



# RESEARCH REPORT

## KGHM S.A.

Metals

ISSN 1508-308X

Warsaw, 25.03.04

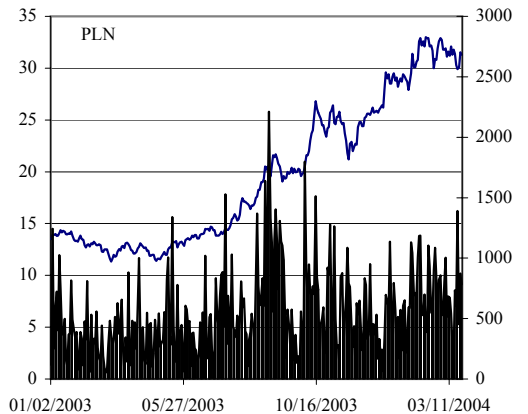
### The Chinese Boom

The boom on raw materials markets continues. The average price of copper in 1Q 2004 is 2 700 USD/t, and silver 236 USD/kg, which corresponds to respectively 31% (+630 USD/t) and 26% more than in 4Q 2003. In the course of the first 3 months of this year inventories of the metal on the LME declined 228 thous. tonnes and currently amount to 205 thous. tonnes. In mid-March, the level of inventories on world markets and at producers amounted to 4.4 weeks of the metal's global consumption. In historic terms, this level is not among record lows, but the possibility of the deficit continuing throughout 2004 and even into 2005 raises fears concerning the availability of the raw material and is keeping the price of copper at a level of almost 3000 thous. USD/t.

An analysis of copper supply and demand shows that the current economic cycle is similar to the cycle seen in the 1980's when the price of the metal remained above 2500 USD/t for more than 3 years. Continuing economic growth and demand for the raw material from China (in the first 2 months of the year, demand for the concentrate grew 52%) will result in the realisation of this scenario. As a result, we are raising the prospective annual average price of copper in 2004 to 2 631 USD/t and to 2 400 USD/t for 2005. Considering the per unit cost of production at 1 610 USD/t and 1 670 USD/t, respectively (in 2004, wages and salaries will grow 13%, amortised by the high price of silver included in calculating the per unit cost), we expect that the company will note record high financial results (including losses on hedging transactions). Following 1Q 2004 results, we also expect the management board to review the company's year-end forecast, assuming a net profit of PLN 650 mn, with the annual average price of copper at 2 000 USD/t (including hedging transactions).

Based on ratios (EV/EBITDA, P/E) for companies with a similar profile of activity, we are raising the target price for KGHM's stock from PLN 27 to PLN 37. Based on the DCF model, assuming a long timeframe and annual average price of copper at 1850 USD/t (excluding the influence of investments planned by the management board aimed at lowering the per unit cost of production and increasing production capacity), the company's stock is valued at PLN 23. The current valuation of a company share employing the discount model would be justified by a long-term price of copper at 2 020 USD/t (for the designed target price - PLN 37 - 2 100 USD/t).

In light of Telefonía Dialog's operating results being less than we expected and the current valuation of Netia's stock (EV/EBITDA = 7.1), we are lowering the valuation of Dialog assumed in the sum-of-the-parts model from PLN 853 mn to PLN 770 mn. Simultaneously, we are maintaining our current valuation of Polkomtel at PLN 12.5 bn (USD 3.2 bn).



### Recommendation ACCUMULATE

**Price** 31,50  
**Target price** 37,00

### Basic Data

No. of shares (mn) 200,0  
Free float 50,3%  
Market cap (PLN mn) 6 300

### Shareholder Structure

State Treasury 44,28%  
Deutsche Bank Trust Company Americas 7,15%  
PKO BP SA 5,38%  
Others 43,19%

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	Sales (PLN mn)	EBIT (PLN mn)	Net profit (PLN mn)	Cash earn. (PLN mn)	Price (PLN)	EPS (PLN)	P/E	BVPS (PLN)	P/BV	CEPS (PLN)	P/CE	EV/EBDIT
2001	4 241	-82	-282	60	31,5	neg.	neg.	18	1,7	0,3	104,7	31,6
2002	4 488	132	255	556	31,5	1,3	24,7	20	1,6	2,8	11,3	18,7
2003	4 741	358	412	707	31,5	2,1	15,3	20	1,6	3,5	8,9	11,8
2004F	6 552	1 798	1 004	1 298	31,5	5,0	6,3	25	1,3	6,5	4,9	3,5
2005F	6 060	1 265	1 021	1 317	31,5	5,1	6,2	30	1,0	6,6	4,8	4,2

