



A Contrarian's Comment on Commodities: The Curious Case of Copper

A Monday Morning Musing from Mickey the Mercenary Geologist

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Copper is arguably the most important non-ferrous metal on the Earth. It was the first metal used by man with documented use of native copper in 8700 B.C. Copper is a soft, reddish metal, 31st most abundant element in the Earth's crust, with a density less than half of gold, and a melting point slightly higher than King Solomon's weakness. It is the third most used industrial metal behind iron and aluminum and is valued for its malleability, ductility, corrosion resistance, and high thermal and electrical conductivities.

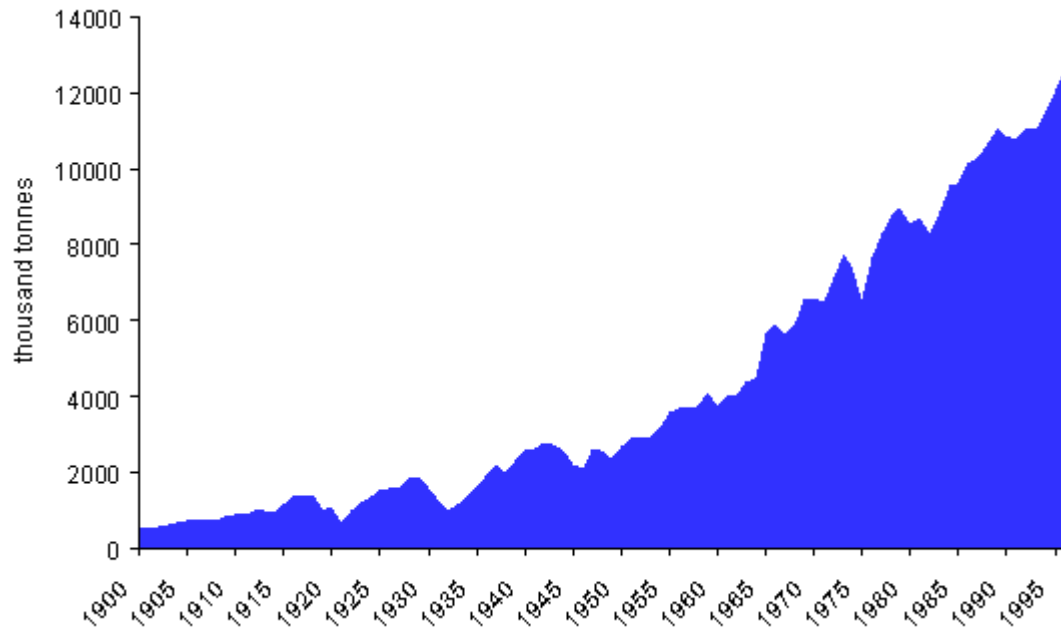
Copper also was the first metal alloyed and it ushered in the Bronze Age over 6000 years ago. Bronze, for those pyro-metallurgically challenged, is a fire-made combination of copper originally combined with arsenic and gradually succeeded by tin in the period from 4000 to 3000 B.C.

Copper alloys such as bronze (12% Sn), brass (10% Zn), and beryllium copper (4% Be) have very important industrial uses today. Other minor copper alloys include aluminum, silicon, phosphorous, and manganese.

However, it is mostly in its native form that copper is essential to the industrialized world. The modern history of copper began with development of commercial electricity in the late 19th century. It is a better electrical conductor than any other metal except gold and silver which are too expensive to use for electrical wiring and distribution. To put it simply, electrical power does not flow on Earth without copper.

Electrical uses account for nearly 75% of total copper demand. Billions of people in the emerging countries of the world, most importantly China and India, are demanding electricity. Of the 6.8 billion people inhabiting Earth, 2.5 billion or nearly 37% live in these two Asian countries. These very large countries will require uncountable kilometers of electrical cable and wire to hook their teeming masses to the grid.

The worldwide consumption of copper has grown at a 4% annual rate since 1900. There is abundant reason to think steadily increasing demand will continue as electrical power is supplied to emerging countries thru out the world and particularly in eastern Asia.



World Copper Demand 1900-2000: 4% Annual Growth.

The supply and demand curves of copper are generally tightly balanced, the world price can be quite volatile, and the relative health of the world economy controls industrial use.

