries market gave upward pressure to prices and premiums
- Strong RoW demand tightened the refined market
- Smelter outages and strong mine growth in China kept the concentrate market in surplus
- Cost and availability of scrap batteries outside of China likely to be a defining factor of price and premium in 2013

\*Scrap prices are calculated using average of European and US prices, Premiums are averages of Western Premiums

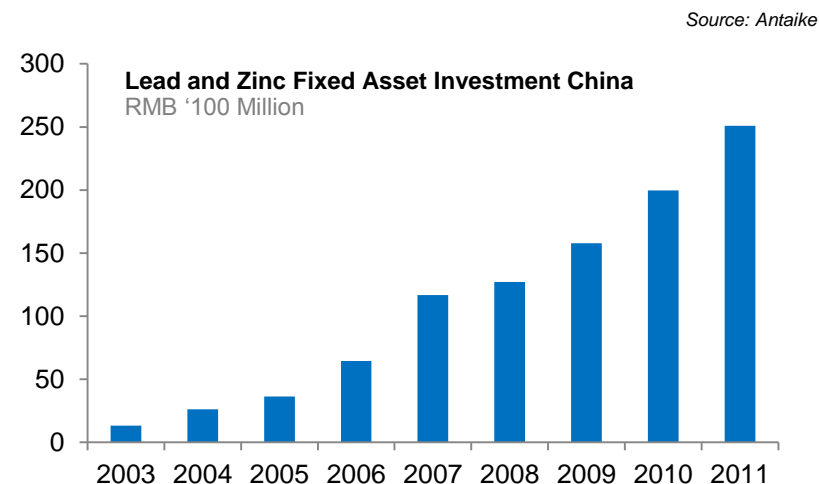
SOURCE: CRU International

# Tight scrap contrasts with concentrate surplus

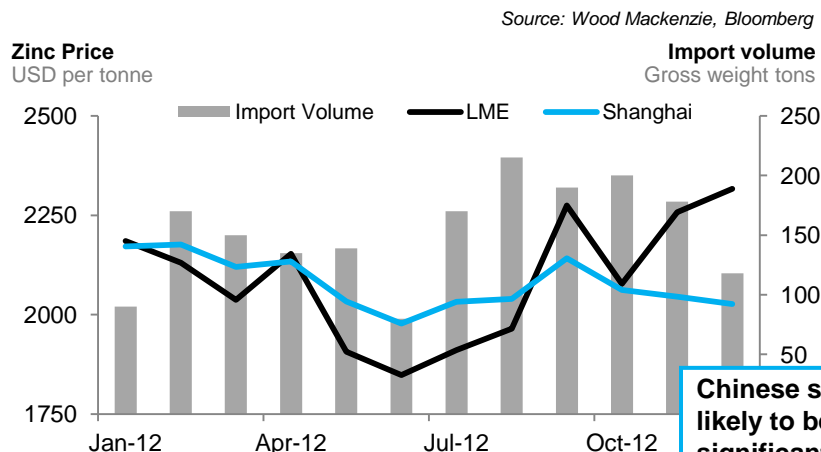
Bulk of mining growth has been in China which explains poorer appetite to import concentrate



Fixed asset investment implies strong mine growth will continue

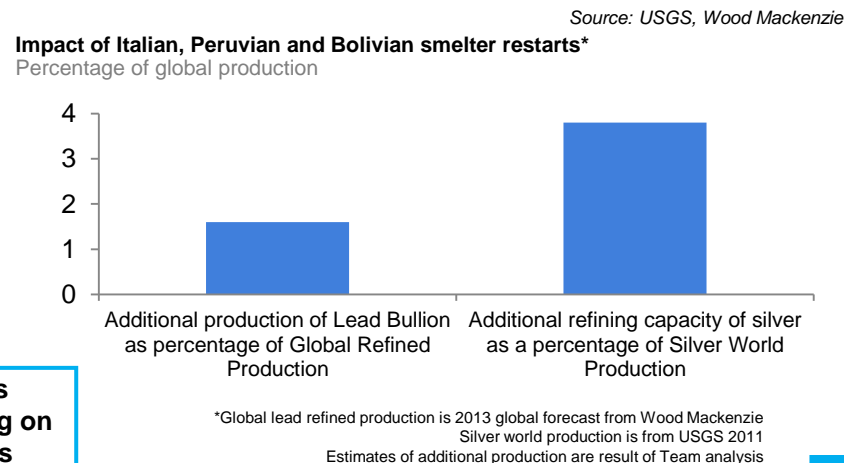


Arbitrage into China is closed so far and last time it was open in a big way the SHFE failed to rally



