

# Macro perspectives on the future of galvanizing

Kareem Barbir, Market Analyst

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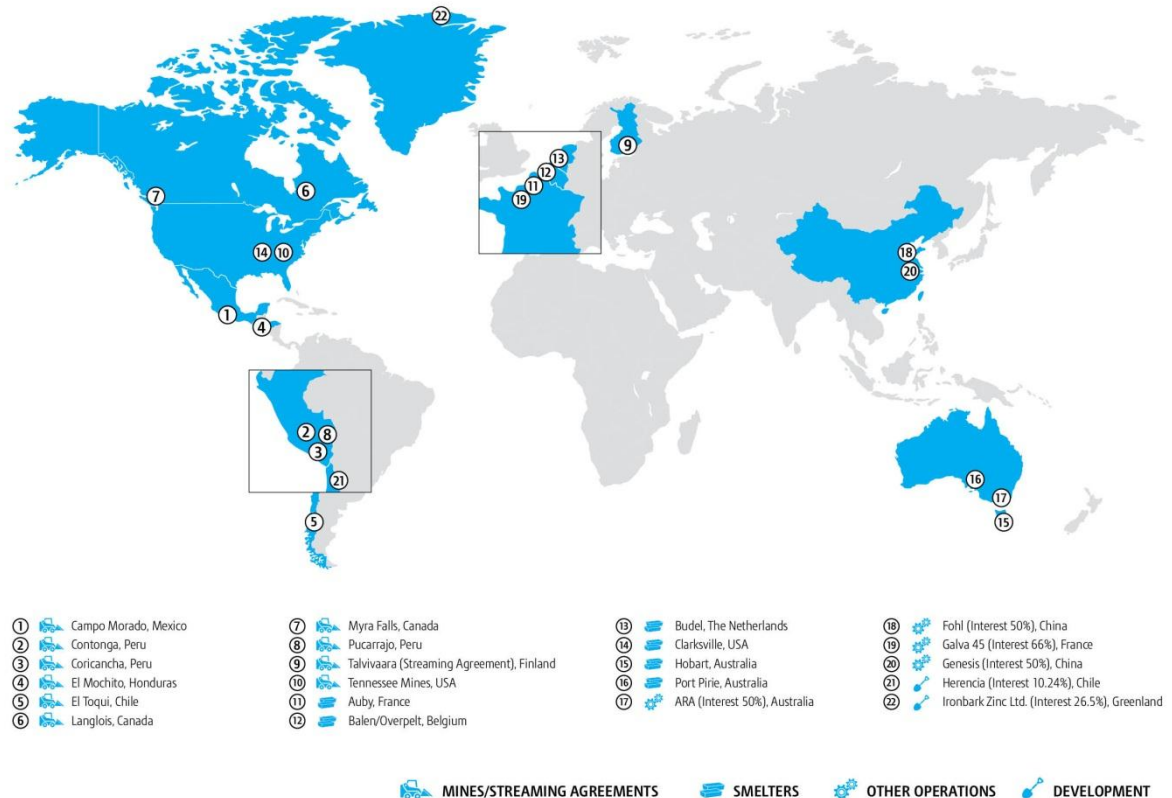
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## Nyrstar's expanding global multi-metals footprint

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 is incorporated in Belgium and has its corporate office in Switzerland. Nyrstar is listed on NYSE Euronext Brussels under the symbol NYR, and is a member of the BEL20.

- 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
  - Growing production of copper, gold, silver and lead
- Nine mining operations
- Six smelters
- Employing over 7,000 people across five continents



## Summary

- Macroeconomic conditions have been mixed but 2012 has been a very good year for galvanizing demand on a global basis.
- Focus will be on China, because in absolute terms it is the most significant driver of metals demand.
  - Review of the urbanization and industrialization story
  - Demonstrate that demand has still a long way to go before it peaks
- Highlight another important structural change in the US economy and why this has strong upside potential for galvanizing and metal demand.

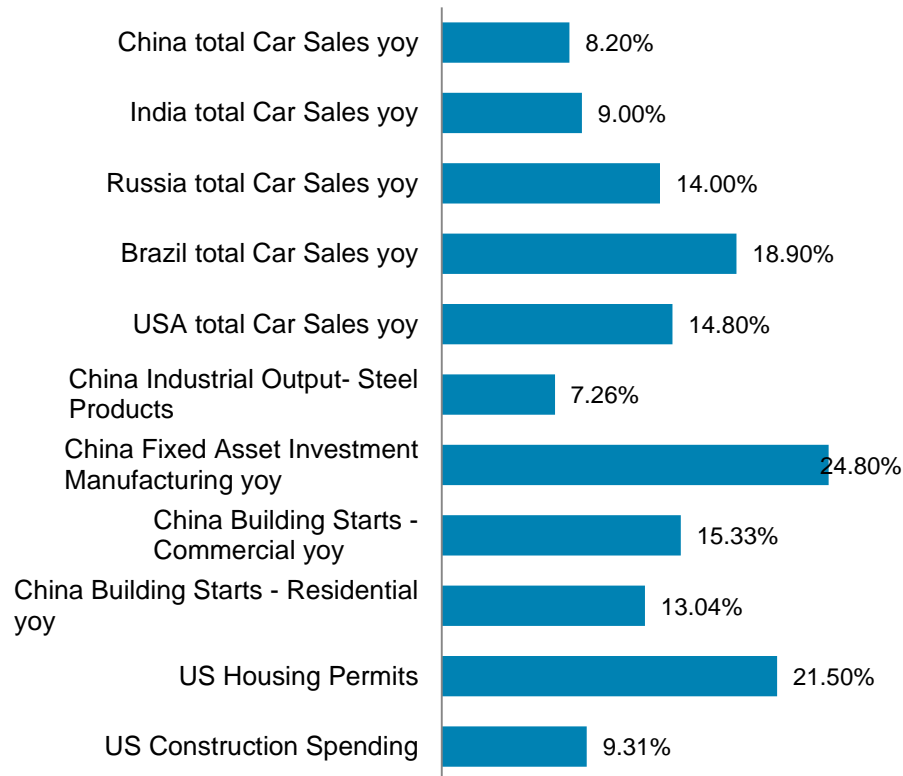
## Contents

- Current market conditions
- Commodity super cycle revisited
- Other structural trends
- Conclusions

## Automotive and Construction sectors are still showing encouraging signs

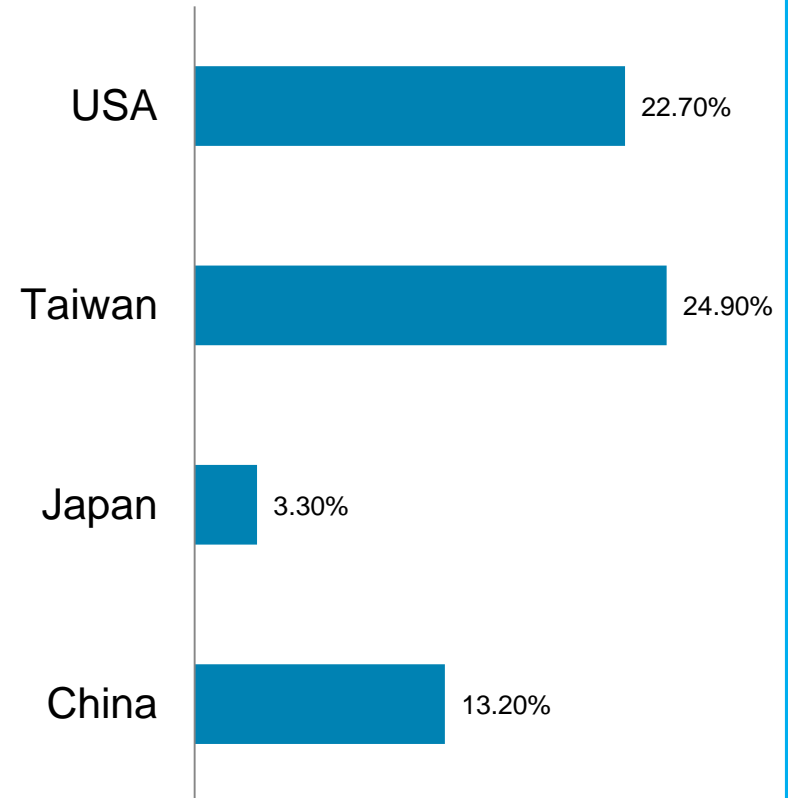
### Performance of key indicators

Year on year growth (Most recent figures)



