

Demand Drivers for Critical Metals: A Report to Congress

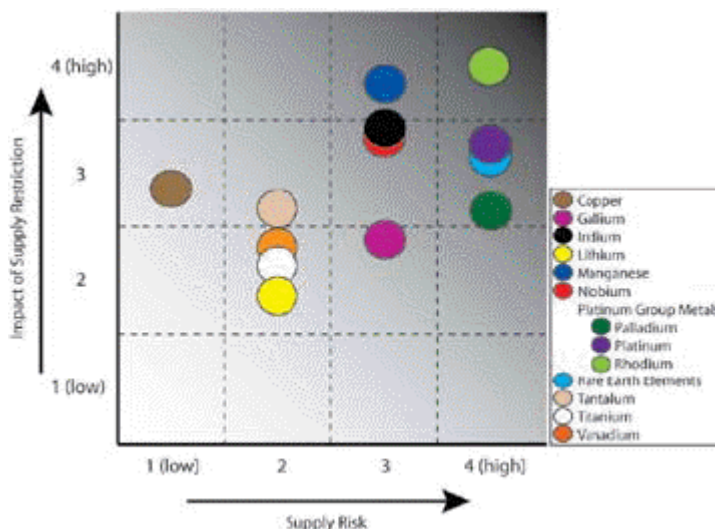
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DETROIT (ResourceInvestor.com) -- The United States Congress has just done an enormous favour for investors. It has authorized the release to the public of a report of the conclusions reached by a special committee of the National Academies on "[Minerals, Critical Minerals, and the U.S. Economy.](#)"

I wrote earlier this year [in March](#) for *Resource Investor* an article about the group's first meeting, at which a friend of mine gave a presentation where he prioritized critical industrial demand from the point of view of a very large end user of metals and minerals, and I asked rhetorically in my article when the group's final report would be issued. I was contacted, by email, and told that the target date was October, and that has turned out to be right.

What I wasn't told about beforehand was that the graph, which appears below, would be the most comprehensive, most timely and best information on the present state, as well as the future, of demand for critical and strategic metals for industry by the U.S. government available.

The report is also a detailed non-partisan primer on the political problems now faced by American industry and government in the new world of sourcing critical and strategic metals and minerals from nations that practice different economic systems within different political systems, some of which adhere to a resource nationalism that holds that the future value of domestic resources to the development of a nation is more important than the utilization, or even development, of domestic resources in order to raise capital or just make profits.



Private financial analysts typically have their newest hires, very young individuals, do the 'technical' research into the identification, the demand for, and the supply of natural resources.

These young people have only an education, usually in finance, as background. If financial institutions hire scientists, they are usually those referred to in the financial world as 'quants', i.e. those whose scientific or engineering background is in the specific area of numerically calculating the results of equations that are too complicated to have simple closed solutions; they are overwhelmingly computer science or engineering graduates who take

their leads from economics researchers who can write down equations that quantify their pet theories of how to predict economic trends particularly in the stock market but cannot solve them in a useful way.

Interestingly enough, the quants get a lot of their credibility from a poorly kept secret: the Las Vegas casino companies are able to precisely calculate the odds for any game with a finite number of moves, no matter how large. The games offered are always those for

which the odds favour the house, or where the game has been 'adjusted,' legally, so that the odds favour the house.

The demand for and supply of natural resources is much more, and much too, complicated to predict, because they involve human emotions and unpredictable political issues. There are too wide a range of possible decisions to ever be quantified reliably, and it has become obvious that not all the factors that figure in the decisions have been, or are known and/or susceptible, to numerical quantification. What we get from financial analysts and brokers is their best guess based on their understanding of the financial issues as modified by data they receive from their educated, but inexperienced, researchers on the 'technical' issues.

The graph above represents, in sharp contrast to the above, hundreds, if not thousands, of person-years of education, experience, and research into topics such as geology, mining technology, metallurgy, industrial utilization and socio-economic drivers of the demand for metals by American industry. The graph shows the conclusions of this massive study as a combination of the results of the risk of specific materials not being available versus the impact of that restriction on the ability of American industry to function.

Investors for the long term who are concerned with the future economic health of the U.S. no longer have to ask financial analysts what they think is a 'hot play' or a coming area. In fact the best question an investor can ask an analyst or broker is: Are you familiar with the study by the National Academies? If they answer, "no" I would close my account and look for another analyst/broker firm. If they answer "yes" then I would ask for a run down of what mining opportunities, end user opportunities, and speculative plays are available in the metals in the graph above, which I will now prioritize for you, the reader, in order of the impact that their shortage would have on the U.S. economy. I am simply reading the graph for you. I am not inserting my own judgment here.

Note: *Resource Investor* publishes, and continues to publish, articles on the individual metals listed below, so *RI* is a great place to go first when you are researching possible investments in critical metals:

- Rhodium
- Manganese
- Indium
- Niobium
- Gallium
- Rare Earth Elements
- Copper
- Tantalum
- Palladium
- Platinum
- Vanadium
- Titanium

- Lithium

The book, "[Minerals, Critical Minerals, and the U.S. Economy](#)," is a must read for anyone who wants to be informed on the identity of critical and strategic materials, the present and (educated guesses upon the) future demand for them and the political as well as the economic factors driving that demand.

You can buy the bound or downloadable (PDF) volume by following the link on the graphic below, or you can read the whole book online by going to the first page, or the table of contents, reading it, then clicking to display the next page. Don't feel bad reading the book "[for free](#)." All of us have already spent millions of taxpayer dollars to gather and interpret the data, so it's not really free anyway.



A four page summary of the book's issues written by the National Academies' staff can also be found here by following the link on the book graphic above for those who want a preview.

A companion volume: "[Managing Materials for a 21st Century Military](#)," covering the same topic but only as it pertains to military needs and problems, has also been published. It does add some metals to the (current and likely or possible future needs) list above, such as rhenium. An executive summary of that study by the staff of the National Academies is [found here](#).

I will discuss its impact on investment opportunities in critical and strategic metals in a few days in my next article.