



How a trade war could break US critical minerals supply chain

As a general rule, the most successful man in life is the man who has the best information

As China and the United States threaten each other with hundreds of billions in tariffs, causing the stock markets to pitch and roll like a tugboat in a typhoon, the consequences for the US economy could be dire. US President Donald Trump has employed his [“art of the deal” tactics](#) to try to extract concessions from China, first by announcing cross-the-board tariffs on steel and aluminum – an indirect jab at China for flooding the global market with cheap steel, even though relatively little Chinese steel directly finds its way to the United States. The EU and some countries including Canada and Mexico were later exempted, but China wasn't, leading the Chinese to immediately respond with \$3 billion worth of countervailing duties. Then



things really ratcheted up, when Trump threatened 25% tariffs on \$50 billion in Chinese technology products, which was met by an equal \$50 billion in tariffs on US exports to China including cars, aircraft and agricultural products. Last week the President doubled down on another set of 25% tariffs on \$100 billion worth of Chinese

imports.

So what to make of this escalating trade dispute, or what Trump describes as the “existing” trade war between the US and China? The President claims it's been going on for decades and has resulted in lost American jobs, a trade deficit with China latest calculated at \$375 billion, and the theft of US intellectual property, which American companies must hand over as a condition of access to the 1.3 billion population Chinese market.

Trump's heavy-handed approach to dealing with China and its other trade partners is bound to play well to his base and will likely help to bolster support for Republicans in upcoming mid-term elections, but the President is playing a dangerous game in which he may not realize the repercussions. We are talking here of resource nationalism



and the strong possibility that if the trade war between China and other countries escalates, the US could find itself cut off from key strategic minerals it needs for its economic and military security. Indeed Trump could be blundering into a trade war that might even escalate into a shooting war, that he can't win without access to mineral supplies that are currently controlled by foreign countries. This article will show the vulnerability of the United States to such supply disruptions.

Trade tensions heating up



Donald J. Trump
@realDonaldTrump

When a country (USA) is losing many billions of dollars on trade with virtually every country it does business with, trade wars are good, and easy to win. Example, when we are down \$100 billion with a certain country and they get cute, don't trade anymore-we win big. It's easy!

such firms. [According to Bloomberg](#) the US accuses China of using its "Made in 2025" initiative to force companies to transfer technologies in areas like robotics, aerospace and artificial intelligence.

While Chinese President Xi Jinping [appeared to offer an olive branch to Trump](#) earlier this week by saying he would lower tariffs on vehicles while working to enforce protections on intellectual property rights, China is holding firm on supporting its high-tech industries, despite a US demand that it curtail subsidies to

"President Donald Trump has told his senior aides to investigate the possibility of joining the Trans-Pacific Partnership, a move that would reverse a Trump campaign promise and would further challenge China.

For its part, China is looking to line up other countries against the U.S., Chinese officials said — especially in Europe, whose firms could benefit should China react to the stepped up pressure by retaliating against the U.S.

Administration officials familiar with the U.S. strategy say that the U.S. Trade Representative, as early as next week, will detail which products are on the list of \$100 billion in Chinese goods subject to 25% import tariffs. The initial hit list of \$50 billion in Chinese imports didn't include some consumer

staples such as clothing, mobile phones or shoes, to minimize consumer impact and limit domestic criticism. But trade experts say the sheer size of the expansion of the hit list makes the inclusion of consumer goods inevitable. At the same time, the Treasury Department is crafting sharp prohibitions on Chinese investment in advanced U.S. technology, whether by acquisition, joint ventures, licensing or any other arrangement, according to a senior administration official." THE WALL STREET JOURNAL, White House plans to maintain hard-line stance to push China trade concessions,
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In other words, this trade war ain't over yet. Not by a long shot.

