The China Effect on Metals, and, on Metals related, Share Prices

Perspective is the key to objective valuation. There are three global Metals' market classes; **base metals**, such as iron and aluminum; **precious metals**, such as gold, silver, and the platinum group metals; and **critical technology metals**, such as copper, lithium, cobalt, and the rare earths, in descending order of value to society. Today the majority demand for the physical metals in all three classes comes from China, which now accounts for nearly 60% of the physical demand for all metals!

You're reading and seeing, in the financial news, about the troubles of a Chinese property developer called Evergrande, and how its vast overleveraged (more debt than it can ever repay) position is collapsing and may soon spread through out the Chinese money and stock markets just as a contagion does if there are no remedies put forward for the disease. The talking heads in the mainstream media love this analogy, because it enables them to use their aging covid scare tactic system to characterize this as a Lehman moment in the Chinese economy.

China does not have a free market economy. All of its companies and banks are overseen from Beijing on a daily basis by China's State Council, regularly and incorrectly called China's cabinet by our mainstream media, but, in fact, it is the operational power center of China's foreign and industrial policy. In its turn, the State Council takes its direction from China's President, Xi Jinping, who dictates China's foreign and industrial policies.

The newsletter, Sinocism, addresses the Evergrande effect this

way:

"… Xi [has] set out three tough battles for the government-poverty, pollution and financial risks. Significant progress has been made on the first two, but the battle against financial risks has lagged. Perhaps Evergrande will mark a turning point in that battle, or perhaps the problems run so deep that they will have to back off from the most stringent efforts to rein in real estate, as they have had to do after previous attempts to lance the festering economic and political boil that is PRC real estate.

The "advantage" of the PRC system in dealing with messes such as Evergrande is that regulators have significant powers to "persuade" other companies to help out, and a robust stability maintenance system to ensure that creditors, employees and apartment buyers will accept the best haircut on offer and not cause too much of a fuss. Yes there have been small protests, but if things play out as they have in other similar cases, protests will be allowed for a bit, as people need to vent, then organizers will be warned if not arrested, then the rest of the unhappy people will take what they are offered and "like it", with no recourse. Equity owners and foreign creditors don't really fit into that equation, they will likely get nothing.

So we have a big mess with a lot of people losing money but not one that is going to cause a systemic financial crisis inside the PRC. But as many analysts have been saying over the last few days, ***we should expect a bigger than expected slowdown in GDP growth*** (Italics and boldface mine), It is going to be an interesting year between now and the 20th Party Congress…."

So, as the Austrian emperor said to Mozart in Amadeus, "There you have it." In this case the very real probability of a sharply reduced demand for almost all metals due to China's "expected slowdown in GDP growth."

The price for the ores of the most produced metal in the world and the most produced in history, iron, are a good predictor. China produced 1 billion tons of steel in 2019. This was 55% of all of the world's steel production. President Xi has stated that (ordered, in other words) the Chinese steel industry must reduce its output. The net effect has been a yo-yo'ing of iron ore prices, which in the last year doubled and has recently dropped by 25%. That kind of price variation will surely net out tracking China's GDP's gyrations. In fact, China's GDP really is the controlling factor in iron ore pricing.

China needs 1.67 billion tons of 62% (contained iron) ore per year to produce its current steel output. At today's prices that is nearly $300 billion of cost. Compare that to the less than 0.5 million tons of ore concentrates needed to produce its official 130,000 mta of rare earths. At today's ore prices that comes to less than $2 billion or just enough capital to supply the Chinese steel industry with ore for 2 days! Note well that the value of the official rare earths' production even when measured as processed high purity separated oxides would be less than $5 billion. Only enough capital for 5 days of ore supply to the Chinese steel industry.

