

The Made in America Critical Minerals Crisis

written by Jack Lifton | October 16, 2026

“The ultimate question is not whether America has enough capital to rebuild its industrial economy. It is whether America is willing to make creating and preserving industrial capability a more rewarding use of that capital than abandoning it.” – Jack Lifton, Co-Chair, [Critical Minerals Institute](#) (CMI)

The American critical minerals crisis did not begin in China. It began in the United States, when American industrial management and its financial backers gradually abandoned the idea that an industrial corporation’s primary purpose was to manufacture useful products competitively and profitably over the long term. The replacement of that objective with the pursuit of financial returns, measured increasingly by quarterly earnings, share prices, and the immediate rewards of corporate management, has had consequences far beyond individual corporations’ balance sheets. It has undermined the industrial foundations of American national economic strength and, ultimately, national security.

I believe that the present crisis was entirely foreseeable. More importantly, I believe that it was preventable. We are now paying the price for decisions made over several decades by people who either did not understand the relationship between industrial production and national power or understood it but valued their own immediate financial interests more.

The United States was once the world’s greatest industrial nation. Its strength was not simply its enormous mineral resources, abundant energy, and large factories. Its real advantage was an integrated industrial economy in which mining, refining, metallurgy, chemical processing, machine-tool

manufacturing, engineering, research, and mass production supported one another. American manufacturers did not simply purchase materials. They developed, qualified, and improved them, and worked with their suppliers to make products that could be manufactured reliably and economically in enormous quantities.

I entered American industry in April 1962. In the years that followed, I watched technologies develop that transformed electronics, transportation, communications, and materials science. I also watched the gradual disappearance of much of the industrial structure that made those achievements possible. It is one thing to read statistics about the decline of American manufacturing. It is quite another to have spent more than sixty years watching productive industrial capability replaced by financial engineering.

In my opinion, the critical minerals problem is one of the most revealing consequences of this transformation.

The Financialization of American Industry

Financialization is an awkward word, but it describes an extraordinarily important change in how American corporations behave. Industrial corporations increasingly came to be judged not primarily by their ability to develop and manufacture competitive products, but by their ability to produce financial returns for shareholders. Management compensation became tied to share prices and financial performance. Corporate acquisitions, divestitures, outsourcing, stock repurchases, and balance-sheet restructuring increasingly competed with investment in production technology, employee skills, and long-term industrial capability.

There is nothing inherently wrong with profitability. Without profit, private industry cannot survive. Nor is there anything inherently wrong with importing a product that another country can manufacture more efficiently. The problem arises when management mistakes the short-term financial advantages of abandoning production for a permanent improvement in the enterprise's or the nation's economic strength.

The American industrial corporation increasingly became a collection of financial assets to be optimized rather than an operating organization whose value depended upon accumulated knowledge, skilled people, physical assets, and relationships with suppliers and customers. The factory became a cost center. The engineers and skilled workers became expenses. Suppliers became interchangeable vendors, at least in the accountants' minds.

The assumption was that American companies could always buy manufacturing elsewhere and keep the more profitable functions of design, marketing, finance, and intellectual property ownership.

This was perhaps the most consequential industrial assumption of the late twentieth century. It was also fundamentally mistaken.

Manufacturing is not merely the mechanical execution of an idea conceived elsewhere. It is itself a continuing process of technological development. The ability to manufacture a product reproducibly, at scale, to specification, and at a competitive cost is an industrial achievement inseparable from the product's design.

When manufacturing leaves, the associated process engineering, supplier development, skilled labor, tooling, and eventually much of the practical research and development tend to follow it. Over time, the nation that designs a product but no longer

manufactures it risks losing the ability to understand how it is actually made.

America did not simply outsource labor. It outsourced industrial learning.

The Statistical Evidence of Industrial Decline

The decline of American manufacturing is not merely an impression formed by those of us who have lived through it. The government's own statistics document it.

