

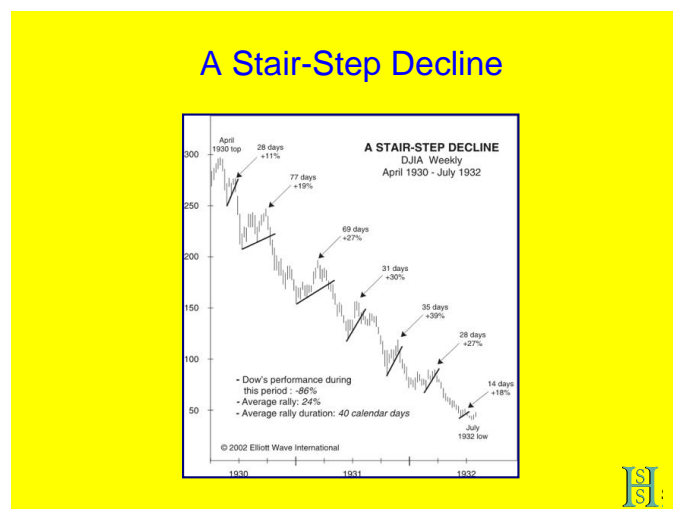
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Risks and Challenges for the Copper Industry
By
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SHSS
At
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Shanghai – 19 – 20 May 2011



Good morning Mr Chairman, Ladies and Gentlemen. Before trespassing on your time, I would like to thank SMM for inviting me to speak today, though once I have finished they might wish that I had not been so invited!

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This is because the world is full of utopian forecasts with little or no regard to the consequences of rising debt. The lessons of history, illustrated by Carmen Reinhardt and Kenneth Rogoff in their epic work, “Growth in a Time of Debt”, are mostly being ignored or forgotten: credit crises are followed by years of sub-par growth and sovereign debt defaults. How long there will be a greater fool ready to take out investors at a profit is any bodies guess, but probably no longer than the end of next year, interspersed with periods when the greater fool sits on the sidelines waiting for lower prices.

Speakers and indeed, writers, have the liberty to talk around their subject, in my case, “Risks and Challenges for the Copper Industry”. Today, I will speak less about copper and more about the profile of the global economy and its financial system, because what happens in this macro-picture will shape what copper prices do.

One reason for choosing this tack to speak to you today is that prices are determined by the financial markets and not by the balance between cathode going into furnaces and its supply. For demand, which almost everyone quotes, is the sum of cathodes bought by the financial sector and subsequently warehoused outside the reporting system and material which is actually fed into furnaces. As the Bank of Japan explains in a report dated March this year, we are witnessing the financialisation of commodity markets and that includes copper.

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In one of my recent chats with a senior economist in Beijing, he remarked that forecasting China's economy was becoming more difficult by the "complicated global economy". He went on to say that the world order had become very complicated by Bernanke's monetary policy, by Europe's sovereign debt crisis, by developments in the Middle East and the recent tragedy in Japan. He asked me for my views but blanched visibly when I told him.

So I thought this would be a sound starting point for today's venture into the unknown, even if our views are outside the consensus or conventional thinking. For those who believe that the global economy has returned to a long-term stable and sustained growth path and that this is the New World Order, I suggest you leave the forum and have a cup of tea or something stronger.

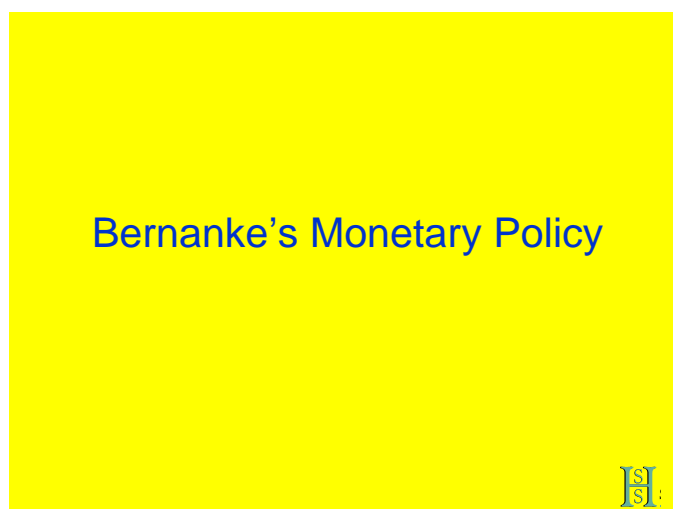
We start by repeating an old axiom. Business recessions are caused by the accumulation of excessive inventories. Credit crises are characterised by the accumulation of excess liabilities. They don't end in recessions, but in depressions. And depressions are defined as years of sub-par growth, interspersed with short periods of growth.