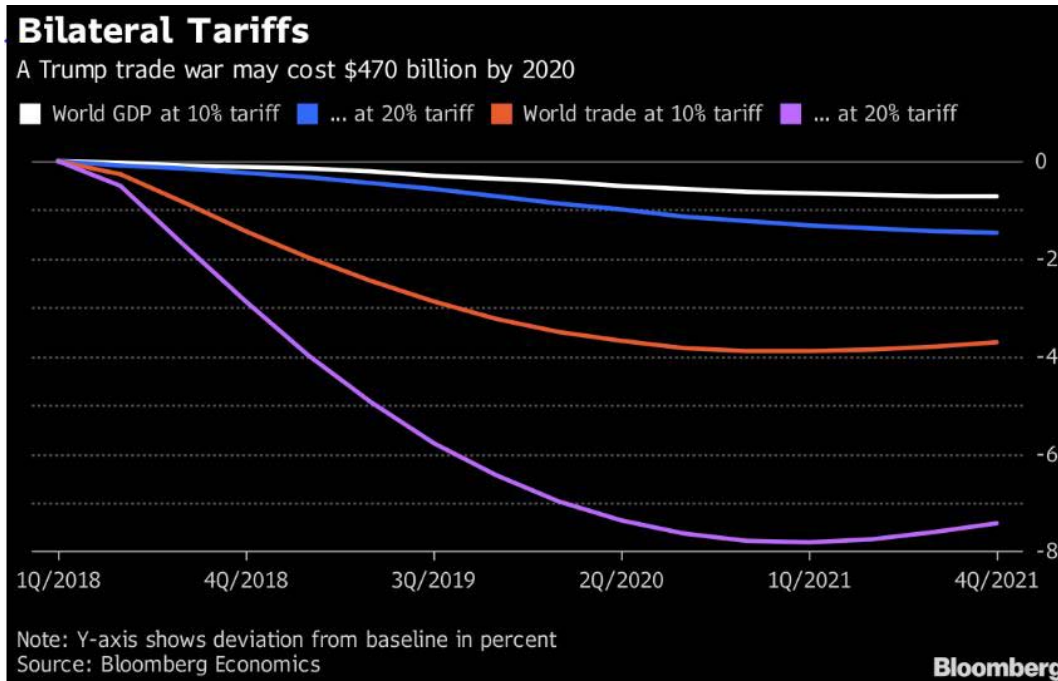
Xi Jinping has [just made himself the most powerful Chinese leader since Deng Xiaoping and Chairman Mao](#), with the abolishment of the two-year term limit in place since the 1990s, meaning Xi can effectively remain president for life. He now owns all three of the most important positions in China: the Presidency, the leader of the Communist Party, and the chairman of the Central Military Commission which controls the armed forces. Compare that kind of power to Trump, who is limited by the separation of powers in the US where the purse strings are controlled by Congress and his actions are constrained by the legal powers invested in the judiciary. Will Xi Jinping risk "losing face" - an extremely important cultural attribute in Asia practised by all citizens regardless of social status – by giving in to Trump, now that he has unfettered power? It seems unlikely. China's hardline stance was echoed by a former diplomat:

"China is ready to fight back with all options on the table," Ruan Zongze, senior fellow at the Chinese Institution of International Studies," [said in a speech regarding the China-US trade relationship in Washington](#). "It has said it will fight with comprehensive countermeasures: trade, services, investment, finance and many others."

Trump was a little more direct, tweeting a few days ago that China-US trade is "stupid trade":

"When a car is sent to the United States from China, there is a Tariff to be paid of 2 1/2%. When a car is sent to China from the United States, there is a Tariff to be paid of 25%. Does that sound like free or fair trade. No, it sounds like STUPID TRADE - going on for years!"

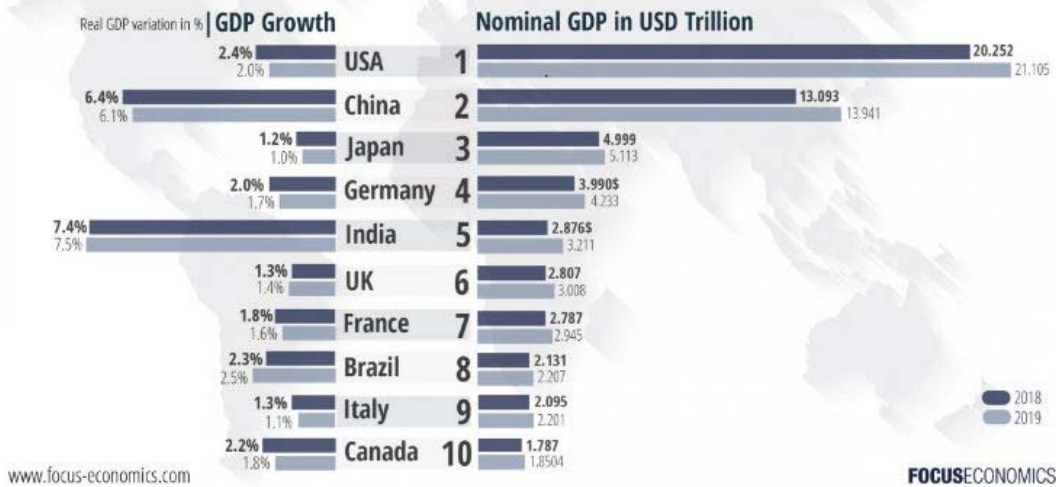
Who might win a trade war?



