

SIGNIFICANT TRENDS IN THE COPPER INDUSTRY SINCE SEPTEMBER 2011

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DR.CHUKWUEMEKA OTUTODILICHUKWU OKO

BEULAH HEIGHTS UNIVERSITY

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INSTRUCTOR: DR. DUANE C. SCOTT

ABSTRACT

It is crucial to evaluate the key players within the copper supply chain, as well as the new market dynamics, relevant international rules, and regulations, significant impacts affecting the sustainability of the whole system and policy drivers that affect its price on the global market. The focus should be on understanding the key and provisional factors that have an effect on copper price on the market, long-term copper prices which are determined by the fundamentals of demand and supply. Short term copper prices are driven by the power of the financial market and other various variables. Through the analysis of the significant factors and present dynamic of the market, global copper consumption increased since 1970, regardless of the economic recession in 2007-2009, growth is likely to continue because of the increasing demand in China. Since 2004 the copper price on the global market increased drastically including the spike on September 27, 2011, when it was reported that the European Union might expand its support of the Euro Zone's troubled banks. Its high consumption was mainly concentrated in developed industrial countries like China. The economic situation of developed countries which consumed copper has a more significant impingement on copper prices, even with the inclusion of the Asian nation's increased urbanization and industrialization continuously. This made analysts anticipate to account for substantial growth in global copper in the next 20 years, will present a significant work to double the supply of copper output.

Industrialization and urbanization will continue to surge copper demand, projected to subdue global copper production, high demand but decreased supply on the market. The decrease of copper supply would cause a mounting deficit, in turn, increase the demand by 2025. This gave a

future prediction that Asia's level of economic activity and urbanization is far from complete. It will eventually be a chief source of copper demand in the decades to come.

THE DEMAND OF COPPER

In China, for example, which is the world's largest consumer of copper and has an increase in demand over recent decades. China has experienced fast economic growth and a related increase in its rate of urbanization. The velocity of this transition, along with the sheer size of its population, has brought about China being a significant driver of global growth and mineral resource demand over the past decade continuously. China's copper demand rose again in the middle of the year of 2014 with the first five months outputs of power generating equipment and air ventilators, recording year-on-year growth rates of about 16% and 20% respectively. The high demand has been caused by a near term urbanization plan. A surge of the infrastructure investment in China, which includes the State Grid's RMB400billion (US\$64billion) investment budget for distribution of power and China railway's RMB800billion (US\$127billion) investment target in the construction of railway where copper is widely used in contact wire to provide railway communications. AME estimates China's demand for copper to grow at a year-on-year growth rate of about 3.5%, offsetting the potential risk of liquidation of invisible stocks in the Shanghai region bonded warehouses.

Financial deals in China are likely to be threatened by the recent Qingdao port probe over an alleged fraud of collateral obligations used to secure loans. However, the speculated decrease of

bonded warehouse inventory has not been looked at critically, with observed stocks stabilizing between 700–800kt. As copper has been largely needed as a tool for trade finance, it is a possible case that the Chinese government would like to impose some forms of regulations in the existing market instead of prohibiting it. If so, the financial demand for Copper in China may grow continuously, and the market risk associated with bonded warehouse collapse will be largely moderated. China at the moment is a major market and consumer that accounts for about 35% of the world's copper consumption, and the figure is growing at a rate of over 6% CAGR expected to rise to over 50% by 2025.

LONG TERM OUTLOOK ON DEMAND

As we understand, the demand for copper is a function of three major segments:

1. Real economic growth

- Transportation Systems

Conferring to the Copper Development Association, the average vehicle contains about 23kg of copper and it's even said to be more for electric cars. The average railroad train uses about 5000kg of copper, while electric subway cars, buses, and trolleys, contain a weighted average of 1043kg. When these numbers are added together with farm and the industrial types of equipment, as well as airplanes. It shows that copper is a significant commodity in modern industrial development today and in the future.

- Industry

Much of the developments in Asia, it is transitioning from rural-based economies towards urban manufacturing-based economies that require rising amounts of commodities which includes copper. As China's economy continues to increase, there are other Asian nations also looking to emerge, examples like Indonesia, Malaysia, Philippines and Vietnam, these experienced recent geopolitical struggles, yet many have made substantial progress since the late 1990s.

