



## How real is high priced metal?

By CK Wong 2006.05.26

<http://www.ck-wong.ca/Money%20Matters/how%20real%20is%20high%20price%20metal%2020060526.pdf>

### Introduction

There is a wide speculation on the rise of commodity price deduced from the chart. There is also observation from the rise of the demand from China and India. The price of copper has been gone up from U\$1.50 to peak at U\$3.80, zinc has U\$0.50 to U\$1.60 a pound in one year. Metals are the foundation of the growth economy because you need to construct building and make widgets using a wide variety of metals. Is there any theory to support and justify the rise of price?

### Law of Elasticity

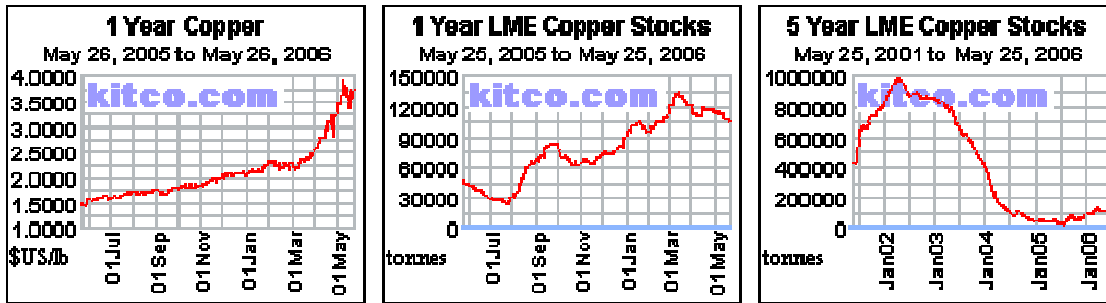
When you take the Economy 101, the first thing they teach you on the relationship of supply (price) and demand (consumption) are governed by the law of elasticity for elastic commodity. Elastic commodity refers to the materials that the demand will change on the price. Unlike the gasoline, the demand fluctuation is very small. The curve is usually represented by a hyperbola with both end very close to the X and Y axis. In the case of gasoline, the base for the demand is not close to zero rather very near the top. This makes the price very sensitive to the supply.

So much theory for everyone. Now we have everyone on the same level we can talk about the price fluctuation.

### Metal Demands

Metal demand does not come alone. Steel is an alloy. You need chromium, nickel and molybdenum and other rare earth metals to make different steel for strength, for elasticity and other requirements. On top of this, zinc is required to galvanize the steel to prevent corrosion for non-stainless steel. Copper is the same thing. While pure copper are widely used for making electrical wire, many application actually uses brass; an alloy of copper and zinc. If the shortage of one ingredient exists, the demand of the other could be reduced.

In general we could look at the group of metals a whole. The following are the price and the warehouse stock level of the corresponding metal.



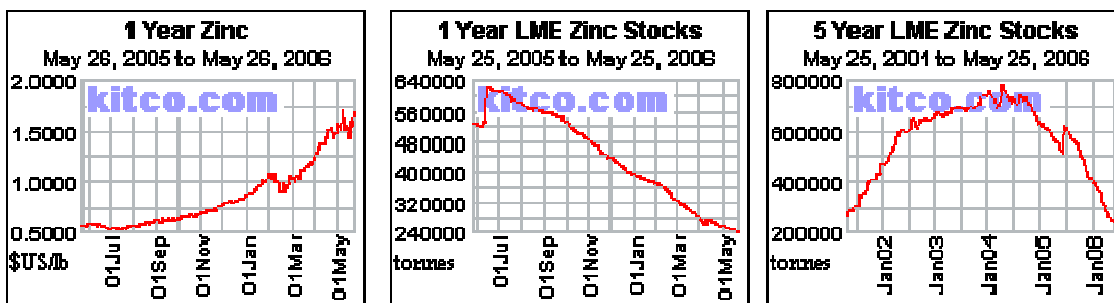
From these 3 charts, you may observe the following:

1. Copper’s price gone up so does the stock. Does it contradict the law of elasticity?
2. The stock of copper in 5 years has reduced from 400,000 tones to less than 100,000 tones after it rose to almost 900,000 tons.

It tells us that the supply at one point shoots for a consumption of 900,000 tones. If the demand did not exist the stock would slowly decline but we have a very sharp decline in two and a half years. This means the demand is there but the supply could not meet the demand. This make the elastic pulled to its full length. So the price (the force to stretch it) will be multiple times higher when the shortage reduced. Although the one year stock chart shows a steady increase but it only represents a few day’s consumption. So the price is justified.

## Zinc

Now let’s look at zinc which is the other metal to make many copper alloy.



From these 3 charts we can draw some interesting observations:

1. Price of zinc, like copper, is due to the shortage which is reflected by the 1 year warehouse stock chart.
2. The stock for zinc is in much worse scenario than copper because of a sudden search on the zinc demand which draws down the stock. From the one year chart we can see the stock comes to less than one half now than one year ago.

3. The stock of zinc falls from the peak of close to 800,000 tons to only 240,000 tons which is one third of the peak. This is either a supply problem or surge in demand. The fact is both.

### **Will the music stop?**

The demand is very high. The supply remains tight. To ram up the production, it usually takes 5 to 10 years. Could technology come to rescue? Sometime, yes. Like the copper pipe was replaced by PVC at one point. At the end, PVC pipe's problem surfaced and copper is back on the saddle. It does not mean copper pipes will not be replaced, it is just time.

Another example is the quick connector to join the tap to the hose was made of plastic and they are very expensive. Most of you could remember that these plastic connectors could not last a few years unlike our brass tap. This year I found these connectors made in brass and even cheaper than the plastic.

On some other situation, platinum used in auto catalytic converter will be replaced by palladium which is about one tenth the price of platinum. The question is will platinum become cheaper? I think not. Will palladium get more expensive? For sure.

With the re-rationalization of national resource program around the world, any imported material will be getting more expensive and you can count on it. With neck braking economic growth of 7+% of India and 10+% of China, all base metal will be consumed in no time.

In the good old time, recycle scrap metal is the solution. Metal recycle has to rely on cheap energy. With the higher energy price, scrape will be one of the production method but you will not be able to find it cheap.

Last note, many metals such as aluminum and nickel are very expensive because they could not be easily extracted using chemical or mechanical process until the electricity process. With the high coal and other fossil energy cost, you could count on these metal shooting the moon much faster than copper.