



Global Coke Private Limited

Presentation

Future of The Coke Industry In India

Discussion Material Regarding The Coke Industry

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The Major Coke Consumers'



- ***Blast furnaces and sintering plants in integrated Steel plants***
- ***Merchant pig iron producers***
- ***Chemical Industries***
- ***Ferro Alloys/ Ferro Manganese***
- ***Iron foundry industry***

Key Qualities of MetCoke



Low Density

High Compressive Strength

Heating as well as Reducing Agent

Indispensable for Blast Furnace

- ***Supportive of Burden***
- ***Reducing Agent***
- ***Provides Heat Required for Endothermic Reaction***

Global Met Coke Production



- *World Production of Coke in 2007 was 450 Mt*
- *Integrated Steel Plants Produce or Import for their own requirement which is about 70%*
- *Balance 30% is Produced by Merchant Coke Ovens*

World Coke Industry



- *In North America, the coke production has fallen at 3.1% p.a. for the last 10 years and the shortage of capacity is currently estimated at 7.5 million tonnes with expectation this to go up further in the next few years due to further shutting down of plants having outdated technology and obsolescence. In the UK and Fran, a shortage of 2 million tonnes per year. In former USSR, a total capacity of 16 MTPA is in need of refurbishing. In Poland, some of the coal mines along with coke making facilities are expected to be shut in anticipation of their joining European Union.*

- *Key industry facts:*
 - *Gradual erosion of coke making capacity outside of China*
 - *Explosion of coke demand within China*
 - *Rise in Chinese coke production costs*
 - *Plans for new coke capacity outside China are few*
 - *Set up cost for ovens in Europe and America is much higher in comparison to that of China*

The Imbalances & China



- ***While there have not been any significant coke capacity addition in recent years, there have been several closures of coke plants due to various technological/pollution issues. Further the Olympics in China in 2008 have fuelled a major construction activity resulting in significant demand for steel and concomitant met coke.***

- **Some of the key factors for the present coke shortage being faced in China are:**
 - ***Closure of heavily polluting, over aged beehive coke oven capacity (up to 70 million MT)***
 - ***Closure of unsafe coal mines (up to 280 million MT) and chronic shortage of good quality, more expensive coking coals***
 - ***Strong and steadily growing demand from the domestic steel industry***
 - ***Domestic coke demand is likely to absorb all newly built capacity (up to 10 million MT in 2003)***
 - ***Rising capital costs as more modern technology is applied***

Declining Global Production



➤ 2008

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➤ Declining Production In US, UK, Germany, Poland & Japan

Indian Scenario

Agenda I



India - Industrial Facts



5th Largest Producer of Crude Steel in the World

- Present Capacity around 58.64 Mt.
- Production around 53.90 Mt

Estimated Capacity Addition to increase

- 124.06 Mt by 2011 – 12
- 300.00 Mt by 2019 – 20

India's Steel consumption is expected to grow by 16% annually until 2012 (*Source: BHP Billiton*)

Largest Producer of Sponge Iron with an annual Growth of 24%

India – Met Coke Demand/Supply



India's coal demand, both thermal and coking, may rise to 1.87 billion tons a year by 2026 (Coal Ministry India, March 5th 2008). India's use of commodity is expected to rise 54% to 730 MTA by 2012, while the imports have doubled in last 10 years

Estimated Requirement of Coke

- 67 Mt by 2011 – 12^{*}
 - 47 Mt to be met by Integrated Steel Plants
 - 20 Mt to be met by Merchant Coke Ovens
- Present Capacity of Merchant Coke Ovens is 6 Mt
- Additional 14 Mt Capacity Required within a time span of 4 Years

India – Volatility in Coke Market



- Demand Supply Gap
- Impact of Volatility of Chinese Coke Market
- Volatility of Coking Coal Price
- Forced Dependence On Imported Coal to a Large Extent
- Distribution Bottleneck