NOTE: F - BRE Bank Securities forecast, non-consolidated data, \* excluding sale of telecom assets

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According to information received from the management board, the purpose of the PLN 0.8-1.0 bn stock issue is obtaining funds for financing the investment program announced by the management board at the end of last year. The program calls for expenditures of PLN 2.7 bn, the main item of which is Głogów Głęboki (PLN 1.2 bn). This project is slated for completion in 2012. According to our estimates, the above amount is sufficient for building 3 mine shafts (as a goal, 5 shafts would be worked in Głogów Głęboki). Remaining items include a thermal electric power plant, a fluidised-bed furnace for Huta Głogów as well as hydraulic transport facilitating and reducing costs of moving the concentrate from the mines to the mills.

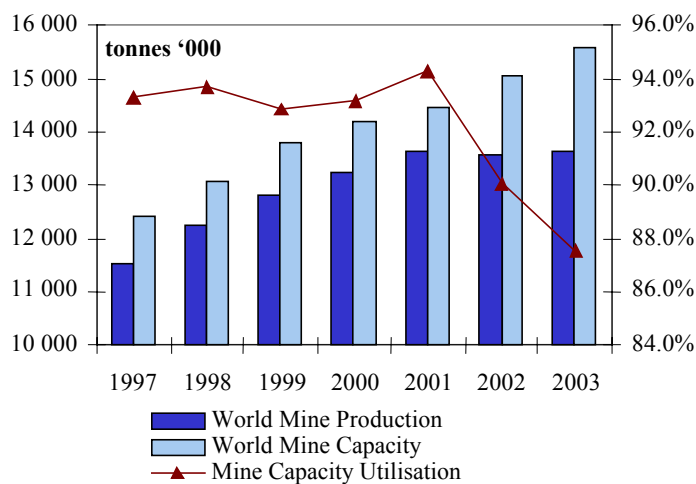
The management board argues that the issue would be conducted due to delays in the process of selling telecommunications assets. In our opinion, this argument is difficult to justify concerning the schedule of realised projects (following 2005). We believe that both Polkomtel and Dialog should be sold by this time and the funds obtained from these sales (plus cash flow from operating activity) would be more than sufficient for financing the above-mentioned projects. According to company information, projects connected with the purchase of foreign deposits are not currently being considered, which appears to us to be a possible pretext for conducting the issue of shares.

Following protests by the trade unions and the negative response to the proposal, the management board decided to withdraw the item concerning further privatisation and an issue of new shares from the agenda of the GMS. According to recent statements made by representatives of the State Treasury, should the level of privatisation income planned for this year not be realised the sale of KGHM shares will be considered.

### Supply and demand

According to the International Copper Study Group (ICSG), the annual production capacity of copper mining has increased in the last two years (2001-2003) from 14.4 mn tonnes to 15.6 mn tonnes. World mine production increased in this period only 16 thous. tonnes, which corresponds to a decline in the degree of utilised production capacity from 94.3% in 2001 to 87.5% in 2003. This was due to leading global producers shutting down a portion of production, after which in 2001-2002 the average price of copper fell to 1565 USD/t as well as technical problems and strikes in mines (Codelco, BHP Billiton).

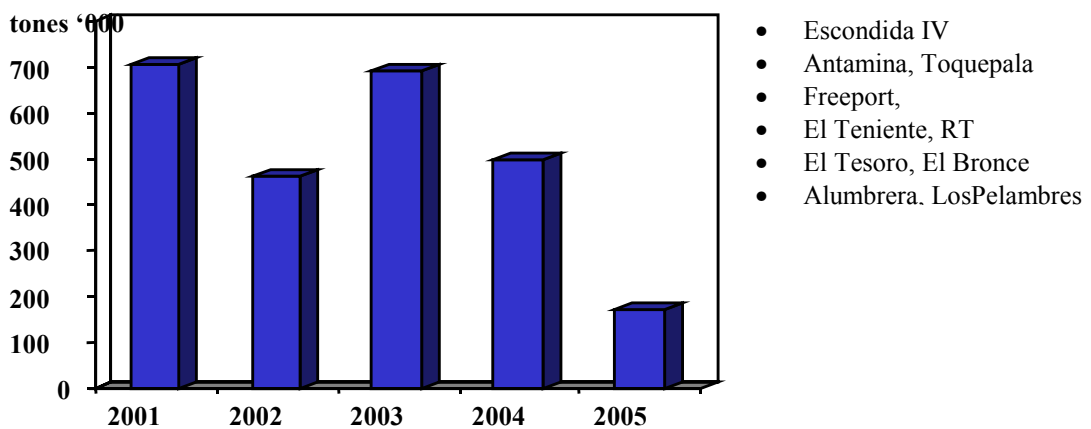
#### World mine production and mine capacity utilisation