Conventional wisdom in our age of globalization believes that trade wars are bad for everybody since they disrupt supply chains and interfere with the laws of competitive advantage by which countries that most efficiently produce goods unhindered by trade restrictions openly trade with countries that do the same.

Project Syndicate wrote an interesting article on what could happen next, concluding that [the answer could depend on whether tit for tat tariffs either lead to more cooperation or confrontation, as explained by "game theory"](#). The article states that while the assumptions underpinning globalization were that that the benefits of trade would be shared by most of the population and that the World Trade Organization would embrace the principle of reciprocity, neither have happened, leading to a loss of confidence in international institutions – like the WTO and a return to economic nationalism and populism – [symbolized by leaders like Trump and far-right nationalists in Europe](#).

TOP 10 The World's Biggest Economies for 2018 and 2019



China seems to have more to lose, with a smaller economy than the US - \$13.09 trillion compared to \$20.2 trillion. And [the US has other advantages over China](#), including: higher population growth; more self-sufficiency in energy versus China's increasing dependency; better technology; better schools; the relative strength of the dollar, the world's reserve currency, versus the yuan; and the fact that the US is surrounded by oceans and has friendly neighbours in Mexico and Canada versus China which is mostly landlocked with ongoing territorial disputes with several countries including India, Japan, Vietnam and the Philippines.

On the other hand, the world economy has changed so that “competitive industries” like steel are no longer as dominant as previously, while tech companies which are very dependent on intellectual property are in the ascendance. This means that barriers to the Chinese market for tech firms, in the form of forcing them to give away their IP, is seen as a significant impediment to growth, versus a competitive industry, where the gains of opening new export markets are smaller. [Project Syndicate explains](#):

For a major player in social networks or search engines, for example, the cost of entering a new market is essentially zero. Since the existing software can easily serve many more millions of users, they just need to translate their interface into the local language, meaning that entering a new market mostly means more profits. But if such companies are forced to reveal their IP, their business models are destroyed, as local players can then compete effectively in that market – and potentially in others.

This is not the case for companies operating in competitive industries. For them, producing and selling more abroad costs much more, limiting the

marginal profits that can be reaped. In other words, in the more competitive "old" economy, the gains of opening new markets are much smaller. That is why lobbying by potential exporters for better access to markets with high tariffs has usually been muted – hence the lack of resistance to India's protectionism.

This is changing in the new "winner-take-all" tech economy: with IP-owning winners missing out on massive profits when a big market like China is protected or closed, trade conflicts become more acute. - Project Syndicate

2018 : U.S. trade in goods with Russia

NOTE: All figures are in millions of U.S. dollars on a nominal basis, not seasonally adjusted unless otherwise specified. Details may not equal totals due to rounding. Table reflects only those months for which there was trade.

Month	Exports	Imports	Balance
January 2018	434.4	1,555.2	-1,120.7
February 2018	566.5	1,259.3	-692.8
TOTAL 2018	1,000.9	2,814.5	-1,813.6

Of course we can't forget that [trade could be slowed or halted between the US and Russia](#), which is not out of the realm of possibility either, given rising tensions after [the chemical attack in Salisbury](#) and the expulsion of Russia diplomats from the UK and Washington. The US has levelled three rounds of sanctions on the Kremlin since the annexation of the Ukraine so decreasing US-Russian trade could most definitely happen, with a likely pile-on from the EU which despite getting most of its natural gas from Russia, has also levelled sanctions.

Market Oracle describes the [current battle between Trump and Xi as a hockey fight that the US will lose](#). This is due to the increased threat that the trade war could escalate into more serious events like US ships being refused at the Port of Gibraltar, and a potential European boycott of American goods, pressured by China and Russia.