India – Volatility in Coke Market



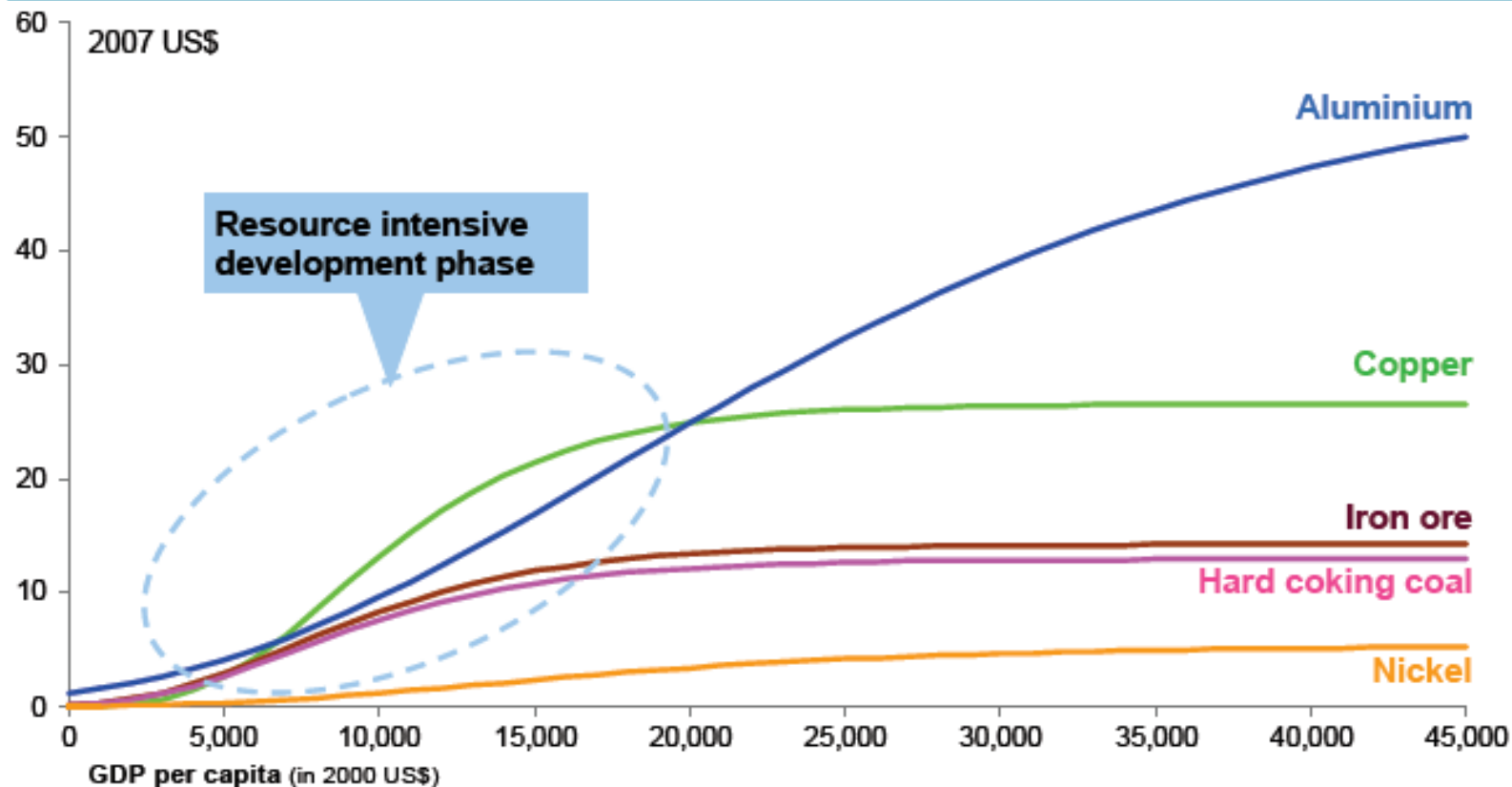
- Lack of Integrity due to presence of about 100 Small Coke Manufacturers- unorganized sector
- Exchange Rate Fluctuations
- Fluctuation in Crude Oil Prices Impacting Transport Cost

The sweet spot for commodity demand



- Urbanisation and the switch from labour to capital

Expenditure per capita



Source: Rio Tinto estimates for commodity expenditure profiles.