Source: BRE Bank Securities S.A. based on ICSG data

In 2003 the surplus of installed mine capacity over production amounted to 1.95 mn tonnes, assuming its utilisation at 100%. In historic terms, the average utilisation of production capacity is 93-94%. Due to the long investment cycle in mining, it is easy to predict the growth in supply resulting from new projects (see chart below). The problem is estimating the current supply of the metal resulting from unutilised production capacity. Information in this regard coming from the producers will have the strongest influence on the price of copper in coming months.

#### New production capacity in copper mining



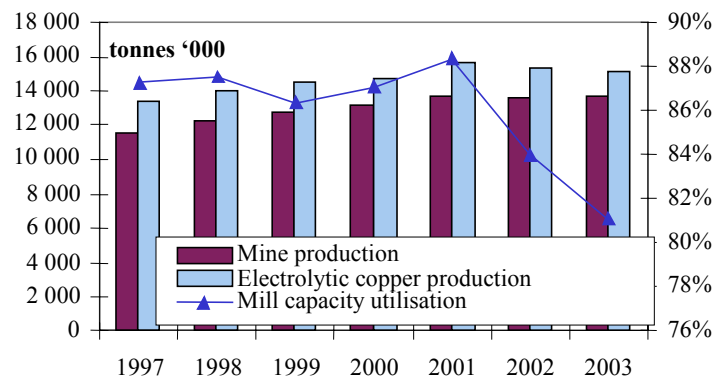
Source: Man Financial

Assuming that there will be approximately 500 thous. tonnes of new production capacity in 2004

and approximately 200 thous. tonnes the next year (growth in production capacity in 2005 to 16.3 mn tonnes) and assuming the level of utilisation returns to 93%, it can be estimated that mine production in 2005 will increase by approximately 1.5 mn tonnes in relation to 2003 (a total of 15.14 mn tonnes).

Due to the lower level of extraction of the raw material in the last two years, the production of electrolytic copper also declined (from 15.6 mn tonnes to 15.2 mn tonnes). The difference between extraction and production (shown in the chart below) largely results from the processing of copper scrape. Utilised production capacity of mills is lower than in the case of mines and in 2003 fluctuated around 81% in relation to 88% in 2001.

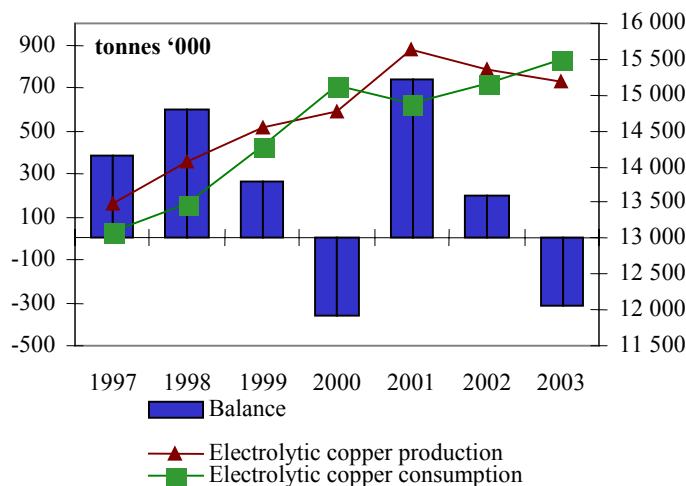
**Mine production against the background of electrolytic copper production and mill capacity utilisation**



Source: ICSG

In 2003, consumption of electrolytic copper totalled 15.5 mn tonnes, which with limited production (15.2 mn tonnes) resulted in a deficit of 312 thous. tonnes.

