

# "Current Coke Market Developments"

Andrew Jones  
Resource-Net  
Brussels, Belgium

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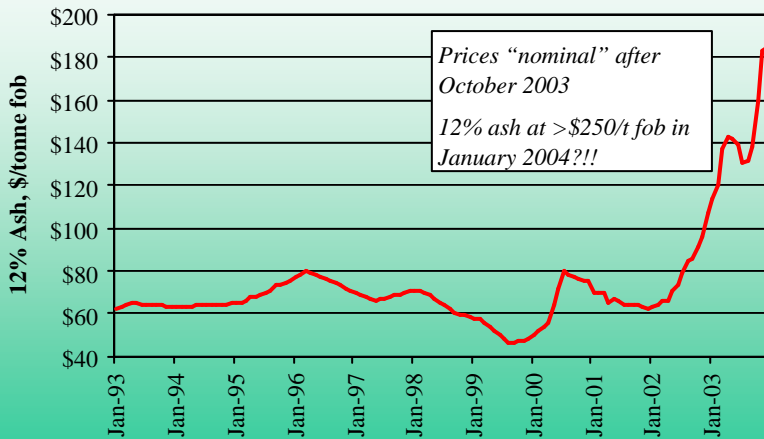
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## About Resource-Net...

- *Research & analysis of the global commodity markets*
- *Main interests are ferroalloys and reductants*
- *"Coke Market Report": monthly, reports coke pricing, trade data, market trends etc (Eur450/year)*
- *"Coke Market Survey": annual report on the coke industry & markets, price forecasts 10 years out (Eur2000)*
- *"Anthracite Market Report": same format as Coke Market Report, in the pipeline...*
- *Web address: [www.resource-net.com](http://www.resource-net.com)*

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## Chinese Coke Pricing



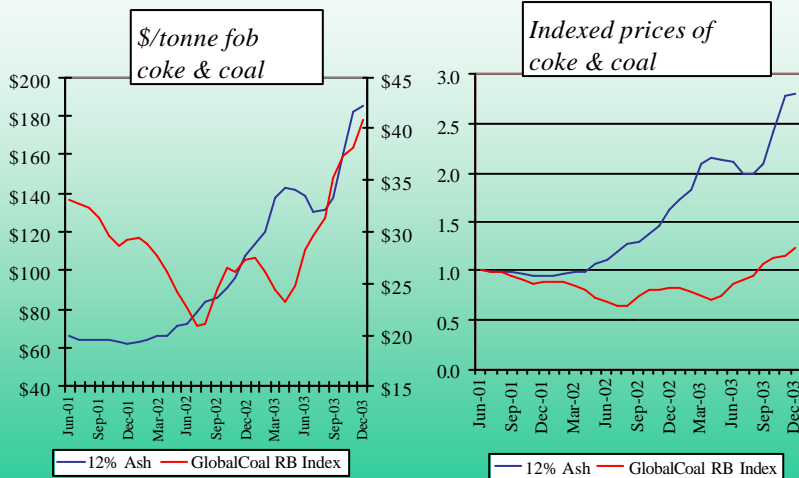
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## Factors in the Tight Coke Market

- **Chinese government policy:** Closures of illegal coke and coal mines in Shanxi province
- Shortages of coke export licences from China, prices are currently at \$70 per tonne....
- High coking coal prices
- Lift-off in world iron & steel output from start of 2002, especially in China
- Long-term decline in coke capacity in the developed world: Europe – decreased from 61.8m tpy in 1999 to 53.6m tpy in 2003; N America – 26.2m tpy to 22.8m tpy

