

Aluminum and copper market situation

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Aluminum

Balance of supply and demand

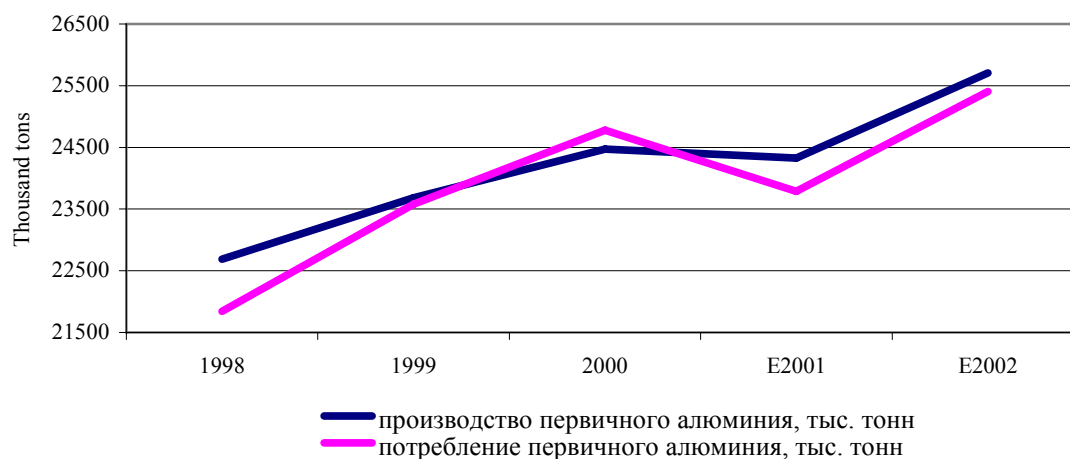
The situation on aluminum market has been ambiguous over the recent years; it witnessed a short-term upswing of prices followed by long-term decline. The year 2001 was one of the most unfavorable for aluminum producers in the last decade – our estimate shows that the demand for aluminum dropped by 4 percent as compared to 2000.

Supply and demand fundamentals directly linked to world industry's tendencies regulate the metal price. Until recently, analysts of authoritative marketing agencies signaled growth of Western European industries in the single currency area coupled with American development on the rise. Relying on the robust demand of automotive, aircraft and building sectors, producers of core construction materials (aluminum placed second after steel) built up their capacities. Besides, rapidly emerging after 1997-1998 crises South-Eastern Asian economies – main aluminum consumers – gave an impetus to escalating output of aluminum. As a result, excessive offer of aluminum on world 2001 market drove prices unsustainably lower – having sharply cut aluminum producers' profit.

Another reason of plunging world quotation rates is the prevalence of futures contracts; their price formation is based on expectations of future metal output and consumption dynamics. Here, predictive estimate of developed economies' slowdown produced material effect.

Terrorist attacks in the USA played their role as well. Vague prospects of USA military operation and negative influence on aircraft industry contributed to a deeper aluminum prices slump. Though after-effects were not as drastic for the USA as forecast, collapse of pricing level for aluminum robbed producing companies of certain plans to expand the output and the market. With things going this way, aluminum producers accelerated their efforts aimed at returning prices to an adequate level and solving market problems.