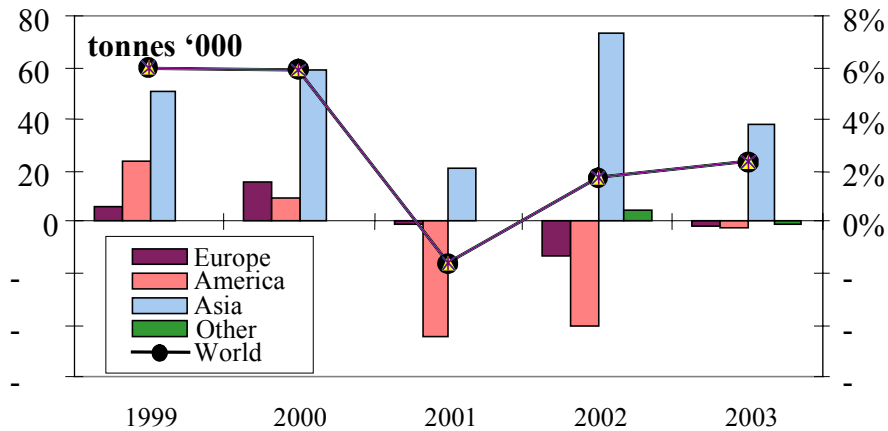
**Production and consumption of electrolytic copper**



Source: BRE Bank Securities S.A. based on ICSG data

Global demand has increased 2% in the last two years due to larger orders from Asia and in spite of demand weakening on the US and European markets.

**Geographic structure of changes in the amount of demand and percentage growth in global demand**



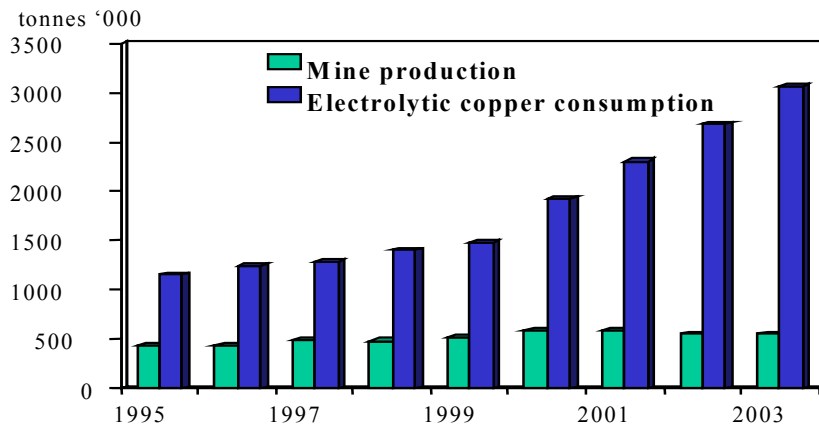
Source: BRE Bank Securities S.A. based on ICSG data

If we assume that demand for the metal will grow by an annual average of 4% in the next two years, in 2005 consumption will amount to 16.77 mn tonnes (i.e., 1.26 mn tonnes more than in 2003). Our estimate of mine production increasing in this period 1.5 mn tonnes (mill production will grow the same amount) would mean a 240 thous. tonne surplus of the metal. If the annual average growth reaches a level of 5%, the estimated increase in demand will exceed the planned growth in production, which will mean the deficit continuing and a further decline in inventories. This would justify copper prices remaining high at least until 2005.

**China – the force driving demand**

The driving force behind the global consumption of copper is China, which has increased consumption of the raw material an average of 19.8% in each of the last four years. In 2003, China accounted for 20% of the global consumption of this metal (6% in 1990). A growth of 20% in a given year translates into a 4% growth in demand on a global scale. As mine production of copper in China has remained flat for a number of years, the growth in demand means increasing imports of the raw material. According to Barclay’s, China’s imports of the concentrate grew 52% in the first two months of this year.