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# Coke versus Coal Pricing

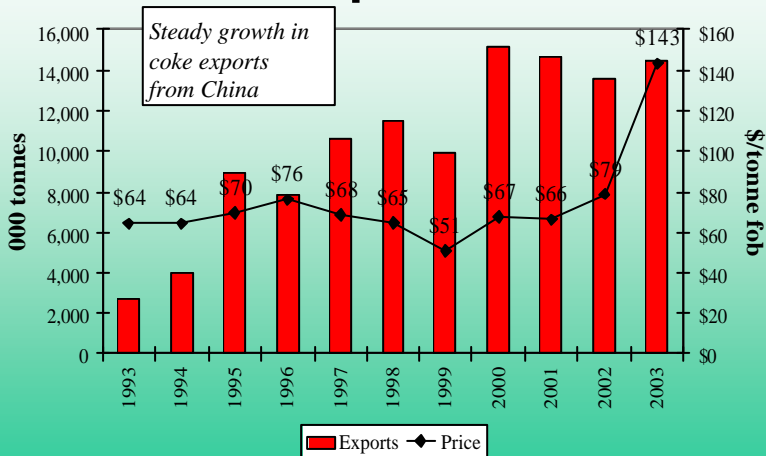


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# Coke Prices – Nominal & Real

<i>Year</i>	<i>Nominal</i>	<i>Real – Using Iron &amp; Steel PPI</i>	<i>Real – Using Fuels PPI</i>
1993	\$63.9	\$65.0	\$79.5
1994	\$64.0	\$79.5	\$81.8
1995	\$69.7	\$61.9	\$88.8
1996	\$75.8	\$81.8	\$88.1
1997	\$68.3	\$63.8	\$79.0
1998	\$64.6	\$88.8	\$85.3
1999	\$50.9	\$71.0	\$64.0
2000	\$67.4	\$88.1	\$64.4
2001	\$66.0	\$63.7	\$63.1
2002	\$78.9	\$79.0	\$83.7
<b>Average % Change / Year</b>	<b>+0.53%</b>	<b>+1.60%</b>	<b>-2.19%</b>

## Chinese Coke Price vs Exports

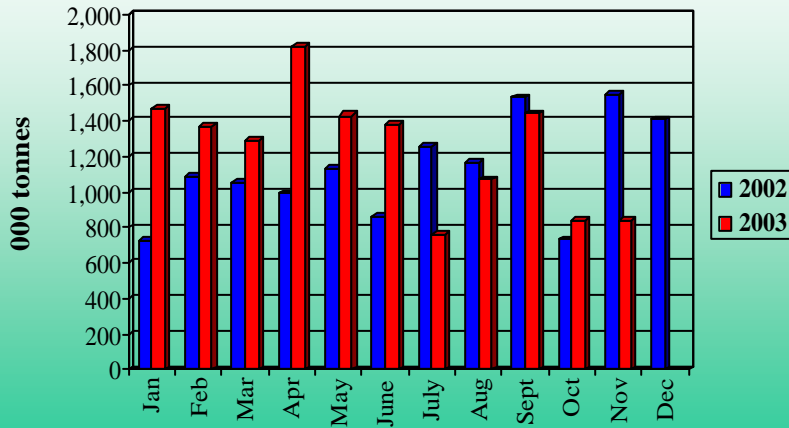


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## Chinese Coke Exports

000 tonnes	1998	1999	2000	2001	2002	2003 (to Oct)
Europe	4,353	3,596	4,382	5,038	4,653	4,307
N America	1,595	1,268	2,058	1,317	1,367	909
L America	1,476	740	1,118	1,411	1,902	2,068
India	1,374	1,241	2,328	1,965	1,111	907
Japan	1,054	1,054	2,826	2,103	2,296	2,428
Other Asia	520	803	1,020	982	945	928
Middle East	560	615	809	1,145	643	468
Other	537	659	658	717	673	856
<b>Total</b>	<b>11,468</b>	<b>9,975</b>	<b>15,199</b>	<b>14,678</b>	<b>13,592</b>	<b>12,871</b>

## Chinese Coke Exports



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## Chinese Coke & Iron Output