According to the United States Bureau of Labor Statistics, American [manufacturing employment peaked](#) at about 19.6 million workers in June 1979. By June 2019, that number had fallen to about 12.8 million, a loss of 6.7 million manufacturing jobs, or roughly 35 percent of the peak. During the same period, manufacturing's share of total nonfarm employment fell from approximately 22 percent to 9 percent.

These figures require careful interpretation. Employment is not the same as industrial output. Productivity improvements, automation, and technological advances have enabled American manufacturers to produce more with fewer workers in many industries. The United States remains a major manufacturing nation, and it would be incorrect to suggest that American manufacturing has disappeared.

But it would be equally incorrect to conclude that the disappearance of millions of manufacturing jobs represents nothing more than the successful application of technology.

A manufacturing job is part of an industrial organization. It supports, and is supported by, equipment suppliers, maintenance

specialists, tooling manufacturers, chemical producers, metallurgists, transportation networks, and the many other enterprises that sustain production. When an entire manufacturing operation disappears, the consequences may extend through its supplier network and eventually affect the institutions that train the next generation of industrial workers.

The Bureau of Labor Statistics also documents that [manufacturing employment declined](#) during each of five recessions between 1979 and 2019 and never fully recovered to its previous level afterward. What had once been a cyclical pattern of industrial contraction and recovery became a persistent reduction in manufacturing employment.

Economists David Autor, David Dorn, and Gordon Hanson have also examined globalization's [consequences](#) in their widely cited research on what has become known as the China Shock. Their work shows that Chinese [import competition](#) did not affect only the workers who initially lost their jobs. Communities exposed to intense import competition experienced persistent reductions in manufacturing employment, labor-force participation, and income.

Their subsequent research found that the [trade shock's](#) adverse effects on more exposed American communities remained evident through 2019, long after the fastest period of import growth had passed. Their earlier work attributed about one-quarter of the contemporaneous aggregate decline in American manufacturing employment over the period they studied to competition from Chinese imports.

These findings matter because they show that the conventional economic assumption that workers and capital would move smoothly from declining industries into more productive activities was, at best, incomplete.

The losses were not simply temporary adjustments. In many places, they became permanent changes in the local economic structure.

To be clear, Chinese competition was not the only cause of the decline of American manufacturing. Automation, productivity growth, changes in consumer demand, trade policy, currency movements, and domestic corporate decisions all contributed. But these forces did not operate independently of the financial incentives that increasingly governed American industrial management.

The question should not have been whether American corporations could increase profits by relocating production. It was whether those decisions would leave the United States with the industrial capabilities needed to sustain its own economy.

That question was not adequately addressed.

China Understood What America Was Forgetting

While American corporations reorganized around financial returns, China built an industrial economy around manufacturing capability.

Chinese leadership understood that national economic strength depended on controlling production, securing access to raw materials, advancing technology, and supplying the materials and components domestic industry required. Its policies were often inefficient, sometimes extraordinarily expensive, and frequently inconsistent with the financial returns Western investors demanded. Nevertheless, they pursued a long-term objective: creating an increasingly comprehensive industrial economy.

China's 2001 accession to the World Trade Organization accelerated its integration into the global economy. Western corporations saw an opportunity to lower manufacturing costs and gain access to a growing market. China saw an opportunity to acquire manufacturing experience, expand its industrial infrastructure, train its workforce, and become indispensable to global supply chains.

The difference in objectives was profound.

For many American corporations, moving production to China was a financial decision. For China, attracting that production was also an industrial development strategy.

China did not limit its ambitions to mining. It invested in chemical processing, refining, metallurgical reduction, alloy production, component manufacturing, machinery, and the downstream industries that consumed the resulting materials. It developed industrial clusters in which suppliers, customers, engineering organizations, research institutions, and skilled workers could reinforce one another.

The distinction is crucial. A mine is not an industrial supply chain. A refinery is not an industrial supply chain. Even a factory producing a finished material is not necessarily an economically sustainable enterprise unless qualified customers are willing to buy its output at prices that allow it to keep operating.