Specifically, Indonesia and Vietnam appear to offer strong industrial growth potential. The global manufacturing growth is expected to rise at an average of 4.5% per year towards 2025.

2. Urbanization

Building Construction in China will continue to require large infrastructure investment as urbanization continues. The amount of copper will be substantially higher during expansion and construction of physical infrastructure than in developed economies. In China, between the period of 2002 and 2012, over 178 million people moved into urban centers from rural centers. BHP reports that copper usage intensity in China rises by a factor of 2-3 times when comparing rural villages to urban centers. KPMG expects on average 15million people to move into urban centers every year in China between 2015 and 2030. Copper piping and wiring, as well as copper alloys, are used extensively in both commercial and residential construction. Hence the demand for copper is projected to grow drastically by 2022; this, in turn, will raise the copper price even further by 2020. In the power & telecom infrastructure, copper is one of the most important metals for conductivity and corrosion resistance. Though silver is said to be a better conductor

and gold more stable, the price differential of these two metals relative to copper inhibits substitution to some extent. Therefore, copper is vital for power cables, building wiring, and telephone wire.

3. Capital Investments

The energy supply and environmental concerns, combined with the increased efficiencies and decreasing system costs for renewable energy technologies, will continue to catalyze renewable energy growth over the long term. Renewable energy plants require more amount of Copper (KG) per megawatt (MW) of capacity added than nuclear power plants (NPPs) traditional fossil fuel plants (FFPs). The aluminum substitution for land-based renewable technologies is a concern. However, the corrosion resistance of Copper is essential for the wind that is offshore, which should be uneconomical in the current environment but whose benefits should ensure the development along with the United States seaboard.

THE SUPPLY OF COPPER

The supply of copper has always had a great impact in the copper industry and the world as a whole because of how valuable it is, which gives it the common name “Dr. Copper” as in most cases, have an influence in many developing countries.

Below are the major factors that affected and still affecting the supply of copper:

- International Economic situation

The Copper consumption is majorly concentrated in the developed industrial countries. The economic or financial state of these countries, such as the USA, Western Europe, Japan, and other countries has a greater influence on copper prices. Generally, if the economic situation is good, the amount of copper demanded will increase, then the copper price will rise and vice versa.

- The status of the copper producing countries

Chile is the world’s largest copper resource, and it is also the world's largest exporter of copper. Zambia and Zaire in central Africa are also essential copper producers, and the copper they produced are mostly entirely used for export. So, these countries production status has a large influence on the world's copper market. However, the political situation in these three countries is turbulent due to some factors, and the labor disputes happen quite often, which will eventually increase the instability of the global copper price.

- Seasonal factor

The seasonal fluctuation of the price of copper is quite apparent. The copper price in January is the lowest usually, and it will reach its peak in August, the copper price will keep on fluctuating year in year out. Lack of increasing investors in the copper market

There have been limiting factors that have restrained from investing in new capacity and delayed new projects of the copper industry, like:

- Shortage of equipment
- Shortage of skilled labor
- Higher wage demand and strikes
- Environmental groups.
- Higher prices for energy and materials that keeps increasing
- Higher prices for materials, energy and wages are expected to contribute to higher costs in

years to come, augmented by the increasing costs of new developments in more challenging areas. These will be partly offset by the development of modern technologies.

LONG TERM OUTLOOK ON COPPER SUPPLY

Long term prices aforementioned are determined by the fundamentals of supply and demand of copper, short term, however, are determined by the financial market and other variables such as government policies, hedge funds, political risks. Copper supplies are most likely to surpass demand in 2014 and 2015. This is less than an ideal environment for promoting rising copper prices. However, the economic situation of copper mining has changed radically over the last 11 years. Operating costs for the copper sector have risen markedly while the copper grades have, and are expected to continue to decrease. Moreover, copper inventories are also near slumps preventing prices from moving back to pre-2004 depressions. Over the ten years estimate period, copper price is expected to increase as capital costs and regulatory risks for large scale mining development projects have become significant obstacles depressing investment into future production.

