

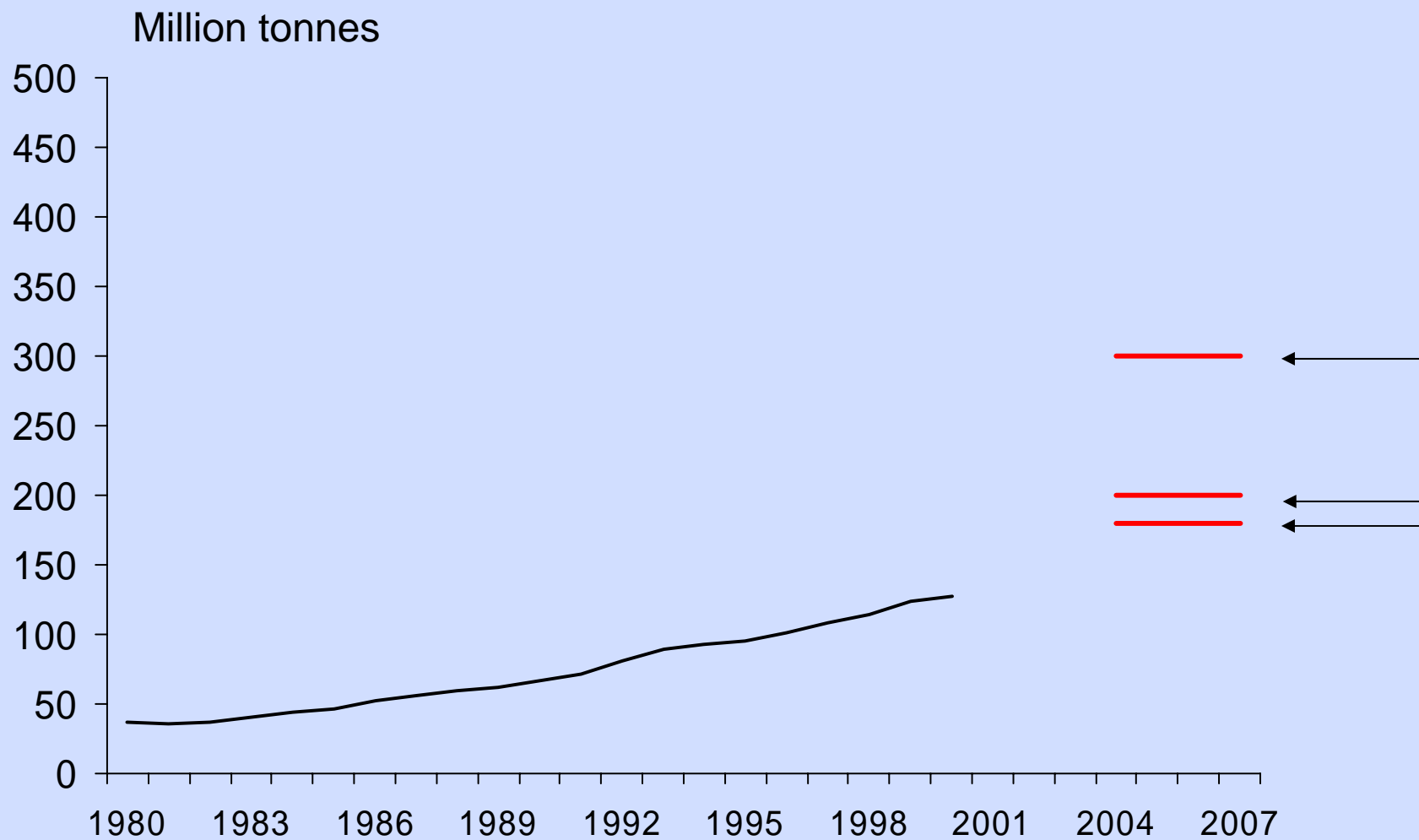


# **Global Commodity Demand Trends: The Emergence of China and India**

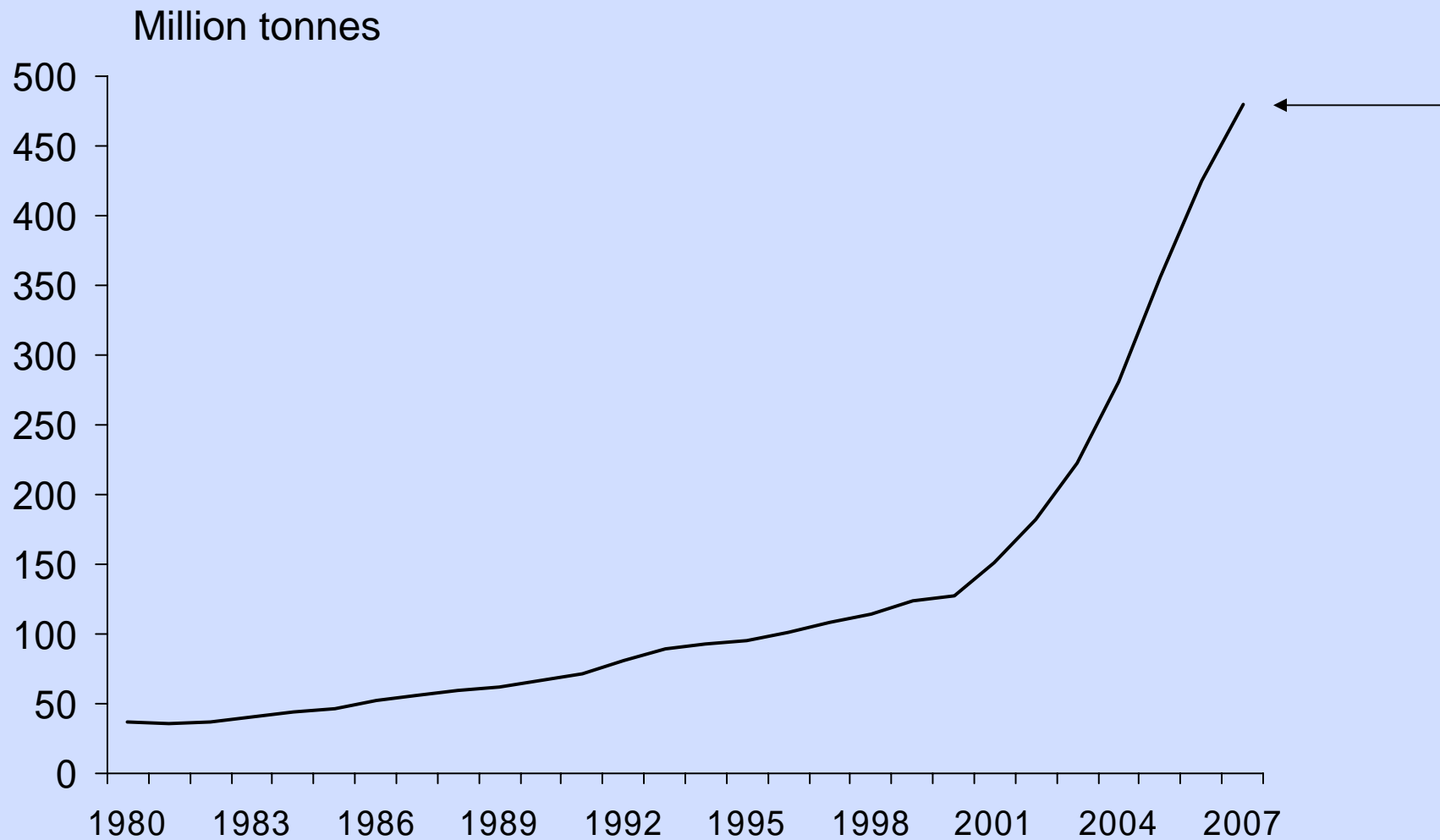
**David Humphreys**  
**Chief Economist**  
**Norilsk Nickel**

*Seminar on 'The Globalisation of Commodity Markets',  
Stockholm, 22<sup>nd</sup> October 2007*

