Jack-in-the-Stox: America's Iron Ore Is Not Enough to Secure Its Steel Supply

written by Jack Lifton | September 9, 2026

In his ongoing *Jack-in-the-Stox* series, Jack Lifton comments on public companies, technologies, capital markets, supply chains and geopolitics. He is not a licensed investment adviser, and his views are provided for informational purposes only. Nothing in this column constitutes investment advice or a recommendation to buy, sell or hold any security.

"Iron ore in the ground is not steel in a ship, a transformer or a gun barrel. Until America can profitably convert that ore into the exact products its manufacturers and military require, its resource wealth is not industrial security. It is only potential." — Jack Lifton, Critical Minerals Institute (CMI)

A billion tons of iron ore can make an impressive corporate presentation. It cannot, by itself, make a good investment or secure a nation's industrial base. The investor needs to know how much saleable product those tons will yield, what it will cost to produce and deliver that product, who will buy it and how much of the resulting cash will reach the shareholder. The policymaker must ask an equally demanding question: can that ore be converted into the precise steel products American industry and the military will require during a prolonged emergency?

These are different versions of the same problem. Size is easy to advertise. Profitable, dependable industrial capability is

much harder to build.

I regard steel as the most important alloy in the world, a position it has held for at least 150 years. Railroads, power plants, factories, automobiles, ships and the machinery that makes other machinery all depend upon it. Even the digital economy rests on a physical foundation of steel.

America's position in the steel industry, however, has changed dramatically. In 1947, the United States produced 77 million metric tonnes of crude steel, accounting for approximately 57% of the world total of 134.5 million metric tonnes. "Half the world's steel" actually understates the American position, although it also describes an exceptional moment when much of the industrial world was recovering from war.

In 2025, the latest complete year, the United States produced approximately 81.9 million metric tonnes, representing 4.4% of global production. China produced 960.8 million metric tonnes, or approximately 52%, and the United States ranked third behind China and India. America therefore makes slightly more steel than it did in 1947, while the world makes almost fourteen times as much.

That decline in market share matters, but the percentage alone cannot tell us whether America can defend itself. A ton of reinforcing bar cannot automatically substitute for a ton of armor plate. Steel used in a submarine, gun barrel, transformer or bridge must meet different requirements. National security depends on the ability to make the required material, process it into the required form and deliver it at the required rate.

America begins with an important advantage: domestic iron ore. American integrated steelmaking draws heavily on mines in Minnesota and Michigan, where much of the material is taconite that must be concentrated and converted into pellets before use.

Imports supplement domestic production. Brazil supplied 58% of American iron ore imports during 2021–2024, Canada 21%, Sweden 10% and Chile 4%, but those percentages describe imports, not the entire American ore supply.

Globally, Australia and Brazil dominate iron ore exports, while China is the principal importer. China's enormous steelmaking scale therefore comes with substantial dependence on overseas raw materials. America's domestic ore is a strategic asset, but the asset becomes an advantage only when the mines, pellet plants, transportation networks, ironmaking facilities and steel mills required to use it remain operational.

The principal established American iron ore producers are Cleveland-Cliffs Inc. (NYSE: CLF) and U.S. Steel. Both mining businesses sit inside larger steelmaking enterprises, which complicates any attempt to compare mine profitability. Ownership also matters. U.S. Steel became a wholly owned subsidiary of Nippon Steel in June 2025. Its mines remain American industrial assets, but investors can no longer purchase the former standalone U.S. Steel stock.

The first task is to get the size comparison right. Using 2024 as a common production year, Cleveland-Cliffs reported approximately 24 million long tons of iron ore output, equivalent to 24.4 million metric tonnes. Its output fell to approximately 17 million long tons, or 17.3 million metric tonnes, in 2025 due to idling.

U.S. Steel reported 22.25 million short tons in 2024, equivalent to approximately 20.2 million metric tonnes, including its share of Hibbing. Cleveland-Cliffs was therefore roughly one-fifth larger on that comparable annual basis. U.S. Steel's Minntac mine alone produced 15.5 million short tons, making it the heavyweight individual operation in this comparison.