Our chart of the Stair-Step decline, depicting the path of markets in the last great credit crisis, should be kept on everyone's desk, for it shows that between April 1930 and July 1932 the Dow Jones index fell by 86% but had seven rallies each averaging 24%. History may not exactly repeat itself but often has similar rhythms.

We are now in one of those euphoric periods in which stock and commodity markets rise not just on good news, but any news, for one simple reason: global central banks have been pursuing loose monetary policies on a scale never before experienced in history. Few, if any, of the real issues that

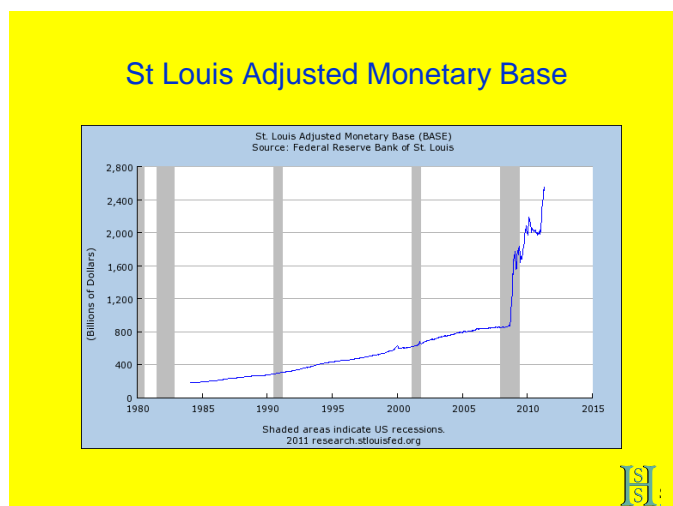
caused the credit crisis and its twin, the Great Recession, have been tackled. Policy makers have done nothing more than “kicking the can down the street”. We are in this period of fools’ paradise, or as Lombard Research, an elite independent think-tank in the City of London, calls this period, “The Lull between the Storms”.

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So we start with the first of our pieces of the complicated jigsaw puzzle – Bernanke’s monetary policy so vilified both here in China and the rest of Asia though so much loved on Wall Street.

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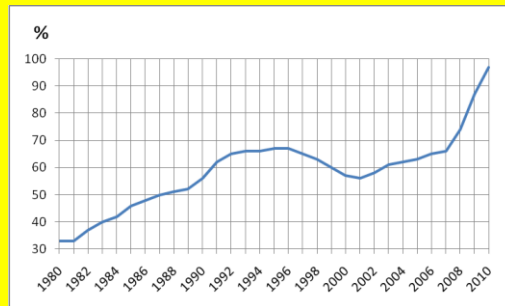


Listen to what our good friend Bert Dohmen wrote recently in his Wellington Letter. *“Over the two months ending March 23, the Adjusted Monetary Base, which is directly controlled by the Fed, grew at a 161% annual rate. Over the three months, it has grown at a 118% rate. In the 33 years of my business, I have never seen such explosive rates.”*

Another way of looking at the US economy is to see how stated Federal debt has grown as a percentage of GDP. Since 2000, GDP has risen by 47%, but federal debt by 147%. More alarming is the relative increases since 2006, debt by 62% but GDP by only 5%.