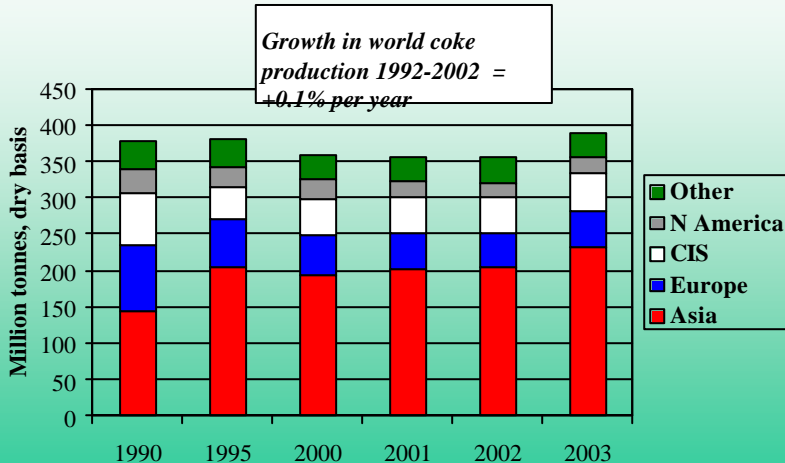
<i>000 tonnes</i>	<b>1999</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>
Coke Output	120,730	121,840	131,268	133,500	161,800
Coke Demand	110,755	106,641	116,590	119,908	147,300
Coke Exports	9,975	15,199	14,678	13,592	14,500
<i>As % of Output</i>	<i>8.3%</i>	<i>12.5%</i>	<i>11.2%</i>	<i>10.2%</i>	<i>9.0%</i>
Pig Iron Output	125,330	131,034	145,410	168,454	195,866
Pig Iron Capacity	150,000	155,000	170,000	195,000	218,000
<i>Capacity Utilized</i>	<i>84%</i>	<i>85%</i>	<i>86%</i>	<i>86%</i>	<i>90%</i>

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# Other Coke Export Sources

Source	Million tonnes (2003)	Main Markets	Trend
Australia	0.40	US, India, Latin America, Europe	Increasing
Colombia	0.60	Other Latin America	Increasing
Czech Republic	0.69	Germany, other western Europe	Decreasing
Egypt	0.45	France, Italy	Increasing
Japan	2.80	US, Brazil, India	Decreasing
Netherlands	0.20	Finland, UK	Stable
Poland	4.10	Germany, other western Europe	Decreasing
Russia	2.30	Finland, other western Europe	Stable
Spain	1.10	France, Germany, Brazil	Decreasing
Ukraine	0.90	Turkey, eastern Europe	Increasing
Zimbabwe	0.12	South Africa	Decreasing
<b>Total</b>	<b>13.66</b>		

# World Coke Production



Sources: Cokemaking Int'l (2000), Re-Net (2001-2003)

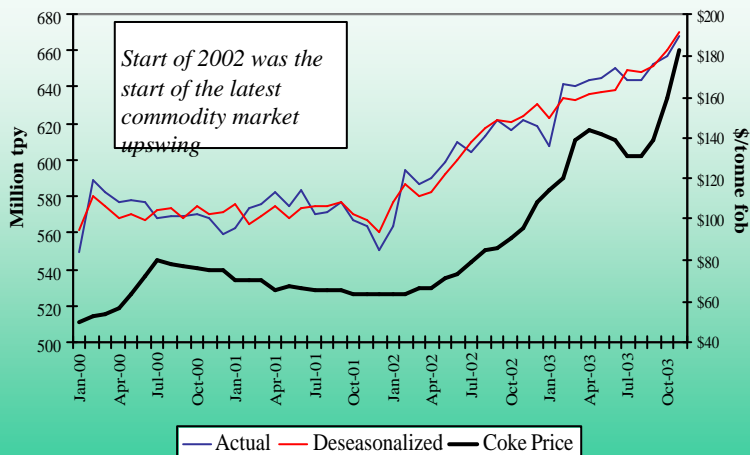
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## Coke Production by Region