Primary production of refined copper is dominated by mining sulfide ores and processing with flotation concentration, smelting, and refining. Solvent extraction-electro winning of copper oxide ores accounts for about 16% of primary production. Secondary refined production of recycled scrap is important and accounts for about 15% of yearly supply.

Copper price has exhibited an inverse relationship with London Metal Exchange warehouse inventories for most of the past five years. However, starting in the third quarter of 2009, copper prices and warehouse inventories have risen in tandem and nearly exponentially:

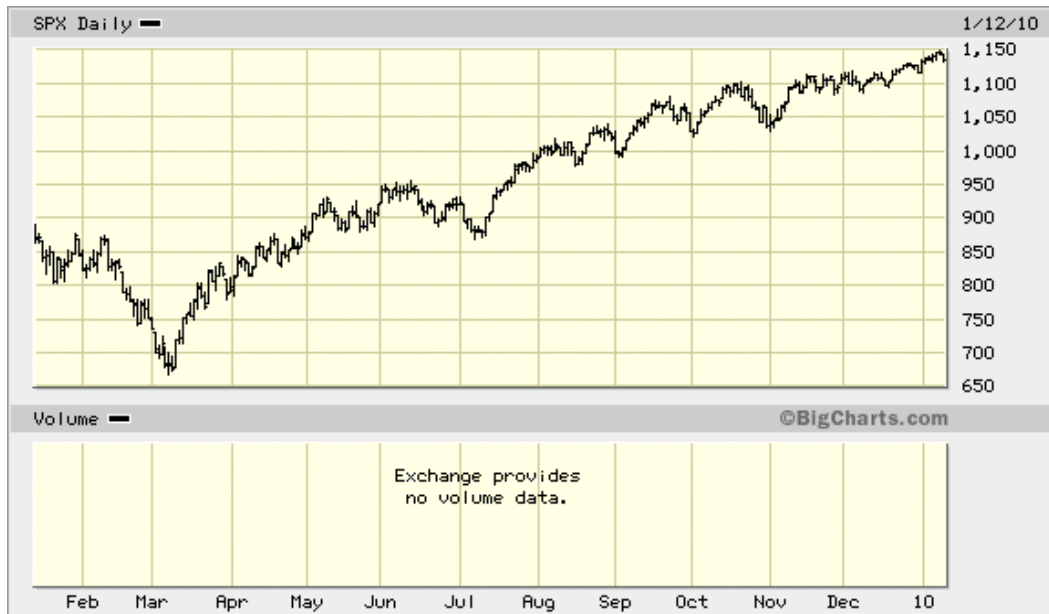
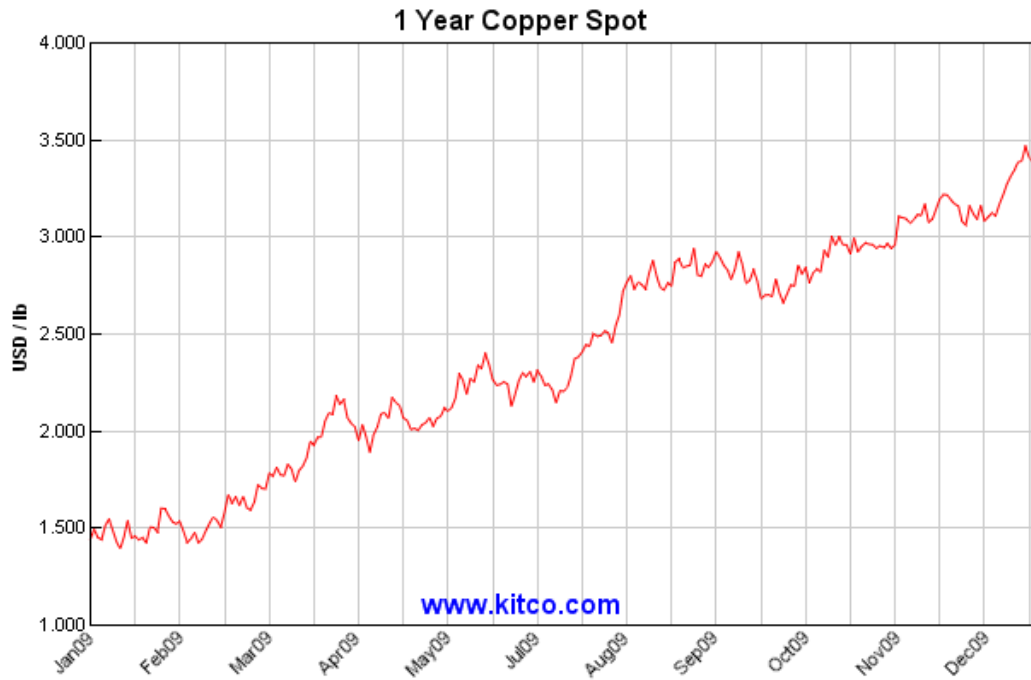
5 Year Copper Spot