Better yet, look at gold. China was, again, in 2020, the world's top gold producer with an output of 365 tonnes, the market value of which was $20 billion. China's gold reserves are now officially about 2,000 mt, which today has a value of $125 billion. The average price of hot-rolled coil steel futures, so far, in 2021 has been $1,000/mt, so that the output of the Chinese steel industry based on this average price will be $1 trillion this year, before any value is added to it by its use to make industrial and consumer products. Think of that, China's gold reserves are very large, but its steel production is worth many times more. I note that it is speculated that Chinese gold reserves are likely some 14,000 mt, which would be nearly a trillion dollars at today's dollar

price of gold. Note also that the US steel output for 2019 was 77 million tons, or just 8% of China's, and the US' gold holding at 8,000 mt would be worth $500 billion compared to the $77 billion that its steel production is worth. Just the opposite of China?

As a last example, lets look at lithium production in China. In 2020 it was approximately 300,000 mt of lithium carbonate (60% of world total). The current price of lithium carbonate is $16,000/mt, so China's output is valued today at around $5 billion, about the same as for its rare earths production.

If the Evergrande effect is to lower China's GDP then the demand for all three classes of metals will decline as will the prices of the raw materials necessary to produce them and the value of any additional supplies to be added by junior miners.

Do not consider just the selling prices of any one of the metals' classes ores or of the prices of the "finished" industrial and consumer raw materials when you are looking at an investment in a junior miner. Look at the overall market for the class or the total market for all of them. Metallic ores are a buyer's market, and 60% of all of those buyers are in China.

China's goal is to make its currency a, or the, global reserve currency, so watch out, because if and (probably) when metals and ores are priced in RMB then dollar inflation will be a very big factor in the pricing of metals and their ores. And, I believe, that whichever metals and ores of all of the classes are not produced or controlled domestically by any country in sufficient quantities for its own needs will after the conversion of pricing to RMB never be so produced after that. China's rulers are not ready to let the RMB float, i.e., be convertible freely to other currencies in markets not controlled by China, and so its status as a reserve currency is not going to happen anytime soon.

But China’s plans for the long term and security not profit is the driver of its Capitalism with Chinese Characteristics. The openly stated plan is for state capitalism to be replaced by socialism with Chinese characteristics. China has achieved self-suffciency in the acquisition, processing, and fabrication of metals in all three classes. It is said that he who has the gold makes the rules. It would be better said that only he who is self sufficient in raw materials and energy makes the rules.

In the metals’ markets if China sneezes the world catches a cold.

A landmark climate accord that leaves ‘green tech’ and rare earths as the biggest gainers

Yesterday – after cutting tariffs on technology products – Chinese President Xi Jinping and US President Barack Obama have signed a landmark agreement to reduce greenhouse gas emissions. The agreement obliges the USA to achieve new carbon emission targets while China will commit to reduce the rate at which these are increasing by 2030. Evidently, the two countries, the world’s largest economies, accounting for some 40% of the global greenhouse gas emissions have been quietly negotiating to reach a common approach, which could serve as the impetus to reach a new global climate agreement by 2015. It was China’s objections at the 2009 Copenhagen Summit that blocked such a treaty.

The crux of the agreement between the USA and China lies in the fact that the former will cut 26-28 percent of the greenhouse gas emissions by 2025, while China will reach its peak emissions by 2030, reducing them thereafter. Whilst this may appear, at first glance, as a climate agreement, it is first and foremost is a business deal: the green economy promises to be the largest source for global growth in the coming years. Indeed, to achieve China's targets, Xi announced that 'clean energy' sources, such as solar and wind power, would supply 20 percent of China's total energy needs. In turn, the United States will double the pace of global pollution reduction from 1.2% per annum between 2005 and 2020, to 2.3 and 2.8% in the subsequent period from 2020 to 2025. Meanwhile, China's goal is extremely ambitious, as it will start from zero percent to 20 percent of energy consumption based on non-fossil fuel sources. Nuclear power will be one of the principal tools, along with wind and solar installations, in order to develop anywhere from 800 to 1,000 gigawatts.

Together the US and China are responsible for about one third of global emissions of greenhouse gases, and hence their agreement has an effect that is at once practical, in its provisions to cut emissions, even as it encourages all relevant parties to re-engage in the so-called Kyoto Protocol. The later will be one of the main points of the UN climate summit scheduled to take place in Paris in 2015. The agreement also carries political weight as President Obama, can use it to secure some tangible results after his Democratic Party's defeat in the midterm elections. The first step in a series of initiatives for which he can use his executive powers to exploit and save his legacy. But there are other important facts of the agreement signed in Beijing.