The image of Donald Trump pulling the jersey over the head of Xi Jinping (China's leader) and windmilling him into submission is simply not going to happen, so when we all read of the markets buckling under the weight of a possible "trade war," the infinitesimal collective wisdom of global market participants is handicapping this contest exactly as it should: it will NOT be a "war"; it will be a "beating" and the U.S. with all of its military might well not be the one skating first to the penalty box arms raised in victory. - Market Oracle

Here at aheadoftheherd.com we've been talking, for years, about another issue the US will face in any all out show down with China.

The Trump directive

Who comes out on top of this conflict is the subject of endless speculation right now, but I have to credit Trump before it all started for recognizing a potentially big chink in the US armor, and that is its dependence on foreign imports of strategic metals. In December [Trump signed an executive order to reduce dependency on 23 minerals deemed critical to national security.](#)

“The comprehensive order aims to identify new sources of critical minerals, ensure miners and producers have access to the best data, and streamline the leasing and permitting process to expedite production, reprocessing and recycling of minerals at all levels of the supply chain,” said a statement from the White House.

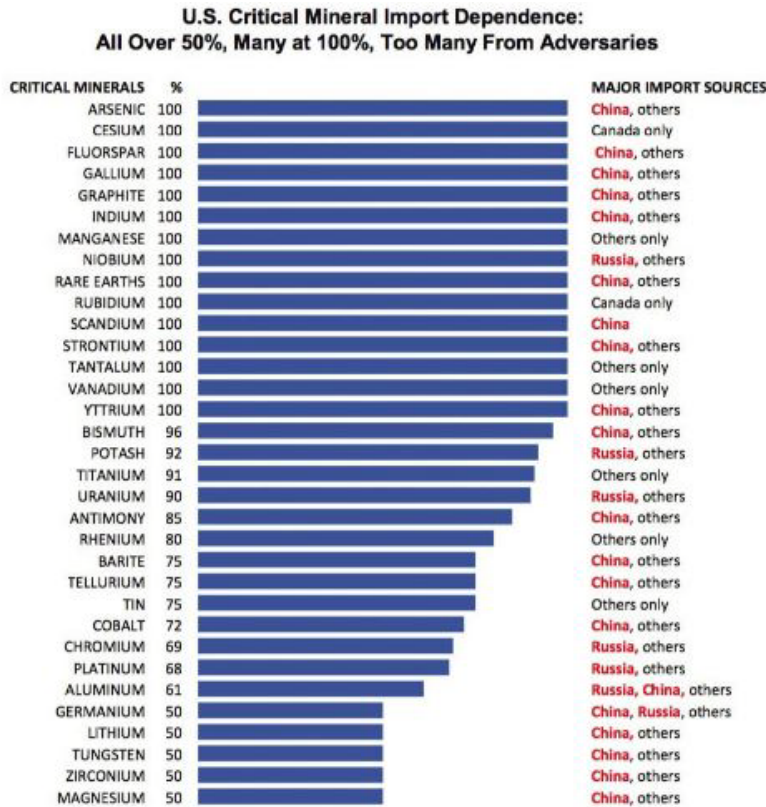
The directive came following the release of an updated report from the USGS and the Department of the Interior which identified the 23 minerals:

- antimony (Sb)
- barite (barium, Ba)
- beryllium (Be)
- cobalt (Co)
- fluorite or fluorspar (fluorine, F)
- gallium (Ga), germanium (Ge)
- graphite (carbon, C)
- hafnium (Hf)
- indium (In)
- lithium (Li)
- manganese (Mn)
- niobium (Nb)
- platinum-group elements (PGE)
- rare-earth elements (REE)
- rhenium (Re)
- selenium (Se)
- tantalum (Ta)
- tellurium (Te)
- tin (Sn)
- titanium (Ti)
- vanadium (V)
- zirconium (Zr)

The report noted that the US is most reliant on China, which supplies the US economy with at least 20 of these most critical and strategic metals. China has been locking up the world's resources, [in Africa during the first decade](#)

of the 21st century, and now in Latin America, the source of some of the world's largest copper mines and lithium deposits.