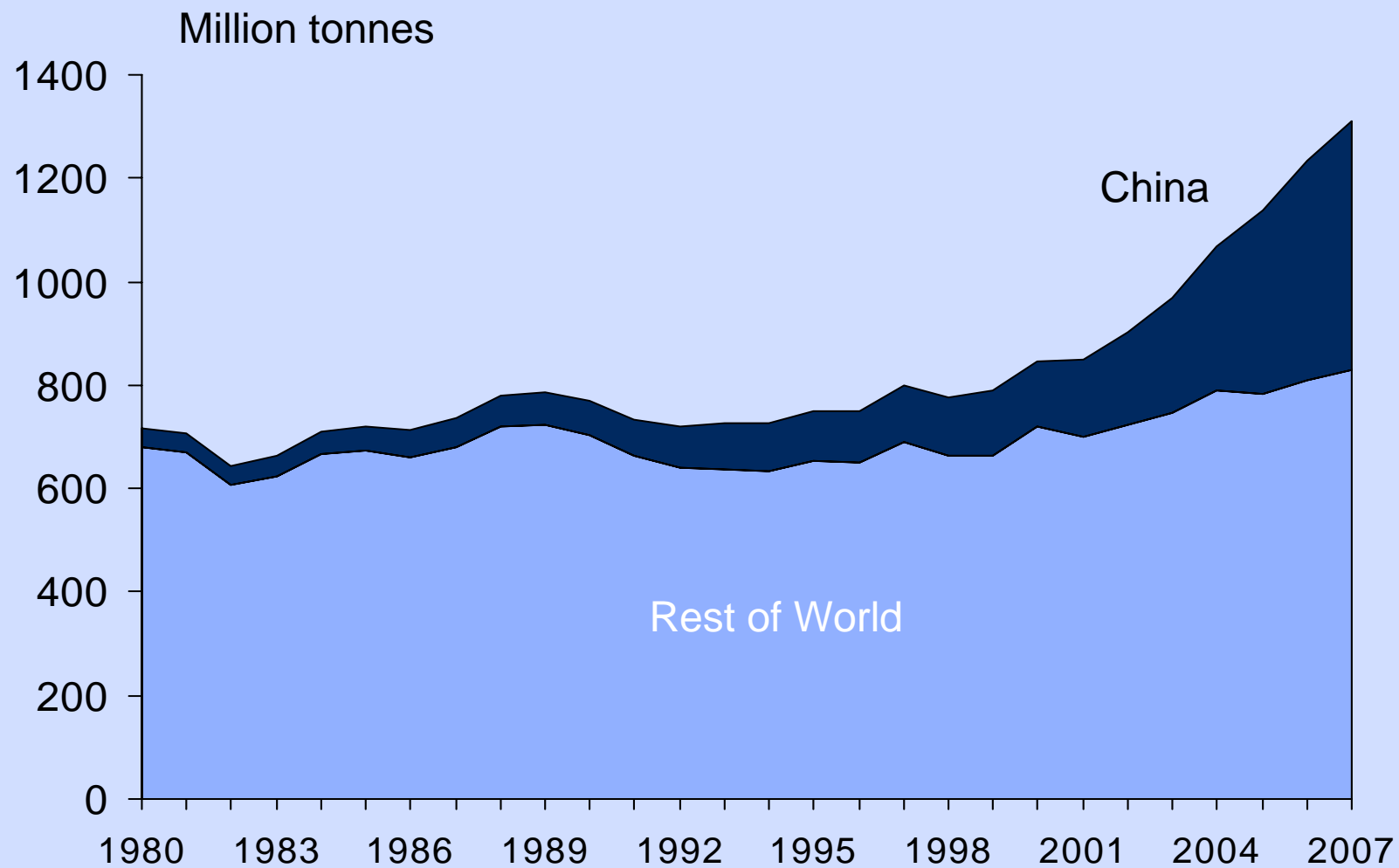
# China steel production



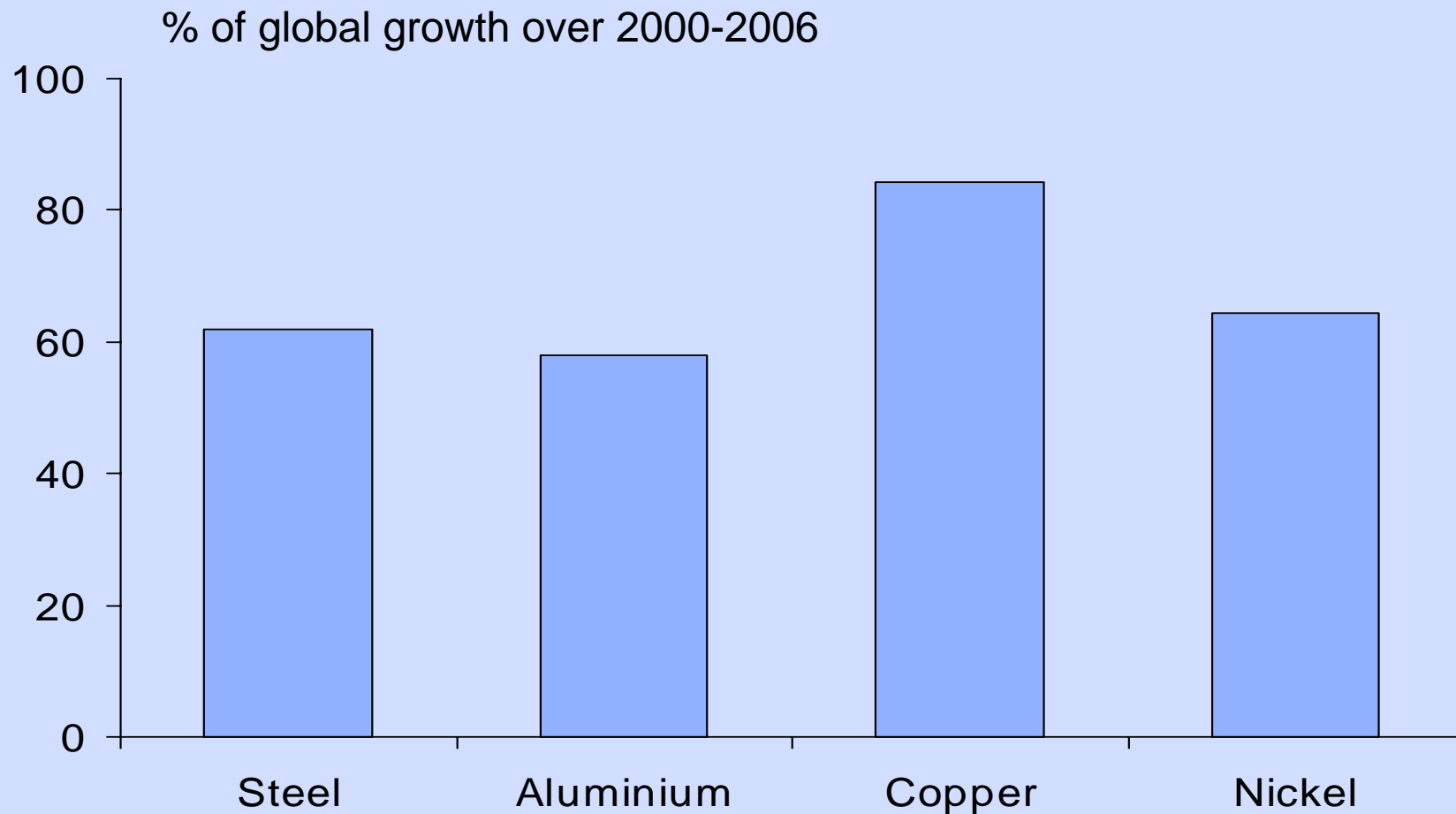
# China steel production



# World steel production



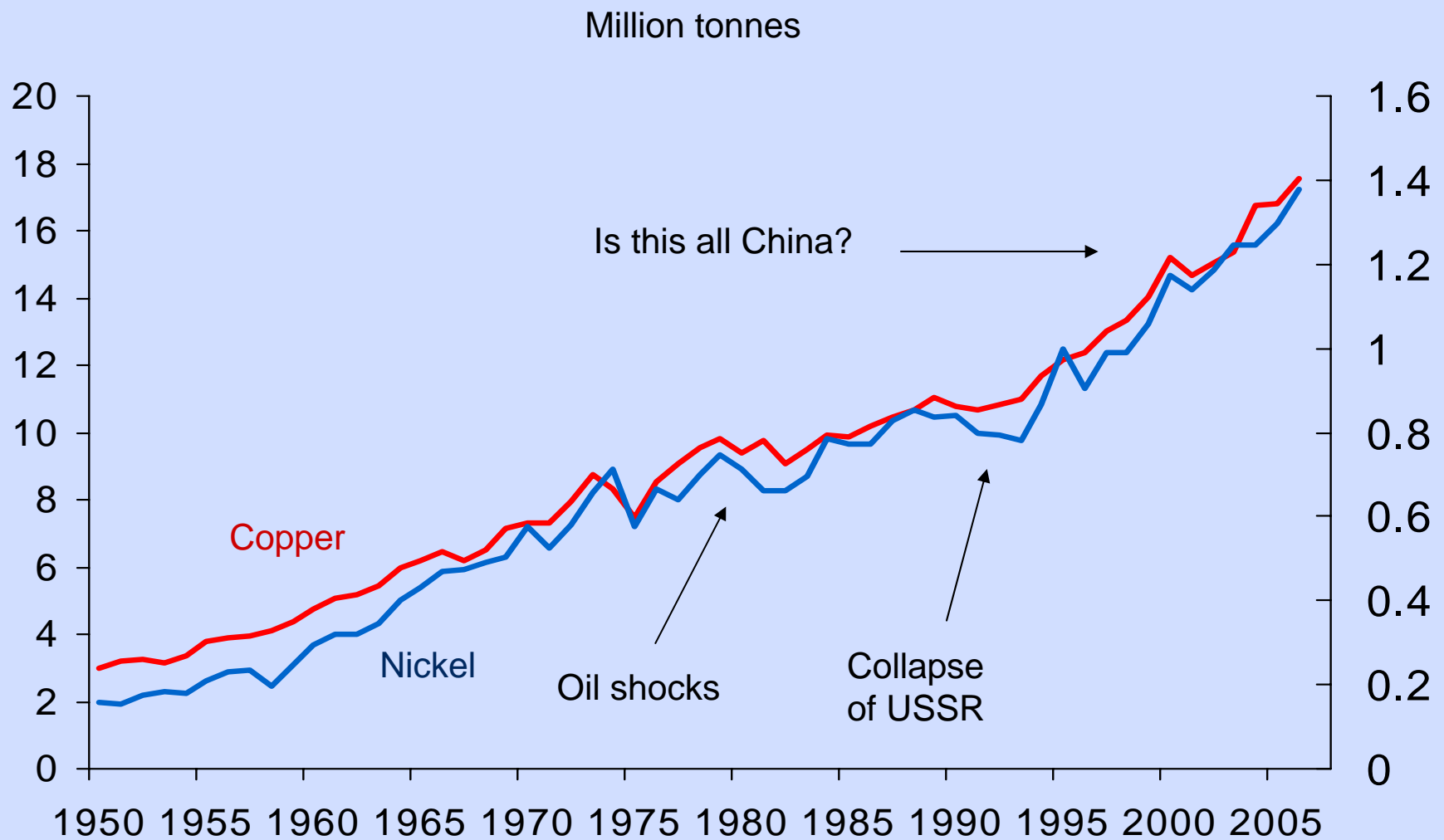
# China's share of the growth segment



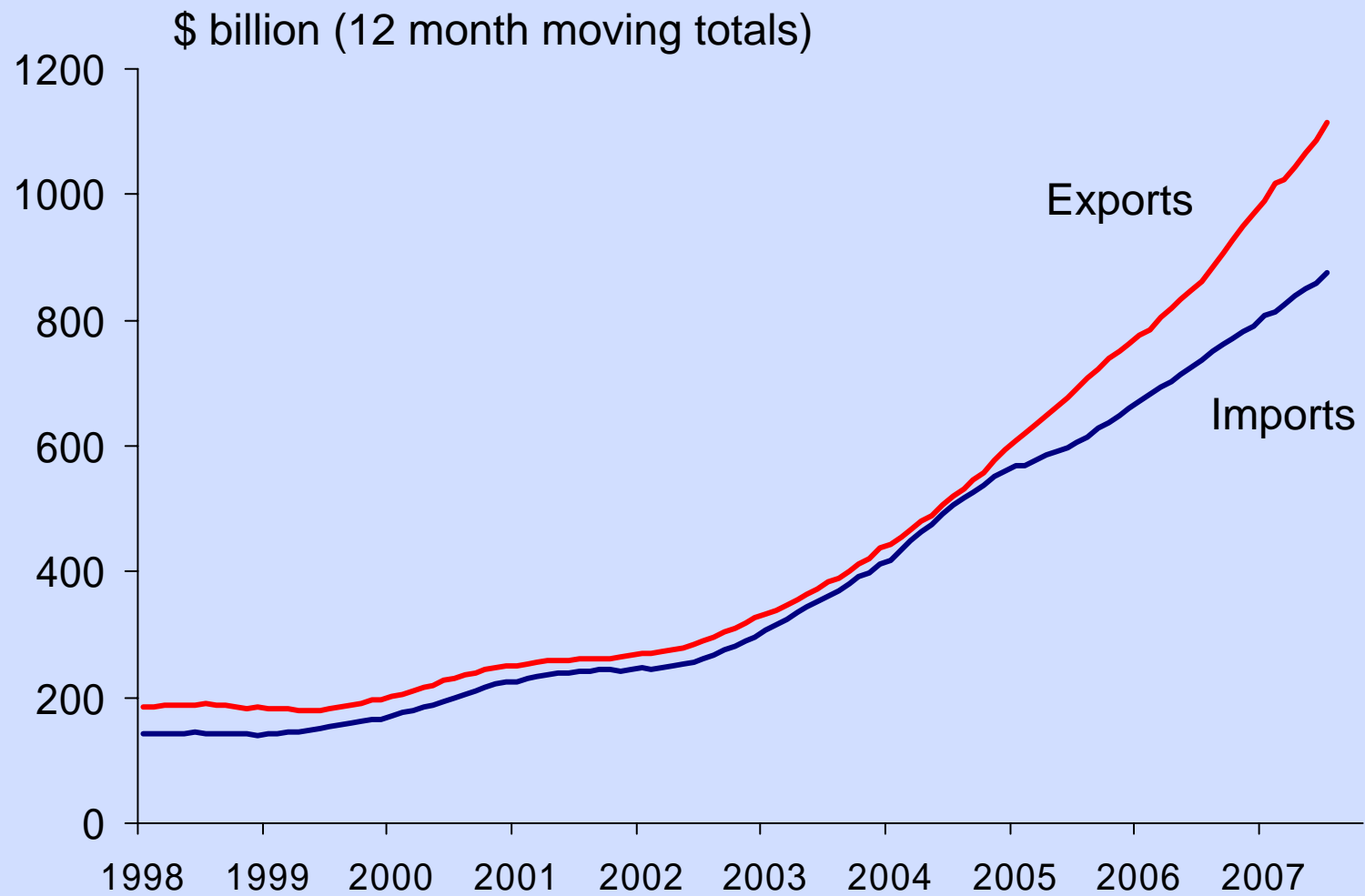
Sources IISI, WBMS, Brook Hunt

- It was not all 'Made in China'
- Not all metals have benefited equally
- Intensity of use in China is unusually high
- Recent trends are environmentally unsustainable

# World consumption of copper and nickel

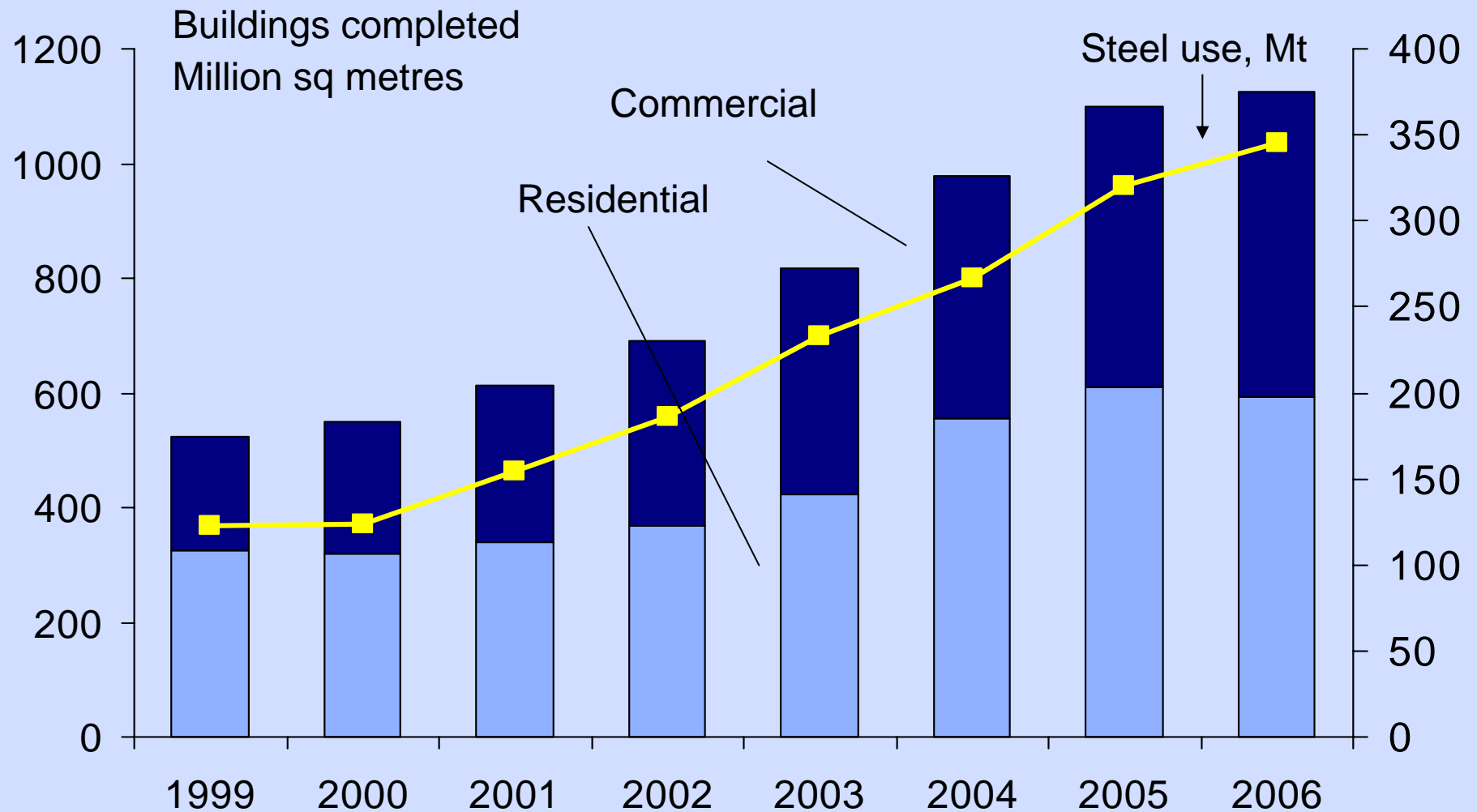


# China's external trade



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# Building and steel use in China