Chinese smelters likely to be sitting on significant stocks

Smelter restarts more likely to be attempt to mitigate high silver lead concentrate surplus

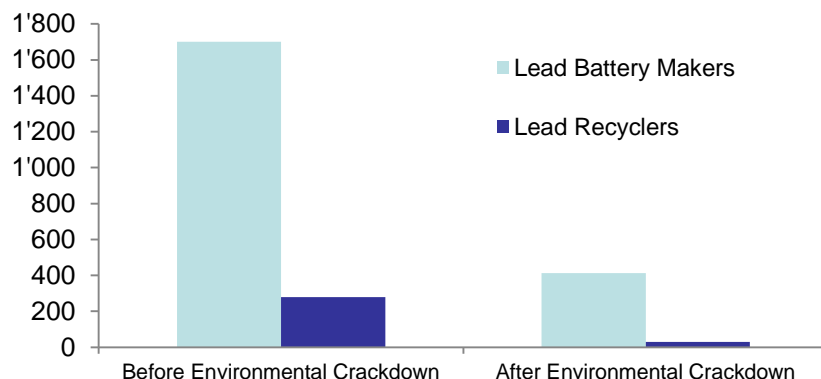


# Refined metal supply tightened by scrap and smelter cutbacks / closures

China saw demand and (recycling supply) disruption due to environmental crackdowns

Source: Wood Mackenzie

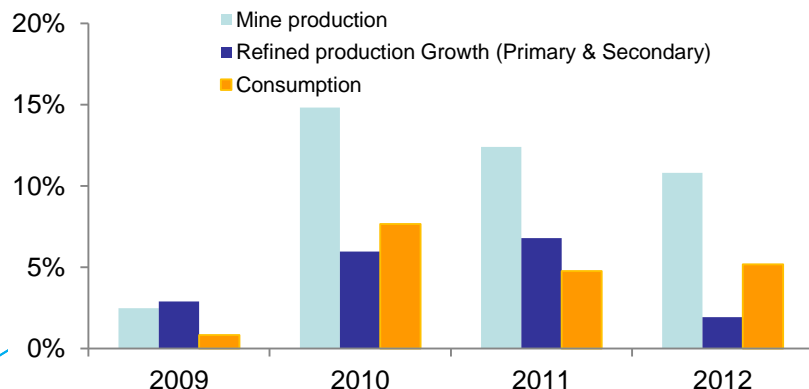
Number of registered enterprises



Poor economics for smelting meant that it could not plug the gap, in spite of significant mine growth

Source: Wood Mackenzie

Year on year growth  
Percentage

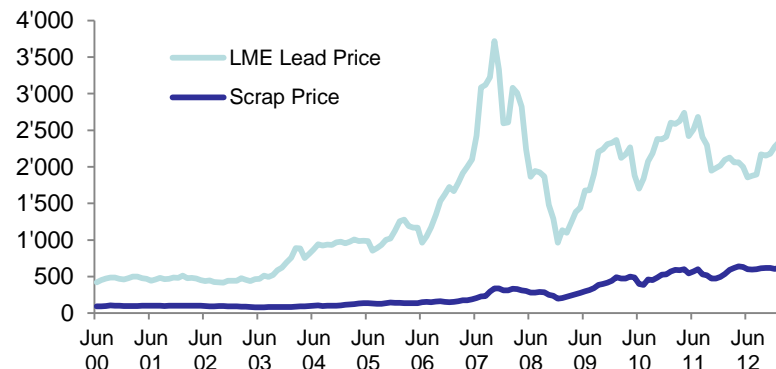


High scrap recycling rates in the west and high prices means little slack in the system

