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The Modern World Can't Function Without Rare Earths...and China Knows it



A quick search on Google Trends reveals the term Rare Earth Minerals is attracting more interest in 2025 than in the past 20 years. There are good reasons for this, and investors should be aware of the geopolitical and macroeconomic implications surrounding the topic.

First, what are Rare Earth Minerals (REMs)?

They are mineral deposits which contain Rare Earth Elements (REEs), seventeen elements on the periodic table¹, but due to their obscurity most Americans would be hard pressed to name one of them². The most common is cerium³, which is used in catalytic converters to reduce nitrogen oxides.

REMs are perhaps misnamed. Their occurrence in Earth's crust is not rare, but the ability to process and refine them into REEs⁴ is. The US at one time was the largest processor of these elements, mostly via the Mountain Pass Mine in California's Mojave Desert, but due to environmental concerns and labor cost differentials that position has been ceded to China over the last three decades. China now produces almost 70% of the world's REMs and processes over 90% of REEs.

Why are REEs Important?

In addition to their applications in consumer electronic products, according to Gracelin Baskaran, research

director at the Center for Strategic and International Studies, REEs are, "absolutely vital for our defense."⁵ A recent example is the precision strikes against the Iranian nuclear facilities during Operation Midnight Hammer, which required the utilization of REEs in the guidance systems of the missiles and bombs used in the operation. REEs also play a role in the stealth technology of our military's most sophisticated aircraft, like the B-2 Bombers, F-22 Raptors, and F-35 Lightning IIs utilized in that operation.

An interruption to REE supply chains would present a potential national security risk. Just such an interruption was reported by the Wall Street Journal on June 19th of this year⁶, pointing out China's exports of rare earth magnets to the United States fell 93% in May of this year vs May 2024. Because of their importance to US military equipment, The US cannot go to war without REEs. Due to the magnitude of annual fiscal deficits, the US finds itself in the ironic position where we need to borrow money *from China*, so we may buy materials for military munitions *from China*, that we might use to defend ourselves...*from China*. So, in essence, the US cannot go to war without China's permission.

There's No Easy Fix

Regaining control of our own REE supply needs will not be easy. China began laying the groundwork for dominating the processing of REEs back in 1992⁷. At



that time China's reformist leader, Deng Xiaoping declared, "The Middle East has oil, China has rare earths."⁸ Fast forward two decades and a 2010 China-Japan maritime border dispute seemed to confirm the United States' worst fears, China had near-total control of this critical resource. In response, Congress convened a special hearing to examine "China's monopoly on rare earths: Implications for U.S. foreign and security policy." The session prompted a Fiscal Year 2010 National Defense Authorization Act requirement, for the Government Accountability Office (GAO) to submit a report on rare earth elements to Congress. In short, the GAO's 2011 report found that *"rebuilding a U.S. rare earth supply chain may take up to 15 years and is dependent on several factors, including: securing capital investments in processing infrastructure, developing new technologies, and acquiring patents which are currently held by international companies."*

In addition to the lengthy time runway required, the use of acids, heat, and pressure in the processing of REEs poses serious environmental and human costs. In China's mineral rich regions, these methods have resulted in exposed wastewater ponds which have poisoned vast tracts of land, livestock, and water. There are now reports of abnormally high cancer rates in villages surrounding the REE processing plants in these regions.⁹

Why This Matters for Investors

REMS and REEs aren't just obscure components on the periodic table; they're strategic commodities with critical applications across defense, technology, and energy. Like other hard assets such as gold, silver, copper, uranium, and fossil fuels, they've suffered from years of underinvestment, resulting in structural supply shortages that won't be resolved quickly, especially given the geopolitical and environmental challenges tied to their production.

In the meantime, tight supply will be rationed by price, and those price signals are likely to ripple through the stock market, impacting sectors ranging from defense to renewables to mining. Investors should recognize that REMs and REEs are part of the broader commodity complex, and as with past transitions, most notably in the 1970s and early 1980s, hard assets have historically outperformed in periods of volatility, inflation, and global realignment.

We've been saying for a while that we're in an era of significant change, and so far, the data has supported our expectations. The current situation surrounding REMs and REEs only strengthens our conviction that strategic exposure to hard assets deserves serious consideration from investors in today's environment.

As always, if you would like to discuss any of these ideas in more detail and what they might mean for your specific situation, we'd welcome the conversation.

¹ *Atomic Numbers 21, 39, and 57-71*

² *While titanium and cobalt are "strategic" metals, they are not rare earths.*

³ <https://periodic.lanl.gov/58.shtml>

⁴ <https://warroom.armywarcollege.edu/articles/rare-earth-elements#:~:text=Until%20the%20late%201990s%2C%20the,rare%20earth%20elements%20to%20Congress.>

⁵ <https://www.marketwatch.com/story/why-its-nearly-impossible-for-america-to-meet-its-rare-earth-needs-after-chinas-export-restrictions-2eb2cb56>

⁶ https://www.wsj.com/world/china/china-flexes-chokehold-on-rare-earth-magnets-as-exports-plunge-in-may-c1adac50?gaa_at=eafs&gaa_n=ASWZDAG-nHsmtGb7mZrkzMXQoWJjCpnZU1NivQFNi_INpdRXyW66PwyogEy

⁷ <https://time.com/7294964/us-rare-earths-minerals-china-dominance-trump-tariffs/>

⁸ *ibid*

⁹ *ibid*

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DAN CAIRNS,
CFP®, CIMA®, CPWA®, RICP®
Senior Vice President, Financial Advisor
(916) 581-7549

dcairns@dadco.com | cairnswealthmanagement.com

2901 Douglas Blvd., Suite 255 | Roseville, California 95661
CA Ins. Lic #0A12472 | D.A. Davidson & Co. member SIPC