The metallurgical Achilles heel



After U.S. Geological Survey (USGS) 2017 Mineral Commodity Summaries, U.S. Net Import Reliance; and Department of the Interior, February 15, 2017 Federal Register "Draft List of Critical Minerals"

I've written before about the [US "metallurgical Achilles heel"](#) – a term that describes how the country is still dependent on South Africa, the politically unstable Democratic Republic of Congo (DRC) and an increasingly unreliable China for supply of what it considered strategic or critical minerals 30-plus years ago.

After World War II the United States created the National Defense Stockpile (NDS) to acquire and store

critical strategic materials for national defense purposes. The Defense Logistics Agency Strategic Materials oversees operations of the NDS and its primary mission is to *"protect the nation against a dangerous and costly dependence upon foreign sources of supply for critical materials in times of national emergency."*

In 1992, Congress directed that the bulk of these stored commodities be sold. Revenues from the sales went to the Treasury General Fund and a variety of defense program: the Foreign Military Sales program, military personnel benefits, and the buyback of broadband frequencies for military use.

"Without increased domestic exploration, significant declines in US mineral production are unavoidable as present reserves are exhausted. We will

continue to ship American jobs overseas and forfeit our economic competitiveness unless we take steps to develop our own mineral resources.”
Subcommittee on Energy and Mineral Resources Chairman Doug Lamborn

Among the minerals recognized as strategic are what I referred to as “the five horsemen”: rare earth elements, chromium, cobalt, manganese and platinum group elements. But there are a lot more.

Given that most of the 23 critical elements identified by the USGS in its 862-page report are concentrated in a few countries – China, Brazil, Russia and South Africa – how vulnerable would the US be to a complete boycott of these materials in the event of an all-out trade war that involved not only the US and China but their allies as well?

Manganese

Manganese is considered one of the most important strategic metals, since it is crucial for steelmaking. Only about 9 kilograms are needed to make a ton of steel but steel cannot be made without it. There is no substitute for manganese in steelmaking. The US has been 100% reliant on foreign suppliers of manganese for decades. There are no domestic reserves and “although some large low-grade resources are known, they are far inferior to manganese ores readily available on the international market,” states USGS.

Most of the world's manganese, about 70%, comes from South Africa, with Brazil and the Ukraine making up the balance. It is imported into the US either as ferro-manganese or silico-manganese; steelmaking accounts for 78% of US consumption and 7% go into batteries.

Electrolytic manganese (EM) is used in aluminum and copper alloys, as a colorant in bricks, and can be combined with lithium or nickel in batteries. Indeed, its use in lithium-ion manganese batteries is its fastest and potentially most challenging application. If the US cannot access competitively priced and reliable supplies of manganese, a host of high-tech new applications will be lost to foreign competitors. The US currently imports all of its EM from China, with lesser amounts from South Africa.

Niobium/ tantalum

Niobium and tantalum are grouped together as they are most often found that way in geological settings. Niobium and tantalum are considered critical metals owing to their specialized applications in the defense, energy, high-tech industrial, and medical sectors.

About three-quarters of the world's niobium is used in steelmaking to improve steel's strength and corrosion resistance – applied for example in pipelines. Niobium can also be found in high-temperature applications, such as jet engine components, gas turbines, rocket subassemblies, turbocharger systems, and heat-resisting and combustion equipment, along with superconducting magnets utilized in MRI machines.

Nearly all of the world's niobium (90%) comes from Brazil; the US has not produced niobium or tantalum since the 1950s and identified resources are mostly low grade and uneconomic at current prices. The other 10% comes from the Niobec mine in Quebec, formerly owned by IAMGOLD and sold to Magris Resources in 2015. Located about 200 km north of Quebec City, Niobec is the world's only underground niobium mine.

About half of tantalum production goes into electronics, mostly electronic capacitors. High-end applications include components for cell phones and hard drives. Tantalum is also used in implantable medical devices such as hearing aids and stents. Pegamites in Western Australia (Greenbushes and Wodgina mines) are major suppliers of tantalum, along with pegamites in Africa. The leading tantalum producer is the Yichun tantalum-niobium-lithium deposit, accounting for over half of China's tantalum output. The Volta Grande pegamite mine in Brazil produces significant tantalum, niobium and lithium.

According to the USGS report the only pegmatite mine in North America since 2000 has been the Tanco deposit at Bernic Lake in southeastern Manitoba, Canada. Other tantalum-bearing pegmatites have been identified in Ontario and Manitoba.