5 Year LME Copper Warehouse Stocks Level



A comparison of the copper price and the S&P 500 shows that the rise in copper price correlates closely with the rise in mid and large cap American equities in 2009:



Copper is often referred to by commodities traders as “Dr. Copper” because it is the only metal with a “Ph.D. in Economics”. Based on the above charts, one would think the US and world economy is booming right along. But we know that the world is still in a fiat currency-derived banking crisis and with exception of Asia, remains mired in a recession.

Supply currently is exceeding demand and demand is being driven mainly by Chinese imports and stockpiling, and hedge fund speculation. The construction and automotive industries in the US and Western Europe are depressed and will continue to be for the foreseeable future.

China's State Reserves Bureau purchased large quantities of refined copper, copper alloy, and fabricated copper products in 2009 with year over year imports up nearly 63%. Their stockpiling is partly the reason the copper price rose dramatically from its low of \$1.28 in late December 2008 to a recent 16 month high of \$3.44.

In mid-August, it was estimated that private speculators in China, led by a group of pig farmers, hold about 50,000 tonnes of hoarded copper cathode and scrap. 50,000 tonnes is a whole heap of copper. By comparison Shanghai Futures Exchange warehouse stocks for the week of January 8 were 95,300 tonnes.



Speculative Hoarding of Copper in Southeastern China

With the five simple charts shown above and an anecdote about Chinese pig farmers hoarding copper, the following points lead to a price trend forecast for copper in the short to medium term:

- Copper demand has increased 4% year over year since 1900. Significant growth in consumption is predicted for the next few years led by demand in China, India and Southeast Asia. That will be tempered by decreased use in North America and Europe.
- The copper price skyrocketed in 2009 returning a phenomenal 268% after a brutal crash in Q4 2008 led by hedge fund capitulation and coinciding with the global economic crisis.

- LME warehouse stockpiles of copper have been steadily climbing since late summer and recently reached levels of over 500,000 tonnes. These amounts were only exceeded this decade in early 2009 during the global financial meltdown.
- Copper price in 2009 exhibited a strong correlation with the S&P 500 index and decoupled from its usual inverse correlation with LME warehouse stockpiles.

Although I remain convinced we are in the early stage of a secular bull market for commodities, basic supply and demand fundamentals for copper are currently negative and the evidence for a pending correction in the price of copper is strong.

In my opinion, the long overdue correction in the S&P 500 Index will result in a significant and concomitant drop in the value of copper.

And rest assured that I do not hold a long copper contract on the Comex today.

Ciao for now,

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Acknowledgements: I thank Otto Rock of IncaKolaNews and my editor Nancy Goertzen for their timely reviews of this musing.

P.S. I often write and speak on the considerable geopolitical risk we must take in the junior resource sector to reap the reward of discovering and developing giant metal deposits. But we tend to ignore the considerable *geological* risk of working where giant deposits are permissive, i.e., along plate tectonic boundaries.

I visited Haiti in May 2009 and met many sincere and dedicated people trying to help this very poor nation develop a viable economy. Let's remember the people of Haiti as they recover from another natural disaster, this one a magnitude 7.2 earthquake that has destroyed major infrastructure in Port-au-Prince and cost many lives.

The [Mercenary Geologist Michael S. "Mickey" Fulp](http://MercenaryGeologist.com) is a Certified Professional Geologist with a B.Sc. Earth Sciences with honor from the University of Tulsa, and M.Sc. Geology from the University of New Mexico. Mickey has 30 years experience as an exploration geologist 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 has worked for junior explorers, major mining companies, private companies, and investors as a consulting economic geologist for the past 22 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 throughout the mining and exploration community due to his ongoing work as an analyst, newsletter writer, and speaker.

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