**Mine production and consumption of electrolytic copper in China**

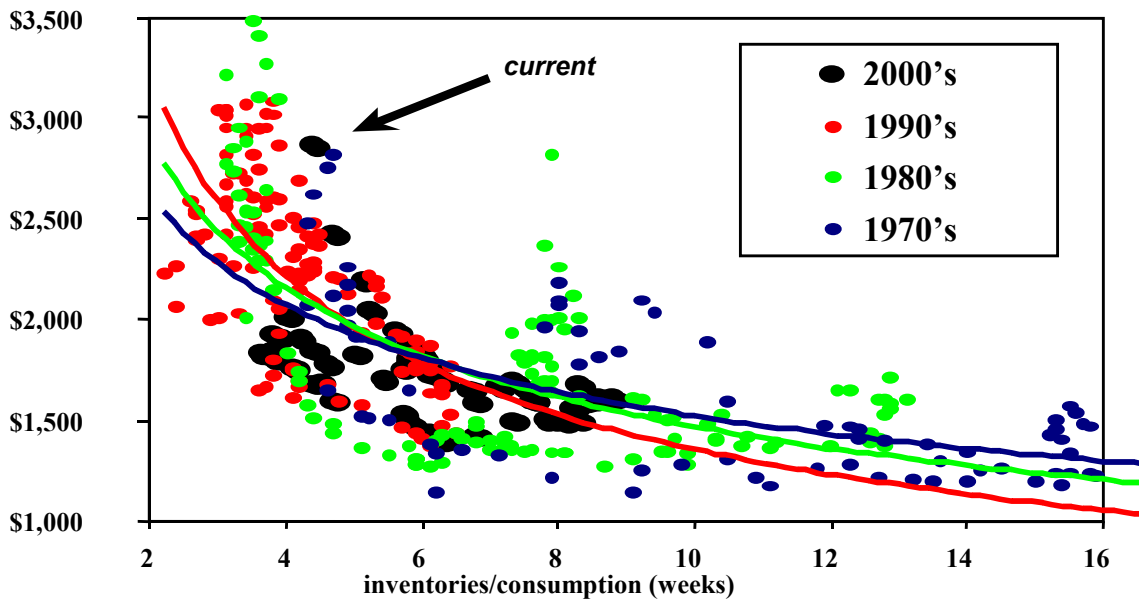


Source: Man Financial

### The price of copper and inventories

The current level of copper inventories (on exchanges and at producers) as well as global consumption of the raw material do not justify the current valuation of the metal. In March of this year, the inventory / consumption ratio was 4.4 weeks. Considering historic data for the last 24 years, the level of this ratio should imply a price of 2100-2300 USD/t. This is a level calculated on the basis of average values (simplified). Historically, and particularly in the 1980's and 1990's, this has led to even higher prices of the raw material than at present.

Prices of copper and inventories / consumption ratio



Source: Man Financial

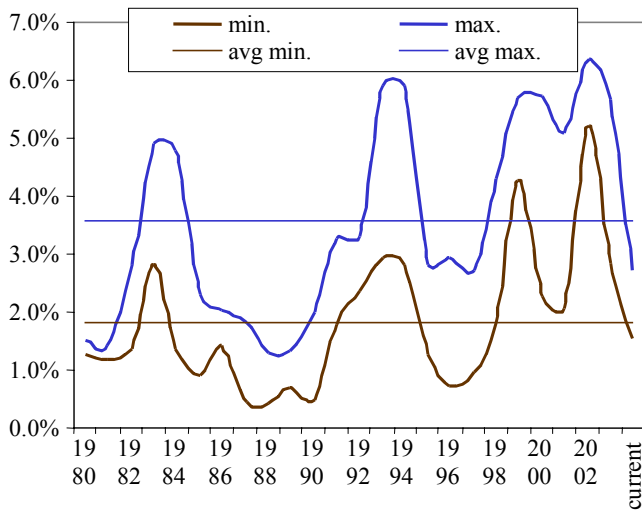
Fears concerning the availability of the raw material in the future, considering the continuing deficit of this metal on the market, could be an explanation for the high prices of copper. Assuming Man Financial is correct in predicting that the deficit will remain at 28 thousand tonnes per month to the end of 2004 (in recent months inventories on the LME have fallen an average of about 60 thousand tonnes), the ratio referred to above should reach a value of 3.3 weeks. On the basis of historic averages, this would in turn imply a price of approximately 2.5 thousand USD/t for the metal. The amount designated in this way is not a level of balance in the long term (the value adopted in discount models). However, considering problems of producers and the greater than expected demand from Asia, this level could indicate the average level of copper listings for the next two years, which would affect listings of sector companies in the medium term. A similar situation occurred in 1987-1989.