Lithium

The lightest metal on earth, lithium is used in batteries, ceramics, glass, metallurgy, pharmaceuticals and polymers. Most lithium is either produced from brines or pegamites, with the leading brine producer being Chile and Talison Lithium's Greenbushes mine in Australia producing the largest amount of pegamite-hosted lithium. Other sources of lithium include clays, geothermal brines, oilfield brines and zeolites.

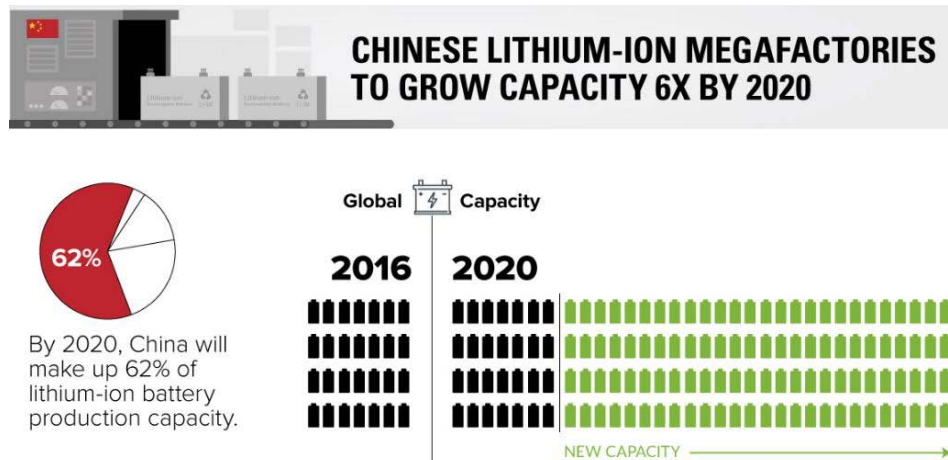
The Clayton Valley in Nevada started producing lithium in 1966 and the Silver Peak lithium brine operation owned by Albermarle is currently the only producing lithium mine in the US.

In 2008 the National Research Council saw lithium as potentially becoming a critical mineral due to the expected growth of hybrid vehicle batteries. Two

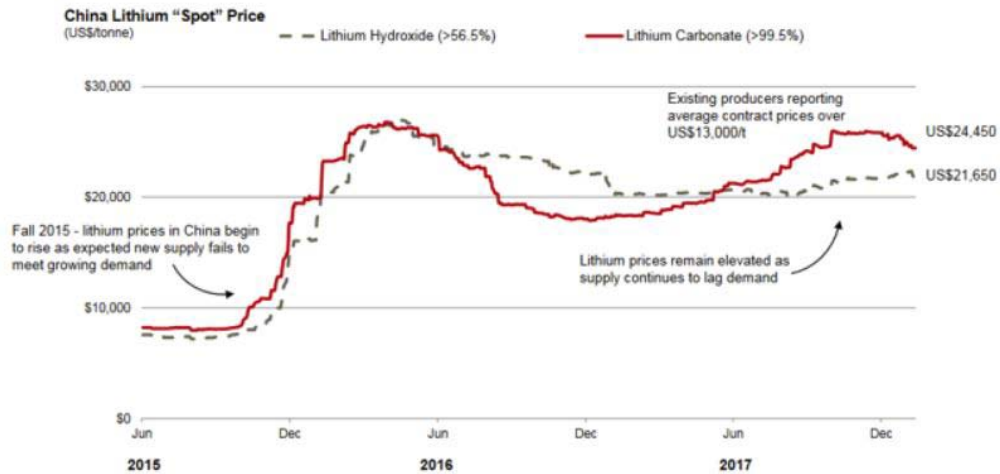
years later the US Department of Energy's Critical Materials Strategy included lithium as one of 16 key elements. The country currently imports most of the lithium that it consumes – with import reliance today pegged at greater than 70%.

The Financial Post recently reported that due to junior lithium explorers having a hard time raising funds in North America, [many are heading to Asia to sign agreements with battery-makers](#). An example is Japan's SoftBank which invested \$100 million into Nemaska Lithium's mine and electrochemical plant in northern Quebec. SoftBank owns a 15% stake in Uber and wants to convert its taxis in China and India to electric vehicles. This trend is good for North American lithium miners that can find Asian partners, but would not help to build an electric vehicle battery industry here in North America. Tesla has promised to source all of its lithium from Canada or the US.