China faces many years growing concerns from the population over excessive pollution and its effects on health. A recent study found that only in 2012 the number of deaths connected to coal-fired plants was 670,000re 670 thousand. The Chinese

government has been working for long time to invest in clean energy (including nuclear power). Of course they are also planning new coal plants – to meet the huge and ever-growing energy demand of a country with a booming economy. In wider terms the agreement means that demand for the raw materials needed to build and fuel the new green technology, rare earths and uranium for starters, will increase significantly.

China is the world's largest consumer of coal-by far, using 50% of the world's total production and driving more than 70% of its energy. Coal consumption had increased annually by an average of nine percent for the past decade. Nevertheless, there is increasing pressure for change at all levels of society. Coal has fueled China's tremendous economic growth, but if this growth is to continue, energy production must change. The Chinese government has already started to increase its nuclear energy generation capacity, expected to quadruple by 2030; sales of electric vehicles in China have also increased. This change and the historic US-Chinese climate agreement should affect the global production and distribution of rare earths. While domestic production fell in 2012, demand for rare earths will increase to the point where China will soon start to import these minerals.

The government cannot hold back any longer on addressing environmental degradation of which air pollution is one of its most notable effects. China will have to devote more resources to innovation to address the problem because it has become a major issue of social and political concern. Chinese citizens are no longer content to be 'mute'; they have taken quite well to protesting to express discontent and demand for changes. Many of the recent protests have addressed environmental degradation and the lack of standards. Chinese authorities have certainly become concerned by the events known as 'the Arab Spring' and they seem well aware that if political and democratic rights are denied, they will have to take action.

Demand for environmental protection – a phenomenon

contributing in no small part to the closure of some Chinese REE production facilities in 2012 an 2013 – and higher wages can only point to the inevitability of China losing its low-cost wage advantage and the price of its export goods will increase in accordance – no doubt leading to the emergence of new cheap labor workshop countries and, more likely, a gradual increase of the prices of many consumer goods. Xi Jinping, China's president clearly outlined that one of his government's priorities will be to tackle environmental degradation. The recent crackdowns to curb illegal rare earth mining has reflected this trend, sending a signal to the West that it is becoming risky for China to absorb the environmental and socio-economic risks associated with low cost industrial practices. China itself has to change and become less price competitive with the unavoidable rise of labor and regulatory costs, resulting from stricter emissions, tougher industry entry obligations or even energy consumption.

All of this suggests that China and the USA should see a surge in internal demand for green technology solutions, leading to greater demand for rare earths, despite the lower output numbers reported by such Chinese rare earth producers as the Baotou Group (IMBREHT). The lower production of rare earths in the past year, caused by consumer reluctance and global economic uncertainty – in China as elsewhere – has already started to reverse toward a more bullish direction. About 90 percent of all currently mined rare earths come from China. With its pricing policy, the country has displaced almost all competitors from the market. The USA, Canada and Australia have been challenging this market dominance, and new mines and processing facilities are being developed. There is no risk of market saturation because when the new mines come on line, China's experience with coal suggests that it will become a major importer of rare earths.

China used to be a major exporter – as well as user – of coal. However, with the tremendous pace of its industrialization,

domestic consumption limited the amount of coal available for export, as the mineral was needed to fuel steel plants and power generation. It has not taken long for China to become one of the largest importers of coal in the world. Rare earths are staring at a similar fate – and one that is approaching at rapid pace. Domestic concerns – environmental ones in particular – will boost internal demand, limiting the amounts available for export. Ten years ago, China has consumed about 25% of domestically produced rare earths; even in the slower growth scenario of 201, China's domestic rare earth consumption has risen to 65%. Today, 80 percent of the magnets, and 70 percent of the world's manufactured phosphors originate from China. Domestic supplies of rare earths will not be sufficient to sustain such a rhythm of production and Chinese government agencies will have to seek other products to maintain this dominance, forcing it to seek supplies elsewhere. China's pollution is encouraging news for the newly emerging rare earth plays.