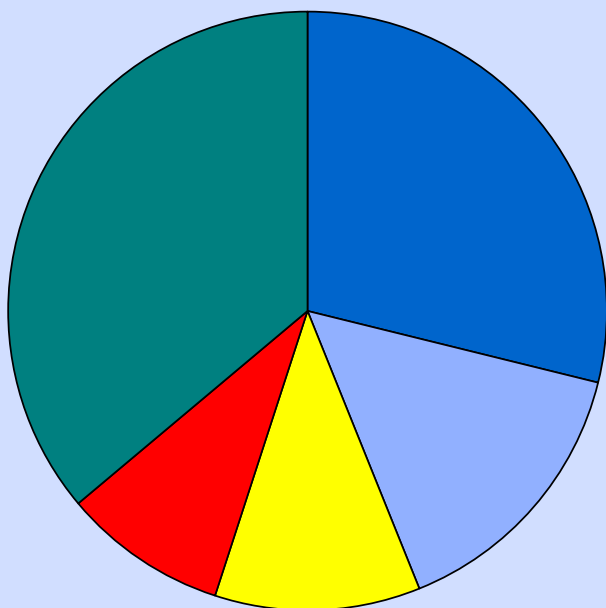


Source: EcoWin and IISI

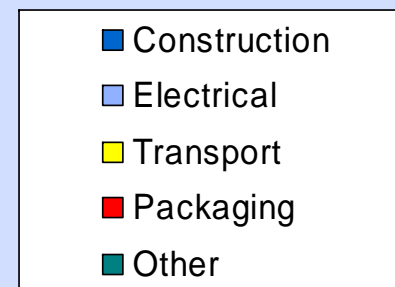
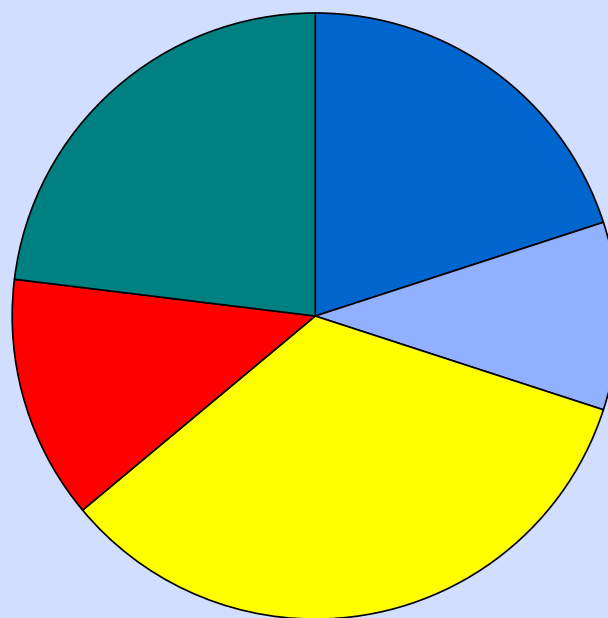
# Uses of aluminium



## China



## World



Source: AME and Alcan

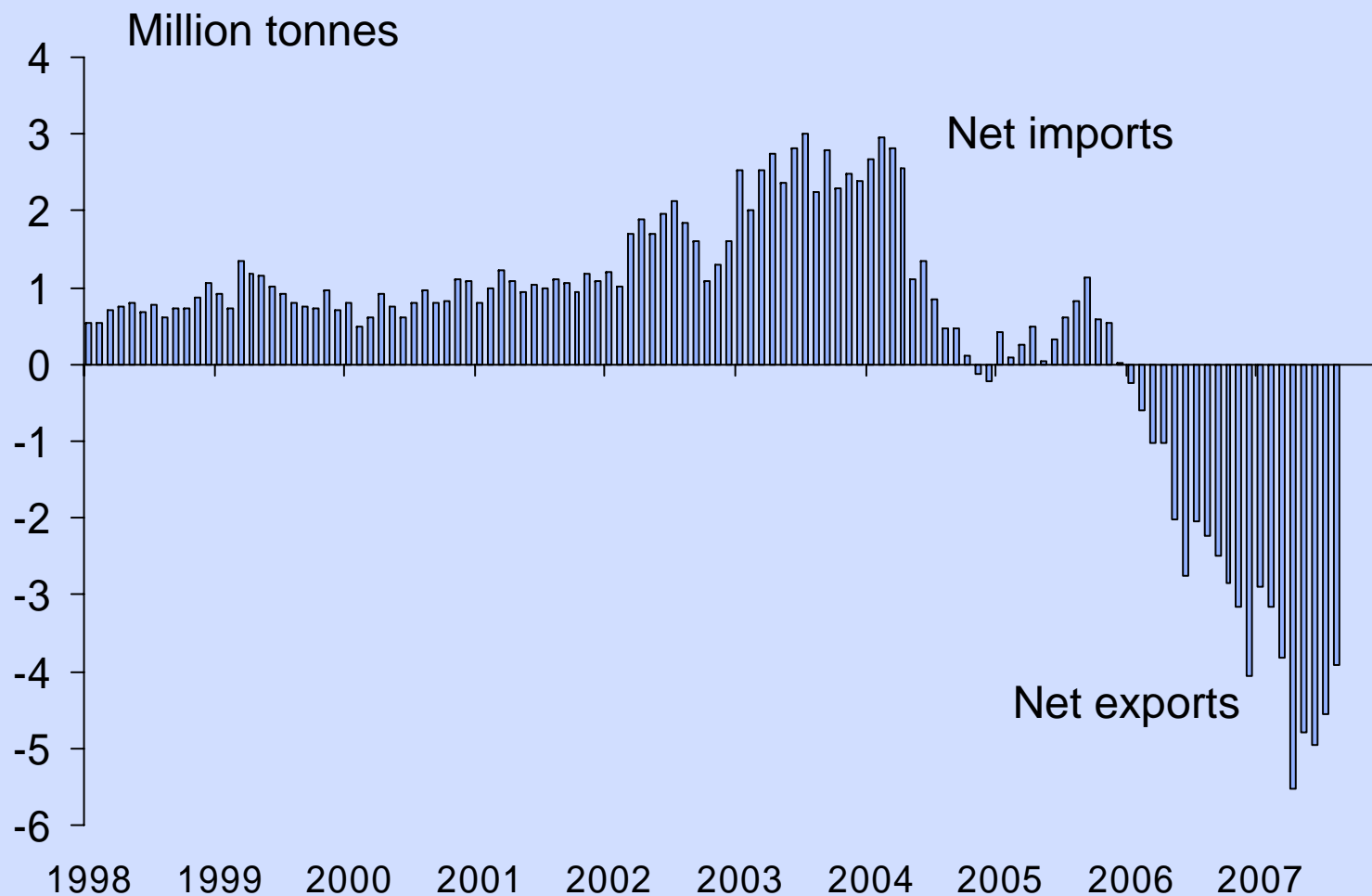
# China impact biggest in steel and aluminium



	Demand ('000t/mt)			Growth rates:		Growth
	1980	2000	2006	1980-2000 (A)	2000-2006 (B)	Change (B)-(A)
<b>Total World</b>						
Steel (mt)	969	850	1243	-0.7%	6.5%	7.2%
Aluminium	15320	24909	34528	2.5%	5.6%	3.1%
Copper	9564	15225	17569	2.4%	2.4%	0.1%
Zinc	6101	9031	11211	2.0%	3.7%	1.7%
Nickel	675	1133	1389	2.6%	3.5%	0.8%
<b>Average</b>				<b>1.8%</b>	<b>4.3%</b>	<b>2.6%</b>
<b>Total World Ex-China</b>						
Steel	912	711	846	-1.2%	2.9%	4.2%
Aluminium	14814	21671	25827	1.9%	3.0%	1.0%
Copper	9067	13429	13599	2.0%	0.2%	-1.8%
Zinc	5851	7685	7848	1.4%	0.3%	-1.0%
Nickel	662	1060	1133	2.4%	1.1%	-1.3%
<b>Average</b>				<b>1.3%</b>	<b>1.5%</b>	<b>0.2%</b>
<b>Total China</b>						
Steel	56	138	396	4.6%	19.2%	14.5%
Aluminium	506	3238	8701	9.7%	17.9%	8.2%
Copper	497	1797	3971	6.6%	14.1%	7.5%
Zinc	250	1346	3363	8.8%	16.5%	7.7%
Nickel	13	72	256	9.0%	23.4%	14.3%
<b>Average</b>				<b>7.8%</b>	<b>18.2%</b>	<b>10.5%</b>

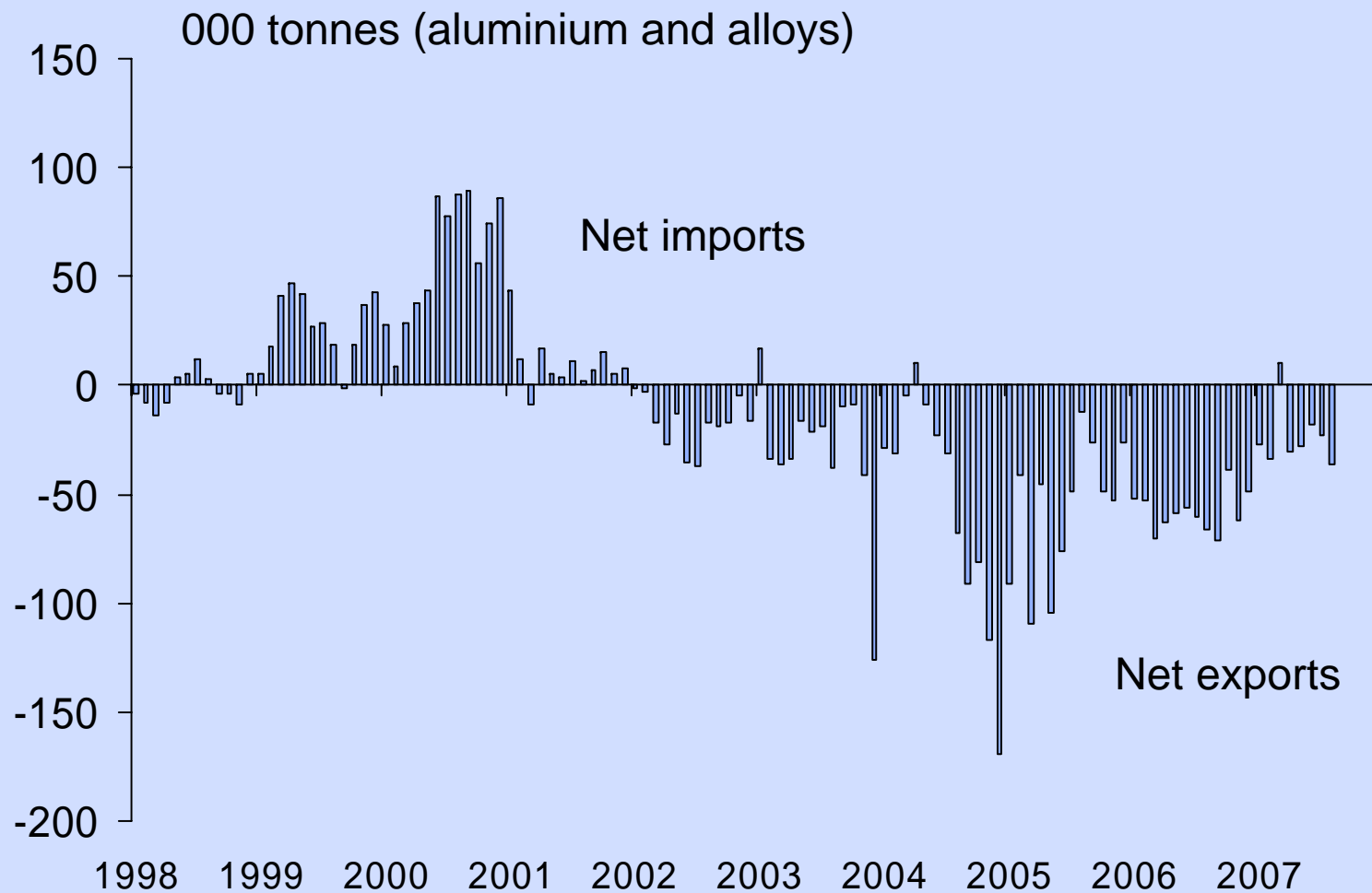
Source: China Metals, CISA, Macquarie Research, November 2006