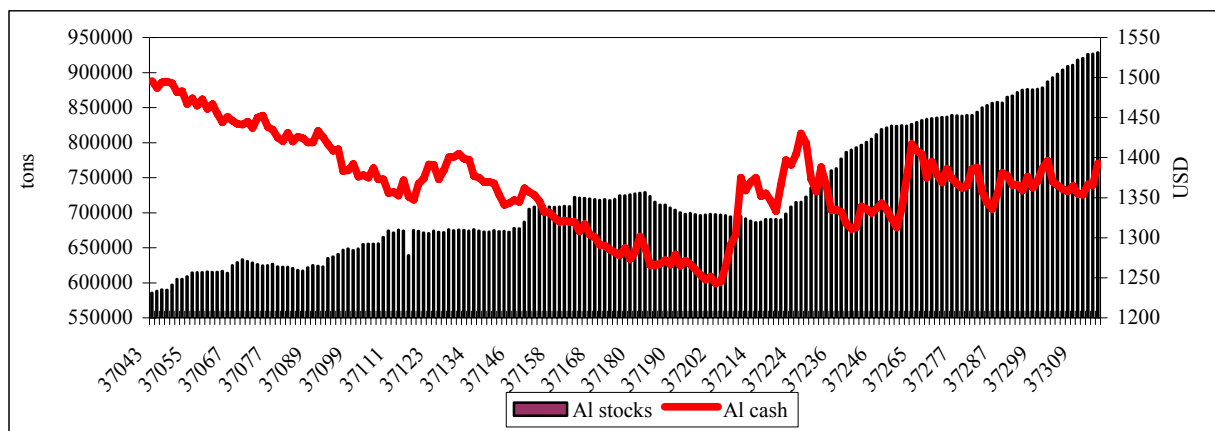
Balance of global demand and supply



Source: *AME Mineral Economics*

Weaker demand for aluminum caused by slowed world economy gave an impetus to curtailment of production capacities from early 2001. This moved primary aluminum production in the world down by 1.4 million tons during one year. Northern America witnessed the strongest recede where manufacturing pared down by 258 thousand tons. However, highly excessive offer stopped decrease of exchange pricing level only in the end of the year. Consequently, overstocking of both producers and consumers occurred: metal stock at London Metal Exchange (LME) grew in 2001 amid lower pricing level and reached record highs from 1993. Growth of stock in 2001 accounted for 180 percent.

Al cash prices and LME stock



Source: LME

Thus, developed European and Northern American economies were unable to ‘swallow up’ the produce of world aluminum manufacturers. All time tough competition on world aluminum market triggered large companies to take extreme steps: some proffered to merge, others cut down their capacities or asked authorities to stimulate aluminum industry development.

The Northern America registers the highest share of aluminum supply and demand, its market, however, far from being saturated. Western Europe and Asia hold the second and third positions in aluminum use correspondingly. Asia is estimated as one of the markets with the greatest potential for demand increase. Economic growth of Africa, Russia and Australia (consumption of aluminum in these countries is 5-fold lower than production) prove they are the greatest aluminum exporters able to considerably influence world market and pricing dynamics. The above points out that world market is far from being saturated; the main reason of excessive offer of aluminum is rooted in falling indices of economic development in strong countries.

Declining consumption of aluminum by the apanese economy was the severest factor to drive the demand down. Automotive industry covers almost half of aluminum consumed in Japan; this branch sustained considerable shrinkage in capacity.

China’s influencing the market as an importer is indefinite. Amid distressing economic activities of the USA and Europe, China looks quite prosperous. Based on preliminary estimates, in 2001 China produced about 3.3 million tons of primary aluminum – 19 percent up from the same index in 2000. Such output positions China on the top of world aluminum producers list with the highest figures of Chinese companies’ production development. Expectedly, in the short run supply deficit is to be covered in China. Raise of inventory holdings coupled with low consumption-stock coefficient may lead to Chinese exports growth – surely affecting world prices dynamics.

Negative correlation of supply and demand in the world market brought down aluminum foreign commerce turnover: export dropped by 5.3 percent, import by 8.3 percent. USA's import of the metal sustained the deepest plunge – by 5.2 percent, Great Britain – by 8.4 percent, and Japan – by 1.9 percent.

Leading exporters and importers of primary aluminum, thousand tons

	Export			Import		
	2000 г.	2001 г.	2002 г.	2000г.	2001 г.	2002 г.
Total world	14911	14115	13900-14100	15494	14200	14000 -14250
Russia	3191	3140	3050 - 3100			
Канада	1837	1850	1790 - 1820			
Australia	1381	1400	1400 - 1450			
Norway	940	950	900 - 950			
USA				2688	2550	2500 - 2600
Japan				2905	2850	2400 - 2500
Germany				1586	1700	1680 - 1720
China				914	925	900 - 950
S. Korea				890	835	800 - 850
Great Britain				677	620	580-620
France				528	540	500 - 550

Source: IMEMO (Institute of world economy and international relations)

Beside global economic factors the situation on the world aluminum market in 2001 was determined by changes in the industry. So, decline in USA's aluminum sector can mainly be accounted for by halt of several large plants caused by energy and ecology related problems. As a result, in 2001 USA cut down primary aluminum production by 28.1 percent. On the whole, last year, USA produced 2.64 million tons of aluminum (in 2000 – 3.67 million tons).