The distinction among short tons, long tons and metric tonnes is consequential. Comparing the reported figures without converting them produces the wrong answer before the investment analysis even begins. Yet production volume is only the first step. The harder issue is profitability.

Cleveland-Cliffs reported 2025 revenue of $18.6 billion, an approximately $1.4 billion GAAP net loss and $37 million in adjusted EBITDA. U.S. Steel reported 2024 revenue of $15.64 billion and net earnings of $384 million, an approximately 2.5% net margin. These figures come from different reporting periods and consolidated steel businesses. They neither establish a current ranking of mine profitability nor tell us whether Minntac earns more per pellet than Tilden or Northshore.

Cleveland-Cliffs' recovery also deserves acknowledgment. Second-quarter 2026 adjusted EBITDA reached $286 million, although the company still reported a $134 million GAAP net loss. Improving operations and achieving bottom-line profitability are separate milestones.

Mesabi Trust (NYSE: MSB) presents a very different proposition. For the fiscal year ended January 2026, it reported revenue of $17.52 million and net income of $13.87 million, an approximately 79% net margin. That appears extraordinary beside steelmaking margins, but the trust collects royalties associated with Northshore rather than bearing the operator's full mining and processing costs. Its income still depends on production, shipments, pricing and contractual enforcement, and the prior fiscal year included a $71.2 million nonrecurring arbitration award that should not be mistaken for recurring earnings.

Mine life adds another layer. Using recoverable pellet-equivalent reserves and 2024 production as a consistent screen, Cleveland-Cliffs' Northshore operation has approximately 57

years of reserve coverage, United Taconite 47 years, Tilden 22 years, Minorca 10 years and Hibbing approximately three years. U.S. Steel's Minntac has approximately 17 years, while Keetac has approximately 30 years on a conventional-pellet basis. These are calculated reserve-coverage estimates, not company forecasts of closure dates.

The spread matters more than false precision. Investors should distinguish the decades of potential production at the longer-lived assets from the much nearer reserve-replacement requirement at the shorter-lived operations. Slower production can extend a deposit's calendar life while weakening its economics. Additional resources may eventually become reserves, but that conversion requires technical work and economic justification. Ore remaining underground is not a promise of uninterrupted dividends or uninterrupted industrial supply.

Mesabi Metallics Company LLC's Nashwauk project adds a new product and a new risk profile to the comparison. The Essar-backed project is designed to produce direct-reduction-grade pellets. A recent royalty company filing describes approximately 7.28 million metric tonnes of annual output over a 23-year mine life, significant on a domestic scale although well below the total mining portfolio of either incumbent.

The developer's June update targeted production in the third quarter of 2026. That is a target; the materials reviewed do not establish a successful commercial ramp-up. Claims of globally competitive costs must ultimately be tested through sustained production, customer acceptance and cash generation. Investors are therefore looking at four distinct propositions: Cleveland-Cliffs offers operating scale tied to steelmaking economics; U.S. Steel's mines provide indirect exposure through Nippon Steel; Mesabi Trust offers concentrated royalty income; and Mesabi Metallics remains a development and startup proposition.

The product Mesabi Metallics intends to make also points toward a broader change in American steelmaking. A blast furnace converts iron ore into molten iron, after which a basic oxygen furnace generally refines that iron into steel. The conventional integrated route uses iron ore, coke made from metallurgical coal, limestone and some recycled steel.

Yet approximately seven-tenths of American steel now comes from electric furnaces. The World Steel Association estimates that 71.3% of U.S. crude steel production in 2025 came from electric furnaces, with the remaining 28.7% produced through oxygen steelmaking. The practical answer to the scrap question is therefore "about 70%," but with an important qualification: the electric-furnace share is not the percentage made entirely from scrap.

