

Today's Notes:

1. Strategic Metals

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STRATEGIC METALS: The Keys To Long-Term Sovereignty and Self Sufficiency

Ed Note: This is an article and a theme we've published before, but due to a large number of new readers, we thought it important to re-publish this piece as it forms the basis for our investment thesis going forward.

As gold and silver continue their inexorable rise, another "class" of metals, if you will, has emerged in importance. They may mean more for future economic growth and energy security in the United States than ever before. If gold and silver are thought of as proxies of "fear," or gauges of economic health, this new class of metals is a proxy for discovery, innovation, and the development of next-generation quality of life technologies.

I'm referring to "strategic" metals, such as lithium, manganese, vanadium, graphite, and rare earth elements which are rapidly becoming necessities for current infrastructure development (such as in the manufacture of steel) and in future applications (such as lithium-ion batteries for the nascent electric vehicle revolution).

What makes these metals unique is not only their chemical properties. Instead, one very real issue surrounding these metals is our import dependence. Today the US is at least 80% dependent for imports of 27 metals and at 100% dependent on a total of 19 metals according to the USGS. While the United States has maintained a strategic stockpile (first formed in 1917) of a number of these metals historically, these stockpiles have been sold down over time as the end of the Cold War fostered an aura of relative security. It seems ironic given today's increasing valuations that we sold off these stockpiles for cash that depreciates.

Though many would have a different definition for "strategic" metals, we define them as metals necessary for infrastructure rebuild or build out (i.e. the smart electrical grid), national defense, or development of next-generation technologies. A metal like copper could certainly be included, but the real differentiator is the fact that many of these critical metals are now in short supply globally and this makes them "strategically important" to US supply chains.

What is perhaps most galling is the fact that the US was independent of imports, generally speaking, for many of these metals until the twin phenomena of off-shoring due to cheaper labor in Asia and inexorable fiat currency devaluation reared their ugly heads over the past 30 or 40 years. This has left the US in the unenviable position of having to import an ever-increasing percentage of metals not only for day-to-day usage and national defense, but also for innovation of tomorrow's technologies.

In early 2011 when Secretary of Defense Robert Gates visited China, he was surprised by that country's test flight of her first stealth fighter. The Chinese contingent accompanying him claimed to be unaware that a test flight would be taking place. However, this was clearly another sign of China's rise – a rise

built on the back of natural resources – specifically using strategic metals. There are many geopolitical issues that come to mind here, but we are focused on is the chart below:



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As China continues to build her military capabilities, more of these strategic metals listed above will be in demand. The US import dependence on them has a direct effect on our own military capabilities in the US – something hopefully not lost on planners in the Pentagon or on Capitol Hill.

Manganese provides a good case study. It is a metal critical for the manufacture of steel. The US is 100% dependent on manganese imports and as the infrastructure build-out in the emerging world continues unabated, you can be sure that this import dependence will remain in place. The US once maintained a strategic stockpile of manganese which served as a resource during the Second World War. It has since been sold down to the point where there is no such stockpile in the US and no domestic production in the US today. Electrolytic manganese is even more important as it has implications for future battery technologies. Today lower grade manganese deposits seem feasible based on the new strategic and critical nature of this metal. We have recently visited one of two such deposits in the United States.

Rare Earth Elements (REEs) are another notable example of US import dependence. In the early 1980's, Chinese Premier Deng Xiao Ping declared,

"The Middle East has oil, we have rare earths."

Anyone involved in investing in rare earth discovery companies knows the story well. The Chinese set about developing their own rare earth supply chain (mine to magnet) by undercutting western prices and by ignoring environmental standards. Today they supply the world with 97% of global rare earth demand.

With REEs essential for a host of applications like cell phones, laptops, anti-missile systems, optics, and high temperature magnets used in motors, it's more than dangerous to rely on a single country for supply particularly when that country is growing its per capita GDP rapidly. China's recent behavior in curtailing export quotas and halting REE exports to Japan are examples of what can happen when you outsource a supply chain and all of the associated intellectual property. The end result is often a five to ten year process involved with re-establishing the industry.

What is most important is realizing the potential of these metals. Entire industries can be built around their supply chains which can proliferate and create sustainable jobs. Again, what's key here is ensuring a steady (preferably) domestic supply. As an example, look at the electric vehicle revolution. Despite the state of the North American auto industry, electric vehicles can serve to reignite production and in doing so, create sustainable jobs, something the US desperately needs. Essentially every major auto manufacturer is working to develop an electric vehicle. By some estimates, there are dozens of auto manufacturers in China ALONE that have joined this quest. What is absolutely crucial, though, is

procuring the raw materials to ensure that adequate R&D and supply chain development take place and ultimately that mass production of such automobiles can ensue unabated.

The Chevy Volt, one of a handful of commercially available EVs today, uses twelve pounds of lithium, seven pounds of REEs, and a substantial amount of graphite, amongst other metals. Lithium is arguably one of the most critical of all elements in an EV. Its light weight and energy storage capacity make it indispensable. Today, the US is 100% dependent on foreign supplies of both REEs and graphite, while being a net importer of lithium despite ample reserves on our shores. How can General Motors build a supply chain and a sustainable business in EVs when they are dependent to a very high degree of foreign sources of raw and processed materials?

Indeed, the disaster in Japan puts this question in sharp relief. The rising quality of life cycle emanating in Asia dictates that demand for these metals will continue, making a domestic supply chain an imperative.

Fortunately there is hope. It appears that the recent appreciation in REE prices and subsequent wake-up call in Washington has spurred our elected representatives into action. Last year, the Rare Earths and Critical Materials Revitalization Act of 2010 was passed and Senator Murkowski, Representative Markey, Representative Johnson have legislation pending in Congress which would kick start a rare earth industry in the US. The crucial issue is that this legislation will take time to get through Congress and it will take longer than anyone realizes to construct a “mine to magnet” industry.

Unfortunately this legislation focuses only on REEs; other metals such as the ones mentioned above (manganese, graphite, vanadium, etc.) need the same degree of attention to curtail the import dependence the US is facing. Now!

When you’ve dug yourself into a hole, the best thing to do is stop digging. Years of a lack of exploration for these critical metals has led to a lack of domestic discovery, which has eroded our supply chain infrastructure, and impaired US strategic capabilities. Establishing such supply chains will take years, but is clearly in the US long-term strategic national interest. The end result is job creation, domestic supply chains, and ultimately ownership of associated intellectual property - the key to the sustained rising standard of living that we’ve enjoyed in this country.

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