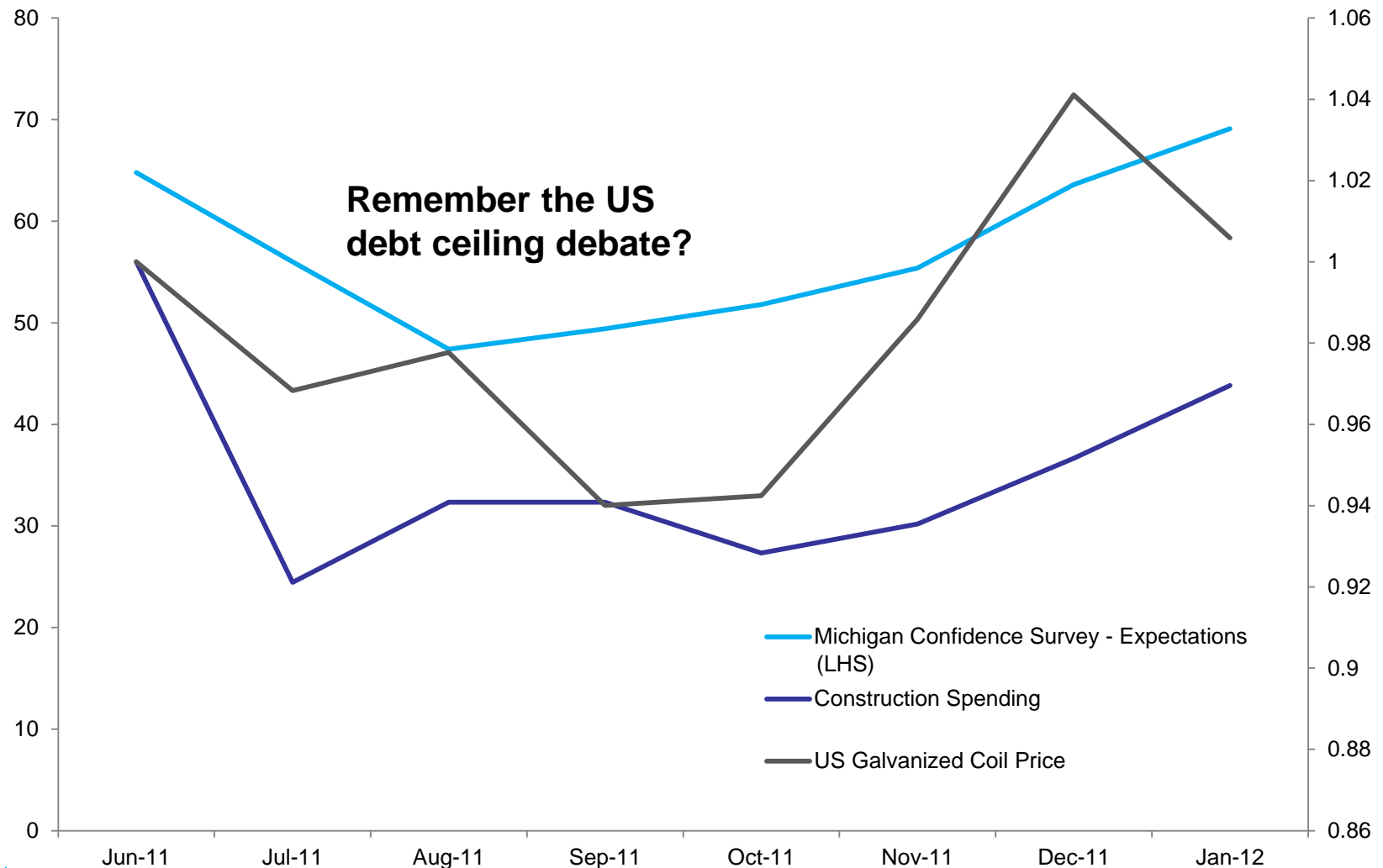
SOURCE: Bloomberg

### Galvanized Sheet Output Ytd Change



SOURCE: Wood MacKenzie, NBS, JISCO, TSIIA, AISI

## Europe is still a weak spot but sentiment can change very quickly when even temporary political solutions are found



SOURCE: Bloomberg

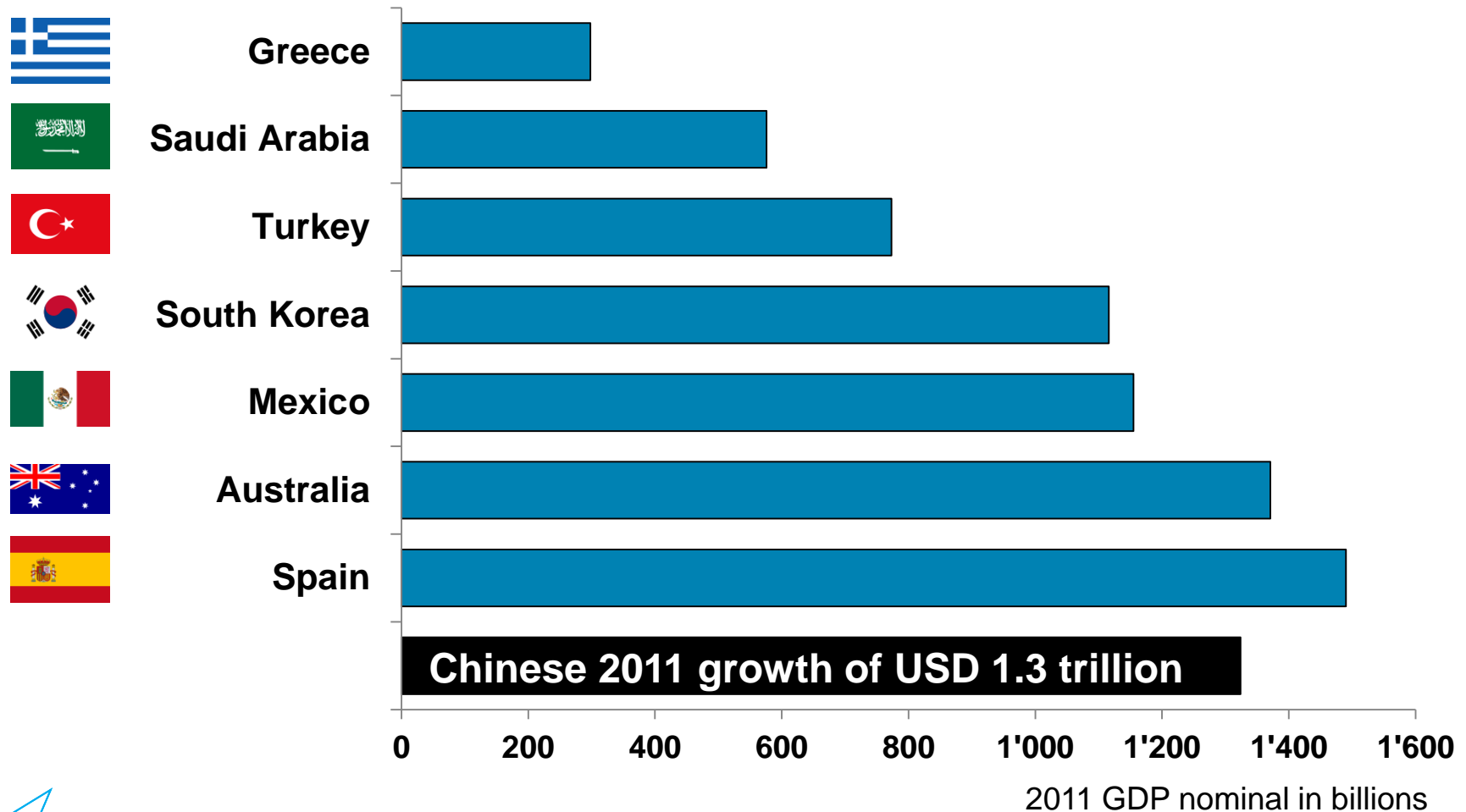
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## Why the focus on China?