# China net trade in steel products

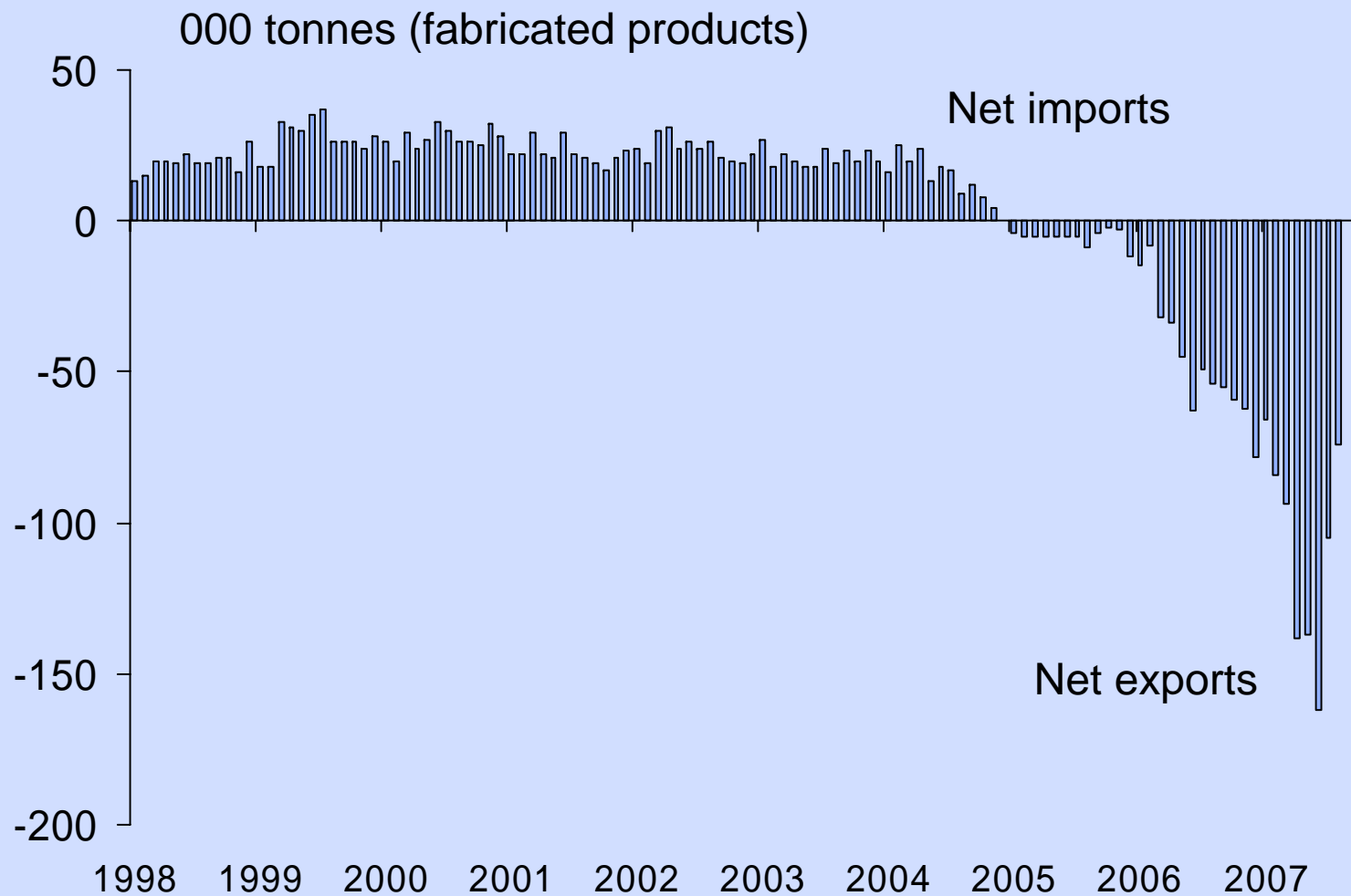


Source: EcoWin

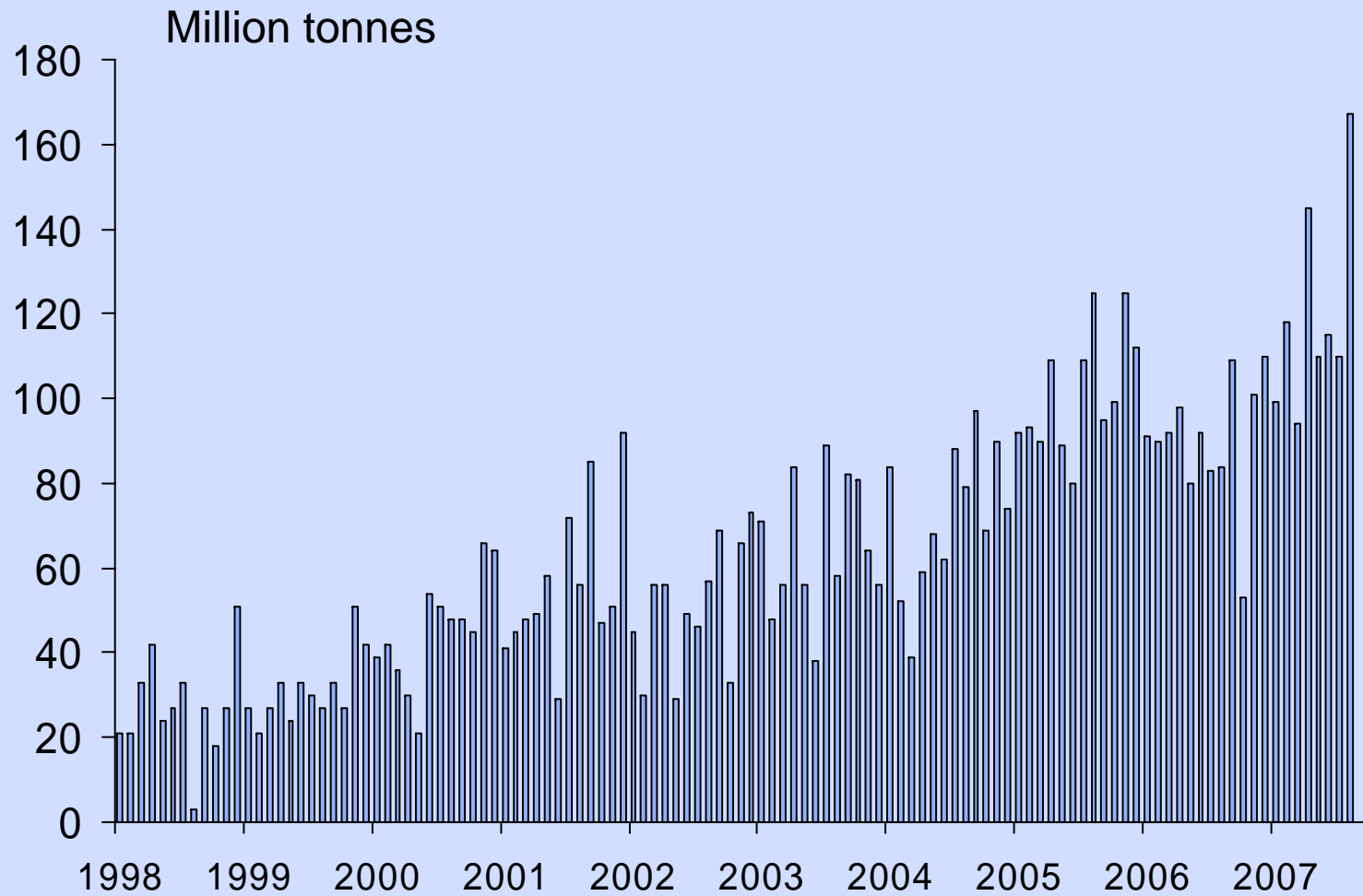
# China net trade in unwrought aluminium



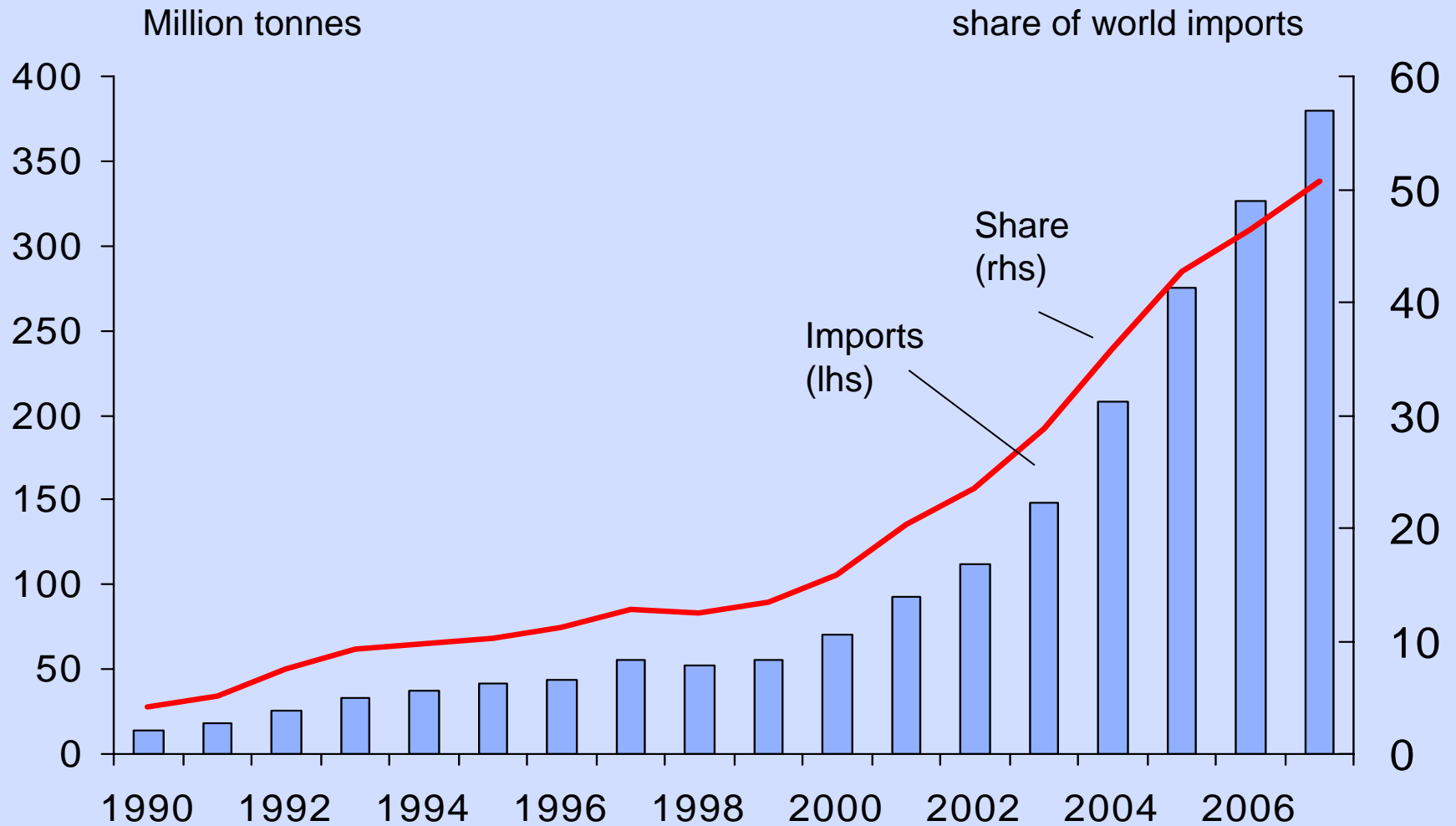
# China net trade in aluminium semis



# China net imports of copper concentrates

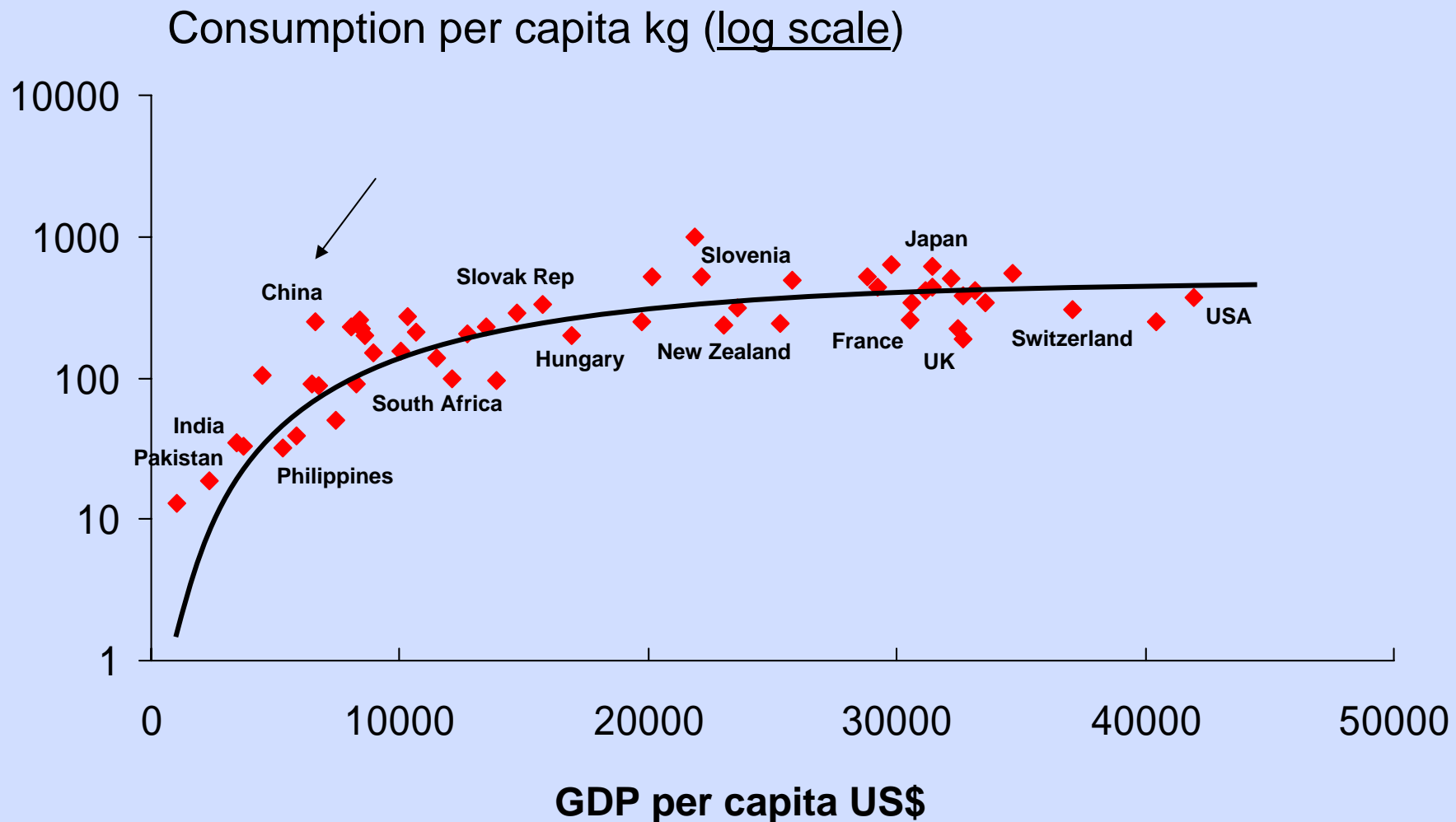


# China's imports of seaborne iron ore



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# Finished steel per capita intensity of use