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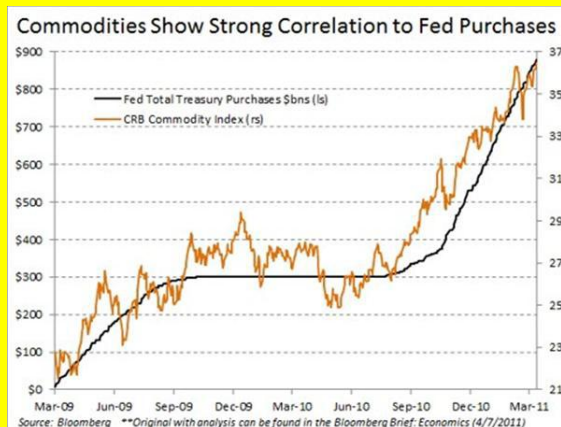
USA: Stated Federal Debt as % of US GDP



From 1980 to 1996, debt as a percentage of GDP virtually doubled to 67% and then for the next five years it fell by 16% to 56%. By 2006, it was back close to the 1996 level of 67%. Since then debt has exploded, accounting for 97% of GDP last year and will probably be 100% or higher this year. This is an extraordinary development for an economy whose currency is the reserve unit of the world.

Money supply is growing faster than the economy. Funds are thus leaking into stocks, commodities, art, wine and many other markets. Bernanke denies that his policies are the cause of commodity price inflation, but the markets don't believe him.

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In fact, as you can see, there has been a strong correlation between Fed purchases and the behaviour of commodity prices.

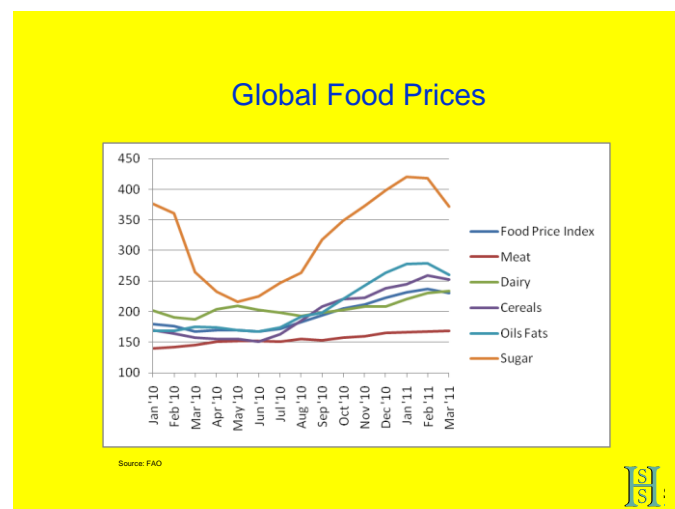
It beggars belief that the Federal Reserve, as guardian of the world's reserve currency and with its hordes of economists, was unable to think through the ramifications of its monetary policy: currency debasement, rising oil, food and other commodity prices and so on. For whatever reason, laying the

foundations for inflating global equity and commodity markets into probable bubbles must have been a deliberate policy.

Having a cynical attitude to policy makers, a thought came to our mind, which is now being supported in other quarters. Modern warfare, or geopolitics, is being waged through the financial system. America's omnipotent power is under threat. Asia, led by China, is in the process of regaining the global status that it enjoyed until the mid-1800s.

For instance until the 1820s, Asia accounted for 60–75% of world GDP. The growth of colonialism, combined with the Industrial Revolution, sank Asia's dominant role so that by the start of World War 2, Asia only accounted for 20% of global GDP. It now accounts for 23%. But reaching its prior dominance won't be achieved any time soon; it will take a generation or two before that dominance can be met. And along the way, there will be glitches to this story with one likely to appear within the coming five years.

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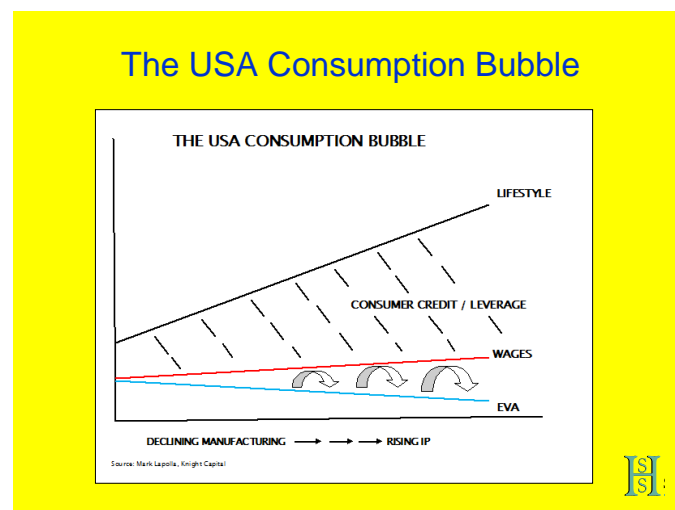