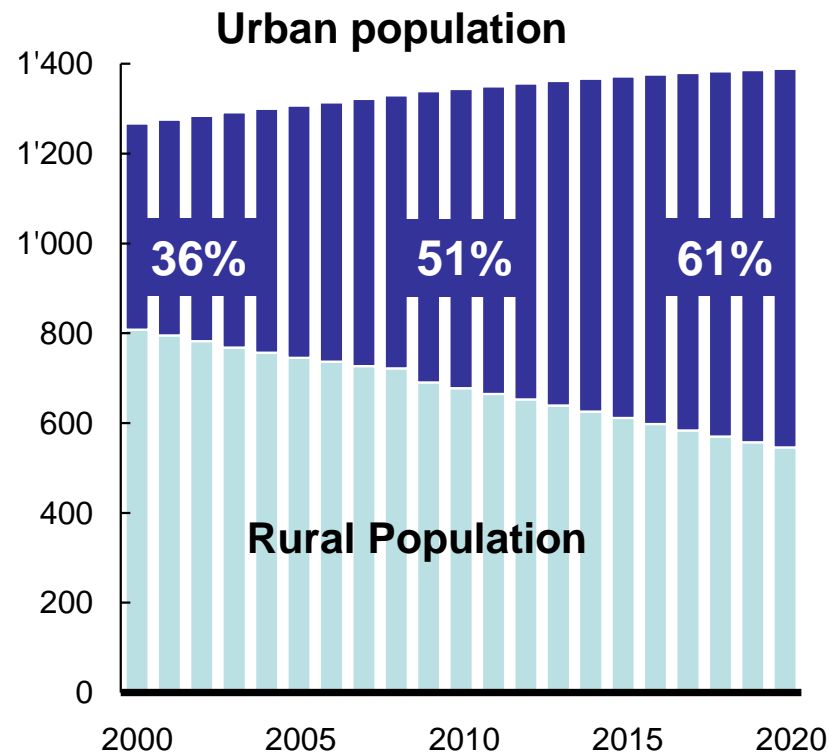
At the end of 2011 China's economy stood at USD 7.3 trillion having grown by about USD 1.3 trillion



## Urbanization and industrialization will remain the key drivers of China's growing annual steel demand

### China population breakdown 2000-20

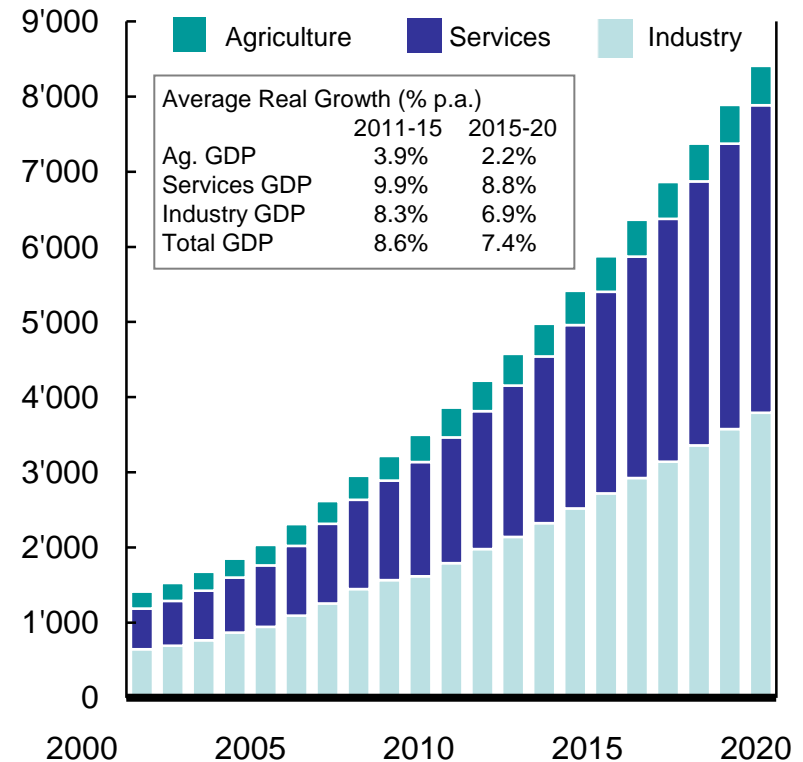
Millions



**Av. 18M people added to China's urban population each year between 2000-20**

### China GDP breakdown 2000-20

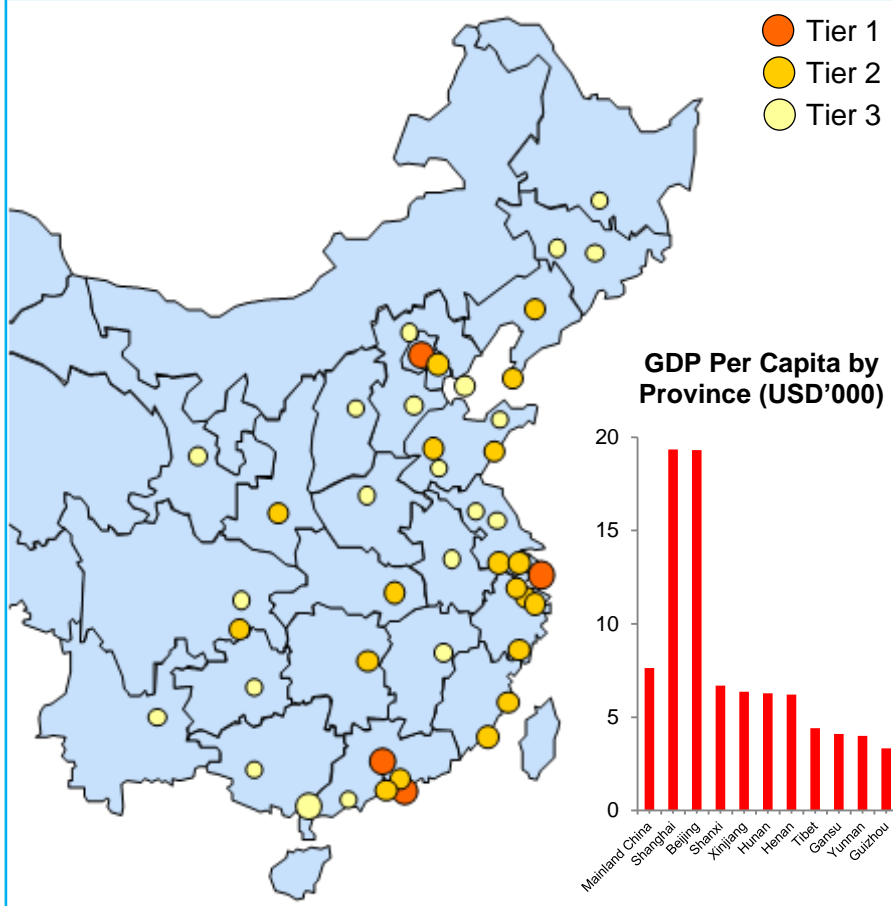
Real 2005 USD billion



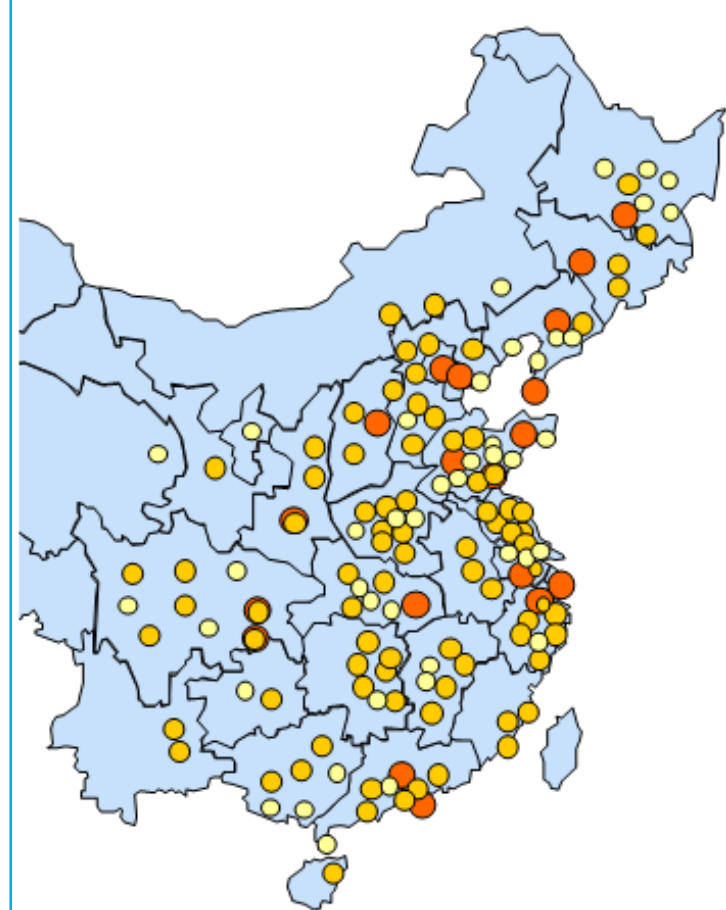
**China's industry and service GDP will more than double between 2011-20**