Reportedly, the problems described touched not only small and medium companies but also industry's giants. Due to world prices slump, the company Kaiser Aluminum Corp. – USA's third aluminum producer – announced its bankruptcy. Canadian Alcan signalled its intention to shut down a number of processing plants in Canada and extrusion plant in Malaysia. Another big aluminum producer – Alcoa – curtailed its output in Brazil by ¼. On average, all major producers of aluminum resorted to reduction affected, which reached, by our estimates, 18-20 percent.

Aluminum producers' response beneficially affected pricing dynamics: from November 2001 to February 2002, prices jumped up by 12 percent. Though, world aluminum situation improved early 2002 as compared to late 2001, it is too early to talk about a strong rise.

Russian aluminum market

World nonferrous metals prices are in the spotlight both by importing countries and Russia – main exporter of these metals. Importers look down on price rise; Russia anticipates it since it would increase influx of budget money.

Significance of metal manufacturing in Russia is obvious, its share in foreign trade turnover exceeds 20 percent; aluminum producers exports 80 percent of their produce. So, profits of Russian metallurgists are

directly linked to the situation on the world market. Though gains of Russian producers sank – by our estimates – averagely by 10 percent if compared to 2000, they still produce a confident impression. Russian companies did not curtail their capacities last year and managed to show increase in efficiency. In particular, aluminum production grew by 1.4 percent last year against 2000.

Besides, advantage of Russian aluminum producers is that high profitability of enterprises in nonferrous metal industry over the recent years enabled them to build up their capacities and invest into manufacturing facilities modernization.

Still, a lot is to be done: it will take no less than 10 years to further improve technologies and replace the fixed assets. Only 14-16 percent of aluminum is produced with use of prebaked anodes whereas in Western Europe the number reaches 87 percent, in the USA – 77 percent, and in Australia – 100 percent. Amid dipping world prices modernization of Russian plants with Western companies' participation was postponed.

One of the factors unfavorably influencing Russian metal producers was prices flop along with growing internal tariffs for electrical energy and railway transportation.

In summer 2001 Russian government increased railway tariffs for transportation of nonferrous metals by 100 percent, which pushed transport share of bauxites price radically up. Increased price of source material drove finished products prices higher – turning Russian aluminum less compatible on the world market. According to our estimates, expenses of Russian aluminum producers for transportation of raw material and finished products exceed those of Western competitors' by 50-100 USD per 1 ton of smelted metal. Profit gap between Russian and foreign companies when exporting the metal averages 280-370 USD per each ton of the final product. However, in autumn the Ministry on antimonopoly policy made a decision to bring down tariffs since price upswing affected the enterprises working with domestically produced raw materials.

Also, electric power accounts for a large share of final product's cost (about 1/3); any tariff rise inevitably triggers growth of prime cost. To our estimates, aluminum cost price climbed up by 12 percent.

Analyzing aggregate effect of world prices growth it becomes clear that the negative situation on the market prompted Russian aluminum companies to increase supply of the metal to native consumers (by 23 percent) especially since local prices almost equaled world. However, the problem for the aluminum producers in Russia to extend the local market is rooted in an unpractical structure of the final user.

Structure of final use

Produce	Russia	Foreing country
Machines and equipment	40,4	9,8
Transport	19,1	27,5
Construction	7,4	20,1
Consumer goods	10,3	5,4
Packing materials	3,4	23,1
Electronics	18,2	8,1
Other	3,1	6,1

Source: www.cfm.ru

Most of metal in Russia goes to machine building industry and equipment manufacturing whereas in the Western countries demand for aluminum is evenly distributed between transport, construction and packing -- machine building closing a small niche in the overall supply. Statistics prove that aluminum output in Russia

is on a continuous annual decrease. In 2001, production of semi-finished products from aluminum added only 22 percent as compared to 1990, rolled aluminum – 23 percent, and building structures – 31 percent. The tendency is still strong.