Source: CRU International

Unit cost

USD per tonne



\*Scrap prices are calculated using average of European and US prices

Smelter closures and disruptions have added to the tightness

Source: Wood Mackenzie

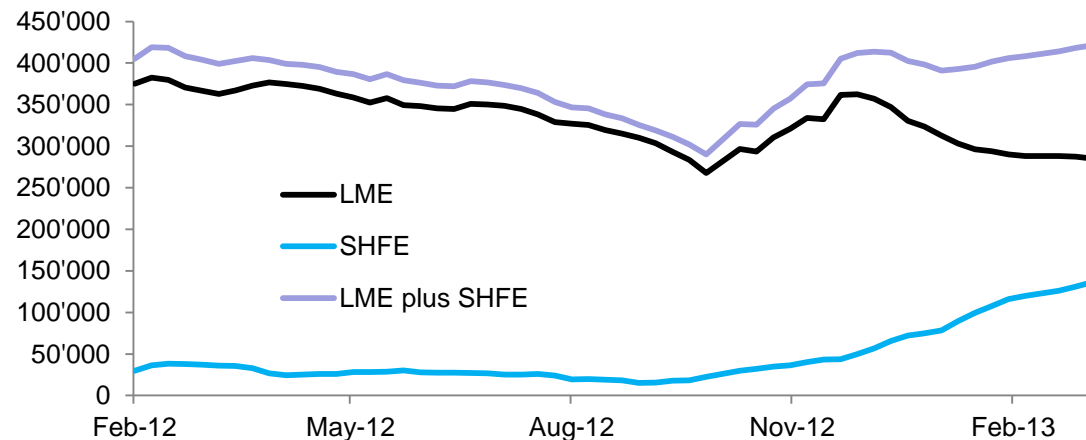
Refined lead disruptions	Country	Capacity kt Pb	Comments
La Oroya	Peru	100	Closed 2009, restarting
Kardjali	Bulgaria	40	Closed April 2011
Oued El Heimer	Morocco	70	Closed mid 2012
Port Pirie	Australia	250	Some disruptions in H2 2012
Onsan	S. Korea	280	Closed for maintenance in Q4 2012
Vedanta	India	185	Brand suspended from LME in July 2012, suspension lifted in February 2013
Herculaneum	US	155	To close end of 2013



## China and the RoW experiencing contrasting market conditions

### Lead Metal Inventories

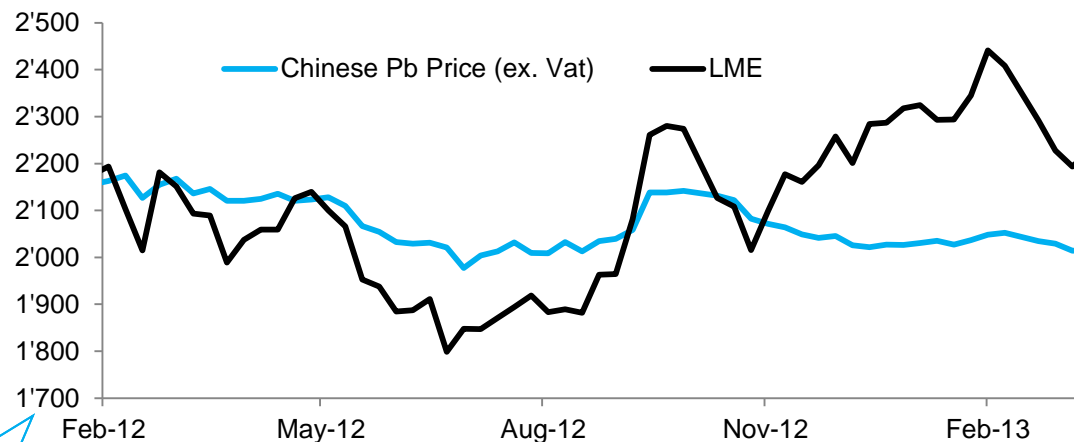
Tonnes



- Lead supply in the RoW has been tight as a result of healthy demand and supply side issues
- China has exhibited relatively weaker demand and low interest in lead concentrates
- Demand likely due to political uncertainty in 2012 and this weakness is likely to pass in H2 2013