## China's urbanization to date has been mainly coastal but will extend to inland China, adding ~15 Tier 1 cities over the next 15 years

### China's city landscape by city Tier<sup>1</sup> – 2010



### China's city landscape by city Tier<sup>1</sup> – 2025



- 1 Tier 1 city defined as registered population >4.5 m and GDP/capita >USD 3,000,  
 Tier 2 city defined as either registered population >4.5 m or GDP/capita >USD 3,000  
 Tier 3 city defined as registered population 1.5-4.5 m and GDP/capita USD 1,500-3,000

## Commodity intensity evolves as cities start to develop



**Tier 1 - Shenzhen**

- Consumer dominates economy
- Commodity intensity declines
- Only commodities with increased intensity are light/environmental metals and commodities used in leisure activities



**Tier 2 - Nanjing**

- Increased consumer spending on goods with high commodity content
- Acceleration of energy use
- Increased intensity of copper, zinc and aluminium

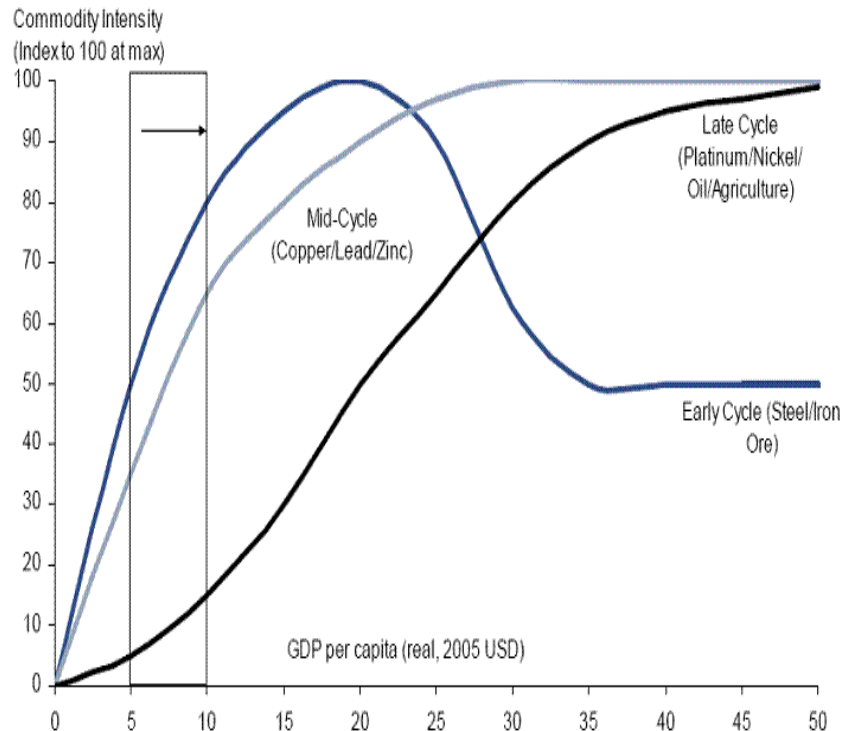


**Tier 3 - Xian**

- Infrastructure and heavy industry dominates economy
- Acceleration in demand for cement, steel, iron ore and coking coal though early stage development
- Early stage increases in demand for energy, other industrial metals, chemicals etc..

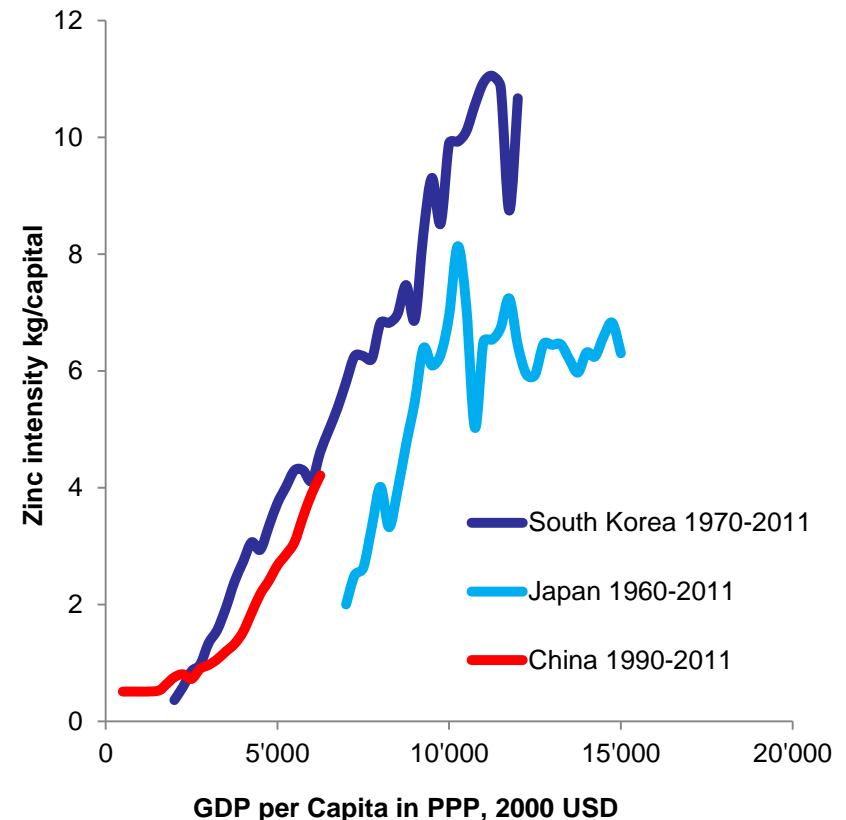
## When steel demand growth starts to slow, galvanizing intensity may start to accelerate...