China recognized that the value of industrial integration lay in the relationships among these activities, not simply in ownership of individual facilities.

I believe China now has something approaching a twenty-five-year head start over the United States in systematically developing industrial policies intended to secure national manufacturing

capability. This is not a precise measurement of technological superiority. It reflects the accumulated advantages of industrial investment, experience, trained personnel, supplier networks, and established production.

The Chinese advantage is not that its engineers are necessarily more capable than American engineers. Instead, China has given its engineers and industrial workers the opportunity to practice manufacturing at a scale America has increasingly denied its own.

The Critical Minerals Crisis Is a Manufacturing Crisis

Consider the rare earths, which have become the most visible example of American dependence upon foreign critical materials.

The International Energy Agency's analysis of the rare earth supply chain offers a particularly revealing picture of today's industrial imbalance. According to the IEA, China accounted for approximately 60 percent of global mined production of magnet rare earths in 2024. But China's share of global refining was about 91 percent, and its share of sintered permanent magnet production was about 94 percent.

These three figures tell us much more about the critical minerals crisis than the usual political discussion about mineral reserves and mining permits.

China's share of mining is large, but its share of processing and finished magnet manufacturing is substantially larger. In other words, China has established its greatest industrial advantage not merely by controlling mineral resources, but by controlling the technologies, facilities, personnel, and markets that convert those resources into useful industrial products.

This is precisely where value is added.

Much of the American political discussion begins with the proposition that we must discover and develop more domestic rare earth deposits. This misunderstands the problem. The United States possesses rare earth resources. So do Canada, Australia, Brazil, and other nations friendly to American economic interests.

The difficulty is not simply the availability of mineral resources. It is the availability of the industrial processes required to convert those resources into the forms that manufacturers actually use.

Rare earth-bearing minerals must be beneficiated, chemically processed, and separated into usable chemical products. Those products must then be converted, where required, into metals, alloys, and engineered materials. For rare earth permanent magnets, manufacturers must produce alloys and then cast them into magnets that meet demanding specifications for composition, microstructure, magnetic performance, corrosion resistance, and reproducibility.

Finally, manufacturers must incorporate those magnets into motors, generators, actuators, electronic devices, and other finished products.

Every stage requires specialized knowledge, equipment, capital, and, most importantly, customers.

The American public is often told that a new mine or magnet factory will solve the problem. But what happens when the mine produces material for which no domestic separation capacity exists? What happens when a separation plant produces oxides for which no economically sustainable domestic metal-making industry exists? What happens when a magnet manufacturer produces magnets

for motors that American industry no longer manufactures?

These are not hypothetical questions. They describe the structural problems that confront attempts to reconstruct American critical materials supply chains.

The United States has lost not merely individual manufacturing operations but substantial portions of the industrial demand structure that once supported them.

This is why I have argued that restoring American rare earth magnet production, although necessary, cannot by itself restore American manufacturing of the products that use those magnets. If the motors, assemblies, and finished goods are manufactured abroad, domestic magnet producers must either qualify as suppliers to those foreign manufacturers or wait for American downstream manufacturing to return.

The economic problem is circular. Domestic material producers need customers to justify investment. Domestic manufacturers need reliable material suppliers to justify their own investment. Neither can confidently proceed without the other.

China has spent decades constructing the industrial relationships that solve this problem. America is now attempting to reconstruct them through individual projects, subsidies, and political announcements.

The Financial Markets Cannot Rebuild What Their Incentives Helped Destroy

One of the great ironies of the present situation is that the United States is turning to the same financial system that rewarded the dismantling of industrial capability and asking it to finance the reconstruction.

A new mine, separation plant, metallurgical operation, or magnet factory may require hundreds of millions of dollars before it produces a commercially qualified product. The development period may extend for years. During that time, the enterprise must recruit and train personnel, perfect its technology, qualify its products, secure raw materials, and develop customer relationships.