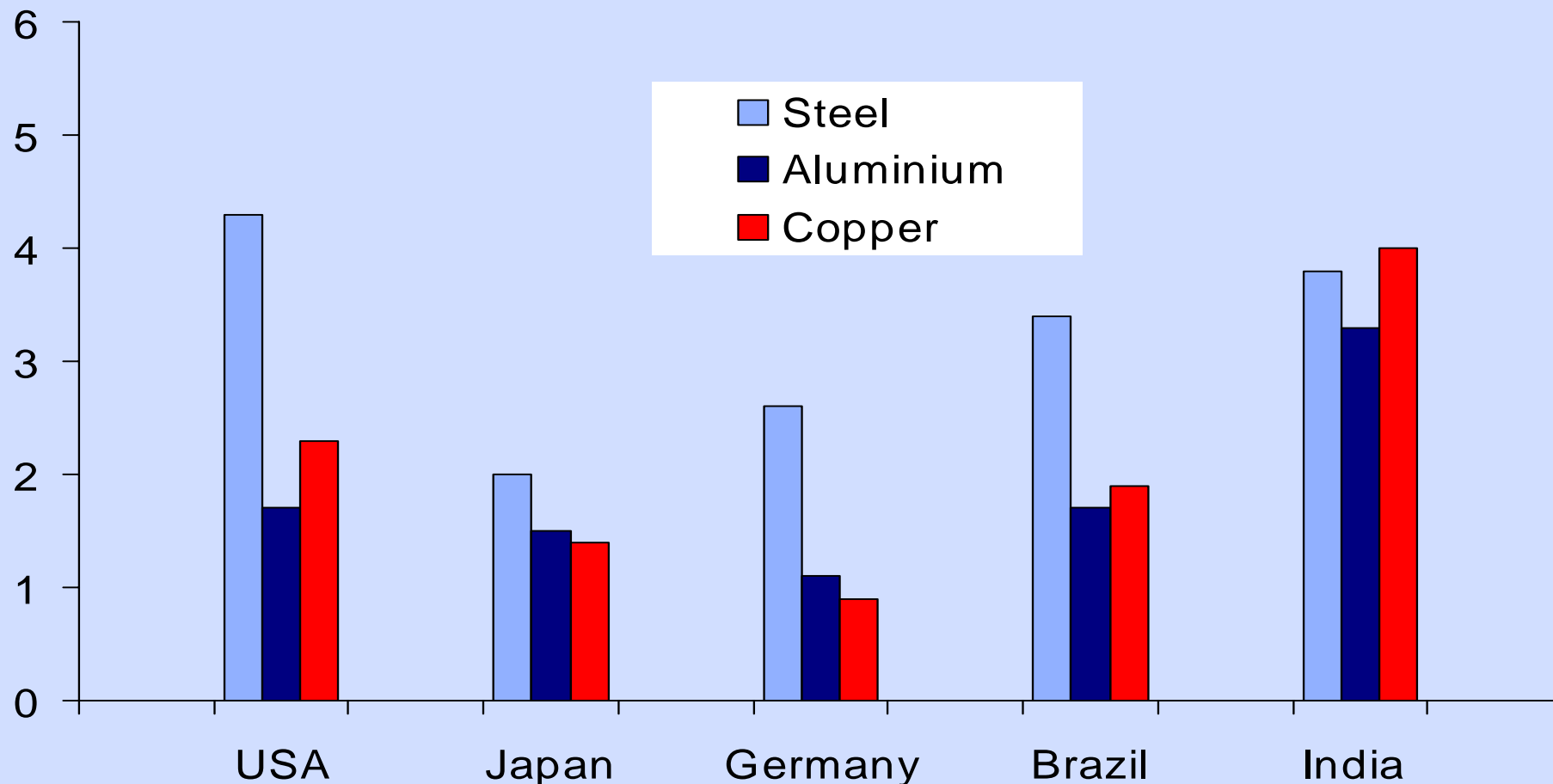


Source: World Bank and IISI, 2005 data. GDP is PPP based.

# Use of metals per unit of GDP

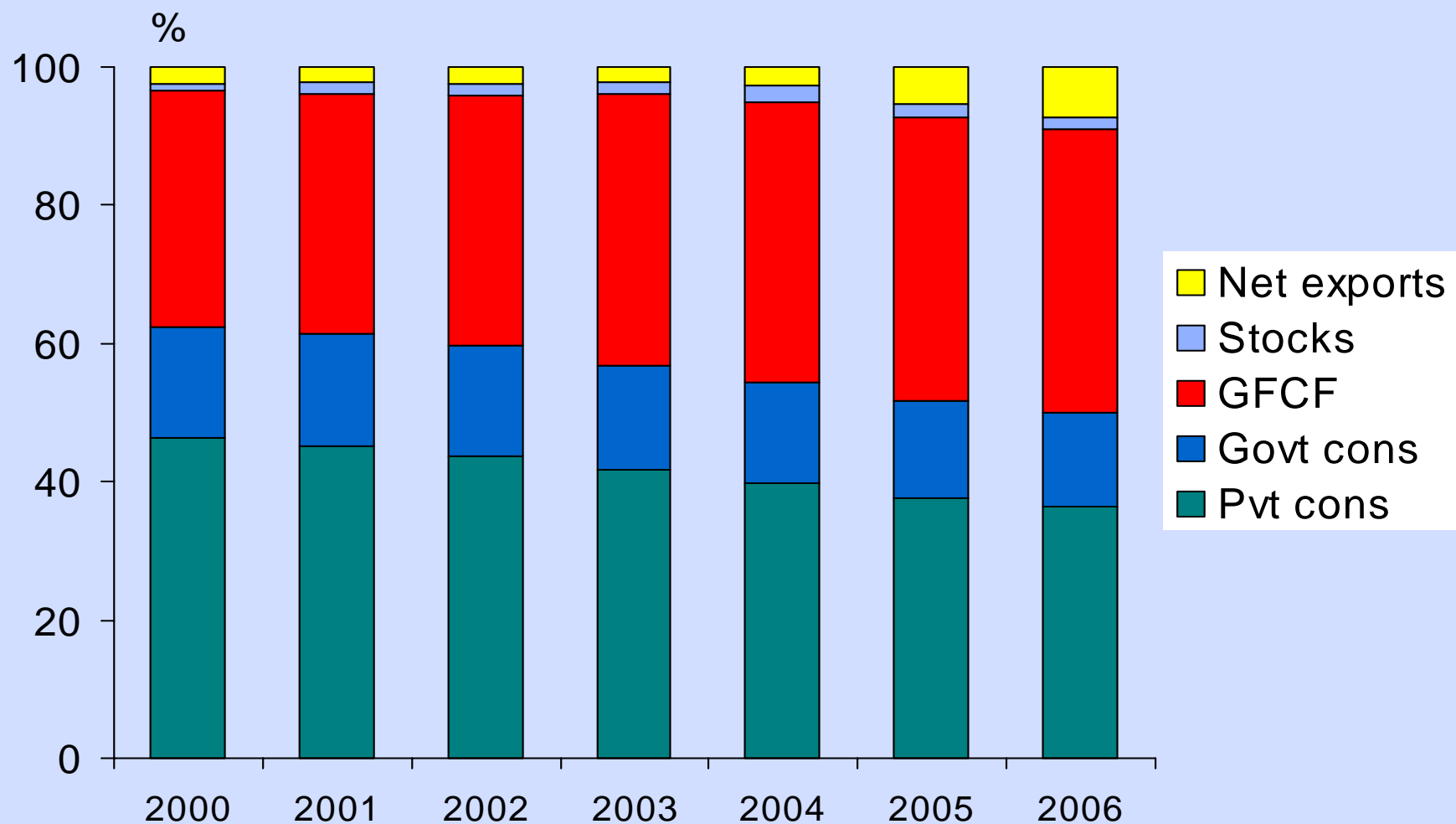


China's use per unit GDP as a multiple of country listed



Sources: World Bank, IISI, WBMS. GDP is PPP based.