### Zinc is a mid-economic cycle commodity



**Galvanizing intensity to peak after steel intensity peaks**

### China zinc demand still in infancy

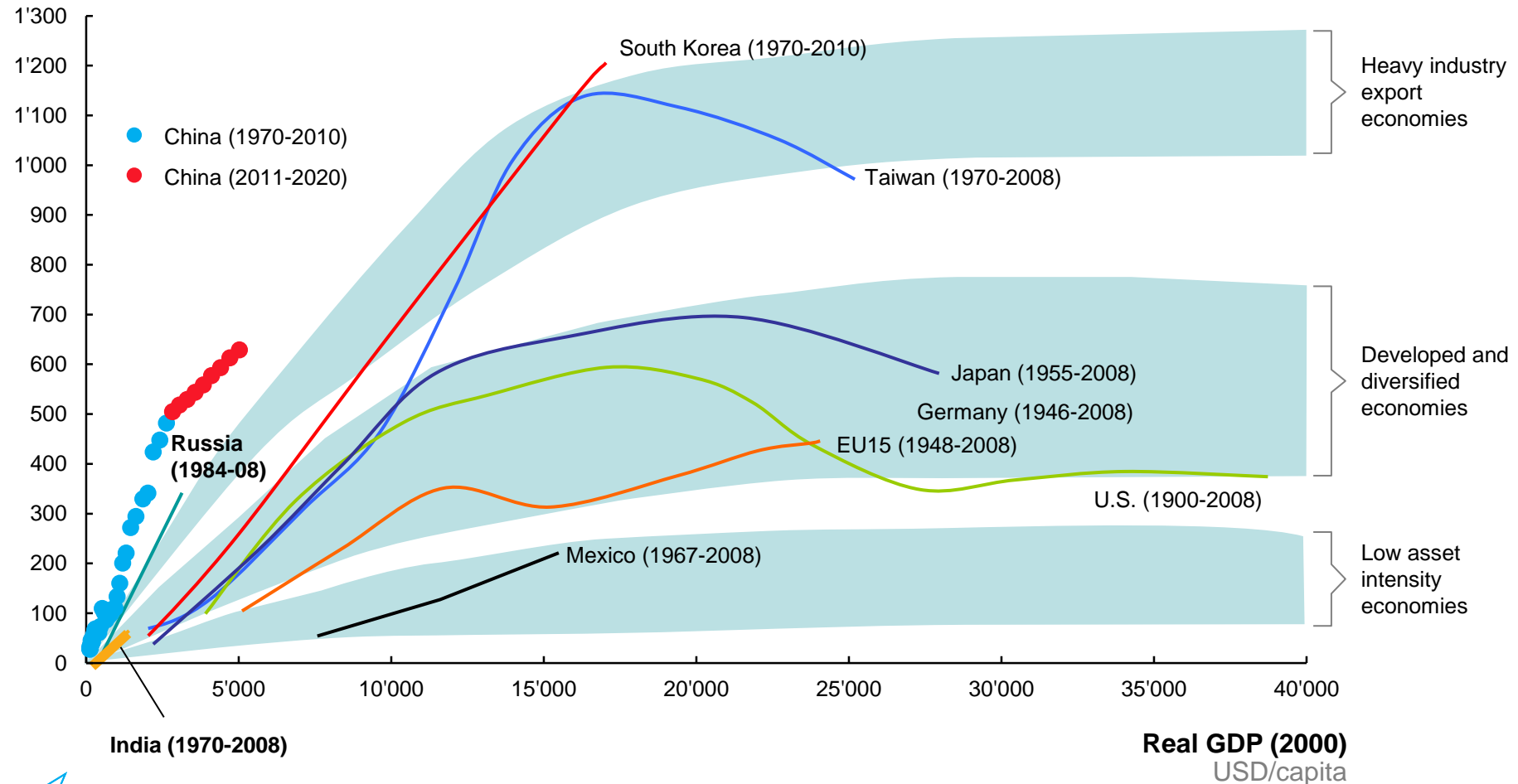


**Using zinc consumption as a proxy for galvanising demand we can see strong potential increases in demand**

# China is expected to reach a high level of steel consumption per capita faster than other countries but still has far to go

## Crude steel consumption

Kg/capita

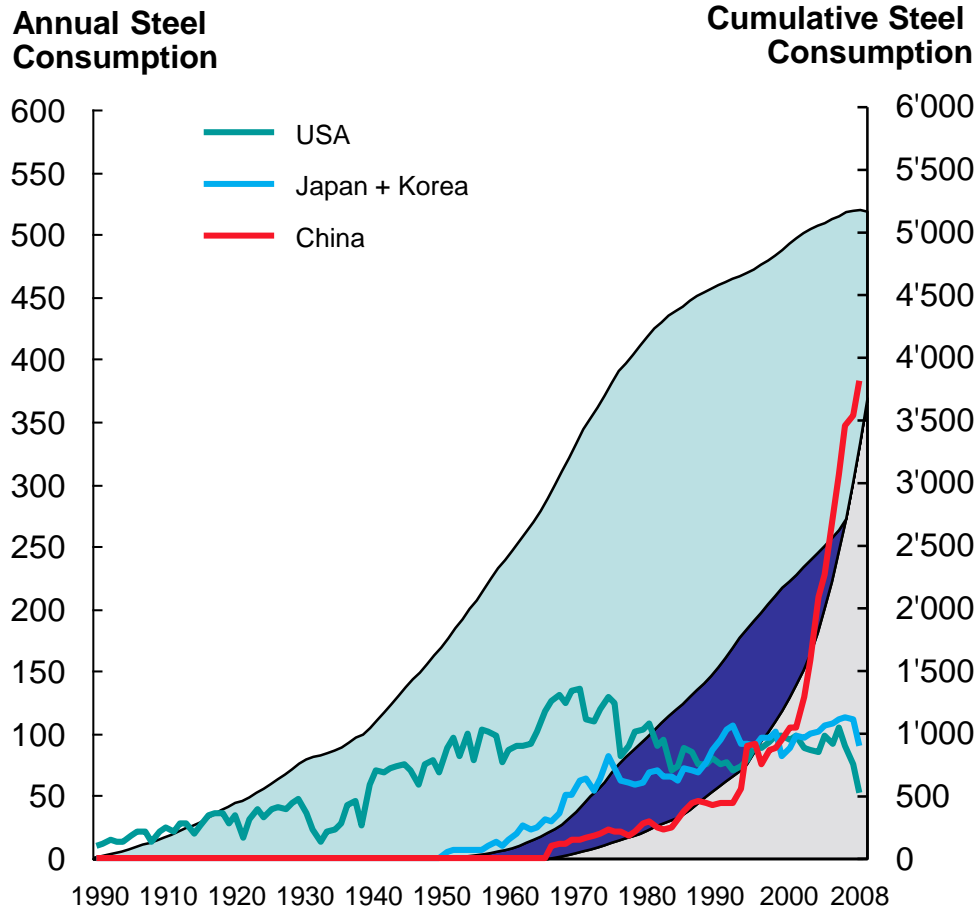


Sources: MGI, WSA; Global Insight; IMF; USGS; McKinsey; Brook Hunt

# Cumulative steel consumption demonstrates that China has still a long way to go before it peaks

## Annual and Cumulative Steel Consumption

Million metric tonnes



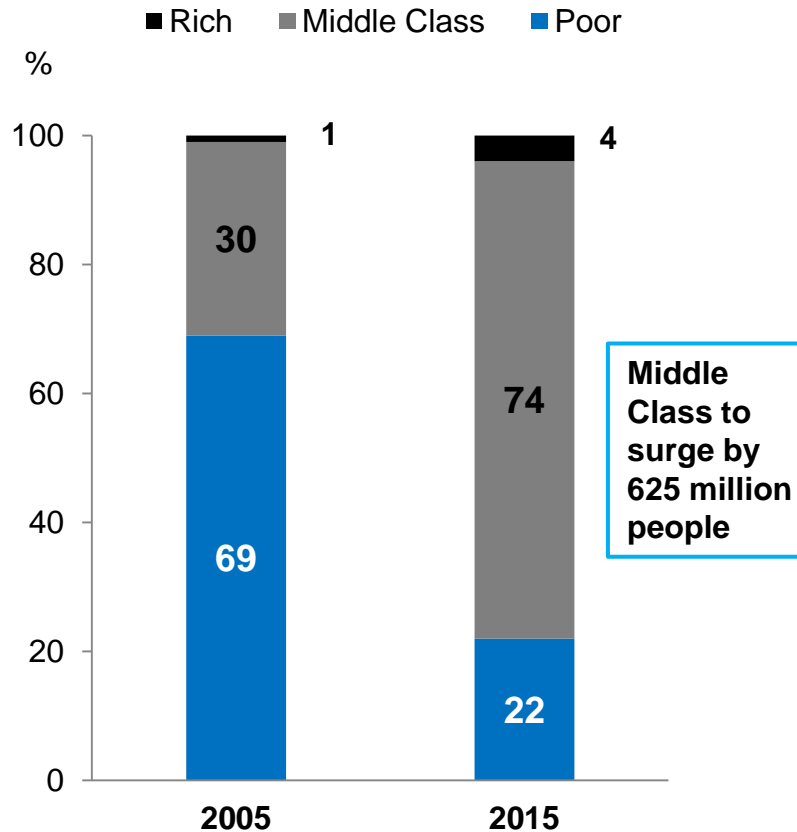
USA  
Japan + Korea  
China

- China's annual demand is 4-5x US levels
- China has accumulated 70% of US stock levels or ~15% on population adjusted basis
- Cumulative stock per capita: China 2.5t, US 16.8t, Korea/Japan 15.8t