### Lead Price

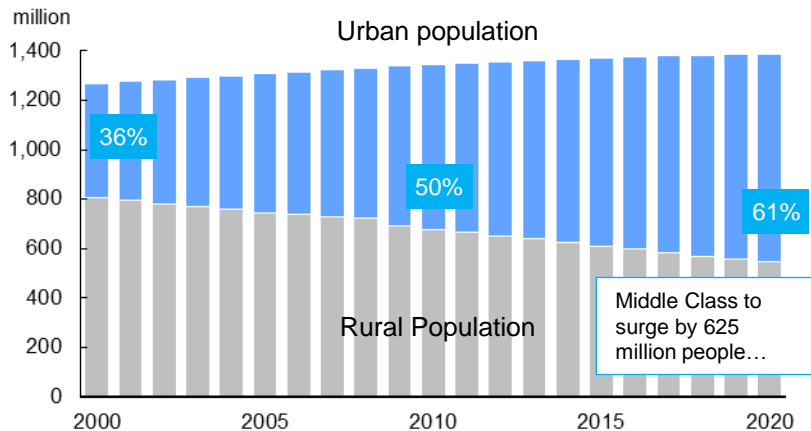
USD per tonne



# China GDP growth may slow but for lead we are still far from peak demand

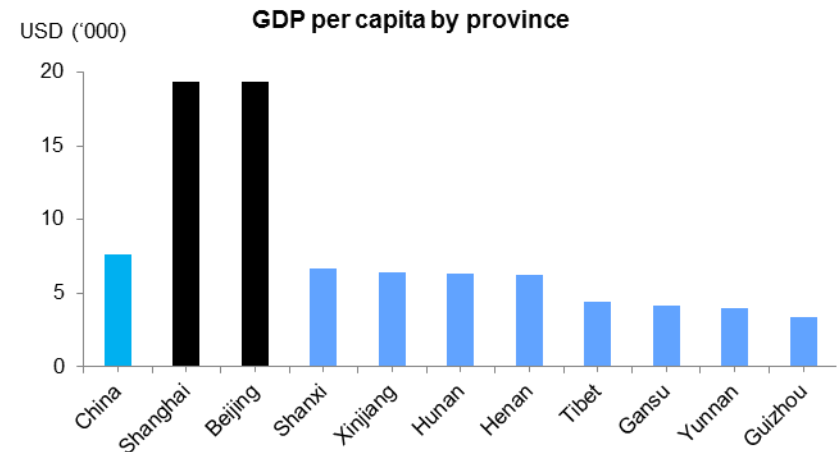
Increasing population, becoming more urbanized  
infrastructure, products and services required

Source: McKinsey



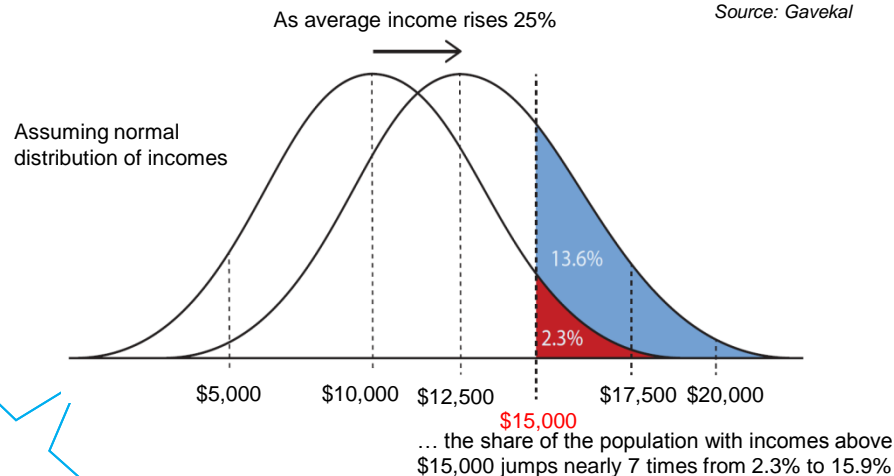
Coastal growth extends to the interior  
Urbanization and industrialization continues