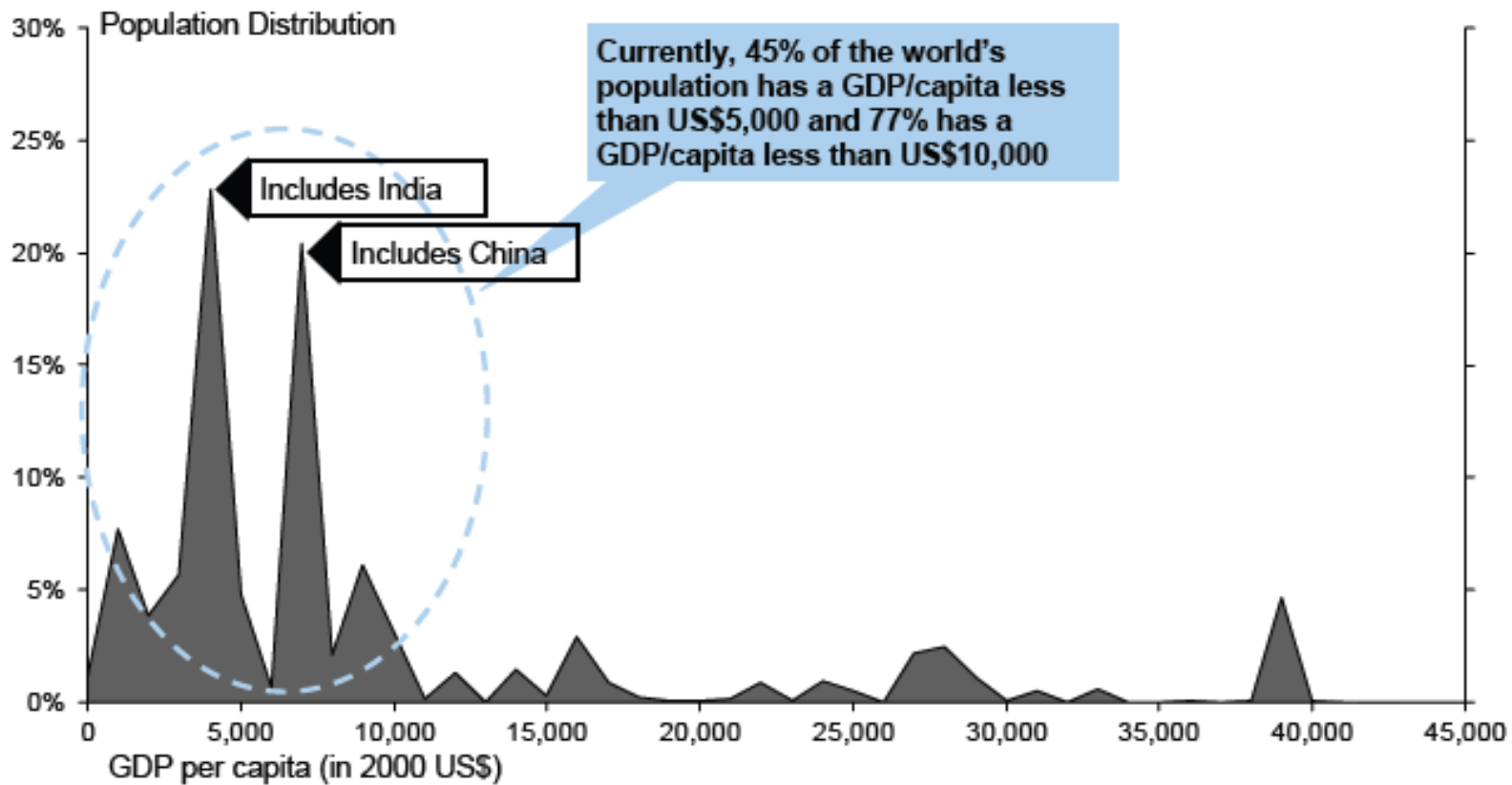
Note: Expenditure profiles are based on Rio Tinto estimates of global income and consumption relationships and average real terms prices between 1990-2006. Iron ore and hard coking coal expenditure calculated based on crude steel demand projections, assuming all met by blast furnace production at historic average export prices.