Global food prices have risen by 37% in the past year, according to the FAO. Rising energy and food prices do destabilise countries with a young and increasingly educated population. So to our cynical mind, Bernanke and his cohorts in Washington by slamming the US\$ and helping to cause rising asset, energy and food prices are creating the foundations for instability in some parts of the world, especially in the Middle East and North Africa, the so-called MENA countries, and in Asia.

At some point, probably in around mid-2012, this policy will be reversed with funds being transferred back into the USA. It will be at that point when the US\$ begins to recover and commodity prices start collapsing but not before oil prices will have reached \$150–200.

In effect, the Fed's monetary policy is not only geared towards raising asset prices in the USA, but to creating the conditions for instability in MENA countries and Asia

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Not only that, but the policies of the Federal Reserve encouraged average households in the USA to borrow, often above prudent limits, for them to retain their lifestyles during years when real wages hardly grew. It was a policy fostered by party politics in the course of which the policies created a Bubble Mania. The aftermath of these policies pursued so vigorously by the Federal Reserve will take years to unravel. And, the end game will be the washing out of a generation or more of a debt induced society.

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This leads us to the second part of the 'complicated' global economy. MENA countries are in turmoil. Autocratic governments, in many cases kleptocracies, have been in power too long. What swept throughout Eastern Europe over the past two decades, following the breakdown of the Berlin Wall, is now starting to be seen in MENA countries. The young don't care about democracy or who governs. What they want is the freedom of expression and the right to work.

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Selected Demographic & Socioeconomic Indicators for Youth Ages 15-24

	Youth Population (1000's)			Youth as % of Working Age Population	Unemployment Rate Among Youth (%)	
	1985	2005	2025		Male	Female
Middle East and North Africa	52,401	87,584	94,647	34	23	33
Algeria	4,469	7,424	6,468	34	43	46
Bahrain	67	110	132	22	17	27
Egypt	9,292	15,442	17,862	34	21	40
Iran	9,249	17,639	12,864	38	20	32
Jordan	559	1,139	1,462	33	28	50
Kuwait	296	415	559	21	16	8
Lebanon	564	657	634	29	24	14
Libya	682	1,318	1,326	34	-	-
Morocco	4,447	6,479	6,673	32	17	16
Qatar	55	112	148	18	8	30
Saudi Arabia	2,492	4,548	6,475	31	25	39
Syria	2,123	4,369	5,176	38	16	36
Tunisia	1,530	2,098	1,614	31	31	29
UAE	206	793	997	23	6	6
Yemen	1,966	4,497	7,594	42	21	14

Those in the age group of 15–24 in MENA countries account for 34% of the total population, but in Yemen 42%, in Syria 38% and in Saudi Arabia 31%. Today, this age group is better educated and more versatile in modern communications, such as mobile phones, Facebook, Twitter etc. The word gets around in a manner that the authorities have difficulty in policing. It is how a small stall-holder in Tunisia torched himself that triggered the riots throughout the region.

Unemployment is high averaging around 25% of the total population. Rising food and energy prices hit this group hard. This was the foundation for social unrest and will probably lead to some governments collapsing over the coming few years. At a guess, the first to go should be the Yemen, next Syria and then even Saudi Arabia, one reason why oil prices could well reach \$200 next year.

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Euro Zone Sovereign Debt

The Euro Zone's debt crisis is as much a political problem as it is a financial one. The richer block of countries centred on Germany are Calvinistic by nature, the exact opposite of the Mediterranean members of the block. The richer countries are only prepared to help bail out the highly indebted members of the EU if they swallow their spending habits and adopt those of the surplus countries.