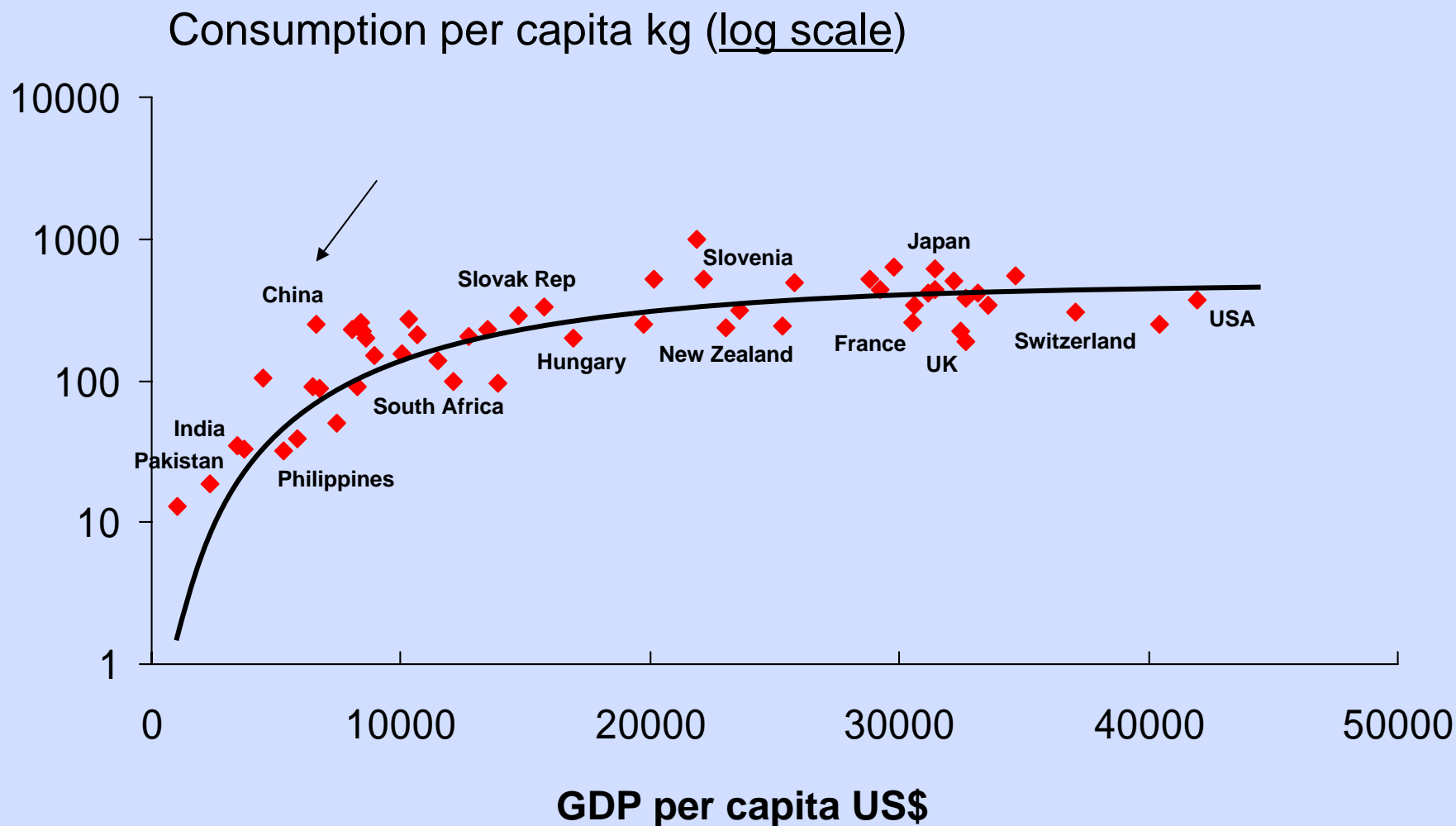
# Composition of China's GDP



Source: IMF

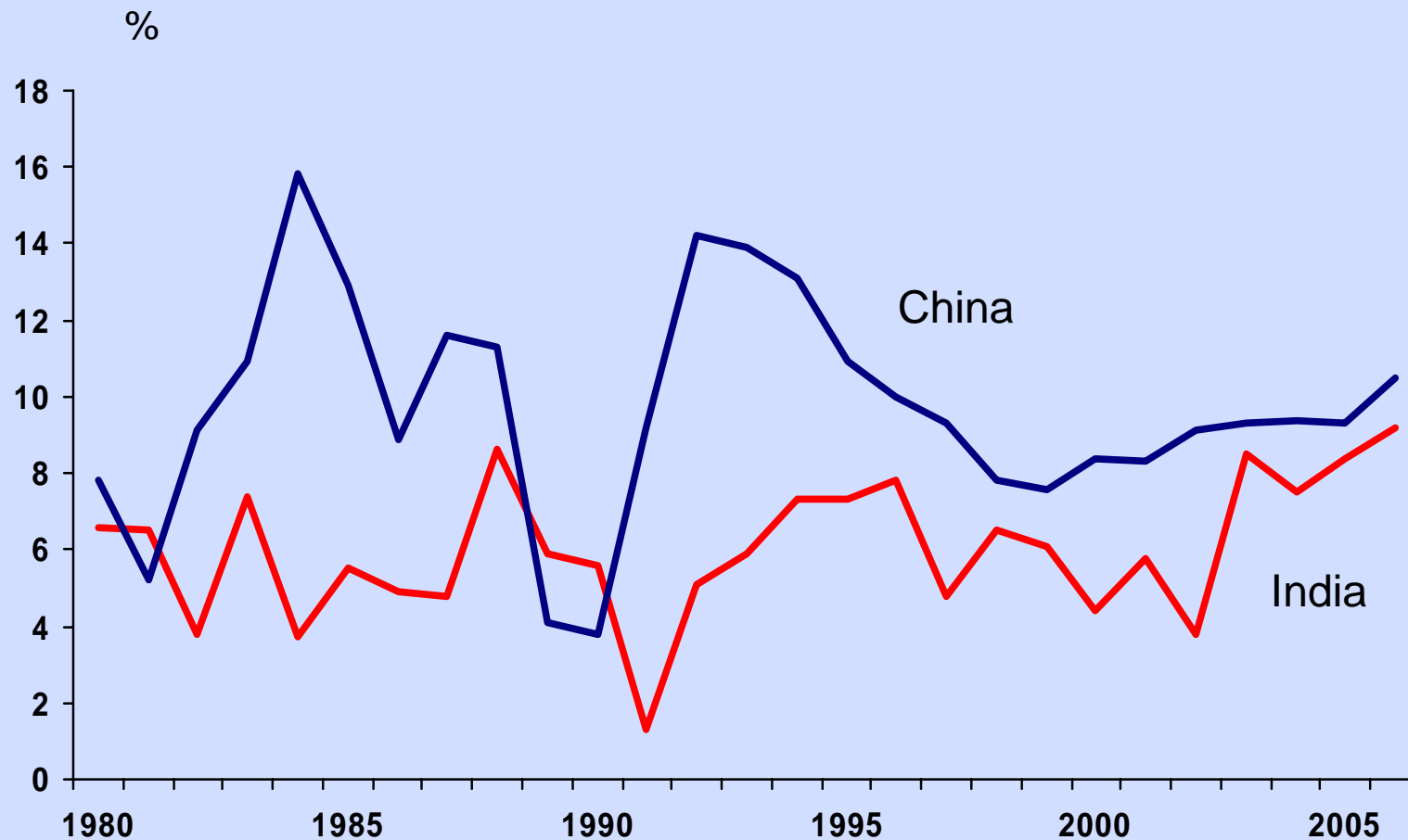
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# Finished steel per capita intensity of use



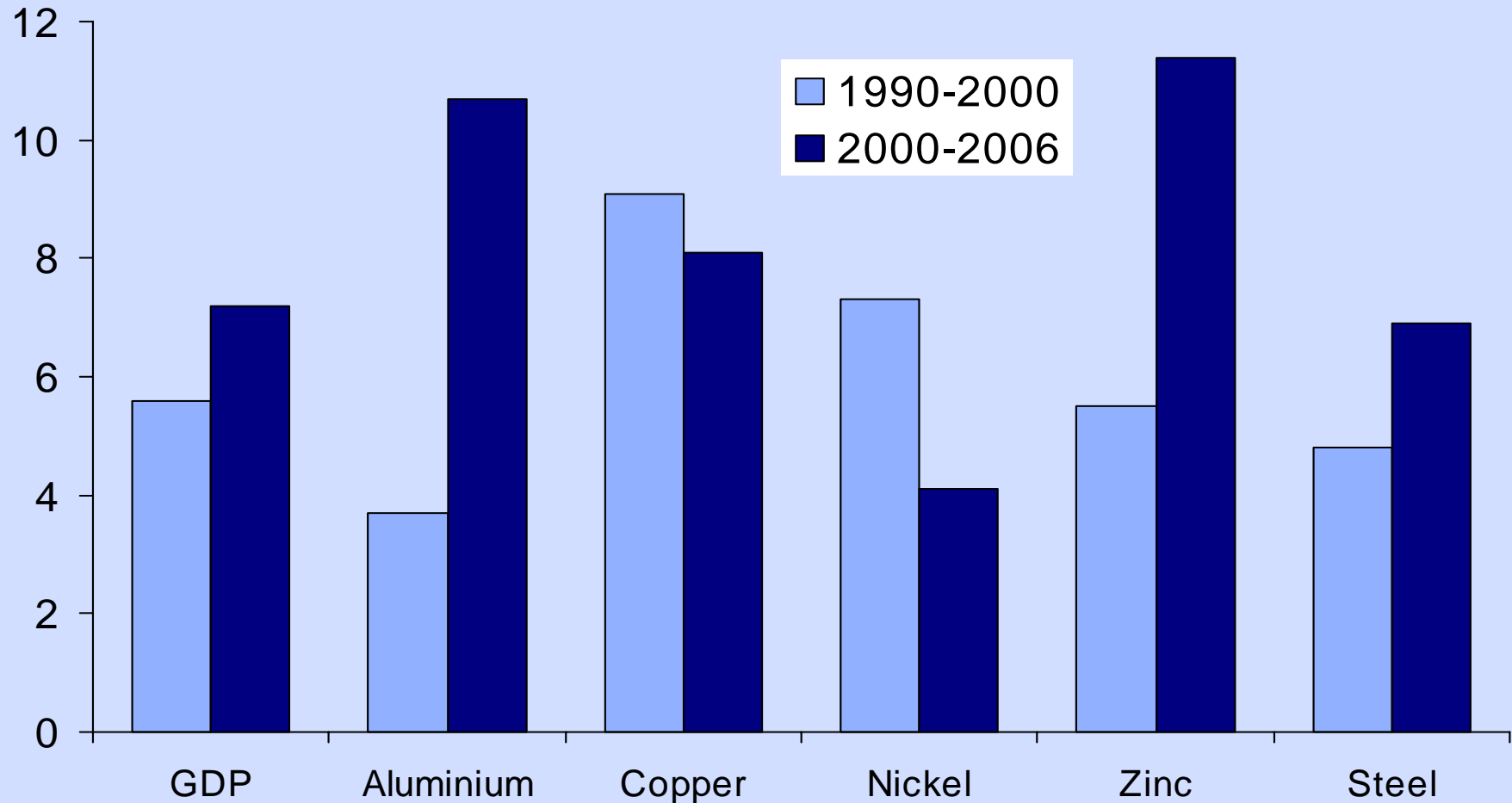
Source: World Bank and IISI, 2005 data. GDP is PPP based.