Arafura announces major progress in de-risking Nolans Project's path to production

Arafura Resources ('Arafura', ASX: ARU) is one of Australia's fastest-growing rare earths developers. It has achieved exploration successes, concluding fruitful partnerships to ensure long term growth at the Nolans Rare Earths Project. The Nolans Rare Earths Project presents a world-class rare earths resource grading 2.6% rare earth oxides ("REO") with measured and indicated resources able to sustain at least a 25 year mine life according to Arafura's

recently published ‘Nolans Development Report’ (NDR), highlighting the advanced stage of the Nolans Project. The Document’ (not to be confused with feasibility Study) explains recent changes to the process and flow-sheet as well as the projected CAPEX and OPEX, which make Nolans a very competitive project even in the face of Chinese producers, which places Arafura’s Nolans Project in the middle of the cost curve in terms of producers inside and outside of China. The NDR has confirmed that Nolans presents some of the highest neodymium (“Nd”) content of any rare earths resource currently being considered for development anywhere in the world.

Chinese magnet producers are very interested in Arafura’s Nolan Project, which is not surprising given its (20%) neodymium and praseodymium content (Nd and Pr separately or NdPr Oxide), two of the main materials used to make magnets. Given China’s dominant position in the rare earths sector, is a very welcome and surprising prospect. Arafura’s uniqueness stems from the composition of its resource, which as stated above, features 25-26% magnet feed materials, accounting by themselves to some 70-77% of its potential revenues. Arafura may well position itself as a major magnet producer in its own right. The growth in demand growth for NdPr Oxide is expected to lead to supply shortages in the next decade, prompting a faster price appreciation than other rare earths.

One of the most important aspects of the report addresses the extent to which Arafura has worked with Chinese experts to accelerate the path to production and de-risk the Project. Arafura The East China Mineral Exploration and Development Bureau (ECE) has helped Arafura achieve project optimization thanks to a careful and review of capital and operating costs, which will maximize the savings achieved thanks to an ambitious cost cutting plan. ECE holds a strategic equity holding of 24.86% in Arafura, enabling Arafura to avoid having to dilute the share price while continuing to work on its own innovative rare earth extraction process. Arafura’s report

says that much of the work for the Nolans Project's Definitive Feasibility Study ("DFS") has been completed thanks to ECE's cooperation, which will continue until the final version, expected to be ready in the second half of 2015. The Nolans Project could launch production in early 2019, provided Arafura secures other offtake agreements in order to fulfill all project funding needs. The Company will likely seek a development partner to be announced over the next 18-24 months, noting that the NDR will serve as a marketing document to achieve these goals.

There have been some concerns over the status of Australian-Chinese relations and their potential deterioration. While, military and international diplomatic cooperation has suffered over Prime Minister Tony Abbott's stance against China's ally Russia, economic cooperation is actually flourishing. Australia appears ready to sign a free trade agreement with China, a deal expected to be signed before the end of 2014 according to news reports. There is speculation that the deal could be finalized during the G20 meeting in Brisbane in November, even as Prime Minister Tony Abbott and Chinese President Xi Jinping are expected to meet earlier at the Forum of Asia-Pacific Economic Cooperation in Beijing. Xi, himself, will address the Australian Parliament during his G20 visit. "The Australian" reports that after nearly a decade of negotiations, there is sufficient political will on both sides to finally conclude a free trade agreement even if the final stages of any trade negotiation are always the hardest. Australia is keen to conclude the deal as any hesitation would play into the hands of Australia's main competitor, New Zealand over agricultural products and services. China wants an improved investment access and tariff reductions on household items such as electronics. China also wants access to Australia's vast mineral resources. The economic stakes are such that neither China nor Australia will let international differences spoil important trade and economic ties.