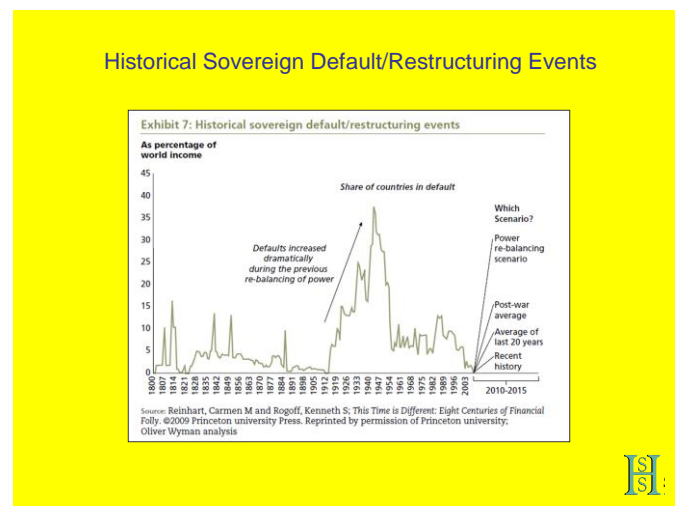
An important question is how long the electorates of these countries will accept austerity. A terrible political price will be paid for governments who follow the route demanded by the northern Calvinistic countries. We should expect surprises, none of which will be especially welcome.

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The facts though make the outcome desired by Germany and others difficult to achieve. For instance, taking government debt as a percentage of tax revenue, a more meaningful yardstick, Greece's ratio was a stunning 596% last year, Ireland's 300%, Portugal's 344% and Spain's 128%. Years of austerity will hardly make a dent in these and other countries' debt ratios. A restructuring of debt is inevitable sooner or later.

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This chart shows that sovereign debt defaults, or, restructuring were numerous in the years leading up to the last great credit crisis in 1929 and immediately following it. We will probably return to this sort of outcome during the current decade.

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If the world was not sufficiently complicated, the Gods have ensured that the future will be even more complicated. That Japan will recover is not in doubt; it is how its corporate and political leaders design a new Japan that will be crucial not just for its population, but the world at large.

Our sense is that Japanese corporations will locate their supply chains close to their manufacturing centres whether in N America, Europe, Latin America or Asia. This is, in fact, a global trend, now in its infancy, as manufacturers are turning increasingly to wanting their supply chains close to their markets, rather than having them located in Asia or in some other distant location.

In summary, our story is not about a stable world with global GDP rising on a sustained and robust path. Nor is it a story of unrelenting growth in Asia or other emerging economies. It is a story of inherent instability, patched together by fiscal and monetary stimuli on a scale never before experienced in modern history.

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Government Debt (as a % of GDP)

	2007	2010	2011
Austria	62	78	82
France	70	92	99
Germany	65	82	85
Greece	104	123	130
Ireland	28	81	93
Italy	112	127	130
Japan	167	197	204
Netherlands	52	77	82
Portugal	71	91	97
Spain	42	68	74
United Kingdom	47	83	94
United States	62	92	100
Asia	37	40	41
Central Europe	23	28	29
Latin America	41	37	35

Source: Bredem Asset Management


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Rising government debt is hardly a panacea for stability, as Carmen Reinhardt and Kenneth Rogoff show. A combination of oil prices reaching between \$150 to \$200 next year, combined with a renewed rise in food and other commodity prices, together with US 10-Year Treasuries yielding 6–8% by the middle of next year, will ensure that we will be faced with a second and, perhaps, more serious global credit crisis, followed by recession and deflation starting in 2013, if not late next year.

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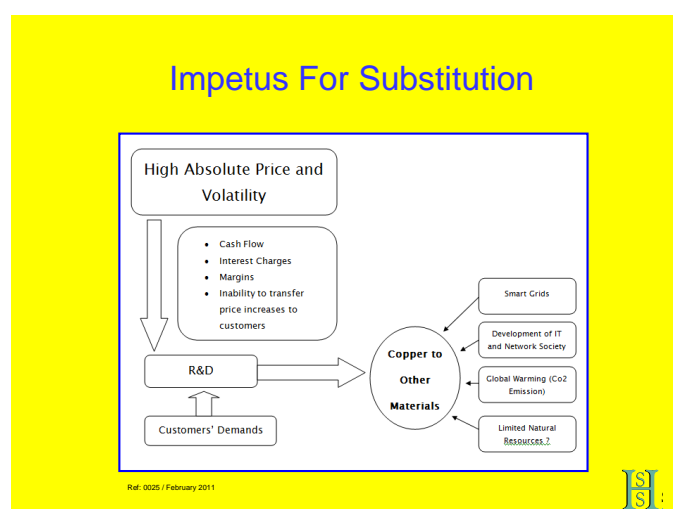
Global Cathode Balances 2005-2010 - Mt-Cu