At the same time considerable manufacturing capacities producing primary aluminum are not in operation and can be up and running swiftly. In this respect experts' short-term forecasts, namely for 2002-2003, are of great interest.

Forecasts for aluminum market

A change in pricing dynamics for aluminum in 2001 prompts analysts to predict climbing demand and moderate deficit of offer in medium-range outlook, which should preserve the tendency for aluminum price rise.

Analysts of the respectable American consulting company Man Financial Inc. claim that in the first half of 2002, the volume of aluminum supply is to soar by 2 percent (in the first half of 2001 the index fell by 8 percent). Production volume is anticipated to go up by 1 percent.

American experts believe that if during the first 6 months of the current year aluminum offer is excessive – amounting 270 thousand tons – the second half of the year will bring the deficit of approximately 150 thousand tons of aluminum.

According to our estimates, in 2002 average annual price for aluminum will be 1,565-1,585 USD per ton – resulting from increased by 1.5-2 percent aluminum demand caused by a general upsurge of global economy.

Yet deficit of alumina placed large aluminum producers in a position when they could not fully employ their manufacturing capacities and introduce new ones. The deficit is likely to be preserved till the first half of 2002 and then may go down.

One of the factors determining the aluminum demand-supply balance is a swiftly developing Chinese economy. As outlined above, China's influence is ambiguous and will depend on the correlation between local producers' and consumers' capacities growth. In keeping with some estimates, in 2002-2003 annual surplus of production capacities in the world is assumed to reach 900 thousand tons – 50 percent covered by China. At the same time China may cut down alumina import and increase primary aluminum import – thus causing drop of primary aluminum's stock and skyrocketing its price. Demand for aluminum in China in 2002-2003 is to climb up by average 6.3 percent annually whereas the rest of the world will see the surplus of 2.4 percent only.

The years 2002-2003 will bring deficit of aluminum supply to Western countries. We believe that from 2002 to 2005 the demand for aluminum is to stir up and by 2005 it may be increased by 3.4 tons. Such a considerable aluminum demand ascend will be triggered by its growing use in motor-car construction and in food industry for packing. Today one car 'consumes' 65 kg on average; by 2005, the index may reach up to 115 kg. In Russia, 2005 may bring rising demand for aluminum -- up to 1,100-1,200 thousand tons.

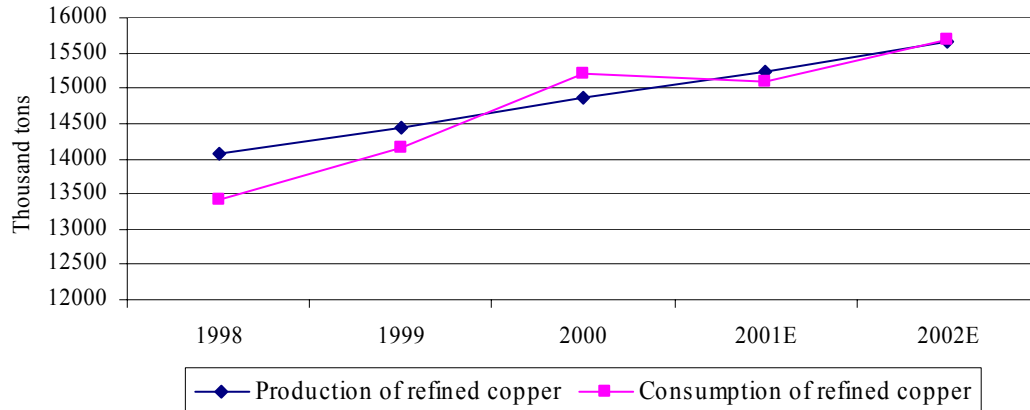
Copper

Fundamental factors

In 2001, world output of refined copper totaled, by our estimates, 15.37 million tons – 3.9 percent higher than in 2000; consumption dropped by 3 percent – to reach 14.83 million tons.