Source: WEFA-WMM, IMF



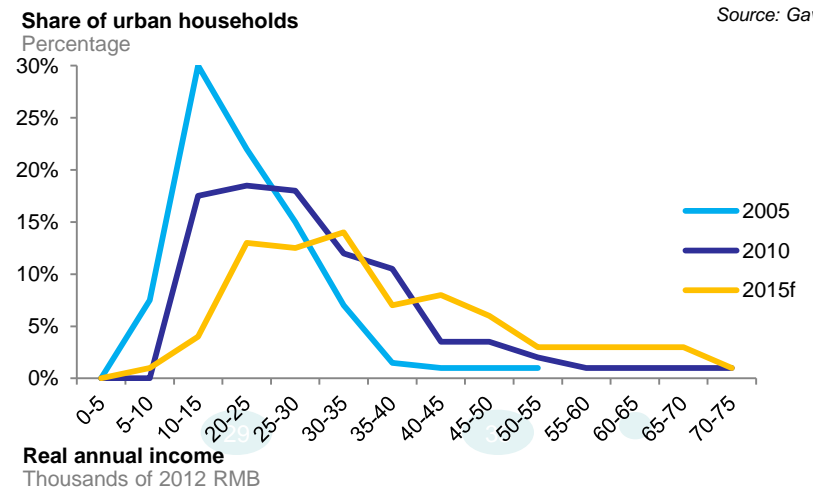
Increasing salaries can exponentially change demand  
patterns

Source: Gavekal



Reality looks something more like this but also means  
some strong consumption increases ahead