Source: Rio Tinto, May 2008

China and India have the population



2007



Source: Global Insight for population distribution

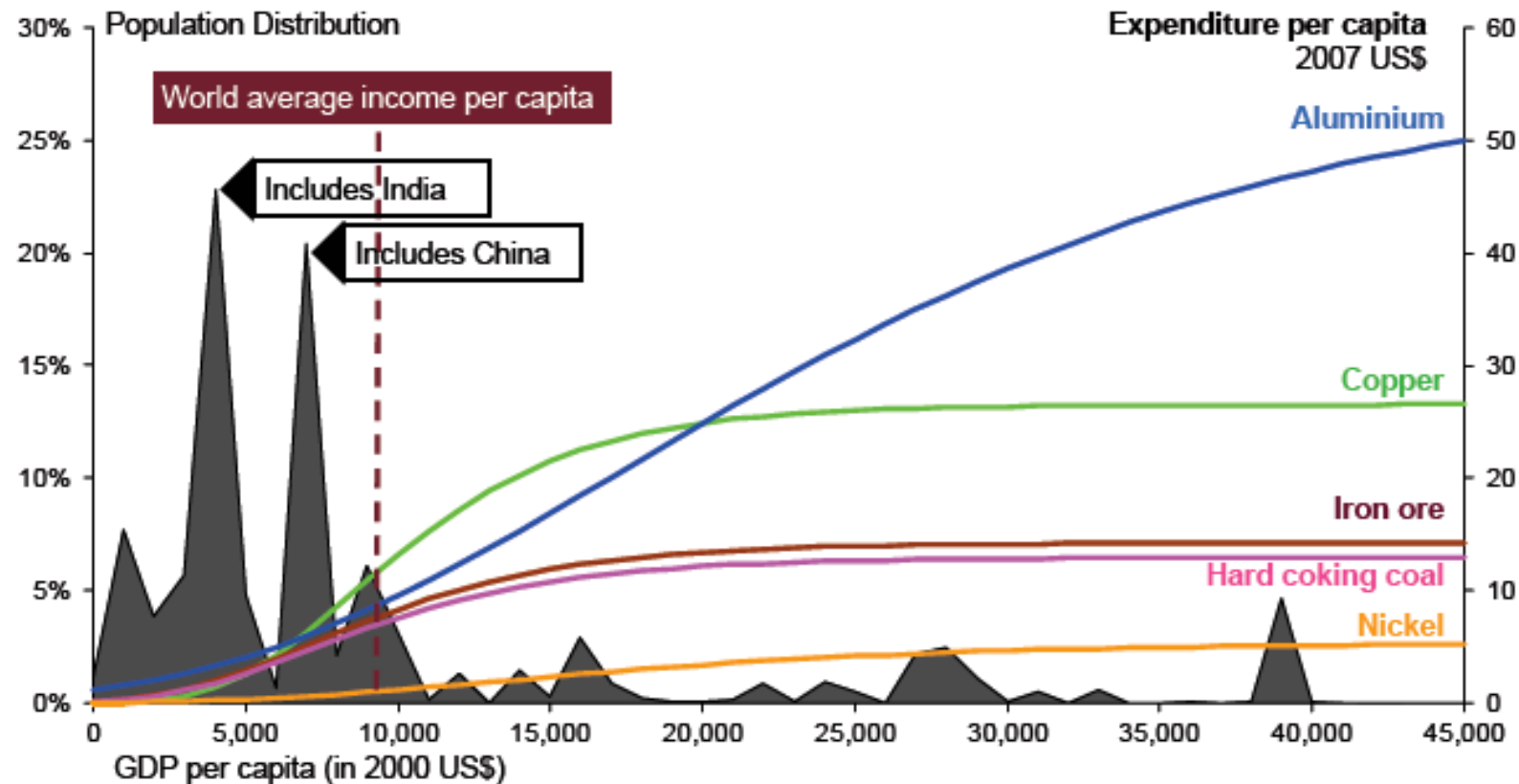
Source: Rio Tinto, May 2008

China is the sweet spot; India is close



- China is 40% urban; it was 20% urban in 1978. With artificial constraints on migration removed, the next 20% will be faster. India is 30% urban.