MANAGERIAL TACTICS IN MEETING FUTURE COPPER DEMAND

Demand for copper is growing. It is expected to get to a spike as much as 50% over the next 20 years alone, and this continuous growth is part of a broader trend. The World Bank's 2017 reports say, "The Growing Role of Minerals and Metals for a Low Carbon Future." This tells us that we could see a ten-fold increase in demand for metals, including copper, by 2050 as the world moves towards a low carbon energy future. Several long-term trends are presently increasing growth in copper demand and are expected to continue to do so in the coming decades. These

trends include growth of consumer use of wider uptake of electric vehicles (EVs), electronics, increased use of renewable sources of energy and energy efficiency and all will require significant amounts of copper to function. The copper industry is already investing in innovation and sustainable solutions. On an average, the members of the Copper Alliance invest a combined \$20 billion a year with the intent to improve their contribution to sustainable development in areas such as protecting the environment and also ensuring the safety of their operations.

This alone, however, will not be enough. Although, it is a fact that industry can, and should do more to make sure copper is adequately extracted, used, and recycled in a well sustainable way. Political stability and a regulatory environment will be favorably needed for such investment. The stability of the copper produced in various areas needs to be checked with political certainty, and stable permitting conditions as copper is to be extracted and processed efficiently and in a sustainable manner. Issues like the permitting processes, which are often slow for existing mines to expand to meet the ongoing growing copper demand, could be better streamlined and would benefit more from political certainty. Recycling and the circular economy should also be considered when talking about meeting future demand of copper. Copper is currently recycled at significant rates at the moment. International Copper Study Group(ICSG) estimates that, on average, 35 percent of copper use globally came from recycled copper. Copper is a circular material by its nature because it does not lose its quality when it is reused for a different function. Not only will the recycling of more copper help to meet the consumer demand, but it will also make the industry even to conserve more and sustain the planet's natural resources.

While the copper industries significantly keep on with the recycling rate, which is potentially impressive, only recycling will not be sufficient to meet the consumer's demand and ensure stable production of copper. The continual mining for new copper will be required. The solution to meeting the increasing demand sustainably is the addition of an efficient and sustainable mining framework with proper environmental standards.

Even as the demand continues to grow due to consumer and industry trends, the stable supply of copper will still endure. However, how this supply of copper will be used and extracted still depends on other different factors. To maintain this stable copper supply in a sustainable and efficient way, there must be some investments from the industries and the political stability needed to allow this investment to occur. This does not transit to increased recycling rates, and a more circular industry are not necessary. Both components are important for long-term industrial stability and sustainability. Therefore, it is strongly advised to take a holistic approach to the various issues to guarantee a viable and responsible copper industry in the long run.

References

- * International Copper Study Group. 2013. The World Copper Factbook 2013. Lisbon: ICSG.
- * US Geological Survey. 2014. Mineral commodity summaries 2014. Virginia: US Geological Survey.
- * Copper Development Association. "Copper facts." Accessed August 20, 2015.
<http://www.copper.org/education/c-facts/facts-print.html>.
- * 2014. "Global Copper Outlook." www.mining.com. 6. Accessed January 10, 2015.
<http://www.mining.com/wp-content/uploads/2014/06/Global-Copper-Outlook-and-PSE.pdf>.
- * Black, Ken. 2015. What Factors Determine Copper Prices. August 13. Accessed August 27, 2015. <http://www.wisageek.com/what-factors-determine-copper-prices.htm#>.
- * Wood Mackenzie Research & Consulting. 2012. Metals Market Service Long-Term Outlook. By Subscription.
- * Garay, Daniela Rojas S. Francisco Donoso R. Jorge Valverde C & Víctor. 2013. Copper Market Trends. Status report for 2012 and Prospects for 2013 - 2014, Cochilco Research and Policy Planning Department.
- * Konrad J.A. Kundig, BBF Associates. 2011. Current and projected wind and solar renewable electric generating capacity and resulting copper demand. Market study, Copper Development Association Inc, Sustainable Electrical Energy Program.

*Albanese, Tom, and John McGagh, 2011. Future trends in mining, Chapter 1.3 (pp 21,38) in Darling, Peter (ed.), 2011. SME Mining Engineering Handbook, Society for Mining, Metallurgy, and Exploration, Inc.

*Mills, Richard. 2012. Crisis in mining. May 4. Accessed January 12, 2015.

<http://www.stockhouse.com/news/natural-resources/2012/05/04/crisis-in-mining>.

*International Copper Association, ltd 2019 www.sustainablecopper.org