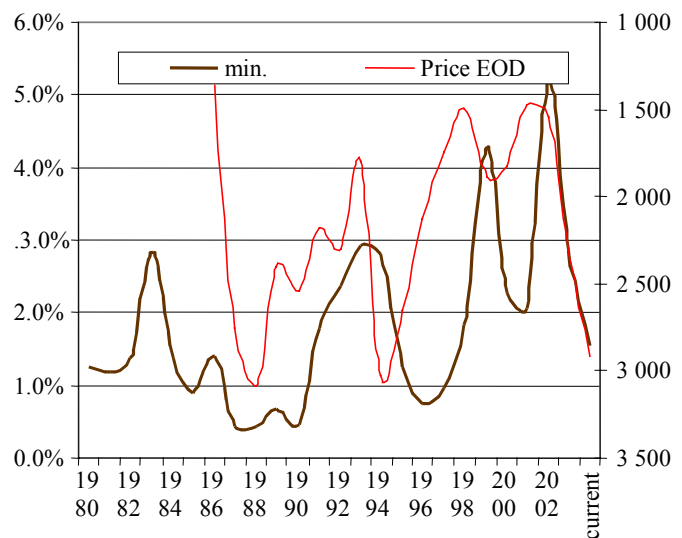
### Comparison of cycles

The question remains whether the current economic cycle will be similar to that in the second half of the 1980's or more similar to the cycle that occurred in the 1990's. This is important, as in the 1980's the level of inventories remained low for several years (see chart below), due to which the price of the metal fluctuated on a level above 2.5 thous. USD for the next 4 years. In the 1990's, following the sharp decline in inventories, stocks were rapidly rebuilt, which resulted in an equally sharp drop in prices.

**LME inventories / consumption ratio (maximum and minimal values) during last 24 years**



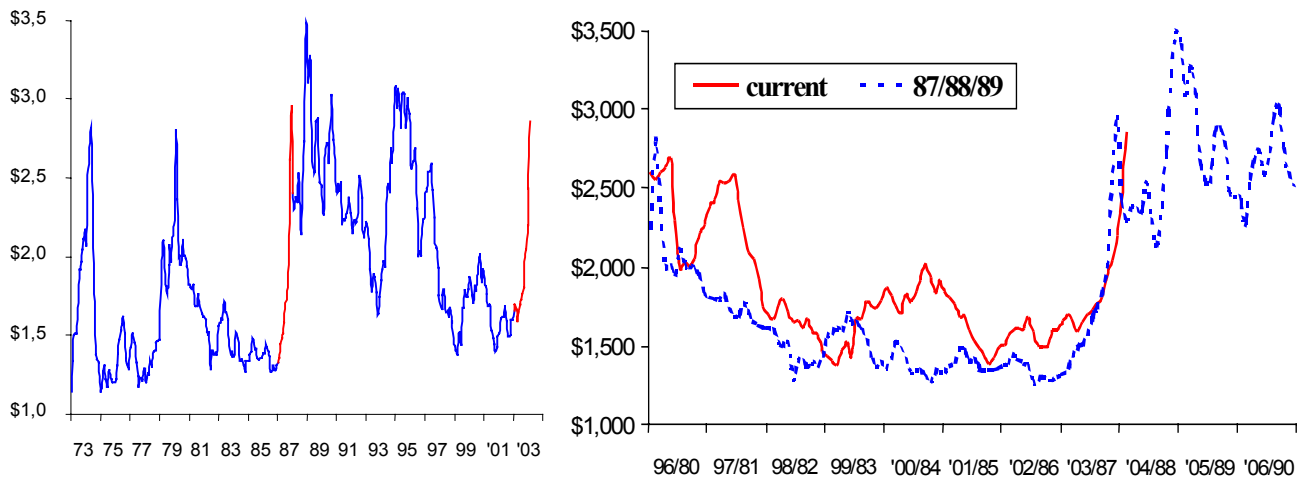
**LME inventories/ consumption ratio (minimal value) and price of copper (at end of period, USD/t)**



Source: BRE Bank Security S.A. based on LME data

In the price chart, the current cycle is reminiscent of the cycle observed in the 1980's. If the deficit on the copper market continues, it can be assumed that prices of the metal in the next two years will not fall below 2.5 thous. USD/t.