Even successful technical development does not guarantee economic success. A plant may produce material of exceptional purity and still fail because its costs exceed the prices customers are prepared to pay.

The financial markets, quite reasonably from their own perspective, ask when the investment will generate an acceptable return. But the industrial development process does not necessarily align with financial investors' time horizons.

A profound difference exists between financing a plant's construction and financing the development of a sustainable industrial enterprise.

A government can subsidize a refinery's construction. It cannot, simply by writing a check, create a profitable market for the refinery's products. Nor can it guarantee that the plant will operate at design capacity, achieve acceptable recoveries, qualify its products, or find customers willing to pay its costs.

This raises a question I believe should be central to every discussion of American critical minerals policy: Who will finance an essential industrial enterprise's survival **until its customers are prepared to pay enough to sustain it?**

If the answer is the government, then we are no longer discussing conventional private industrial investment. We are

discussing the deliberate use of public resources to create or preserve capabilities that the private market, under prevailing conditions, will not support.

That may sometimes be necessary for national security. But it requires industrial competence in government, realistic economic analysis, and an understanding that the objective is not to enrich investors in selected companies. The goal is to establish sustainable productive capability.

Governments and financial markets cannot suspend economic reality.

The Missing Customer

In my experience, industrial development must begin with the customer. More precisely, it must begin with the customer's technical specifications, production requirements, qualification procedures, and willingness to pay.

That is why I have consistently argued that critical materials supply chains should be designed backward from original equipment manufacturers' requirements.

A magnet producer needs to know what kind of magnets its customers require. The alloy producer needs to know what compositions and metallurgical properties will satisfy the magnet producer. The rare earth metal producer needs to understand the alloy producer's requirements. The separation plant must produce chemical products suitable for the metal-making process, and the mineral processor must supply feedstock the separation plant can process economically.

Each operation exists because it adds value to a product required by the next operation.

Much of current American industrial policy appears to proceed in the opposite direction. We identify a mineral deposit, announce its strategic importance, seek financing for a processing plant, and assume that a market will somehow appear for the products.

Sometimes it will. Frequently it will not.

The survival of an industrial supply chain depends upon more than technical feasibility. It depends upon the economics of every indispensable participant.

An essential supplier that cannot earn enough to stay in business is not a secure supplier, no matter how strategically important its product may be.

Can America Recover?

I do not know whether the United States can fully recover the industrial position it has surrendered. I am increasingly skeptical that it can do so within the time frames politicians, government agencies, and promoters of critical minerals ventures suggest.

Industrial capability is cumulative. It builds through years of production, mistakes, process improvements, customer qualification, and the transfer of practical knowledge from one generation of engineers and skilled workers to the next.

A factory can be constructed in two years. The industrial organization required to operate it competitively may take a decade to develop. The supplier networks and customer relationships needed to sustain it may take even longer.

Opportunity cost is also a factor. China is not standing still while the United States attempts to catch up. Its industrial companies keep producing, improving processes, training

personnel, and expanding into increasingly sophisticated products.

The question is therefore not whether America can recreate the Chinese industrial structure of twenty-five years ago. The question is whether America can develop an economically competitive industrial structure that can meet its future manufacturing requirements.

I believe that any realistic recovery program must begin by abandoning the fantasy of complete national self-sufficiency. The United States neither needs nor can economically justify producing every mineral, metal, and engineered material its economy requires domestically.

It does need secure access to those materials, and reliable industrial relationships with trusted suppliers and allied nations must support that access.

The distinction between self-sufficiency and supply security is fundamental.

A diversified network of economically sustainable suppliers may provide greater security than a collection of uneconomic domestic plants maintained indefinitely by government subsidies.

But diversification alone is insufficient if all the alternative suppliers depend upon the same Chinese processing technologies, reagents, equipment, or intermediate products.

The objective must be genuine industrial capability, not merely geographic diversification of corporate ownership or mine locations.

The Price of Reindustrialization

The American public has not yet been told what reindustrialization will cost.

