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## Is The Doctor In ?

Doctor Copper, Professor Emeritus, of all things related to metal markets and the economy, renowned the world over, and highly venerated for his insight and deep understanding of, and into the inner workings of capital markets throughout the globe, was at his desk.

But instead of his normal dapper attire, the good professor looked disheveled. There he sat, hunched over old manuscripts, some more than one hundred years old, wearing a green eye shade, with the short stub of a yellow No. 2 pencil behind his ear, and arm bands to hold his shirt sleeves up.

He looked haggard, his eyes red as if he'd been working all night. "Professor, you look tired, what's going on?" "I am", he replied, in his guttural German accent, "and confused as well". "What's the matter?" I asked.

With empty eyes, and a face devoid of expression, he stared at me, and then in a low almost inaudible voice said, "My old formulas, the ones that have served me very well for many, many years, are no longer working". Seeing that he was upset, and not knowing what to say, I stumbled around, trying to find some words to break the silence. "When did the problem begin?" I asked in a low and sympathetic voice. After some hesitation, he finally said "it seemed to have started at the end of last year, right around Christmas of '08".

The professor then went into a lengthy explanation of how the metal markets worked within the global economy, and how the role of currencies, credit markets, interest rates, and other factors influenced prices, how they all meshed together, like worm gears, cogs, pins, and the pendulum of a clock work in synchronicity, to tell us the time of day.

I suspected he knew I didn't understand what he was talking about, but I let him continue. "Look", he said, drawing my attention to the chart on the wall, "this black line is the price of copper, and the red line is copper inventories". "When the global economy slows, consumption of metal falls, causing inventories to rise, which results in a decline of prices until either production is reduced, or, consumption rises again". Sounds simple enough I thought, and a glance at his chart confirmed what he said.

But looking more closely at the chart, I saw periods when the lines didn't move as expected. "What happened here professor?" I asked, while pointing at a brief period in which inventories rose as did the price, "and over here", when

inventories fell, and the price simply moved sideways. "Oh, those were short term aberrations while the market caught up with itself, much the way the spring movement in a clock suspends tension momentarily in order to function."

The perplexed look returned to the old man's face. "Here", he said, as he grabbed the pencil from behind his ear, "right here", tapping the yellow pencil on the copper chart, right above January 2009. I immediately saw the problem he was facing, and it wasn't just copper he was concerned about, but all the important industrial metals necessary for the world to work properly. One by one, he went through each chart, copper, aluminum, lead, tin, nickel and zinc.

They all looked as if something had gone horribly wrong. Inventories have been climbing rapidly, in some cases to record high levels, while prices were also moving up, almost in lock step.

"What happened?" I wondered aloud. "That's my problem, I don't know" he sighed.

We walked over to the blackboard where he had drawn the most complex diagram I'd ever seen, filled with formulas and calculations for production, consumption, interest rates, foreign currencies, and what seemed to be hundreds of economic indicators. There were also words I'd never heard before like contango, and backwardation, and Greek words, Alpha, Beta and Delta, scribbled into the formulas.

There were other blackboards with formulas for things called derivatives that he tried to explain, but they were so confusing that I just shook my head in despair. On yet other boards were still more formulas to measure market risk, and speculative behavior, and something called an ETF. "What's an ETF?" I asked. "Oh, that's a new invention, it stands for Exchange Traded Fund". "It's a financial instrument that lets people invest in a commodity without actually trading directly in the futures market". "Hmmm, that sounds interesting, how do they affect your formulas". "I don't know, they haven't been around long enough yet". "But my sense is that they are creating an artificial, self reinforcing influence"

We went back to the copper chart, and I saw the angst return to his demeanor.

Pointing to the price of copper at \$4.00 in July 2008, and following the line down with his finger to \$1.25 in December of that year, he talked about a credit crisis that



occurred and went on to describe how the world's financial system had stopped working properly. Companies went out of business, banks failed, and brokerage houses, some of the best and the biggest that had been around for decades just disappeared. Then pointing at the price of copper again, he followed the line back up. By April 2009 copper was over \$2.00, and just three months later in July, it crossed \$2.50, and by October the market was back to \$3.00.

"Does that mean all the problems have been solved"? I queried, "No", he replied, "and that is another part of my problem. There is nothing in my records or formulas, as far back as I can see that would have predicted the price of copper to be where it is now". "There was a period in the mid 1990's that was somewhat similar when a major trader was buying copper ostensibly to supply strong demand from his customers, but that explanation didn't wash with the fundamentals, or the economy at the time, and ultimately it was revealed that his buying was an attempt to hide, or recoup very significant trading losses". "This time is different again".

"When I look at the production and consumption elements of my formulas, the numbers don't seem to add up anymore. Also, when I factor in international GDP rates, industrial production, and unemployment for the biggest economies, they throw my numbers even further out of whack".

"Look at this", he went on to explain, "through June, global production of copper stands at 8.89 million metric tonnes, down 1.3% from last year, while consumption is off just 0.6% at 9.18 million tonnes. Therefore we have a deficit of some 290,000 tonnes, even bigger than the deficit of 236,000 tonnes through last June, despite the global economic crisis. Also, when I examine the consumption figures, we see the United States is off 23% through June from the same year ago period, Japan is down 40%, Germany was off almost 30%, while the Euro zone overall is down 25%. These losses, we've never seen before.

The only country showing strength is China, with year over year consumption rising 47%, a figure I can't reconcile

given the weakness everywhere else. If we remove China from the equation, consumption dropped almost 20% for the rest of the world".

"So, I hope you can see the difficulty I am having with the price of copper rising the way it has. Also, in just the past three months, inventories held in Comex and London Metal Exchange warehouses have climbed almost 100,000 MT, while at the same time, the price of copper has risen 50¢".

"Even if I include my 'Inflation Fudge Factor', it still can't explain how the price got back up here, and I am becoming more concerned about what may happen in the future. If I extrapolate the past ten months and assume the trend will continue, we could be looking at \$4.00 copper by the first quarter of 2010".

"Alternatively, seeing as inventories are rising rather rapidly, the oscillation in price behavior, compounded by the square root of risk allocation, that is the embracement of risk, minus risk avoidance, divided by the mean of derivatives plus the compound growth in ETF's could have us back to \$2.00 early next year". "On the other hand . . ."

I could see Professor Copper was becoming agitated again, so I decided not to ask any more questions. But I think part of the problem he is having stems from changes in the global economy, and the lag time required for the markets to adjust, as well as a lack of transparency that is necessary for proper market analysis. And the problem is further compounded, as commodities are increasingly viewed more as financial instruments, rather than the raw materials necessary to make the things we use everyday. Also, with the advent of new financial instruments like ETF's, their true impact has not been fully measured, or understood.

In time the good professor will be able to make the necessary adjustments to his equations, and copper, the single most important industrial metal known to mankind will regain its status as the reliable bellwether of global economic activity.