2007



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

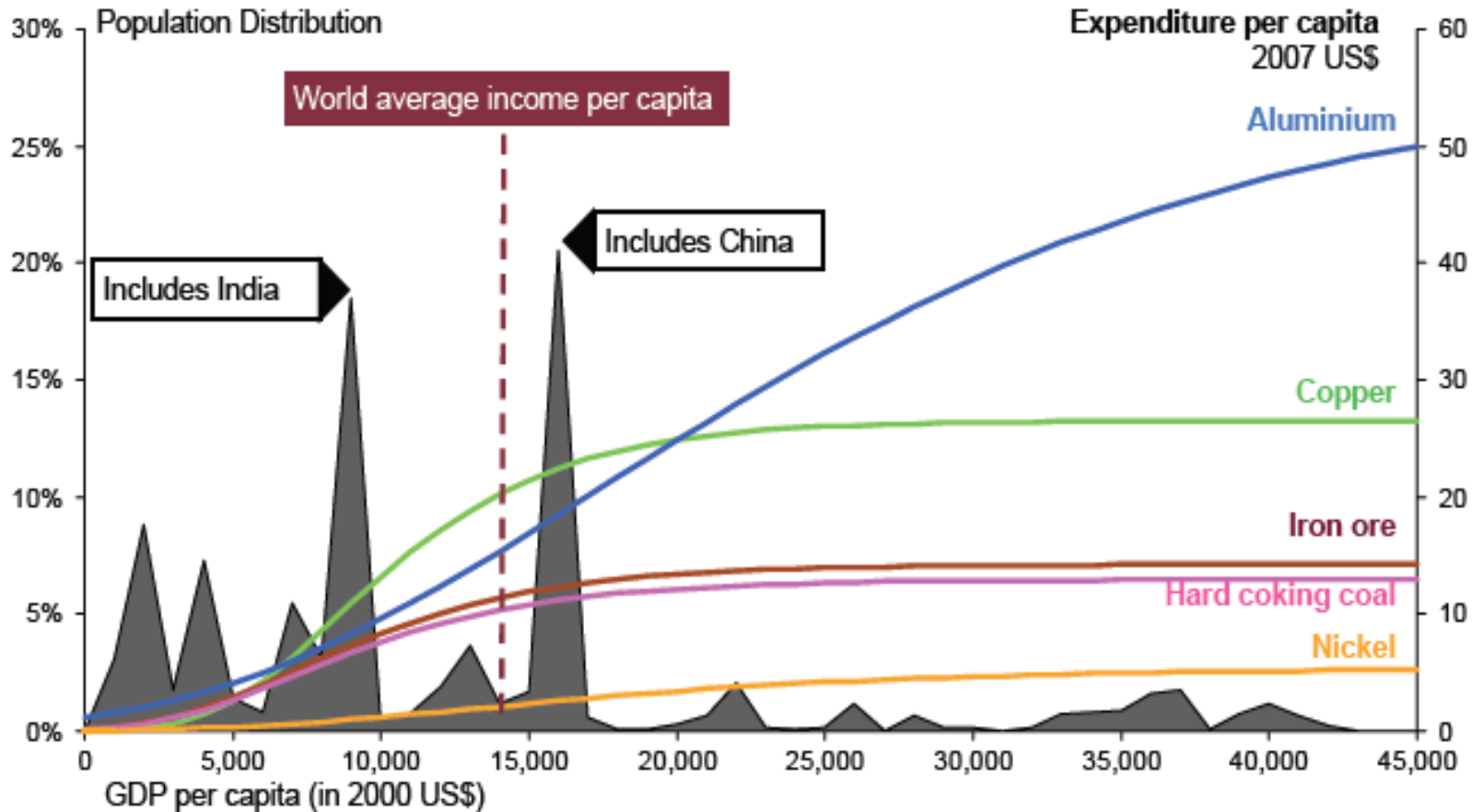
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Source: Rio Tinto, May 2008

This could be a very long cycle!