SOURCE: McKinsey; IISI

## Rise of the middle class in China will increase galvanizing demand

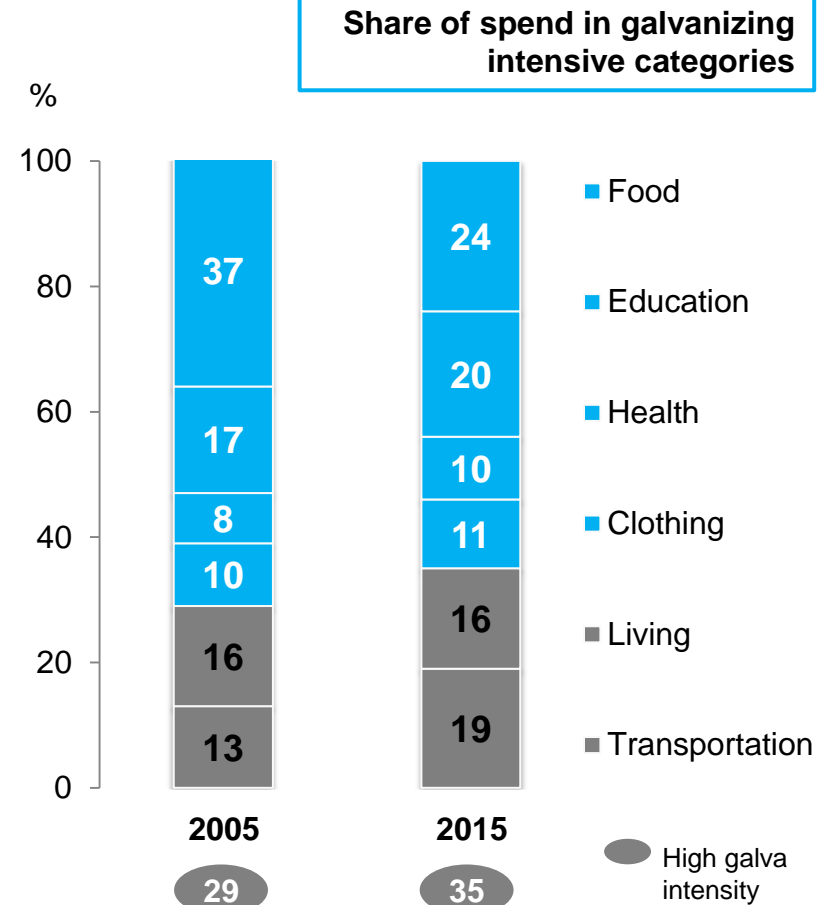
### Population breakdown by income



SOURCE: McKinsey, IMF

**Increased salary expected to change demand patterns**

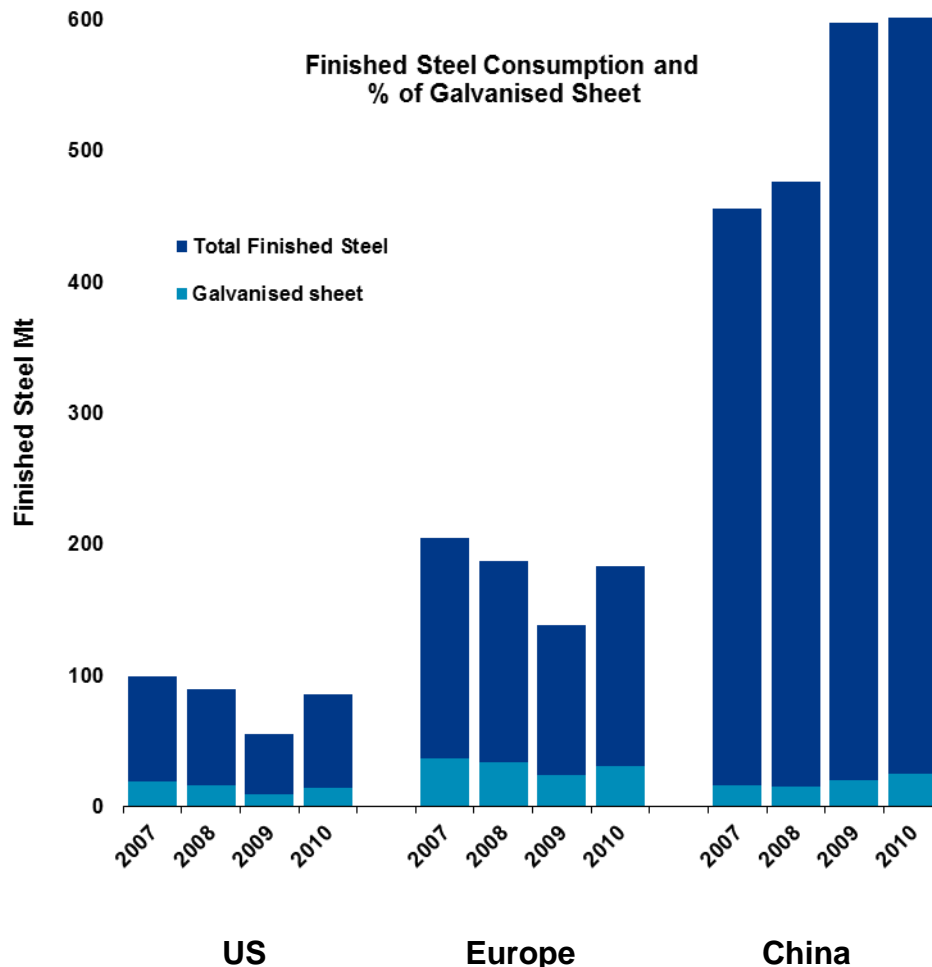
### Middle class to have more budget



**Increased spending in living and transportation will lead to increased spend in galvanized products**



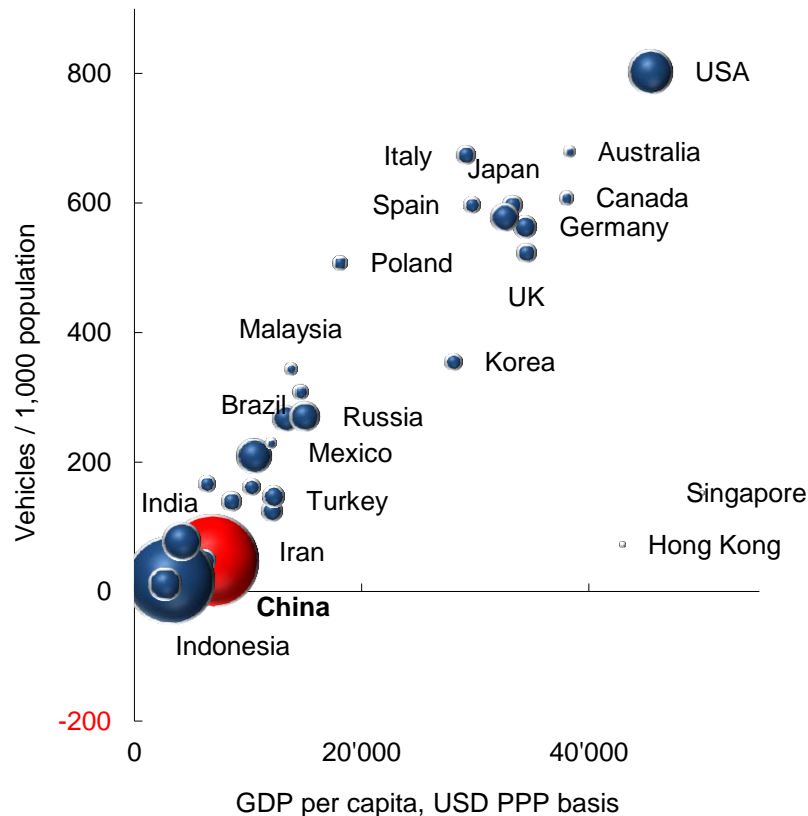
## Construction growth combined with increased galvanization percentages will continue to drive demand



- Approximately 5% of China's steel consumption is in galvanised sheet form (18% in Europe & US)
- As China's urbanisation progresses:
  - Steel demand will continue to grow
  - Steel product mix will shift
  - Increase in galvanized flat products
  - Chinese galvanized steel shipments has so far increased by 13.2% in 2012