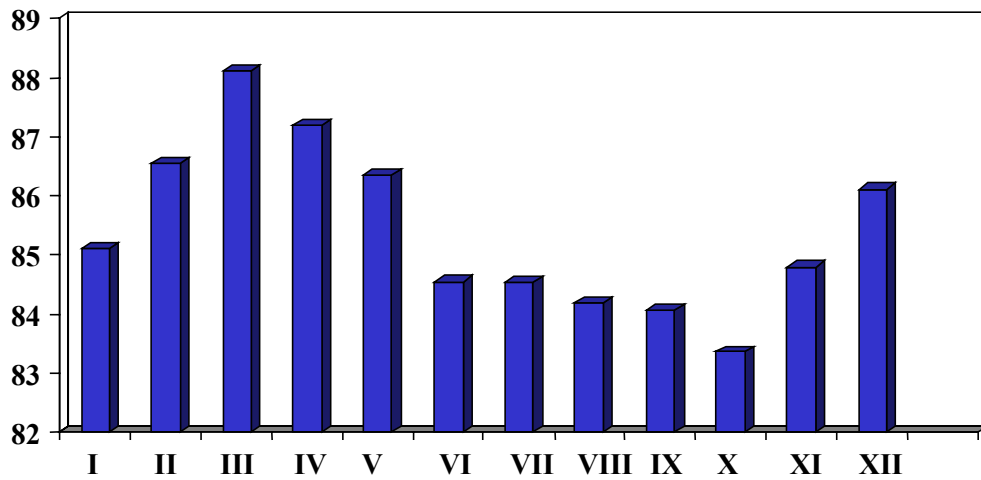
### Prices of copper on the LME (comparison of cycles)



Source: Main Financial

### Seasonality in annual terms

The current growth in copper prices, mainly resulting from dynamically falling inventories, the level of which could raise fears in the future, also has a seasonal character. From historic data, it results that in annual terms, the months of February, March, April and May are characterised by a greater degree of activity from buyers, which also translates into a growth in prices.



Source: Man Financial

The decline in demand expected in coming months could lead to a correction of copper listings. Considering the scale of recent growth, the correction could be rapid and considerable.

**Profit and Loss Account**

	1999	2000	2001	2002	2003F	2004F	2005F	2006F	2007F	2008F
Copper sales (tonnes '000)	472.2	480.8	491.2	534.6	523.9	529.7	537.7	545.7	551.2	551.2
<i>Dynamics</i>		1.8%	2.2%	8.8%	-2.0%	1.1%	1.5%	1.5%	1.0%	0.0%
Silver sales (tonnes '000)	1.10	1.11	1.19	1.20	1.33	1.26	1.28	1.30	1.31	1.31
<i>Dynamics</i>		0.9%	7.0%	1.0%	10.8%	-4.8%	1.5%	1.5%	1.0%	0.0%
Average SPOT price of copper (USD/t)	1 572.0	1 813.6	1 579.4	1 555.2	1 772.4	2 631.2	2 400.0	2 100.0	1 850.0	1 850.0
<i>Dynamics</i>		15.4%	-12.9%	-1.5%	14.0%	48.5%	-8.8%	-12.5%	-11.9%	0.0%
Average price of silver (USD/kg)	187.1	176.7	171.5	166.2	174.8	227.5	210.0	195.0	175.0	175.0
<i>Dynamics</i>		-5.5%	-3.0%	-3.1%	5.2%	30.2%	-7.7%	-7.1%	-10.3%	0.0%
Average USD/PLN exchange rate	3.97	4.35	4.10	4.09	3.91	3.84	3.80	3.90	3.90	3.90
Per unit cost of copper production (USD)	1 472.0	1 417.0	1 544.0	1 545.0	1 593.5	1 609.9	1 668.8	1 621.8	1 614.9	1 587.7
<i>Dynamics</i>		-3.7%	9.0%	0.1%	3.1%	1.0%	3.7%	-2.8%	-0.4%	-1.7%
Per unit cost of copper production (PLN)	5 836	6 156	6 328	6 305	6 237	6 176	6 341	6 325	6 298	6 192
<i>Dynamics</i>		5.5%	2.8%	-0.4%	-1.1%	-1.0%	2.7%	-0.3%	-0.4%	-1.7%