# India & China: annual growth rates of GDP



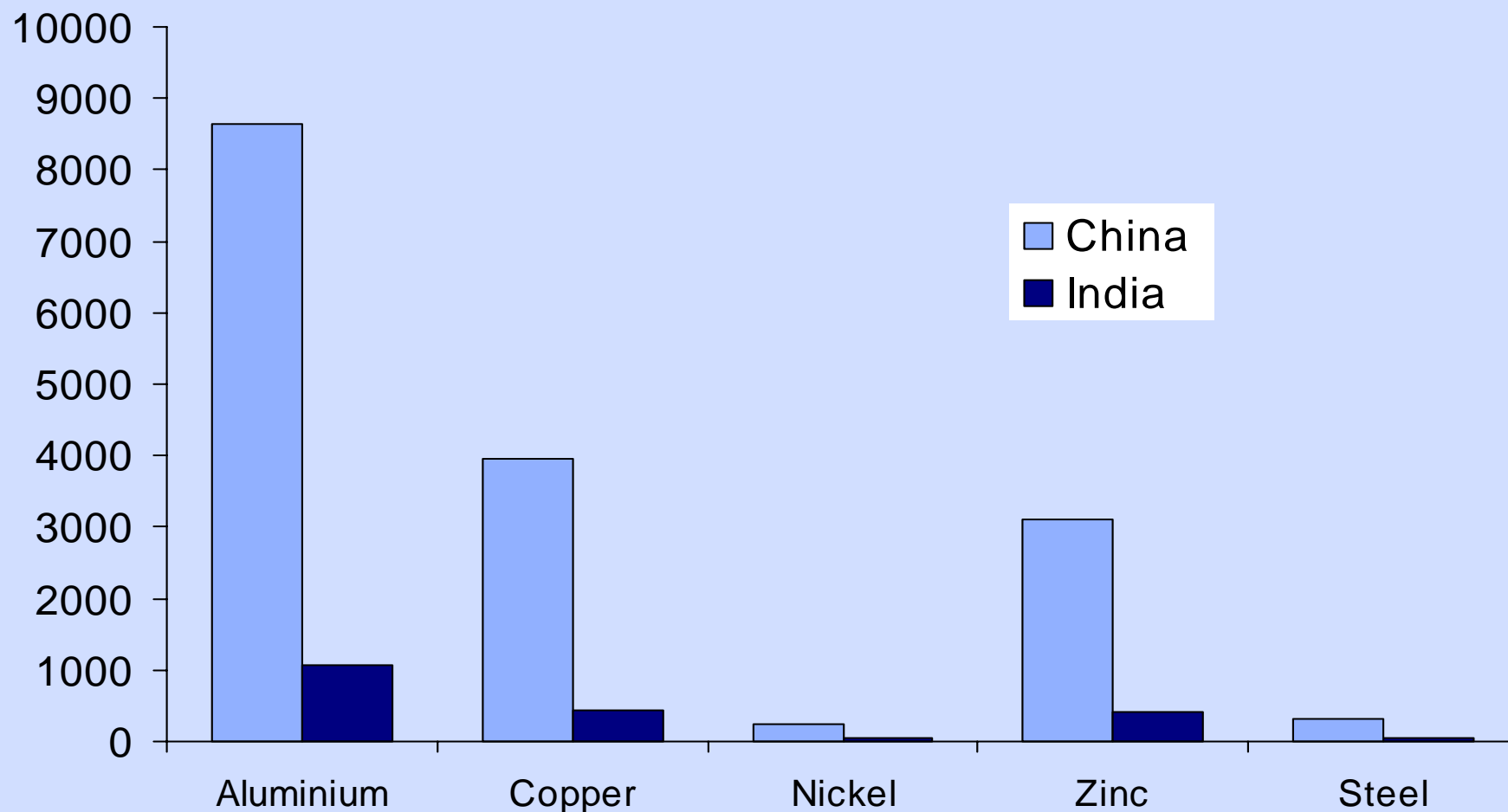
Source: IMF

# India: growth of GDP and metals use



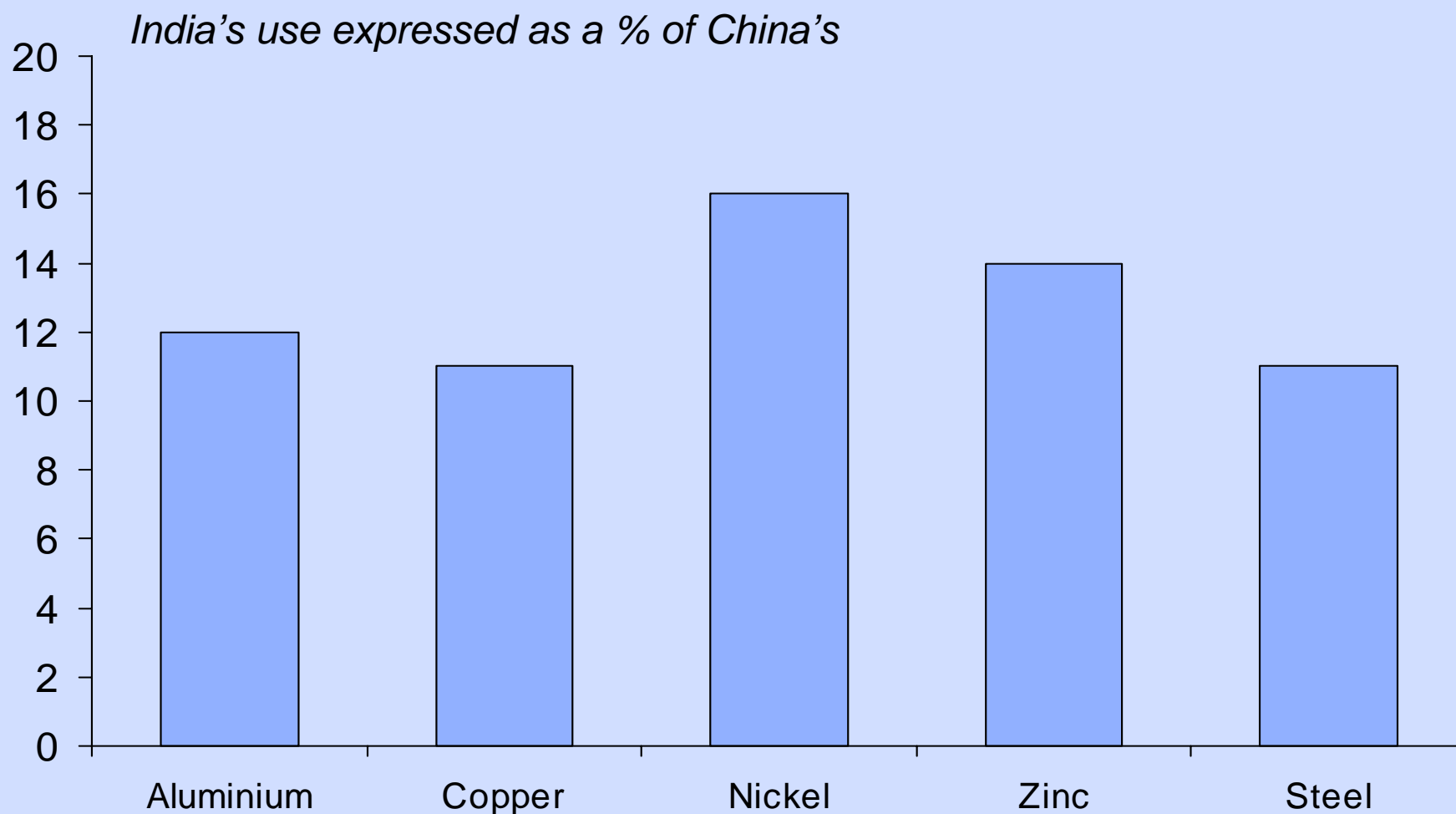
Source: IMF, WBMS

# China and India: use of metals



Source: WBMS

# China and India: comparison of use of metals

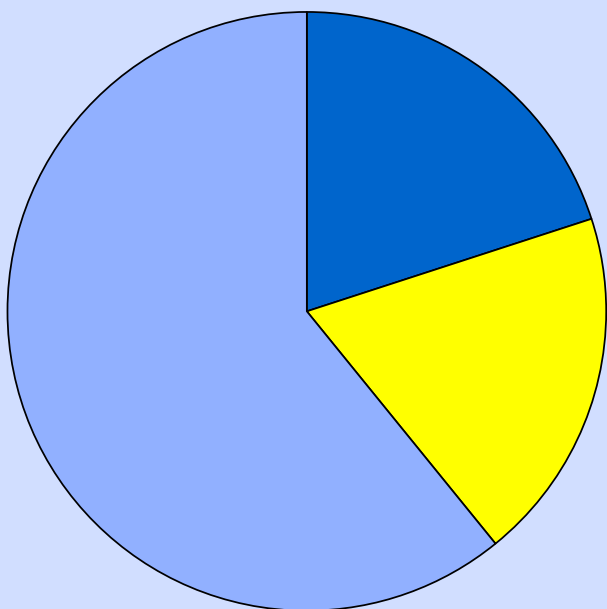


Source: WBMS, Brook Hunt, IISI

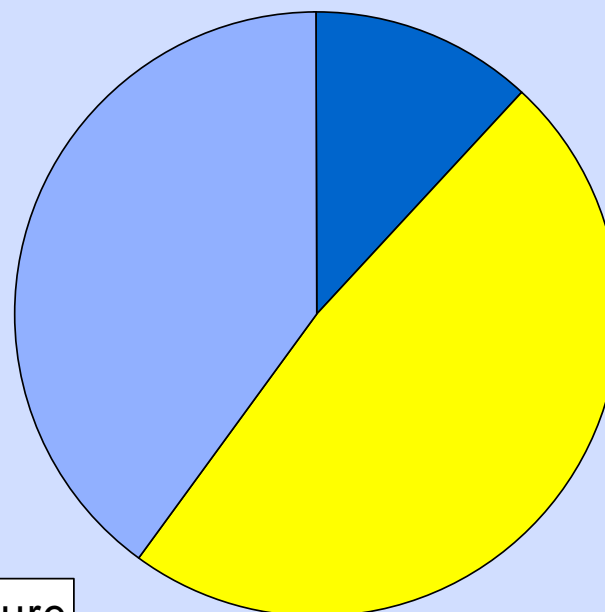
# India and China: structure of GDP



India

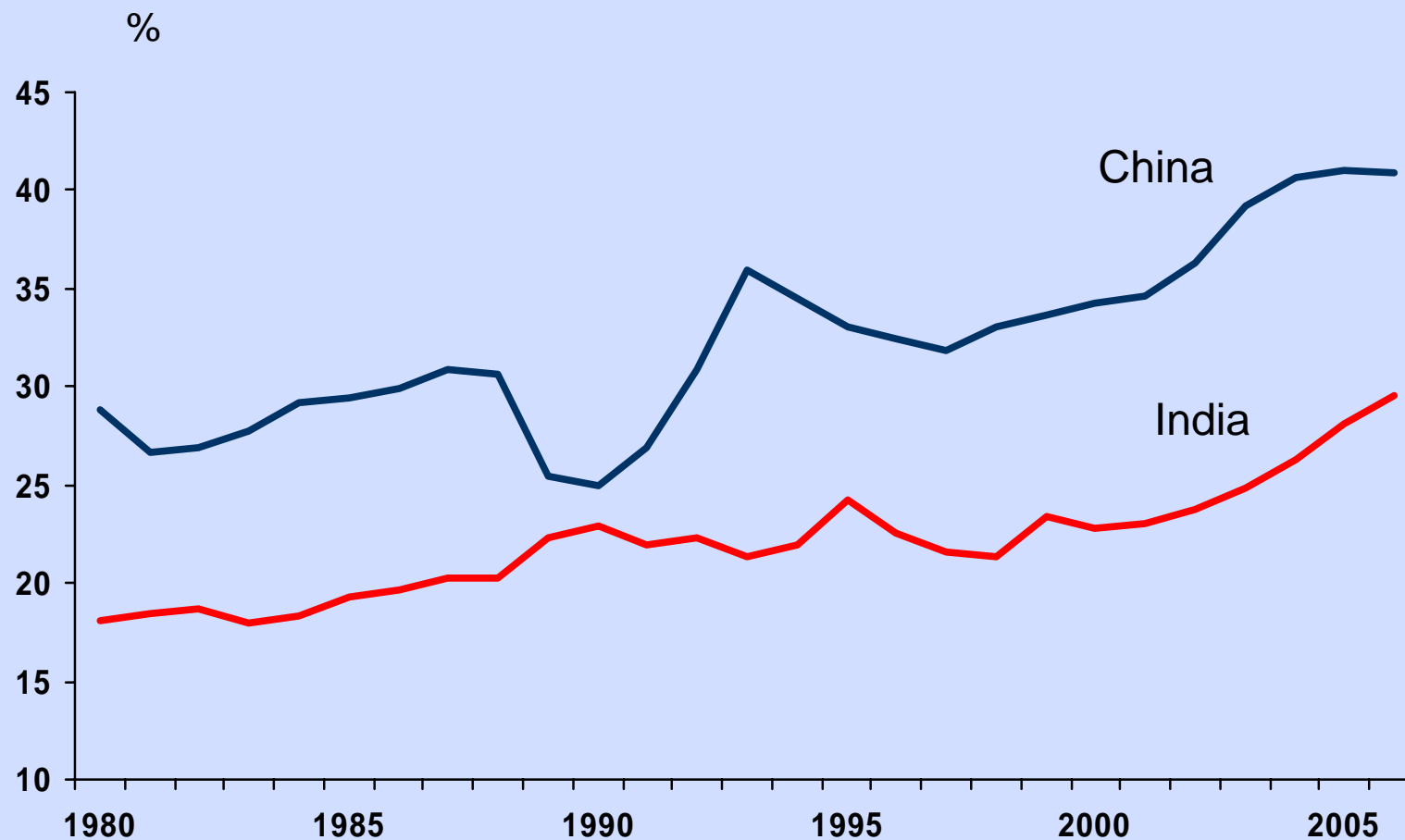


China



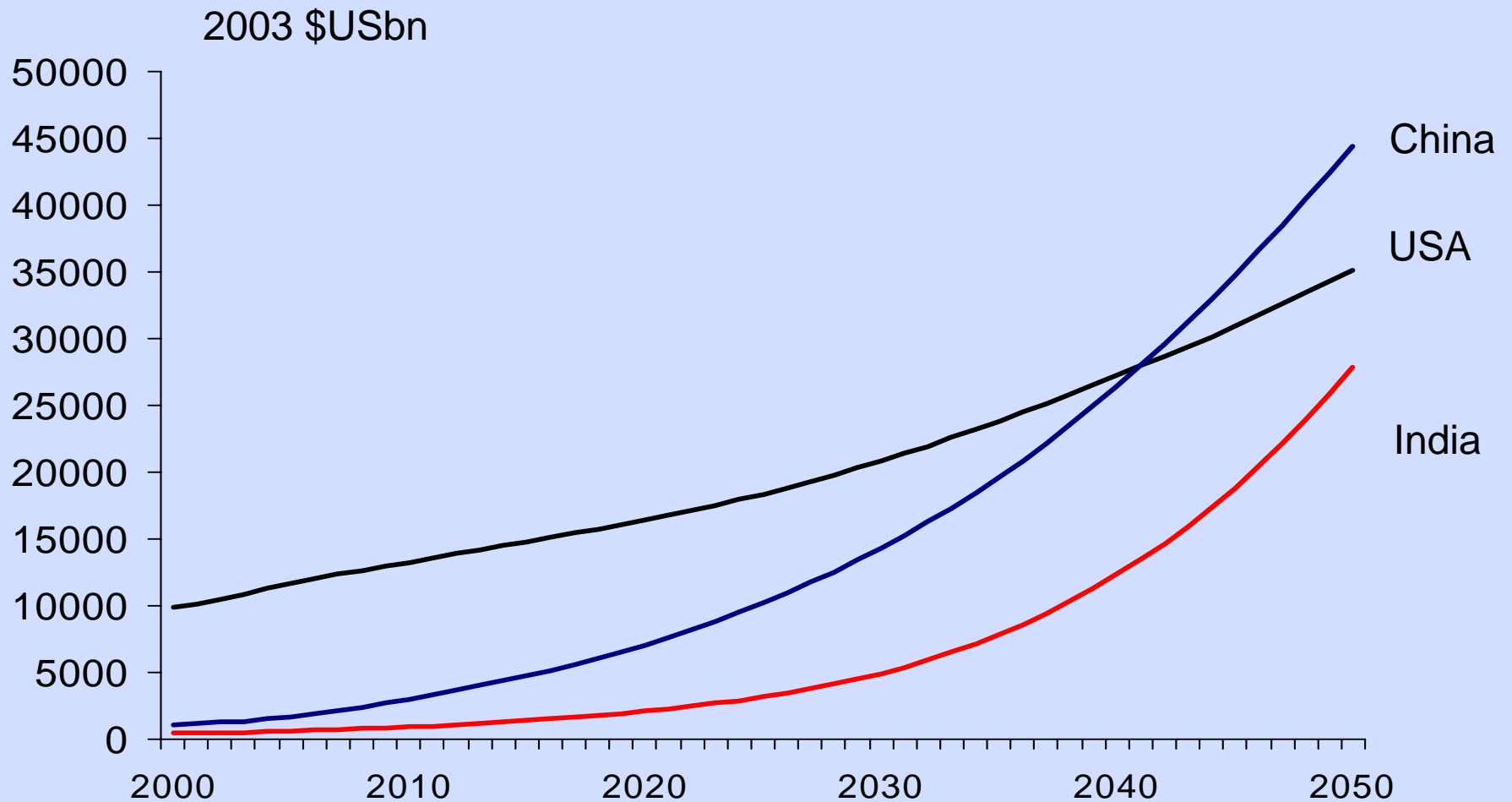
Source: CIA, *The World Factbook 2007*

# India & China: investment as % GDP



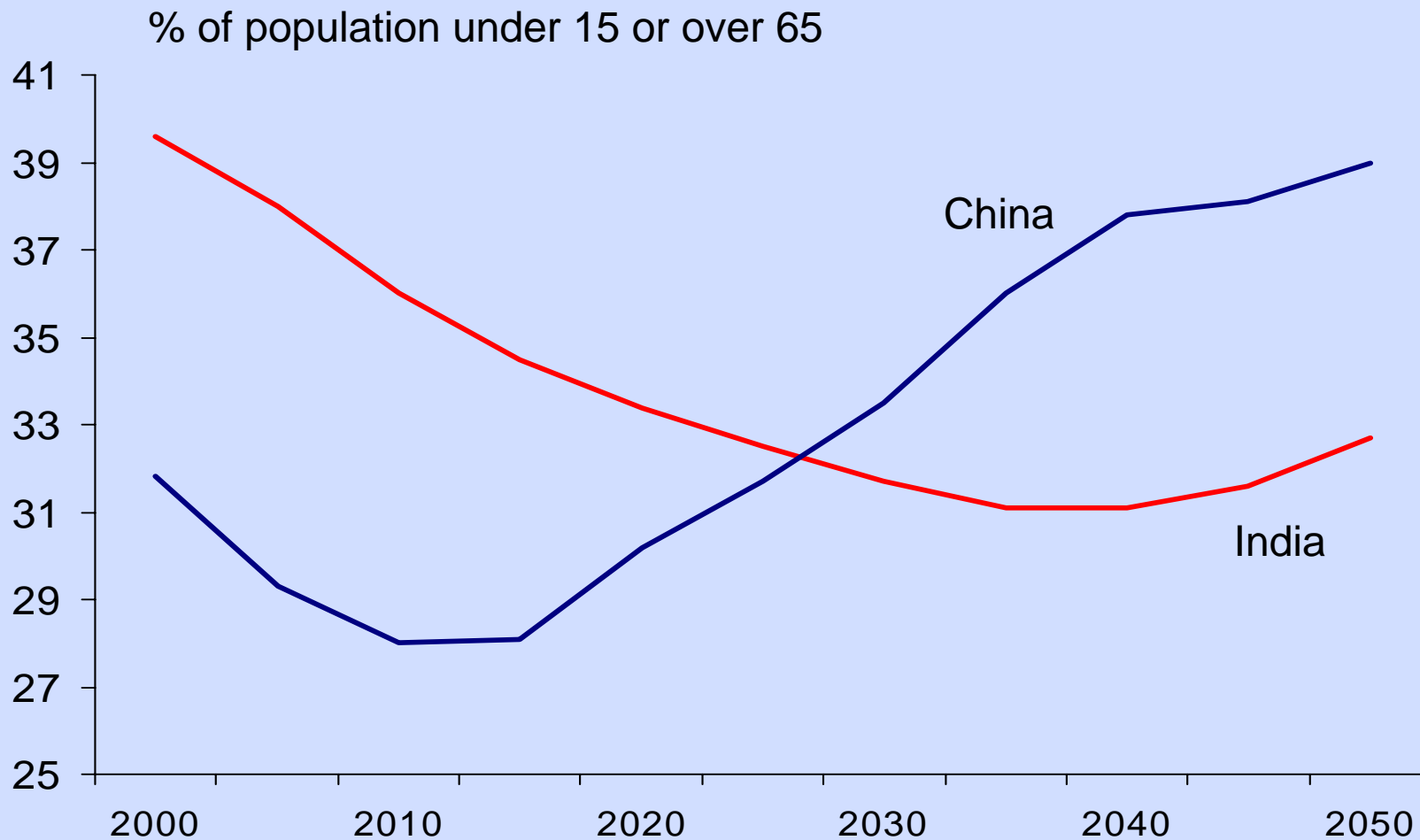
Source: IMF