Source: Gavekal



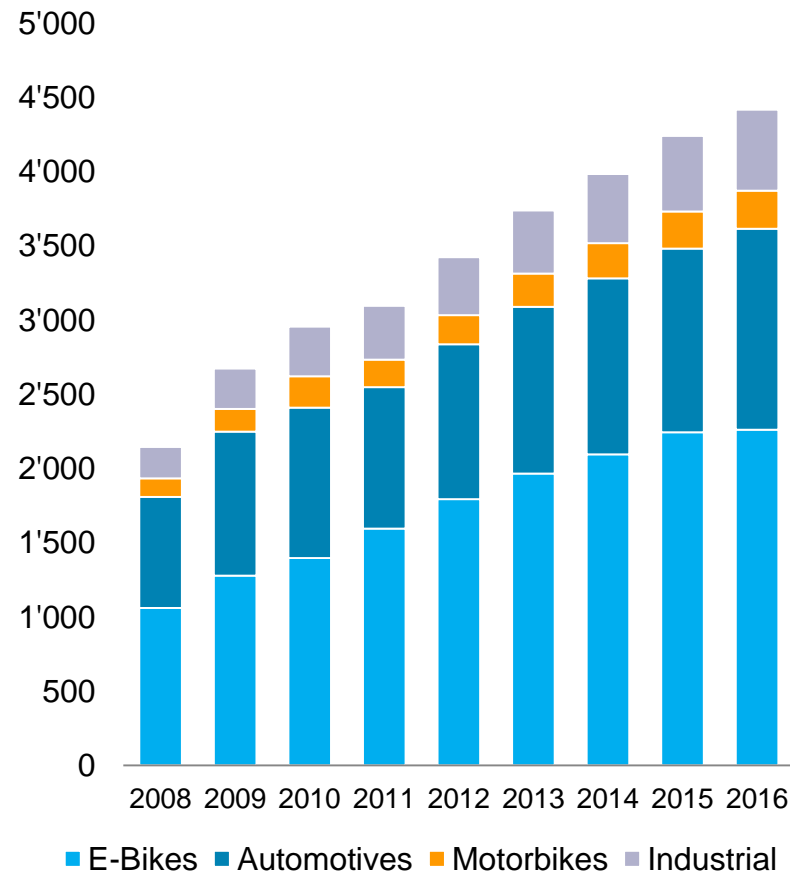


# E-Bike story far from over but key demand driver likely to be global telecoms sector and energy storage

## China's projected lead consumption by end use

### China lead consumption by end use

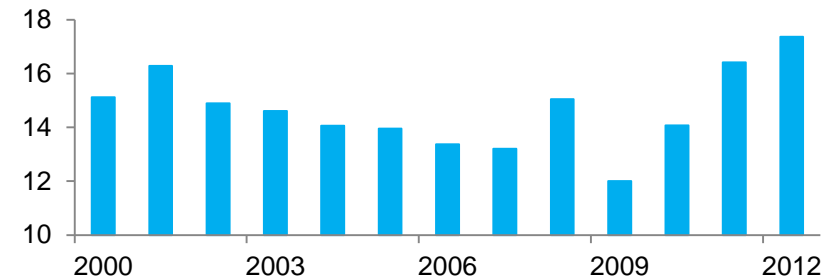
Thousand tonnes



## Strong demand growth potential from global infrastructure

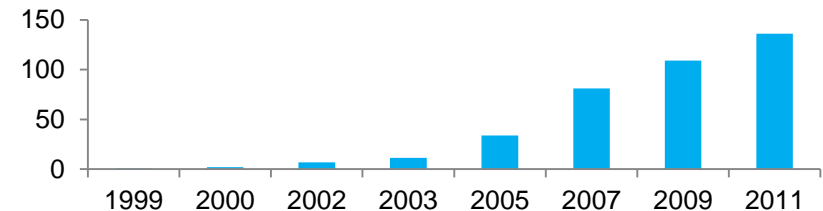
### Wireless Capex as % of Wireless revenues (Europe)

Percentage



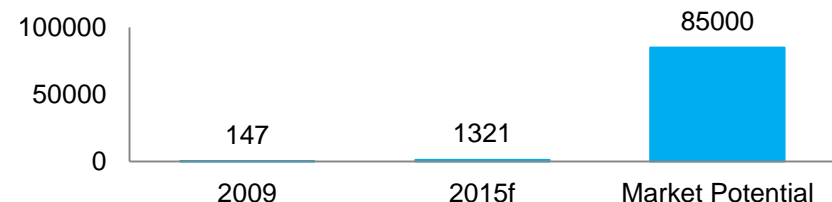
### Market for data storage & use of equipment

USDbn



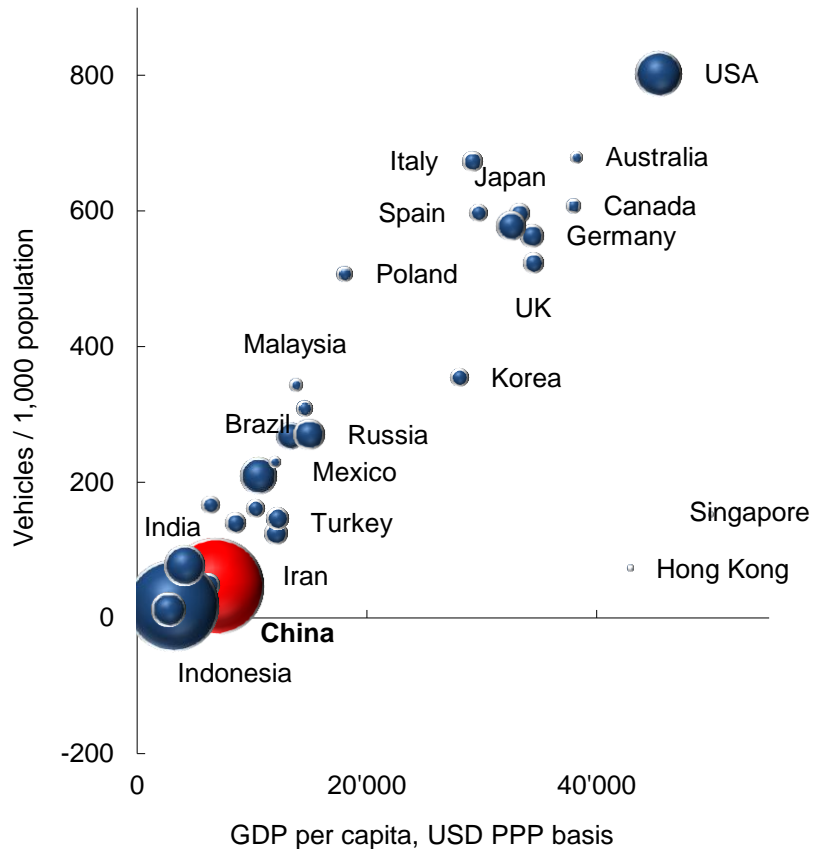
### US Energy Oriented Storage (Load leveling) market projections

