Michael S. (Mickey) Fulp
M.Sc., C.P.G.

MercenaryGeologist.com
contact@mercenarygeologist.com

Comments on the Supply Chain Conundrum

A Monday Morning Musing from Mickey the Mercenary Geologist

Contact@MercenaryGeologist.com

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In Q4 2021, main stream media's go-to buzz phrase to describe America's ongoing economic struggles was "supply chain crisis".

Over these past four months, news sources of every ilk have inundated us with anecdotes, reports, stories, and opinions on supply chain breakdowns. Many reasons are promulgated but as per usual, coverage is simply a series of superficial headlines.

I submit that even well-informed Americans have gained little knowledge or insight into the myriad of components that constitute a supply chain.

Supply chains are driven by simple supply-demand fundamentals. On the other hand, they are quite complicated with many sequentially active parts from start to finish. In our capitalist economy, the motivation to turn a profit controls every step of every supply chain.

Rest assured that the US of A's current supply chain problems go much deeper than 50 or 100 container ships from China that have been parked for weeks or months off the SoCal coast due to overwhelmed port facilities in Long Beach and Los Angeles.

At **MercenaryGeologist.com**, we strive to educate the layman. Therefore, I illustrate a typical copper supply chain below.

Copper was chosen because it is widely recognized as a leading economic indicator for the short-term economic health of the world.

So from mine to consumer, here is the supply chain for copper used in domestic electrical and plumbing applications:

- Rock containing copper sulfide is extracted from an open-pit or underground mining operation.
- Copper sulfide ore that grades 0.3 to 2.0 % Cu is transported by conveyor, tram, truck, or rail to a proximal or regional processing complex.

- At the processing complex (mill), the ore is crushed, ground, floated, skimmed, and dried to produce a copper sulfide concentrate that grades around 28-30% Cu.

- The copper sulfide concentrate is transported by truck, rail, and/or ship to a large smelter complex operated by a major integrated miner or sovereign entity.

- At the smelter, the concentrate is treated by pyro-metallurgical processes and converted into high-grade blister copper grading around 98.5% Cu.

- The smelted copper is upgraded at an electrolytic refinery to extremely pure metallic copper grading a minimum of 99.9% Cu. It is then made into thick copper rod and large diameter cable.

- Copper rod and spooled cable is transported via truck, rail, and/or ship to a primary manufacturer.

- At the primary manufacturer, large diameter rod and cable is extruded or tooled into much smaller-scale copper rod, tubing, wire, plate, sheeting, bars, and windings.

- These smaller-scale copper products are subsequently transported to secondary manufacturers that configure or install the material into final electrical, electronic, and plumbing products.

  Products include copper-bearing components for radios, televisions, motors, transformers, computers, phones, appliances, tubing for plumbing applications, and rods, insulated wire, and components for transmitting and regulating electricity.

- These products are transported via truck or rail to a wholesale distributer.

- The wholesaler sells bulk volumes of intermediate and final products to assembly plants, large contractors, and retail stores.

- Bulk shipments are delivered by truck or rail to the retail store.

- The retail store sells single and small lot products to local construction contractors, electricians, plumbers, and individual do-it-yourselfers for installation into multi-and single-family housing units.

So there is a 13-step chain from the mining of copper ore to delivery to a consumer who installs copper-bearing products into a dwelling.

Supply chains can be impacted at a plethora of choke points in supply, demand, processing, manufacturing, and transportation. Note that transportation bottlenecks often play an outsized role in inefficiencies.

Most current supply chain problems in the hard commodities sector have been caused by a variety of factors that were spawned or exacerbated by politically-motivated government lockdowns, work stoppages, and draconian regulations during the Wuhan Lab virus panic. Included are:

- supply disruptions and destructions;

- pent-up post-pandemic demand;

- bottlenecks in all modes of transportation;
- worker shortages;
- higher input costs for energy and labor;
- slowdown of the Chinese export sector;
- small business shutdowns and bankruptcies.

Given a normal world economic environment, most of the disruptions to well-functioning and reliable commodity chains are supply shortages caused by geopolitical events.

And these are contributing mightily now.

Both long-lived and newly-minted resource nationalism in major producing countries (e.g., Chile, DRC, Indonesia, Peru, Philippines, and Zambia) has compromised copper, nickel, and cobalt supplies. High energy prices and power shortages are severely affecting zinc smelters in the Euro Zone and aluminum smelters in both China and Europe.

With many world-traded hard and soft commodities trading at or near all-time highs, I opine that the root cause for our current supply chain turmoil is the exponential increase in money supply that has produced the highest inflation rate in 40 years. Although inflation is rampant worldwide, I will focus only on the homeland.

Runaway inflation in the late 1970s to early 1980s generated a three-fold response in the United States: Fed Chairman Volker raised interest rates to record levels; Reagan and a Republican Congress drastically cut taxes; and the federal government ran huge budget deficits. These actions generated an immediate recession but our economy was back on track in relatively short order.

This time is different. Our current problems were spawned during the housing bubble collapse in 2007 and the subsequent global economic meltdown in 2008 to 2009.

Admittedly clever central banksters pulled the world economy from the brink of collapse by dramatically increasing the money supply and subsidizing failed financial institutions and giant legacy corporations with the fiat currency that was created.

Once the threat subsided, the US Federal Reserve created a new bubble in American stock markets and banksters thru out the world instituted negative real interest rates.

But massive budget and trade deficits have led to an ever-burgeoning domestic debt load over the past 14 years. US government debt now vastly exceeds GDP and the Fed's usual solution of raising interest rates to levels that can tame record inflation is nigh impossible now. Such actions would cause the country to default on the dollar for the third time in 99 years.

How the self-appointed *cognoscenti* hope to resolve the current economic quandary is way beyond my pay grade so I will leave it there.

Here's what I know: In an inflationary economic environment the way to preserve one's wealth is to convert devaluing fiat currencies into inherently valuable assets.

Buying gold and land may be wise moves at this juncture.

Ciao for now,

Mickey Fulp
Mercenary Geologist

The **Mercenary Geologist Michael S. "Mickey" Fulp** is a Certified Professional Geologist with a B.Sc. in Earth Sciences with honor from the University of Tulsa, and M.Sc. in Geology from the University of New Mexico. Mickey has 40 years of experience as an exploration geologist and analyst searching for economic deposits of base and precious metals, industrial minerals, uranium, coal, oil and gas, and water in North and South America, Europe, and Asia.

Mickey worked for junior explorers, major mining companies, private companies, and investors as a consulting economic geologist for over 20 years, specializing in geological mapping, property evaluation, and business development. In addition to Mickey's professional credentials and experience, he is high-altitude proficient, and is bilingual in English and Spanish. From 2003 to 2006, he made four outcrop ore discoveries in Peru, Nevada, Chile, and British Columbia.

Mickey is well-known and highly respected throughout the mining and exploration community due to his ongoing work as an analyst, writer, and speaker.

Contact: **Contact@MercenaryGeologist.com**