(PLN mn)	1999	2000	2001	2002	2003F	2004F	2005F	2006F	2007F	2008F
<b>Revenues</b>	<b>4 113</b>	<b>4 983</b>	<b>4 241</b>	<b>4 488</b>	<b>4 741</b>	<b>6 552</b>	<b>6 060</b>	<b>5 677</b>	<b>5 095</b>	<b>5 097</b>
Costs	3 291	3 579	3 556	3 843	3 806	4 081	4 113	4 146	4 095	4 037
Gross profit (loss) on sales	823	1 404	684	645	935	2 471	1 947	1 531	1 000	1 060
Selling costs	55	63	71	75	80	112	97	91	82	82
Administrative costs	420	400	420	418	424	481	515	483	433	433
Net profit (loss) on sales	348	941	194	152	431	1 878	1 335	957	485	545
VII. Result on other operating activity	-201	-113	-276	-20	-73	-80	-70	-70	-70	-70
<b>VIII. Profit on operating activity</b>	<b>146</b>	<b>828</b>	<b>-82</b>	<b>132</b>	<b>358</b>	<b>1 798</b>	<b>1 265</b>	<b>887</b>	<b>415</b>	<b>475</b>
IX. Result on financial activity	-204	-33	-161	178	211	-552	-63	-56	-49	-41
<b>X. Profit on economic activity</b>	<b>-58</b>	<b>795</b>	<b>-243</b>	<b>310</b>	<b>569</b>	<b>1 246</b>	<b>1 201</b>	<b>831</b>	<b>366</b>	<b>434</b>
XI. Result on extraordinary events	0	0	0	0	0	0	0	0	0	0
<b>XII. Gross profit (loss)</b>	<b>-58</b>	<b>795</b>	<b>-243</b>	<b>310</b>	<b>569</b>	<b>1 246</b>	<b>1 201</b>	<b>831</b>	<b>366</b>	<b>434</b>
XIII. Income tax	107	177	39	56	158	242	180	125	55	65
XIV. Other encumbrances on profit	5	0	0	0	0	0	0	0	0	0
<b>XV. Net profit (loss)</b>	<b>-170</b>	<b>618</b>	<b>-282</b>	<b>255</b>	<b>412</b>	<b>1 004</b>	<b>1 021</b>	<b>707</b>	<b>312</b>	<b>369</b>

**Previous recommendations issued for KGHM S.A.**

Recommendation	HOLD	HOLD
Date issued	12-02-2002	06-03-2002
Price on day of recommendation	15.20	14.35
WIG on day of recommendation	15289.83	15307.61



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**List of abbreviations and ratios contained in the report.**

*EV* – net debt + market value (*EV* – economic value)  
*EBIT* – Earnings Before Interest and Taxes  
*EBITDA* – EBIT + Depreciation and Amortisation  
*PBA* – Profit on Banking Activity  
*P/CE* – price to earnings with amortisation  
*MC/S* – market capitalisation to sales  
*EBIT/EV* – operating profit to economic value  
*P/E* – (Price/Earnings) – price divided by annual net profit per share  
*ROE* – (Return on Equity) – annual net profit divided by average equity  
*P/BV* – (Price/Book Value) – price divided by book value per share  
*Net debt* – credits + debt papers + interest bearing loans – cash and cash equivalents  
*EBITDA margin* – EBITDA/Sales

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**Recommendations of BRE Bank Securities**

A recommendation is valid for a period of 3-6 months, unless a subsequent recommendation is issued within this period.  
*BUY* – we expect that the rate of return from an investment in a company's shares will be at least 15% higher than the WIG  
*ACCUMULATE* – we expect that the rate of return from an investment in a company's shares will be 5%-15% higher than the WIG  
*HOLD* – we expect that the rate of return from an investment in a company's shares will be within +/-5% in relation to the WIG  
*REDUCE* – we expect that the rate of return from an investment in a company's shares will be 5%-15% lower than the WIG  
*SELL* – we expect that the rate of return from an investment in a company's shares will be at least 15% lower in relation to the WIG

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**Strong and weak points of valuation methods used in recommendations:**

*DCF* – acknowledged as the most methodologically correct method of valuation; it consists in discounting financial flows generated by a company; its weak point is the significant susceptibility to a change of forecast assumptions in the model  
*Multiple* – based on a comparison of valuation multipliers of companies from a given sector; simple in construction, reflects the current state of the market better than DCF; weak points include substantial variability (fluctuations together with market indices) as well as difficulty in the selection of the group of comparable companies.