# China and India: GDP forecasts



Source: Goldman Sachs, *Dreaming with BRICs*, 2003

# China and India: dependency ratios

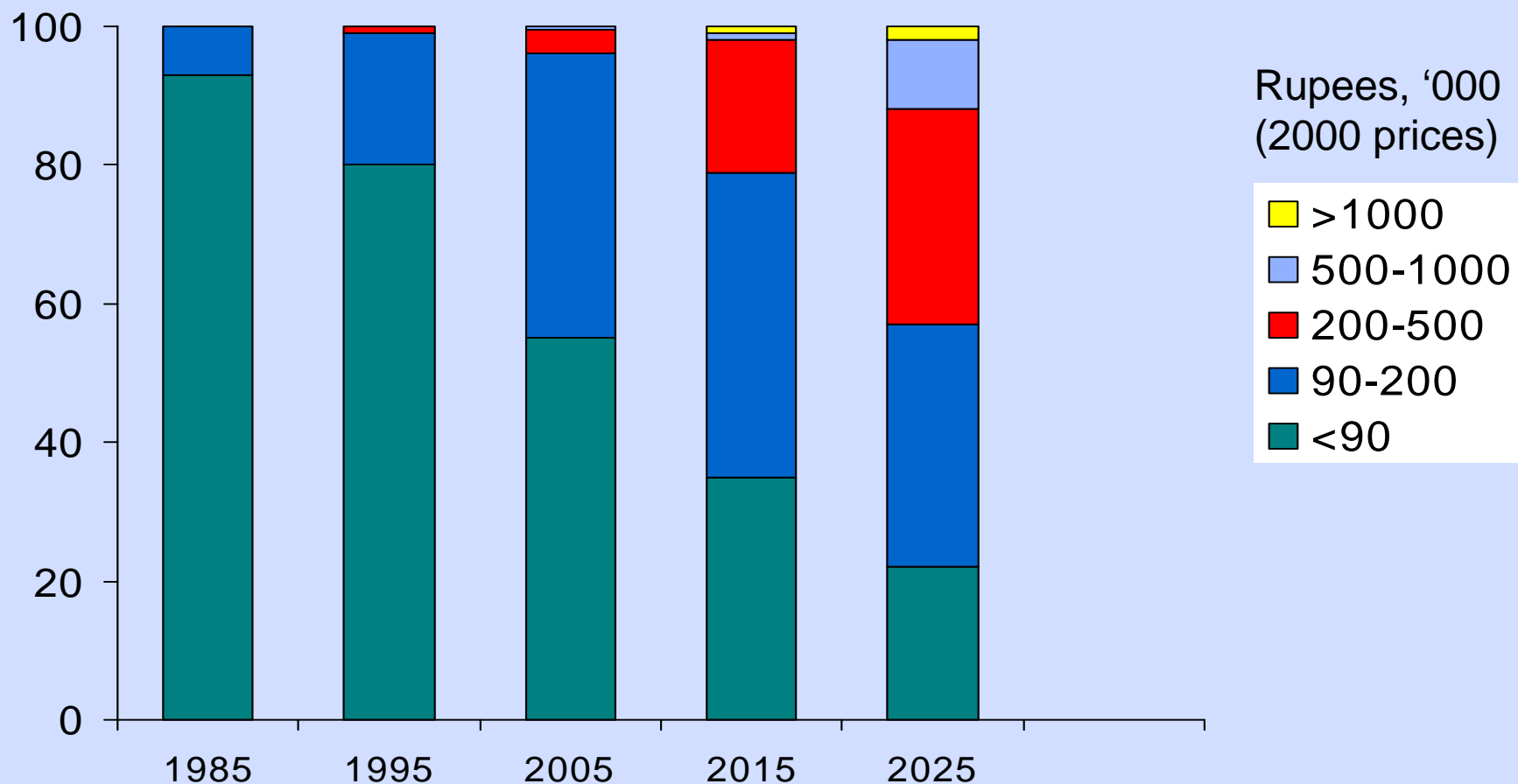


Source: UN, World Population Prospects, 2007

# Household incomes in India

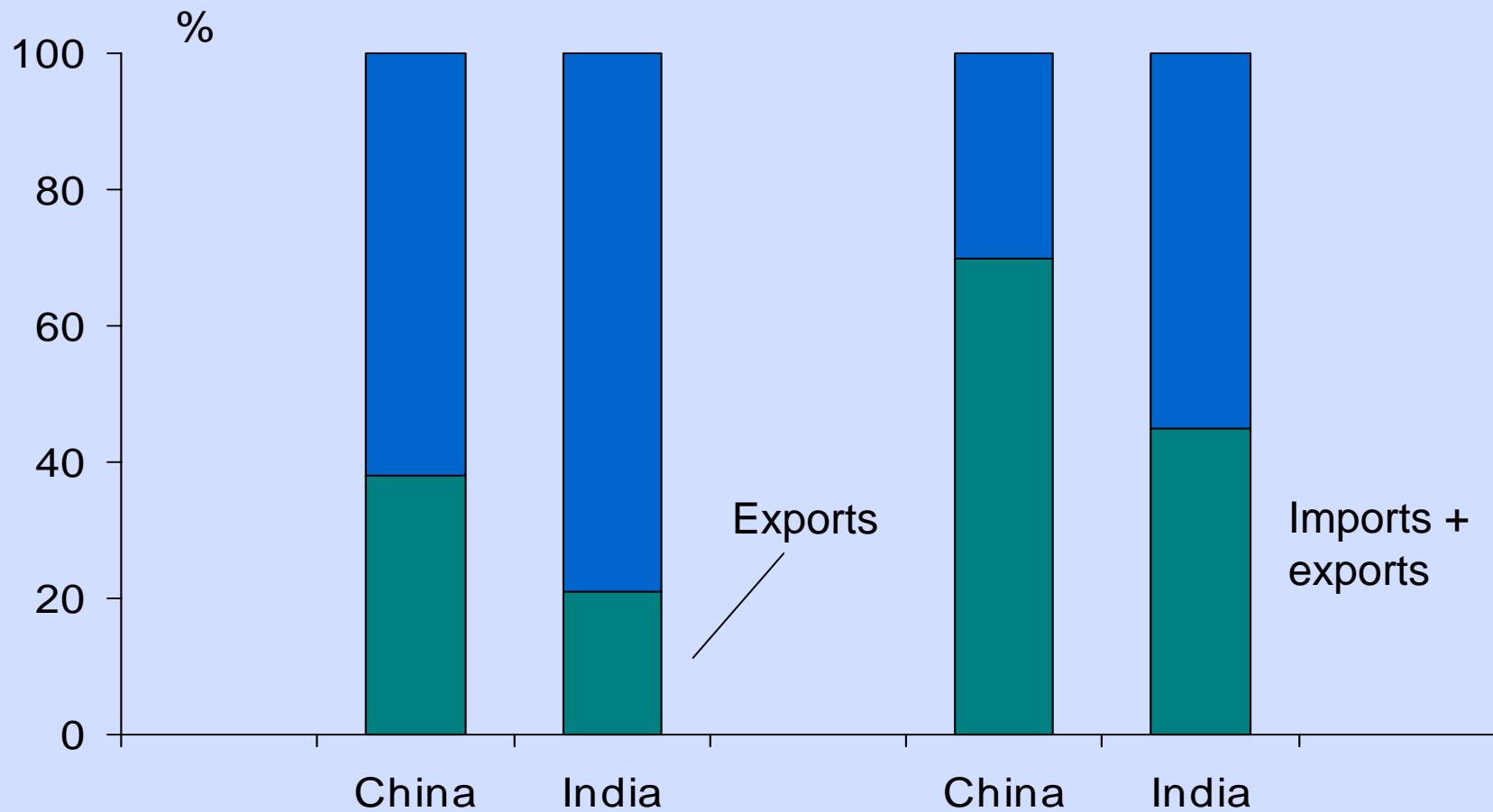


% of population in household annual income bracket



Source: McKinsey Global Institute, from *The Economist*, 5 May 2007

# Value of trade relative to GDP

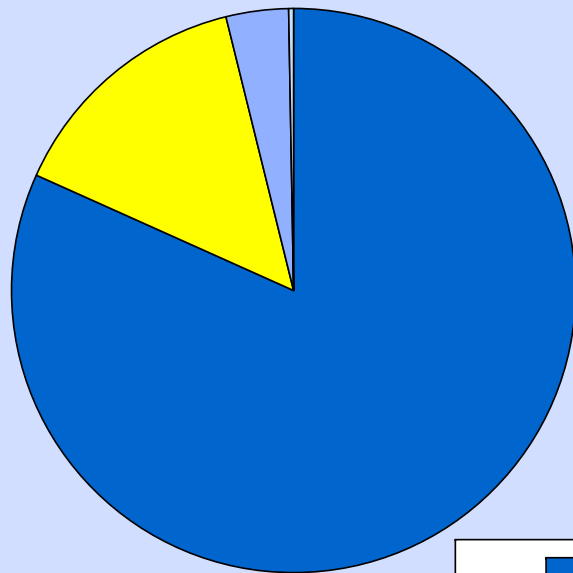


Source: World Bank

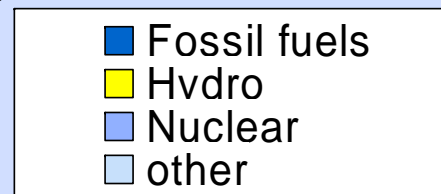
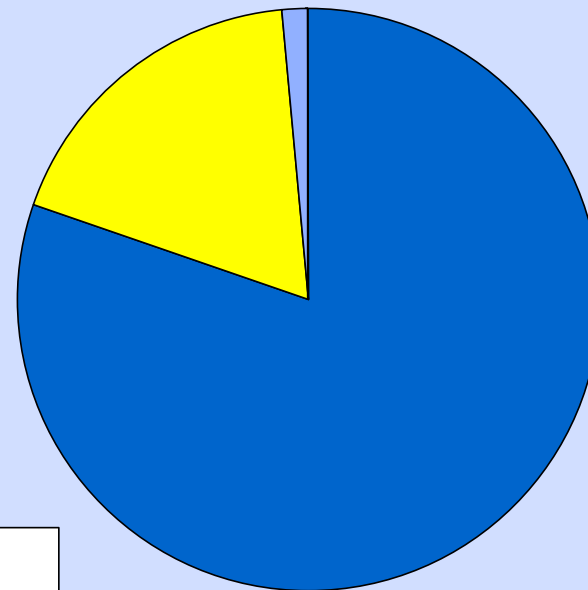
# India & China: sources of electric power



India



China



Source: CIA, *The World Factbook 2007*



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