Copper market stuck in a situation reminding that on aluminum market. Copper use is closely linked to expanding manufacturing capacities in general (main copper application is electrical communications). Curtailed construction of new production facilities in automotive, aircraft, and other industries leads to lower copper consumption and, consequently, brings price for this metal lower.

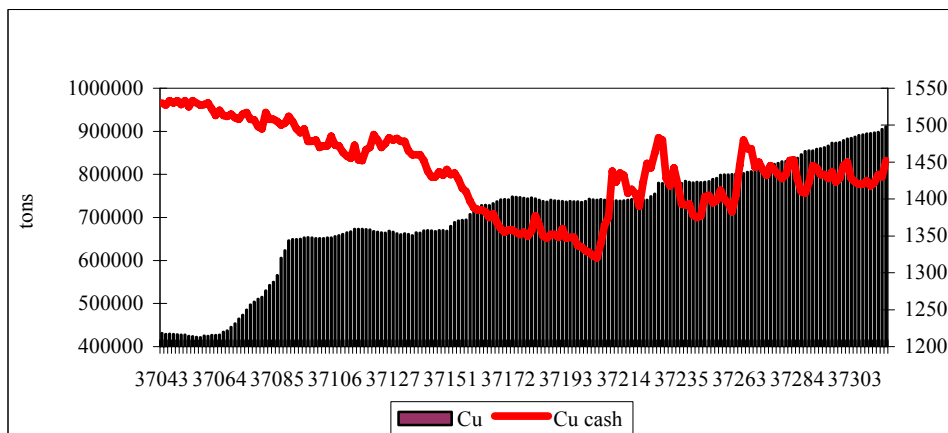
Balance of world demand and supply



Source: AME Minerals Economics

Through pricing dynamics for aluminum and copper we can trace a strong correlation between them. Like with aluminum, copper stock at certified LME warehouses has towered as compared to the last year -- up to 750 thousand tons -- making up more than a half of all world reserves. According to Copper & Brass Servicecenter Association (CBSA), copper stock in USA service centers escalated by 60 percent by the middle of last year in comparison to the similar period in 2000.

Prices Cu cash and LME stock



Source: LME

It is demand slump but not excessive offer which caused lower prices for copper. Copper is one of the main industrial metals along with iron and aluminum. Three-quarters of copper is consumed for current transfer in cables, in the sphere of telecommunications, different electronic devices and so on. That is why demand for copper is closely related to the global level of economic situation.

Like aluminum makers, copper producers curtailed their manufacturing capacities – trying to keep a higher level of prices. Six out of nine leading countries-consumers of copper saw production volume cut in 2001.

Only China showed signs of considerable increase: the country is not fully integrated into the world economy and recurring decline of developed economies affected China less than others. However, even for China the forecasts are not bright. China purchased a lot of copper at the end of 2001 and early in 2002 and formed considerable stock.

Gradual diminution in rolled copper demand in Japan's electronic sector reached 5-year low last year. Copper producers were receptive to the change and responded with almost full freeze of their manufacturing facilities. Greatest recession was registered in copper strip production (21.5 percent in comparison to 2000).

Heads of Chile state corporation Codelco revised their plans of copper ore extraction – with smaller copper content – at their five extractive branch companies with the purpose to process it. Along with these actions, Codelco decreased refined copper production minimum by 100 thousand tons – up to 1.54 tons per year.

BHP Billiton, Australia – world third top company -- announced its cut of copper manufacture by 170 thousand tons per year. BHP's prime cost of a ton of copper is lower than 1,100 USD. Assumingly, MHP Billiton's decision is that of preventive nature. Phelps Dodge also declared its manufacturing capacities curtailment by 220 thousand tons, keeping relatively high prime cost – 1,586-1,653 USD per ton.

Copper concentrates supply was discerning towards decisions of large-scale mineral resource companies. For example, Anglo American gave up cooperation with Konkola Copper Mines. The claimed slowdown in copper pricing is surely to negatively affect acting copper mines seeking ways to bring process costs down.