Rebuilding manufacturing capability requires capital investment, but it also requires time, skilled labor, technical education, competitive energy, reliable infrastructure, and a willingness to accept that strategically necessary production may initially be more expensive than imported alternatives.

It may require higher prices for certain materials and manufactured products. It may require governments to support enterprises whose commercial returns are insufficient to attract conventional private capital. It may require corporate management to accept lower short-term financial returns in exchange for long-term productive strength.

Most importantly, it requires a change in the way America measures economic success.

An economy cannot indefinitely substitute financial asset appreciation for goods production and expect to retain the industrial foundations of national power.

The prosperity generated by financial transactions does not equal the capability created by manufacturing. Financial capital can move across borders almost instantaneously. Industrial knowledge, qualified production systems, skilled workforces, and dependable supplier relationships cannot.

This does not mean that financial markets are unnecessary or inherently destructive. It means they must serve productive industry rather than treat it merely as a source of assets to trade, consolidate, or liquidate.

The challenge is not simply to persuade investors to finance more factories. It is to create an economic environment in which operating those factories profitably over the long term becomes a rational use of capital.

That will require industrial policy, but one informed by engineering and economics rather than political announcements.

It may also require reconsidering the incentives under which American corporations allocate their capital. If management can obtain greater personal and financial rewards by repurchasing shares, selling productive assets, or transferring manufacturing abroad than by investing in domestic production, then the resulting decisions should surprise no one.

The behavior is rational within the existing financial system. The cumulative national consequences may be disastrous.

A successful industrial policy must therefore address not only the cost of building factories but also the financial incentives that determine whether those factories will be built, operated, improved, and maintained.

Can Financial Capitalism Rebuild Industrial Capitalism?

This brings me to what I believe is the central question confronting the United States.

Can a nation whose financial system rewards abandoning manufacturing rebuild a competitive industrial economy without first changing that system's incentives?

I do not believe we can answer this question by announcing another government program, identifying another strategic

mineral deposit, or subsidizing another processing plant.

The American financial system is extraordinarily efficient at allocating capital toward activities expected to generate attractive returns. That is precisely its purpose. But financial returns from industrial production must compete with those from financial transactions, asset management, acquisitions, real estate, and other investments that may produce returns more quickly and with less technical or operating risk.

An investor who can obtain an attractive return from a financial asset without assuming the risks of constructing and operating a metallurgical plant has little reason to finance the plant unless the expected return compensates for those risks.

Similarly, a corporate executive whose compensation depends heavily upon short-term share-price performance has a powerful incentive to favor actions that improve reported financial results, even when those actions weaken the company's long-term productive capabilities.

We have constructed a system in which the individual financial decision may be entirely rational while the cumulative industrial consequences are destructive.

That is the essential contradiction.

China's industrial policy has not been free of mistakes. It has produced excess capacity, misallocated capital, and supported enterprises that would not necessarily survive under conventional Western financial requirements. But it has also produced an industrial infrastructure whose strategic value extends far beyond the profitability of its individual components.

The United States has generally judged industrial investment by

the returns available to private capital. China has often judged it by its contribution to national industrial capability.

Neither approach is without costs. But only one has produced the extraordinary concentration of rare earth refining, metal production, and permanent magnet manufacturing that now concerns American policymakers.

The United States cannot simply copy the Chinese model. Its political institutions, capital markets, industrial traditions, and economic structure are different. Nor should it try to preserve every enterprise merely because it produces something designated as critical.

The objective must be to create conditions under which strategically necessary industrial production can become economically sustainable.

That requires more than subsidies. It requires long-term purchasing commitments, credible customer qualification programs, financing structures suited to industrial development, investment in technical education, and a willingness by major American manufacturers to support domestic and allied suppliers during the years required to establish competitive production.

It also requires that the financial rewards of long-term productive investment become competitive with those of short-term financial engineering.

If private capital cannot be induced to finance strategically necessary production, then the government must decide whether that production is sufficiently important to justify public support. But such support must be disciplined by engineering reality, demonstrated technical capability, and an identifiable market.