	2005	2006	2007	2008	2009	2010
Production	16.7	17.3	17.9	18.2	18.4	19.3
Consumption	16.9	17.3	17.9	17.4	16.4	17.4
Balance	-0.2	0	0	+0.8	+2.0	+1.9



This is hardly an encouraging background for copper. The real story about copper is the size of the financial sector's involvement in buying surplus copper and warehousing it outside the reporting system both in your country and elsewhere, which probably started in 2006. This is what creates robust demand, which is quite different to consumption.

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Note that I use the word Consumption and not Demand. Since 2008, there has been a vociferous appetite for copper by the financial community. The companies which fabricate copper and the companies which use the metal, whether utilities, auto or household appliance makers, have thrown big bucks at R&D to help either to design copper out of their systems or to minimise their use of the metal.

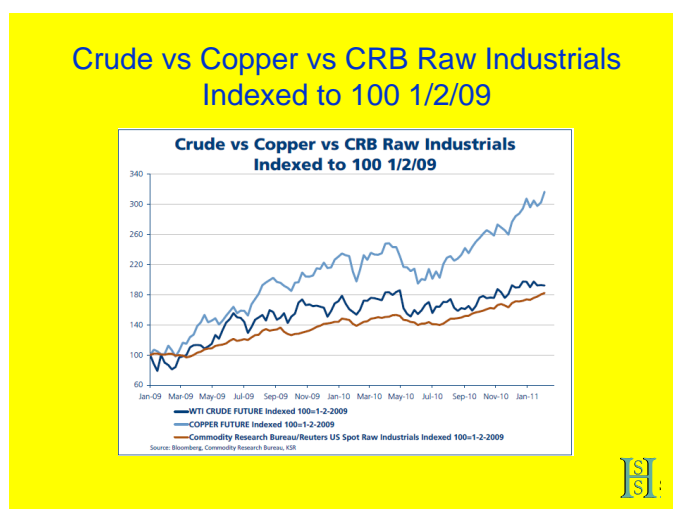
Global cable companies will tell you, for instance, that since 2006 1 million tonnes of copper has been lost to aluminium and fibre optics, that is to say starting in 2007 by the end of last year. This equates to an annual global loss of almost 1.5% a year based on 2006 world refined consumption. Talking to a European cable maker only last week, he said that 90% of all new electrical grid systems were using all-aluminium solutions including High Voltage lines.

In addition, every user of brass mill products has tightened specifications or has designed copper out of their systems because of the absolute price and its volatility. For instance, global ACR tube makers have reduced wall thickness and the diameter of the tube to an extent that they have taken out about 40% of the copper content per metre of tube. Now various types of aluminium inner groove tubes are being employed by aircon makers, including aluminium clad copper tube which takes 70% of the copper out of the system.

Thus, you have to wonder how so many analysts arrive at global growth rates for copper that are almost double the experience of the prior decade. But, there is worse to come. The world is on the threshold of seeing new developments replacing copper in wires and cables, such as high temperature superconductors, carbon nanotubes and graphite film. In the brass mill sector, not only will nanotechnology replace many current household appliance models, but improved designs and even tighter specifications will continue to reduce the amount of copper used in a given product. New applications of copper are being designed and promoted but at current prices they will be difficult to market. According to our preliminary work, by 2015 around 6.5% of 2006's world refined consumption will be lost, by 2020 some 9% and 2030 15%. Those are very large numbers.

In sum, the future issue for the industry is not a shortage of copper to meet the needs of manufacturing but a shortage of consumption.