000 tonnes	1992	2002	% Per Year
Europe	71.78	47.15	-3.7%
CIS / FSU	56.85	49.21	-0.4%
North America	26.98	20.94	-1.6%
Latin America	9.82	9.60	-0.8%
Sub-Saharan Africa	4.74	2.78	-5.0%
Middle East	6.59	6.07	-1.1%
Asia	148.04	203.90	+2.0%
Australia	8.50	3.28	-3.3%
<b>Total</b>	<b>343.82</b>	<b>355.31</b>	<b>+0.1%</b>

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## Global Annualized Pig Iron Output Data versus Coke Price



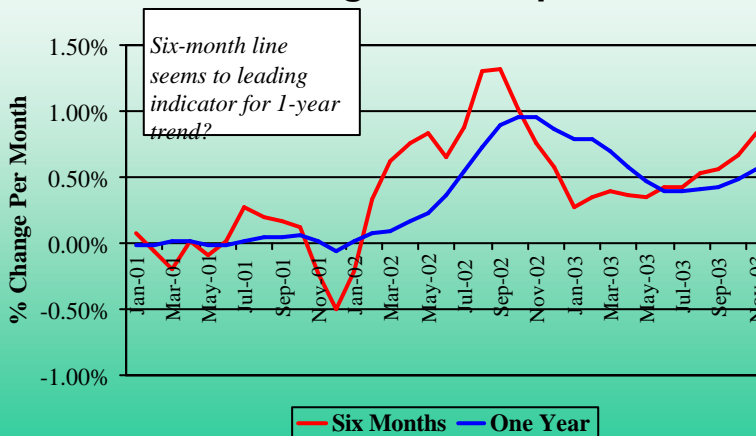
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## Pig Iron Output – Rates of Change of De-seasonalized Data to November 2003

	<i>Iron Output, Annualized &amp; De-seasonalized Basis</i>	<i>% Change Per Month – Previous Six Months</i>	<i>% Change Per Month – One Year</i>
Europe	114.5	+1.3%	+0.1%
Americas	87.5	-0.6%	-0.4%
Asia & Middle East	369.5	+0.9%	+1.0%
Africa	6.6	+0.9%	+0.3%
Australia	7.0	+1.8%	0.0%
CIS (Fmr Soviet Union)	85.0	+1.3%	+0.4%
<b>Global</b>	<b>670.2</b>	<b>+0.8%</b>	<b>+0.6%</b>

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## Progression of Historical Rates of Increase of De-Seasonalized Global Pig Iron Output



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## Non-Ferrous Applications for Coke

Sector	Demand, 000 tpy	Comments
Base Metals	700	Lead and zinc smelting by blast furnace. Capacity closures for environmental and cost reasons.
Calcium Carbide	1,400	Capacity in long-term decline outside China.
Ferrochrome	2,800	Growing due to use in stainless steel. Most expansion is in South Africa. Displacement by gas coke.
Manganese Alloys	2,000	Flat demand outlook, capacity closures. Some displacement of coke with anthracite.
Soda Ash	2,700	"Synthetic" soda ash. Capacity centred in Europe, India, others. Being substituted by natural soda ash from USA.
Stone Wool	500	Insulating material. Being replaced by fibre glass, especially in North America.
Sugar Refining	small	Seasonal. Sugar beet refining, temperate climates.

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## Summary & Conclusions

Chinese prices have become the main benchmark indicator for the coke market

- Stand at >\$250/tonne fob in January 2004!!
- Government policy has restricted export licence availability; closed unsafe coke and coal capacity

Coke supply tightness unlikely to ease significantly in 2004, unless the Chinese economic "bubble" implodes...

- Japan and Poland in long-term decline as coke exporters, no other large-scale supply sources open
- Further coke plant closures possible, too little new investment in capacity

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