Electric arc furnaces melt scrap, often supplemented with pig iron or direct-reduced iron. These additional iron sources help control composition and meet demanding specifications, while oxygen steelmaking also consumes scrap. Cleveland-Cliffs' Toledo plant, for example, uses natural gas and suitable iron ore pellets to make hot-briquetted iron, a compact form of direct-reduced iron that can supplement scrap.

Recycling is a substantial American strength, but it does not eliminate the need for fresh iron. A prolonged industrial expansion would require suitable scrap quality, reliable collection and processing, dependable electricity, and sufficient supplies of pig iron or direct-reduced iron. It would also require the right producers and the right downstream equipment.

Nucor Corporation (NYSE: NUE) and Steel Dynamics, Inc. (NASDAQ: STLD) demonstrate the importance of electric arc furnace production. Steel Dynamics uses that technology exclusively in

its steel operations, with ferrous scrap as its largest raw-material input, while Nucor's three domestic plate mills also use electric arc furnaces. Cleveland-Cliffs represents a deeply integrated chain extending from ore and iron production to automotive, electrical, plate and other finished steel products.

Electric furnaces should not be dismissed as suitable only for ordinary construction steel. Nucor markets military-grade armor plate and other defense products. The relevant questions concern equipment, metallurgy, finishing and qualification, not simply which furnace melts the metal. The same distinction matters to investors: a producer's strategic importance does not, by itself, establish its profitability or make its shares attractive at any price.

What, then, could turn steel into an American crisis? A prolonged disruption of power, fuel or transportation could stop mines and furnaces and prevent bulk materials from reaching customers. The U.S. Army Corps of Engineers identifies the Soo Locks as critical infrastructure for the domestic iron ore supply chain. A country may possess the ore and the furnace, yet still lose the connection between them.

The loss of a comparatively small alloying input could produce an equally serious constraint. The United States Geological Survey reports 100% net import reliance for manganese in 2025. Having iron does not mean having every ingredient required to make the steel an end user needs.

The loss of specialized production and processing would create a different bottleneck. A qualified plate mill, forging operation, heat-treatment facility or skilled workforce cannot be replaced merely by increasing output at an unrelated mill. During a prolonged conflict, military procurement would also compete with the need to repair power systems, maintain railroads, expand

factories and replace damaged transportation equipment. If essential capability is allowed to disappear during peacetime, money and emergency orders may not rebuild it quickly enough.

The United States probably has sufficient aggregate steelmaking capacity to support a greatly expanded military effort, provided its domestic industrial system remains largely operational. The U.S. Geological Survey estimates 2025 raw steel production of approximately 82 million metric tonnes against annual capacity of approximately 105 million metric tonnes. That difference suggests room for increased output, but it is not a ready reserve of qualified military steel.

For perspective, the Commerce Department's 2018 steel investigation reported a Defense Department estimate that military requirements represented approximately 3% of U.S. steel production. That is a historical baseline, not an estimate of demand during a prolonged major war. Any confident assessment would require a scenario specifying the war's duration, equipment losses, allied supplies, damage to domestic infrastructure and the civilian demand that could be deferred.

The stronger warning comes from downstream manufacturing. The Navy has already identified supply-chain capacity, skilled labor, tooling and production throughput as constraints on increasing shipbuilding. Defense Department investments have specifically targeted hard-to-source large forgings and castings. These are bottlenecks encountered before the replacement demands of a major war arrive.

America does not need to reproduce China's steel industry ton for ton. It needs a complete, resilient and economically sustainable industrial chain capable of supplying its military while keeping the supporting economy functioning. Mine life tells us how long an ore opportunity might last. Profitability

tells us whether the business is worth owning. Product capability tells us whether the industrial system can make what the country actually needs.

The question I would put to policymakers, steel executives and investors is this: Which indispensable steel products could America fail to deliver during a prolonged emergency, and what must be built now to prevent that failure?

America needs iron ore. Shareholders need cash flow. National security requires a functioning industrial chain that connects the two.