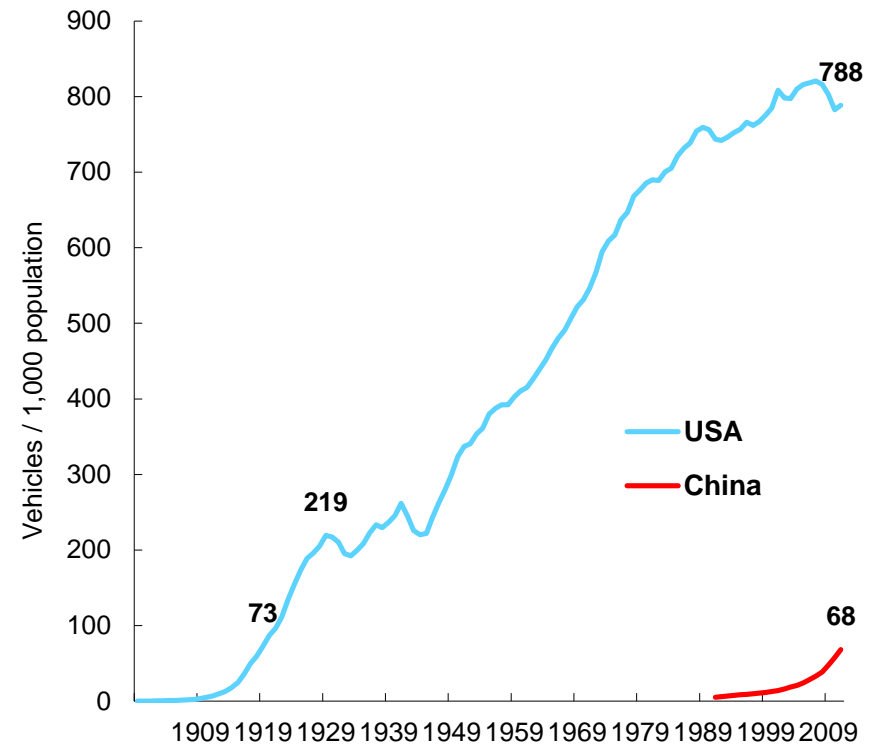
## Automobile ownership in China still in its infancy

### Vehicle ownership relative to income



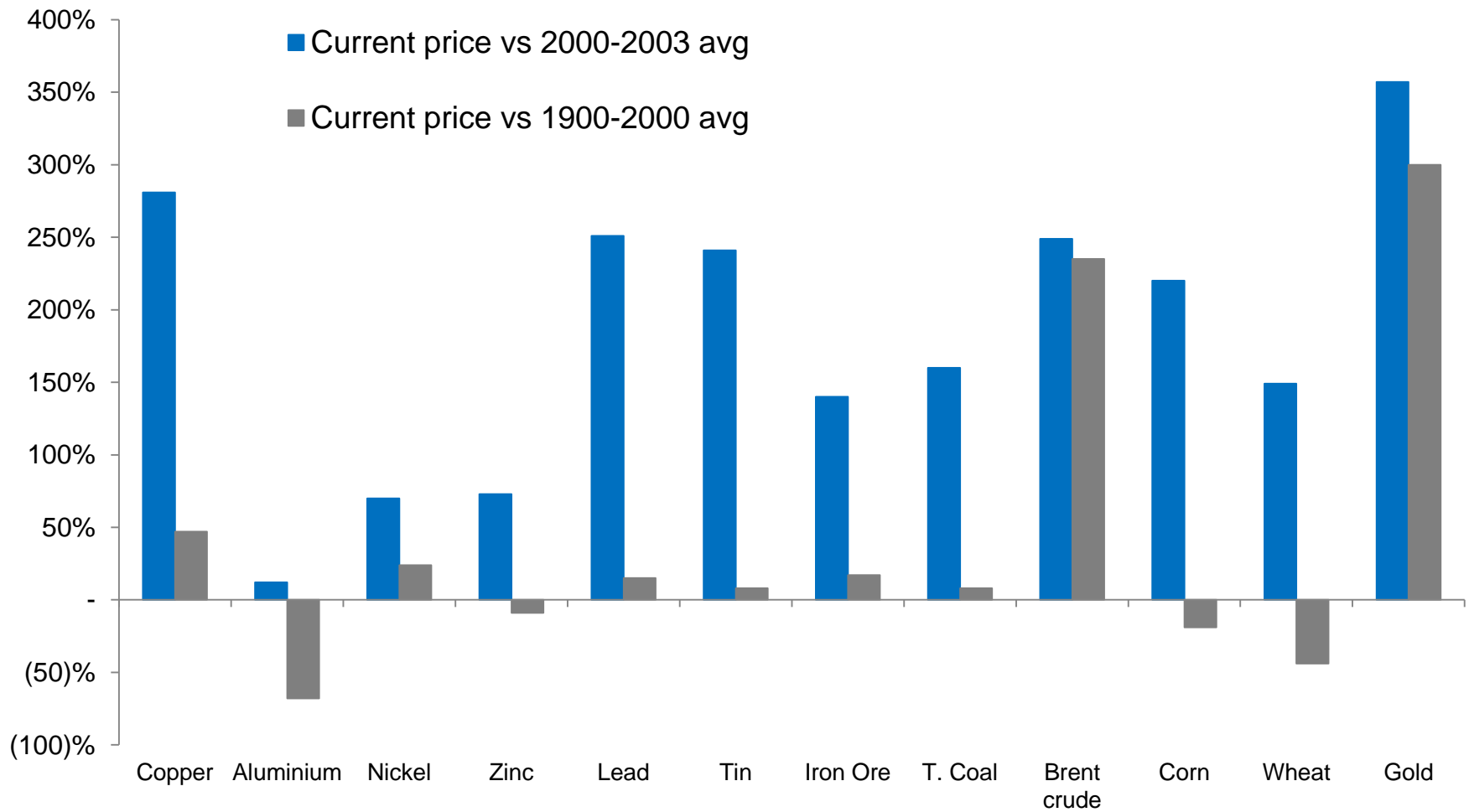
**Increased income expected to increase car ownership**

### Vehicle ownership relative to population



**China's level of vehicle ownership is like the United States in 1920**

## Commodity prices are higher than the early 2000s but mostly lower than very long term averages

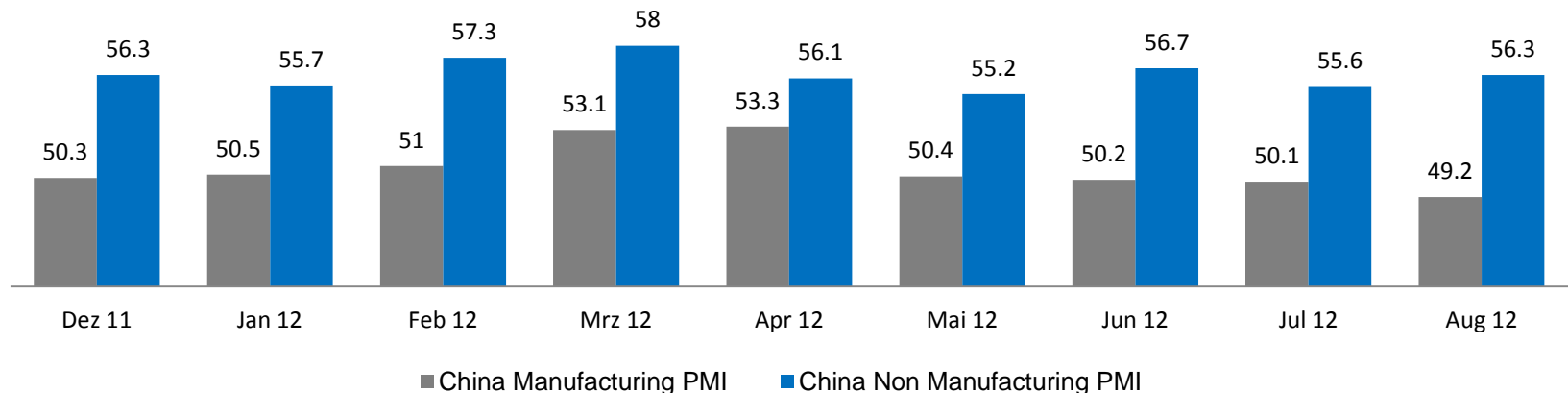


SOURCE: Credit Suisse 'Commodity Prices in the Long Run - Are We There Yet', September 11<sup>th</sup> 2012

## Is the China driven commodity super cycle here to stay?

- On an installed basis, Chinese **commodity intensity is still very low**
- **Urbanization** is still at its early stages
- Expansion of consumer demand in white goods, transport and housing has **still a long way to go**
- Difficult to doubt growth prospects of an economy where the **government is deliberately constraining demand**
- As economic stimulus of 2008-2009 starts to fade, **it is inevitable that we shall see a softening of macro indicators such as Manufacturing Purchasing Managers Indices (PMI)**
- As the **economic focus starts to shift** from being export led to consumer driven then there will be **some dislocations** in supply and demand, this is a **healthy development**