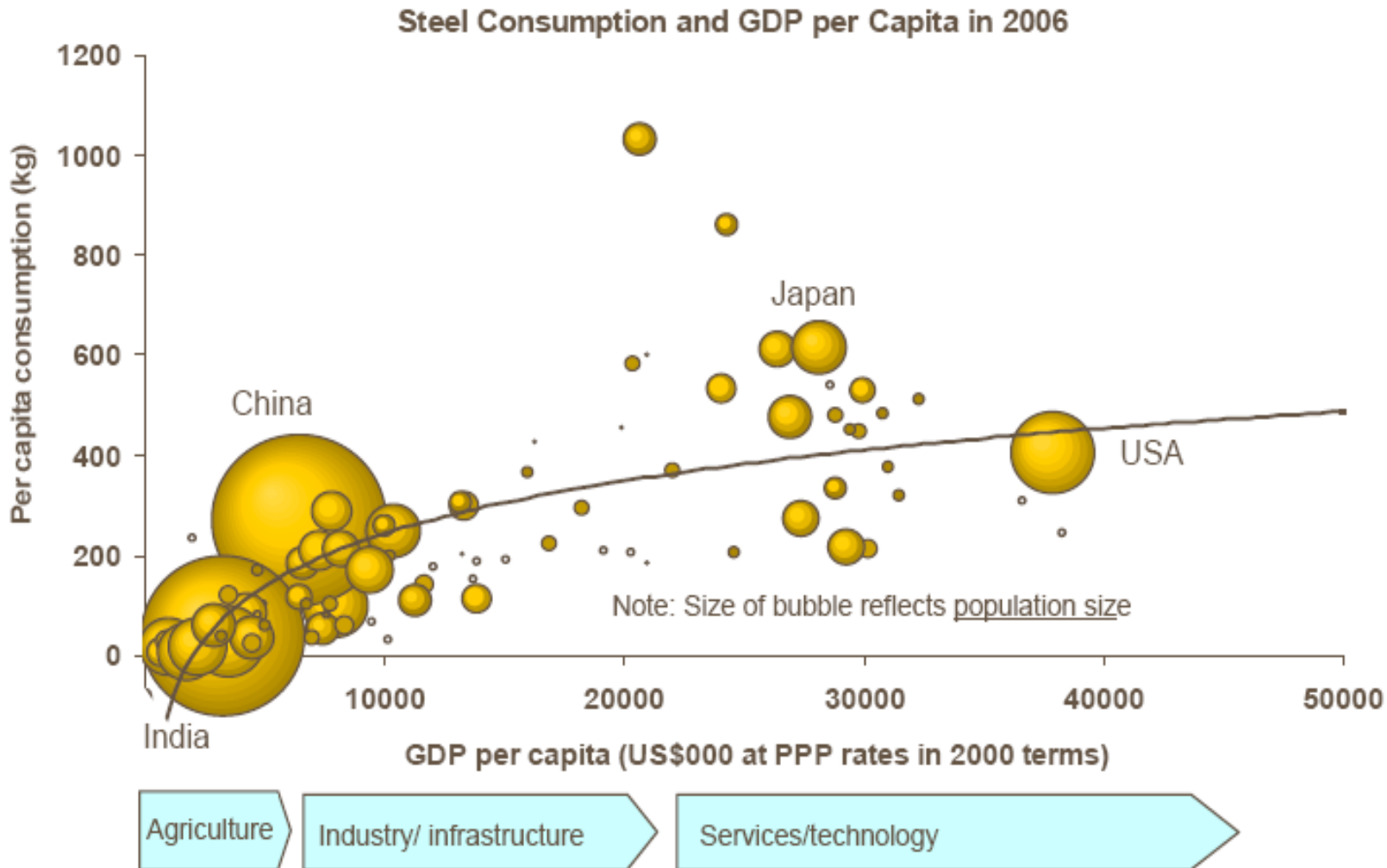
2022



Source: Global Insight for population distribution; Rio Tinto estimates for commodity expenditure profiles.
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Source: Rio Tinto, May 2008