Instead the competition to lock up lithium in the South American salars is heating up, with Lithium X Energy recently accepting a buyout offer from NextView, a Chinese investor consortium, for its flagship lithium property in Chile. NextView also acquired a 20% stake in Bacanora Minerals' Sonora lithium project in Mexico.



Lithium China Spot prices - Over USD 20,000/tonne



Among the bidders interested in Potash Corp's 32% position in Chilean major lithium producer SQM, was China's Tianqi Lithium – [although Chilean authorities have balked at the bid](#). Reuters reports that [South Korean and Japanese auto and battery makers are also on the hunt for partners](#) in the lithium triangle of Bolivia, Argentina and Chile - home to around two-thirds of global lithium reserves. Korean companies Samsung and Posco for example have committed to building a battery materials plant in Chile in exchange for getting discounted lithium from SQM and US-based Albermarle.

Vanadium

Used mostly to produce steel alloys and as a chemical catalyst, the majority of the world's vanadium comes from China, Russia and South Africa. The metal's newest application is in vanadium-redox batteries (VRBs) used for renewable energy storage. It's been predicted that demand for vanadium in lithium-vanadium-phosphate batteries would jump from 200 tonnes in 2012 to 1,700 tonnes in 2017.

However the vast bulk of vanadium usage in the US (93%) is for the steel industry, where just a few kilograms of vanadium per ton of steel can strengthen the steel by 25%. The strategic nature of vanadium is also evident in the aerospace industry where vanadium-titanium alloys are said to have the best strength-to-weight ratio of any engineered materials. There are no known substitutes.

Vanadium demand is poised to increase due to Asian steelmakers wanting to increase the quality and strength of their steel, as well as the growth of VRBs. According to the USGS Australia could become a major vanadium producer in future, but for now the most prolific vanadiferous

titanomagnetite (VTM) deposits include the Bushveld Complex in South Africa, the Kachkanar massif in the Ural Mountains in Russia, the Panzihua layered intrusion in Sichuan Province, China, and the Windimurra Complex in Western Australia. A substantial amount of vanadium could also be recovered from the Matagami deposit and the Lac Doré Complex, both in Quebec. Exploration in the 5,000-square-kilometer Ring of Fire in Ontario has indicated that vanadium grades could be comparable to economic deposits found outside North America.

In 2010, vanadium produced from a mill in Utah was enough to meet 20% of US vanadium demand, according to the report, or the equivalent of 2% of world production.

The little brother to the north

It should not have escaped your attention that taking many of the 23 critical elements from the list and analyzing them for their degree that the US is dependent on them, reveals that Canada is an excellent candidate for supplying these materials in the event of an all-out trade war in which strategic mineral imports are constrained or even cut off completely from US adversaries. Economic deposits exist in Canada for many of the minerals that the US considers critical and strategic.

Unfortunately, the Canadian government is likely unaware that the country is sitting on a treasure trove of strategic minerals that could be indispensable to the United States and Canadian industrial and military uses. It has taken decades for the Ontario government to finally punch a road into the Ring of Fire, and while a year-round access road was promised in December, nothing has happened yet and one wouldn't want to hold their breath until the election in Ontario is decided in June. The Ring of Fire is rich in copper, nickel and chromite – the latter being another strategic metal important to the US.

Not only that, foreign investment is fleeing Canada, destined for sunnier climes south of the border where Trump and his Republicans passed a tax bill in December that [eliminates Canada's previous corporate tax advantage](#). (the bill cut the tax from 35 to 21%, but when both provincial and state taxes are factored in, both rates stand at around 27%).

Non-residents reportedly bought only \$5.68 billion worth of Canadian securities in January compared to the monthly average of \$18.4 billion.

“Direct investment in Canada is collapsing,” [Kevin O’Leary, founder of O’Leary Financial Group, told BNN in an interview](#). “It’s not going down a few

per cent, it's down 53 per cent. And, that means this is not a choice for either Canadian or international investors."