The alternative is to create an industry permanently dependent upon political favor and public subsidies, an outcome that would replace one form of industrial weakness with another.

The Consequences of Forgetting How to Make Things

The United States did not become the world's greatest industrial economy because its financial markets were sophisticated. Its financial markets became extraordinarily powerful in part because they served an economy capable of producing the machinery, materials, transportation systems, electronics, chemicals, and infrastructure modern civilization requires.

We have gradually reversed that relationship.

The financial system has increasingly become an end in itself, while industrial production has too often been treated as a replaceable service available from the lowest-cost supplier anywhere in the world.

China took advantage of that decision. It did not force American corporations to abandon domestic production. It offered them opportunities to reduce costs, improve reported returns, and access a rapidly growing market. American management and investors made their own choices.

They did not make those choices without understanding their immediate consequences. Factory closures, disappearing suppliers, declining industrial employment in manufacturing communities, and the movement of production expertise overseas were plainly visible. They did not adequately consider the cumulative effect on America's ability to sustain an advanced industrial economy.

The critical minerals crisis is therefore not an isolated failure of mineral policy. It reflects a much larger industrial failure.

The statistics are now before us. American manufacturing employment fell by more than one-third between 1979 and 2019. Economic research has documented the persistent damage import competition has caused in manufacturing communities. China now controls about 91 percent of global magnet rare-earth refining and 94 percent of sintered permanent magnet production, according to the IEA's 2024 estimates.

These are not unrelated facts. They describe different aspects of a transformation in the organization of global industry, one in which the United States increasingly accepted the financial benefits of consuming imported manufactured products while China accumulated the industrial capabilities required to produce them.

The American economy remains wealthy, innovative, and technologically sophisticated. But wealth and innovation are not substitutes for industrial capability. A nation can have extraordinary scientific knowledge and immense financial resources and still be unable to manufacture the materials and components it needs for its own defense and economic security.

The question is no longer whether America possesses the mineral resources necessary to rebuild its industrial base. In many cases, it does. Nor is it whether American engineers and scientists possess the intelligence and technical ability to develop competitive production technologies. They do.

The question is whether the American economic system will reward the patient investment required to turn those resources and technologies into profitable, sustainable manufacturing enterprises.

I have spent my professional life studying, developing, manufacturing, and trading industrial materials. The lesson I draw from that experience is simple: value is created when knowledge, materials, labor, and capital combine to produce something a customer needs and is willing to buy.

The creation of that value requires more than money. It requires capability, continuity, and time.

I believe that the United States can rebuild selected parts of its industrial economy. I am much less certain that it can reconstruct the integrated manufacturing system it once possessed. And I do not believe that either objective can be achieved merely by pouring public money into projects that the existing financial system regards as unattractive.

If the financial rewards for abandoning production remain greater than those for developing and maintaining it, then even successful government programs may produce only temporary islands of industrial capability in an economy whose underlying incentives continue to favor their disappearance.

That is why mineral policy alone cannot ultimately solve the American critical minerals crisis. It requires reconsidering the relationship between financial capital and productive capital, between private financial returns and national economic strength, and between corporate management's immediate interests and the long-term survival of American industry.

We cannot reasonably expect the same incentives that rewarded the dismantling of our industrial base to produce its reconstruction.

Unless those incentives change, America may keep financing new factories while losing the economic foundations needed to keep them operating.

The ultimate question is not whether America has enough capital to rebuild its industrial economy. It is whether America is willing to make creating and preserving industrial capability a more rewarding use of that capital than abandoning it.

Until we answer that question, the critical minerals crisis will remain a symptom of a much larger problem.

America once understood that national economic strength rested upon the ability to make things.

China understands it today.

The question is whether America can relearn that lesson before the remaining industrial capabilities on which its prosperity and national security depend become too fragmented, too expensive, or too difficult to recover.

Follow where value is added.

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