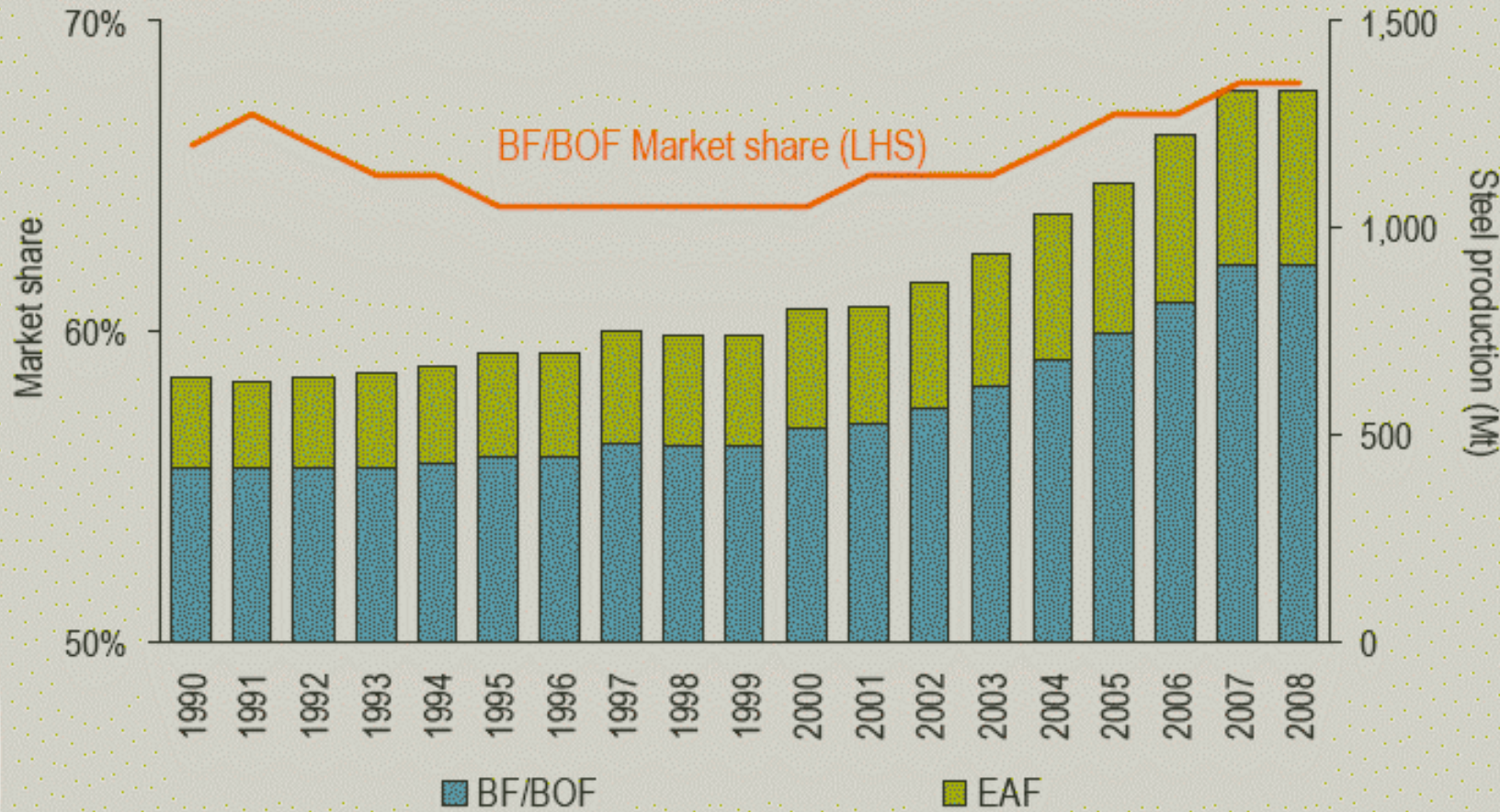
China and India will follow the path...