Investors may also be getting scared off by the pending carbon tax, which takes effect in September in all provinces that don't already have one. "Nobody has it," O'Leary, who made an unsuccessful run for the Conservative Party of Canada, said. "You don't put money here when you're getting whacked with a tax no one else has."

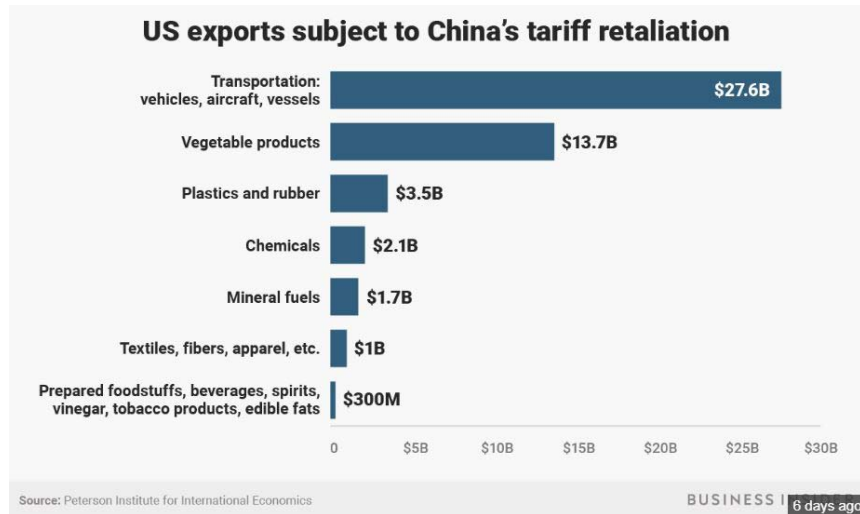
But think of it this way. The time to invest in a sector is when nobody cares about it, and critical metals are in that category. When was the last time you saw a newsletter writing playing up a Canadian manganese or vanadium deposit? Or for that matter writing about a Canadian company with a massive lithium deposit in Clayton Valley, Nevada beside Abemarle's Silver Peak lithium mine and tying it into what's happening today constant headline trade war and tariff news?

No one, except aheadoftheherd.com is talking about the connection between Trump starting a trade war with China the US is obviously unprepared for (interesting that Trump tweeted about the missing critical minerals before he got into it with China) and the fact that if it gets out of control the US will be cut off of so many minerals needed for the functioning and defense of a modern developed economy.

We are in the midst of a trade war where critical metals could soon be on the bull's eye target for both China and the US. The United States has taken Canada for granted for a long time – with Trump taking every opportunity to put the boots to the little brother to the north – at a time when the US could need us, and our [TSX.V listed 'juniors'](#) the most. Ironic, isn't it?

Conclusion

The next steps in what looks like an escalating trade war between China and the US are impossible to plot – especially with a Commander in Chief as erratic as Donald Trump. What we do know is that trade disputes often escalate quickly, and while strategic minerals are not yet on the list of products in China's sights, there is no reason that they would be given cover as trade salvos continue to be lobbed.



I'm of the opinion that Trump believes that a trade war is winnable; he's even come out and said that trade wars are good – despite evidence to the contrary. What he may not realize is that his opponent, President Xi Jinping, is not about to lose face over an unprovoked attack on China's economic interests – especially since Xi has just elected himself for life.

In these circumstances it's smart to look ahead to what could happen. If trade between China, Russia and the US suddenly stopped, could the US survive an embargo on the 23 minerals it deems critical? It's hard to say for sure, but we can predict that in such a scenario, the US would quickly look to its friends: Canada, which already supplies 40% of US oil, South America, where it can source lithium and copper, and possibly South Africa, although it's unclear who the ANC government would ally themselves with. Brazil and the DRC are also wildcards that could either extend a hand to the US or play to the other side. Australia contains a lot of strategic minerals, but the supply lines are long to the United States and the shipping costs expensive. Could Australia risk alienating China, the destination for most of its iron ore and coal, by siding with the US in a trade war? Likely not. I'm keeping my eye on this trade dispute and continue to look for juniors and near-term producers, in Canada and the US, who could help the US to keep its supplies of strategic minerals open.

I've got trade wars and tariffs, critical and strategic metals and minerals, and the TSX.V listed junior resource companies exploring for and developing these deposits on my radar screen. Do you?

If not, maybe you should.

Richard (Rick) Mills

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