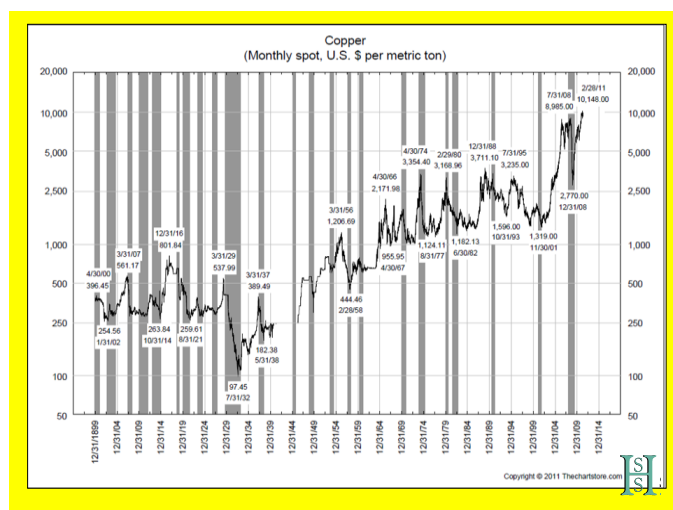
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Against two important benchmarks, oil and the CRB's Future's index, prices of copper have outperformed by a significant degree. It is suggestive not of a shortage of material but of the scale of the financial sector's involvement. If the deficits being reported in recent years were real, spot premiums would have been consistently higher than the long-term producer premia. In fact, the

reverse has been the case. Other than for the odd very short period, they have been consistently and significantly lower.

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We are living in a lull between two storms. This period is giving us a false sense of hope and wellbeing and inflated forecasts of metal prices such as copper. For the coming few years, copper price movements will be as volatile, if not more so, than the industry has experienced in recent years.

Nearly all markets should correct over the summer months. Copper should fall to at least \$7500 by September/October this year, but later on start a parabolic rise, as for other asset markets under the tutelage of Bernanke and his Washington cronies continuing with their global policies of inflation so causing destabilisation.

If I had to make a wild guess, LME 3-month prices could spike at around \$13000 by the end of 2012, mostly caused by a renewed and sharp fall in the US\$ in the first half of next year. Markets will take America to the brink. Only then will the politicians produce a credible plan to reduce its budget deficit and start the country, to once more, living within its means.

The crisis will bring the USA back to the principals that made it the great nation it once was: a land where everyone had an opportunity to make good. Listening to General Colin Powell, America's former Secretary of State and head of the military the other evening, reminded me of this remark. His grandparents came from Jamaica to find work. He made it and his brother made it as a leading light in the educational field.

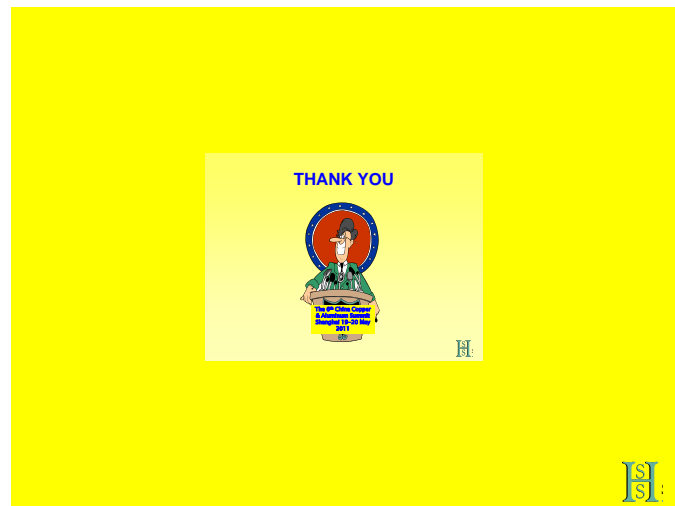
For copper, post 2012, the consequences of a second global credit will be a strong US\$ but a world subjected to recession and deflation of asset values. This will include the collapse of many commodities, especially the prices of energy and metals.

The price collapse will be vicious for all metals, not least for copper. Not only will global consumption be falling, but the market will have to assimilate the circa 4 million tonnes of cathode being held by the financial sector who will want to be cashed up. Prices will fall to levels now thought to be crazy, but I would remind you what happened in the 1980's, following the last great spike in copper and

other commodity prices following a similar play by financial institutions and others into the copper fold.

So I will end this story, where I began. We are sailing through calm waters after being buffeted by storms, but the dark clouds of a gathering storm are appearing on the horizon. It is the new storm which I fear the most.

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So thank you for your patience in listening to me.