MW capacity



# Global auto production still very positive

## Vehicle ownership relative to income

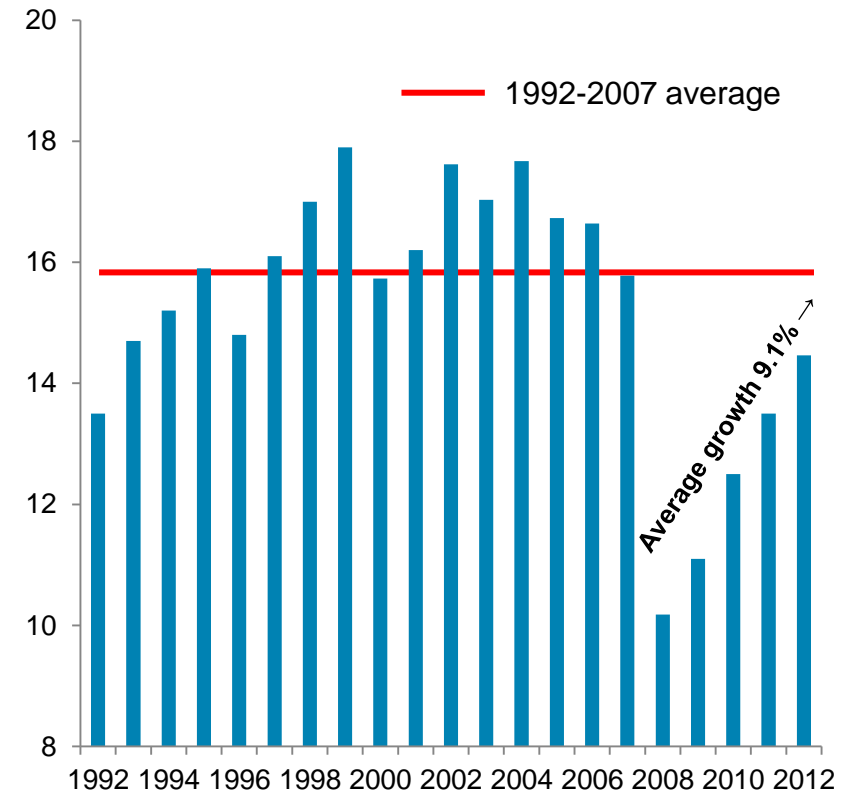


**Increased income expected to increase car ownership**

## Still plenty of upside for US auto demand

### US annual car sales

Millions



**Stop-start batteries could provide further upside to demand potential**

## Conclusions – what are the changing dynamics?

### Old

- Mining balance motivated the lead price
- E-Bike demand was the leading indicator of demand growth (E-bike story not yet done!)
- Secondary supply absorbed price spikes
- Early part of the China boom meant high correlation of consumer items with GDP growth

### New

- Mining becoming less relevant to cost support
- Infrastructure spending could be the new lead indicator (not just in China)
- Secondary production provides cost support
- Income acceleration means this relationship is likely to be more volatile

**Scrap market likely to continue to be significant price driver**

**Market has significant potential of supply/demand shocks**

Port Pirie

# QUESTIONS