Long-awaited copper and copper alloys demand surge in the USA late this year was caused first of all by extinguishing customers' stock of this metal.

Russian copper market

Russia is one of the biggest copper producers; more than half of refined copper is exported. Russian copper industry (unlike aluminum) suffered a weaker response from world prices collapse. Re-orientation towards local users enabled copper producers not only to keep their output at the same level but even to show stable results for 2001: purified copper manufacture jumped up by 6.7 percent, copper concentrate – by 3.2 percent, and rolled copper – by 28.5 percent.

World sinking prices for copper did not radically affect Russian copper companies since they kept prime cost for this metal not too high – about 1200 USD. Still, some 'amendments' to the activities of Russian copper producers were introduced. Ural Mining Metallurgical Company (UGMK) – second large copper producer in Russia – announced termination of the project to reshape manufacturing capacities due to a decrease of world prices; the company exports 70 percent of refined copper. According to UGKM's Director General A. Kozitsyn, in 2002 the company does not plan to cut out output of cathode copper. Changing structure of company's produce – rolled wire, in particular – enabled it to smooth the losses sustained from price drop. Output of copper electrolytic powder and radiators is planned to be surged. Today, 50-70 percent of UGKM's produce is high-limit products – targeting mainly domestic market -- instead of cathode copper. Generally, internal copper supply grew up by 30 percent in 2001 in comparison to last year.

Copper market forecasts

Prospects for copper market development are first of all linked to the developing economies of South Eastern Asia – primary consumers of this metal. According to our estimates, demand for copper in these countries is to show increase in the near future. Negative expectations stay only in Japan – the largest world copper consumer – but here as well some improvement of situation on the market is anticipated.

Japanese copper producers intend to compensate for the unstable environment on the market by streamlining the industry this year. The latter means inevitable mergers and absorptions. The most optimistic forecast for Japan is an increase of copper use up to 1.3 million tons during 2002-2005. The pessimistic scenario, however, points out to the drop to 1.05 million tons in the near three years.

Japanese import is to inevitably go down by 40 percent. Moreover, export of refined copper is assumed to rise by 25 percent -- first of all to the expanding Chinese market.

China Copper Industry Services (CCIS) informs that consumption of refined cathode copper on China's domestic market will outstrip domestic production by 2005; to cover the deficit it would be necessary to import 1.4 million tons per year. We estimate that domestically produced copper is to jump up to 2 million tons in 2010 against domestic consumption of purified copper reaching 3 million tons by 2005 and 4.3 million tons by 2010. Thus, volume of import is to tower threefold by 2010.

Bloomsberry Minerals Economics (BME) assumes that May 2002 may bring the longed-for balance of demand and supply though it will hardly soar the pricing level. Expectedly, recent closures of copper mines and curtailment of refined copper production are to negatively impact metal supply from the second quarter of the current year.

Besides, metal stock of many important consumers drastically fell during 2001 and needs to be replenished. BME's analysts believe that 'mending' of copper semi-finished products and alloys reserves will happen so fast that output of copper in the world will fall short of upswing of purified metal consumption.

Escalating demand for copper is to trigger metal cost jump; but from October 2001 to end of 2003 (BME's estimate) average price for refined copper with immediate supply will amount to 1,740 USD per ton instead of earlier predicted 2,100-2,200 USD. Such little price growth can be accounted for (as stated by BME's specialists) by excessive stock exchange reserves 15-20 percent above the sufficient level.

International Copper Study Group signals that output of refined copper in the world will come to 15.2 tons in 2002 – showing a 1.1 percent descend compared to 2001. This year, world metal consumption will make up 15.29 million tons – having increased by 3.1 percent in comparison to 2001.

Copper supply in 2002 should not, to our mind, sustain any cuts like aluminum offer. However, new projects in this sphere are hardly to be launched.

The following materials were used when preparing the article: materials of State Statistics Committee of the Russian Federation, Ministry for Economic Development, Interfax agency, Prime-Tass, MC& C, REGIONS.RU.

*no official data on world production and consumption of nonferrous metals in 2001 have been published by the end of the year.