Excessive pollution challenges the entire Chinese industrial system to reform

Air purifiers and protective masks against pollution might just be China’s biggest selling consumer items these days. It has become impossible, in fact, to escape the thick fog that has enveloped Beijing in recent weeks. The Chinese Ministry of the Environment said that has the heavy smog now spread over an area of □□1.3 million square kilometers, or 13 percent of China itself (the size of Central Europe), too large an area to control to affect the current air quality index values.

s new national pastime, everybody checking the daily number, which has varied from 300 to 500 micrograms per cubic meter. These statistics are impossible to ignore considering the World Health Organization recommends a threshold of 25 micrograms. s hospitals are full of residents complaining of suffering from ailments as basic as a headache to major respiratory disorders, which they all attribute to the pollution. And nobody can blame them considering the air is literally yellow. In recent years, the pollution problem has become one of the leading political issues.

In 2012, the US embassy started to monitor the air quality (or lack thereof), which eventually forced Beijing to take note and do something about it. The Air Quality Index (AQI – based on pollutants in the air with negative effects to health including NOx, CO, sulfur compounds and any number of particulates) in Beijing was said to be hovering at 200 according to the US Embassy with average levels in 2012 of

145. To understand just how high this is, consider that major North American cities like NY City or Toronto typically range in the low twenties or below. Children, elderly and the sick were advised not to go outside. However, the situation has deteriorated since then, having now been euphemistically dubbed the ‘airpocalypse’. The government has promised to solve the problem, and the Chinese citizens are adamant that solutions be taken. The government understands that air pollution is no longer an issue that it can bury under the proverbial carpet – or the smog if you will – the people are fed up and are even starting to turn to violent protest in some cases. According to official data, one sixth of China was trapped under the pollution last month. Satellites photographed an enormous cloud of pollution in the north – which happens to be a very important industrial and mining area.

One Chinese citizen sued the City of Beijing for failing to reduce pollution. Government agencies are, uncharacteristically, frank with their assessments. The Academy of Social Sciences published a report declaring Beijing to be “barely livable” for humans. The Government’s climate change adviser, Li Junfeng , said that pollution had reached an “intolerable” level, comparing its effects to those of a chain smoking, warning that exposure to cancer risk is very high. Pollution has created an actual legitimacy problem for the Chinese government, which has even resorted to media censorship to contain the problem. Indeed, pollution is directly related to the Chinese economy, the weight of investment in heavy industry and the lack of a proper opposition to challenge the various levels of government. The issue of pollution, therefore, extends beyond the environment and raises questions about the Chinese system’s long term survival and its ability to reform or adapt.

How will pollution affect energy generation and mining?

The government has intervened to control pollution enforcing

traffic controls, forced factory stops – famously shutting down rare earth production at various plants last year – and other measures to no avail. People are demanding a 'Clean Air Act' even as they reach for the nearest hospital to get treatment for respiratory and cardiovascular ailments. The number of cars has doubled in the past five years alone, with a similar jump predicted to occur before the end of this decade, meaning that such measures have little to no effect whatsoever. To make a dent in pollution, authorities have suggested shutting down over a hundred factories, but even this will have very little impact.

The reason for China's unbearably high pollution is that China is the world's largest consumer of coal-by far, using 50% of the world's total production. More than 70% of China's energy derives from coal generated power. Coal consumption had increased annually by an average of nine percent for the past decade. Nevertheless, there is increasing pressure for change at all levels of society. Coal has fueled China's tremendous economic growth, but if such growth levels are to be sustained, energy production must change. The Chinese government has already started to increase its nuclear energy generation capacity, expected to quadruple by 2030. Sales of electric vehicles in China have also increased and this week, Tesla Motors announced it would start selling its luxury all electric 'S' model. This change should affect the global production and distribution of rare earths. Such cars, hybrids or full electric, need dysprosium, neodymium and lanthanum, to mention a few of the rare earths. While domestic production fell in 2012, demand for rare earths will increase to the point where China will soon start to import these minerals.

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are no longer content to be ‘mute’; they have taken quite well to protesting to express discontent and demand for changes. Many of the recent protests have addressed environmental degradation and the lack of standards. Chinese authorities have certainly become concerned by the events known as ‘the Arab Spring’ and they seem well aware that if political and democratic rights are denied, they will have to take action.

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