

GLOBAL ECONOMIC CHALLENGES FOR SUSTAINABLE DEVELOPMENT IN THE BOR BASIN OF COPPER

Slavka Zeković¹

¹Institute of Architecture and Urban&Spatial Planning of Serbia, kralja Aleksandra 73/II, 11000 Belgrade, Serbia

Abstract

The paper gives an overview of the global economics condition and strategic business challenges for the development of the mining&metallurgy copper sector and its possible impact on the future development of the Bor basin of copper. An analysis of strategic prospects in copper sector is undertaken by application of a comprehensive development as the broadest integrated framework for the preliminary general, sectoral, corporate, territorial and environmental assessment. Paper indicates that economics and impacts of global sectoral challenges on the future sustainable development of Bor basin copper should be included in corporate making-decision, as well as in local and regional plans.

Keywords: *economics, challenges, financing, sustainable development, Bor Basin of Copper*

1. INTRODUCTION

Global economic challenges in the period of the world economic and financial crisis appear mostly on the macro-economic level and sectoral level, from where they should be” transferred” onto the level of sector economics and action level in corporations.

The research has included perspective and the general market trend and market positioning of the production and copper processing complex in the world; the impact assessment of the regulations important for business in the mining and metals sector, and some economic challenges for the sustainable development of mining and metallurgy sector in the Bor basin of copper in Serbia. The analysis has included the identification and assessment of the global challenges on the future development of the copper complex which is important for further development of the Bor basin.

In the following text, firstly the global challenges in the copper sector in the world have been analyzed, then the risks in the mining and metals sector.

2. EXPERIMENTAL

The analysis of global economic challenges as part of strategic management and strategic planning based on the broadest integrated framework for the preliminary general, sectoral and corporate risk assessment and management. The identification of main challenges of the further sustainable development in the Bor basin of copper is based on comprehensive integrated approach in planning through cooperation between different levels of management and decision making. The approach involves correlation and linkages between inter/national, sub/regional and local levels together with corporative level. The approach implies mobilization of corporative and inner strengths and resources in development and mitigation of effects of global economic crisis, with emphasizing local responsibility. This approach provides greater certainty for creation of conditions for coexistence of different mining and metallurgy projects in the space as well as the possibility for different forms of integration of sectoral policies in territorial development of the Bor area [1]. The factors of economic challenges and uncertainty should be introduced in the choice of development plans for the region of the mining-smelting basin of Bor. Among the key risks at a corporate level are the financial risks and risks of the regulative framework, especially in the field of environment and land use. In both cases, it is a question of

external risks, which the companies need to relativize and successfully manage. Some companies pay more attention to production risks and search for better solutions in that domain, which, however, is not enough [2].

3. RESULTS AND DISCUSSION

3.1 New economic challenges

Changes in the increase of copper demand, over longer periods, have triggered development changes up to the period of the global economic and financial crisis. According to data in Business risk report [3] the key global risks in business are strategic, financial, regulative and operative. Strategic risks imply the weakening of alliances, a drop in transactions, radically “going green”, non-traditional new participants in the company purchases. The copper sector is one of the carbon-intensive sectors in which adjustments to the „green“ regulations are necessary (Kyoto Protocol, Directive on carbon emissions, Directive on CCS, and Directive on ETS). Financial risks are the key flywheel in the birth and deepening of the recession in the copper sector. Operational risks imply the reduction of costs, maintaining a reputation, management, new owners and using of financial derivatives, supply channels, new business models.

Key strategic risks of mining and metals in sector of copper complex are: changes in the market in the period of global crisis; the economics of copper sector - large-volume purchases and acquisitions of companies, the emergence of oligopoly and rapid expansion of smelters capacity in developing countries; the impact of market trends on the companies consolidation, the value added and competitiveness; increase the market value of mining companies; movement copper price and the growing influence of investment funds on the price of copper; the impact of environmental regulations and requirements of climate change on costs; energy efficiency in the copper complex; sustainable development strategies, development of hi-tech manufacturing; recycling of copper; globalization and international cooperation in copper sector.