Coking Coal / Coke demand increasing faster than steel production

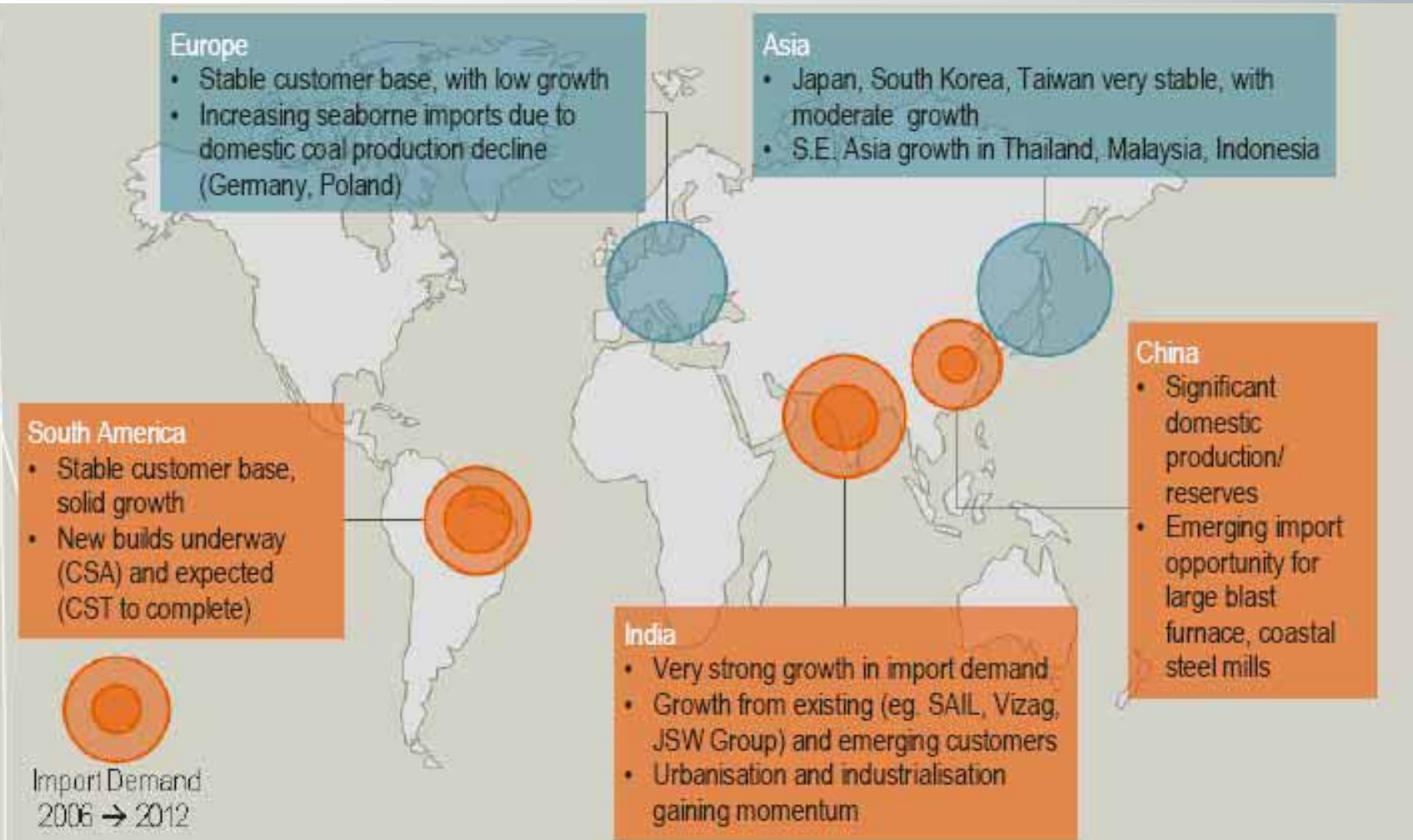


Global steel production by Blast Furnace/BOF & Electric Arc Furnace



EAF production growth is constrained by availability, quality and price of iron ore scrap and electricity.

Demand Growth; India, China & Brazil



Combating Volatility

Agenda II



India – Combating Volatility



- Increase Manufacturing Capacity - Economy of Scale
- Dispense With Small Players by merging/acquisitions
- Eliminate Distribution Bottleneck in Supply Chain of Imported Coking Coal – Reduce Intermediaries
- Backward Integration
- Blending

Rationalization of Global Trade Imbalances

Agenda III



India – Why these Imbalances?



- Consistent demand supply deficit in 1997- 2007 due to expanding economies of India and China
- Highly Fragmented State of Global Coal Trade
- Coking Coal Trade – Almost Monopolized by Australia
- Low Availability In International Market

India – What lead to Imbalances?



- Impact / Fluctuations of Domestic Demand of Producers – surge lead by demand for construction projects
- Logistic constraints – ability of ports to handle/store large shipments
- Absence of International Trading Platform thus limiting access for coke manufacturer to ensure consistent supply of hard coking coal

How To Eliminate these Imbalances?



- Facilitation of Supply Agreements between End User and Producer of Coal
- Open Access and Availability Resulting in Reduction of Volatility
- Common Regulatory Framework for Transparent Pricing

How To Eliminate these Imbalances?



- Encouragement to Countries with Coking Coal Reserves but Poor Infrastructure and Logistics
- E Auction
- Electronic Trade

GCPL - Capacity

Present Capacity : 0.288 Mt

Proposed Capacity
By 2009-10 : 0.576 Mt



GCPL – Jamnagar, Gujarat Plant



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Thank You