### Services vs. Manufacturing

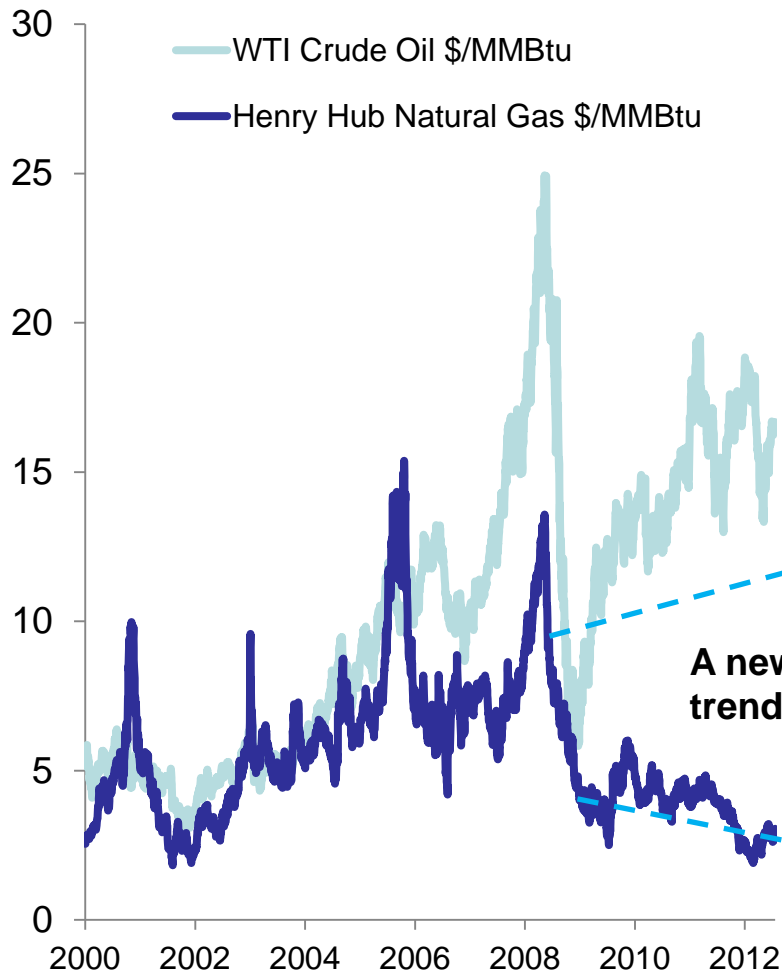


SOURCE: Bloomberg

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## Relatively cheap energy could set the stage for a reindustrialization of the United States



### Old structure

- Since WW2 cost of energy was similar globally
- Emergence of China and BRICs led to sharp price hikes –forcing need to look for alternatives
- US private sector bet on fracking and natural gas

### New paradigm?

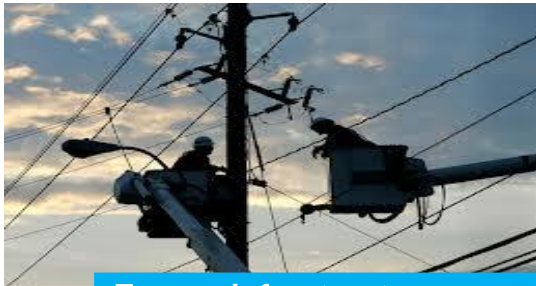
- Cost of capital is similar everywhere (ie zero)
- Cost of labour is converging
- Cost of energy is diverging

## The United States has pent up demand due to aging infrastructure



Highways and Bridges

- Total 5 year investment need for highways and bridges is USD 930bn of which USD 381bn is in the base case
- Current economic cost of congestion is USD 78bn per year



Energy infrastructure

- Total 5 year energy investment need USD 75bn
- Estimated annual cost of disturbances to economy between USD 25-180bn
- Electricity demand increased 25% since 1990 whilst construction of transmission facilities has decreased by 30%



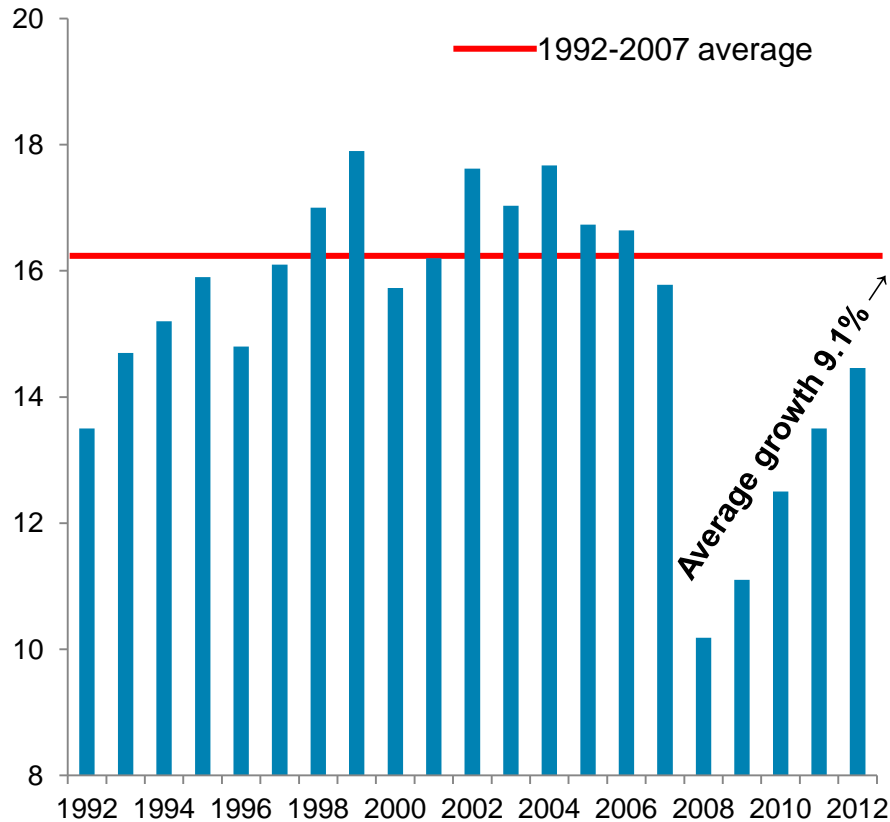
Railways

- Rail investment needs estimated to be USD 63bn but this does not include plans for high speed networks

## US car sales are growing strongly but still below pre-recession levels

### US annual car sales

Millions



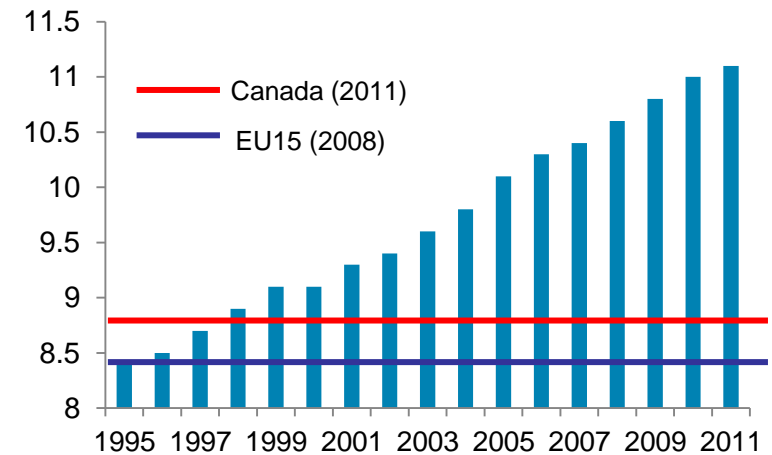
The average age of a car in the United States is now at 11 years, this is much higher than in most other countries



- A recovery expected, but consensus expectations do not envisage returning to 2006 levels before 2016

Years

### US Median Car Age





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## Galvanizing will continue to benefit from economic growth but there are some potential catalysts to even greater demand



### Galvanizing will continue to benefit from Chinese growth

- **Urbanization** to support new infrastructure in central and western provinces and offset slower rate of expansion in China's coastal provinces.
- **GDP growth** is likely to be lower (but from a higher base) but intensity of galvanization use is likely to increase
- Fears of **hard landing difficult to envisage**



### The US economic recovery has slowed but has pent up zinc demand

- **Automotive** sales have been strong and supported zinc demand and could be boosted by replacement of the aging car fleet
- **Construction** showing signs of improvement and **has huge potential**
- **Fixed Asset Investment** could be a strong surprise driver should the US address its issues of aging infrastructure

# Questions