According to the World Copper Factbook 2012 [4] the operative and financial limitations in the copper sector are: a) A decrease in the amount of copper in the ores: a serious problem in the developed territories of copper production. b) Project financing: costs of capital are the central factor. High interest rates can significantly reduce the supply. Exceeding the costs of capital. c) Taxes and investment regime. d) Water supply: the key issue in all the dry mining areas. e) Energy. f) Environmental regulations and climate change can significantly increase the costs of mines and processing. g) Supply and price of sulphuric acid. h) Skills of workforce. i) Workers' strikes. j) The relation between costs of imported and domestic inputs and the impact of the producer's currency. k) Market power/concentration. l) Peace and security.

General limitations in the future development of the copper sector are the shortages of copper concentrate; deficiencies in the ores in overly exploited zones; unstable prices of copper concentrate; unstable income of copper exporters; strikes and shocks when prices rise; layoffs of workers when the prices drop; pressures on the use and protection of water, energy supply, local communities and environment; omissions in reporting goods (e.g. gold, silver, auxiliary rare metals), cash and flows of refined copper and copper scrap; increase in the stocks of semi-fabricated products; the instabilities attract risky actions such as hedge funds; increased short-term trade by commercial traders, and insurance and risk diversifications. Zeković [1,5] indicated that new challenges in the future financing of developments in the copper sector are:

1. Variable, unreliable, „cunning“ and skillfully established method and character of financing as a long-term effect of the global financial crisis, which especially causes changes in the financing of capital and company debt. The financial derivatives play a great importance here, especially CDS, Options (“vanilla”, „exotic“) and Futures, as key financial instrument on the copper market. Copper prices are determined short-term and have a variable fluctuation due to the current affairs

and events. Investment plans for copper mines are not short-term government risks. Because of the ways of financing, mining investment plans are not short-term government risks and they are expected to articulate a clear policy as soon as possible. The inventories at the LME (London Metal Exchange) and Shanghai Futures Exchange are very important for global state, particularly increasing of cathode premiums for delivery times in Europe, mainly due to low availability in this market. One of challenges is how limited risks from the fluctuating euro to US dollar exchange rate with appropriate hedging transactions.

2. Dynamic demand growth due to the economic expansion of the BRIC countries and the phenomenon of resource nationalism considering that some countries are limiting export, asserting higher state intervention with licenses and permits, the introduction of new taxes and regulations. There is an obvious growing difficulty in the construction and extension of mines, lack of infrastructure, and workforce. It is evident the possible effect of the growth of Chinese investments into the copper sector in Africa on the market and copper prices - long-term.

3. In the financing of the project the central factor is the cost of capital. Until recently, companies have financed their own growth by taking loans until the capital became insufficient and until it did not jeopardize the cash flows. For better efficiency of capital, companies usually undertake drastic measures such as disinvesting non-core assets, rigorous cost cuts, extension of loan return period, halting one part of production, etc. The cure has also been found in strategic investment into the projects based on long-term strategies and company plans. Such an approach was encouraged because of the consequences of the impact of copper sector growth in BRIC countries that apply long-term and medium-term planning and company management. Challenges in the development are in regard of the issue whether the security and financial coverage of projects is over assessed due to the considerable mining profit. Risopatron [6] indicates that caution is necessary in securing the financial costs of capital. It is noticeable that the net financial effects in mining projects tend to be overestimated in order to secure financing.

4. The role of the agencies for credit rating, considering that their assessment of a country's financial capacities can drastically change the investors' confidence in a specific country and have a significant impact on the real state of things. By lowering the overall credit rating of a country, these agencies directly influence the decline of share prices of that country on the stock exchange, i.e., the decline of share prices of the companies on the market, the growth of interest rates and they discourage potential investors and financial arrangements in the copper sector.

5. Further tension in obtaining social permits for mining activities, considering their impact on the local environment. From the viewpoint of sustainable development, mining companies have an increasing role in the local communities because they now have to do more for the local community in cooperation with numerous stakeholders in every phase of the mining plan/project. Very important are Extractive Industry Transparency Initiative and Global Reporting Initiative.

6. A lack of a uniform global framework for standards in environmental reporting and numerous individual frames of reporting, as an important mechanism for society.

7. Potential introduction of the new global legally binding instrument for banning mercury by UNEP intergovernmental negotiating committee on mercury could limit the primary copper production and the copper smelting activities, considering that mercury is released again into the environment through the process of extracting metals from copper ores. In the primary copper production in the pyrometallurgy process, there are considerable mercury emissions released into the atmosphere, while in the electrolytic extraction process considerable amounts of mercury are leaked into water. Mercury should be recycled in the sulphuric acid plants in copper smelters. It is assumed that by 2020 there will be a mandatory implementation of strict mercury emission restrictions throughout the world.

8. Future restrictions in financing copper projects and the role of export credit agencies and institutions for financing development that aspire to secure strong projects; the growing interest in the risks of investing in a certain country; having the capacities to supplement finances of commercial banks; the role in the industrial consolidation of producers incapable of paying back debts and capital.

Big changes that are occurring in the world economy, and the fast economic growth of China have had significant implications on the copper market in Europe. Pressure is particularly growing on the smelters in Europe for recycling copper and for secondary products. There is dynamic growth in the export of old copper, copper scrap. Both processes lead to the concentration of smelting production outside of Europe, which nowadays has a surplus of smelting capacities. That is why, Stibich [7] points to the fact that joint activities are necessary in order for Europe to agree upon how it can retain its strong position in the sector.

4. CONCLUSION

In conclusion, copper price could not be disconnected from the market trends in the raw material sector. In general, a continued favorable situation is anticipated in the market for copper concentrates. An increasing supply from the mining industry will likely be confronted by limited smelter demand, so treatment and refining charges are expected to continue increasing. The trend in the sulfuric acid markets was significantly weaker in 2013 with lower prices. Various market challenges and strategic risks in the copper sector implied a growth in production costs, especially those regarding the introduction of regulations on climate change (reduction of CO₂ and SO₂ emissions, CCS, ETS, IPPC Directives). This trend forces some producers to reduce their production programs, even to close down the mines and processing capacities. Also, we should have in mind the risks associated with the European debt crisis. In light of the economic conditions in Europe, we don't expect a strong general upturn of copper demand in the future.

Results indicate that economics and other predictable impacts of global sectoral challenges on the future sustainable development of Bor basin copper should be included in corporate making-decision, as well as in local and regional plans.

ACKNOWLEDGEMENTS

Results are part of research project "Sustainable spatial development of the Danube area in Serbia" (No.36036), financed by the Republic of Serbia Ministry of Education and Science 2010-2014.

REFERENCES

- [1] Zeković S., Economics and challenges for the development of mining and metallurgy sector in the Bor basin of copper in Serbian part of Danube region, Tematic Conference Proceedings of 51st Conference of Metallurgy, Canadian Institute of Metallurgy and Petroleum, September, 30-October, Niagara Falls, Canada, 2012, p.1-13.
- [2] Zeković S., Risks and uncertainty for the development of the Bor basin of copper, in Economics, Process Control, Automatization and Optimization, Tematic Conference Proceedings of 7th International Copper Conference 2010, Volume 6, GDMB German Society for Mining, Metallurgie, Resource and Environmental Technology, Hambourg, Germany, June, 2010, p.2249-2264.
- [3] *Business risk report*, Ernst and Young, Oxford Analytica, 2009.
- [4] World Copper Factbook 2010 and 2012 (2012), International Copper Study Group (ICSG).
- [5] Zeković S., Vujošević M., The role of global challenges for sustainable development in the Bor basin copper, European metallurgical conference, GDMB German Society for Mining, Metallurgie, Resource and Environmental Technology, Weimar, Germany, June, 23-26.2013 (upcoming).
- [6] Risopatron C., Global Copper Market Drivers, International conference „Copper 2010“, GDMB, Hambourg, Germany, June, 2010.
- [7] Stibich R., Copper production – an industry with future in Europe? COO, Montanwerke Brixlegg AG, Tyrol, Austria, 2009.