HEYÓKHA BROTHERS

Reflection

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Illustration created by Lala Wu

"It ain't what you don't know
that gets you into trouble.

It's what you know for sure
that just ain't so."

- Mark Twain

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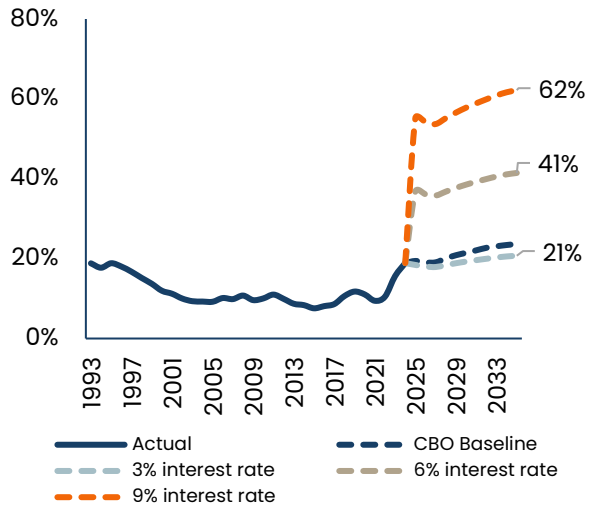
The Death of 60/40 and Why Smart Money is Targeting Gold Explorers

The 60/40 portfolio is failing because the "U.S. Treasury Safe Haven" has become the source of the volatility.

For decades, investors operated on a simple rule: when stocks crack, you hide in US Treasuries. That logic is now broken. The volatility is no longer just about trade wars or tariffs; it is being driven by a mathematical debt spiral. As the U.S. government issues trillions to fund widening deficits, interest costs explode, forcing even more debt issuance. To use a safety analogy: the fire extinguisher itself is flammable. You cannot use US Treasuries to put out a market fire when the US government's own fiscal policy decisions are the fuel.

Figure 1: The U.S. can't hike rates to control inflation; The debt is too expensive

Interest payment % of tax revenue at different rates



Source: CBO, Heyokha Research

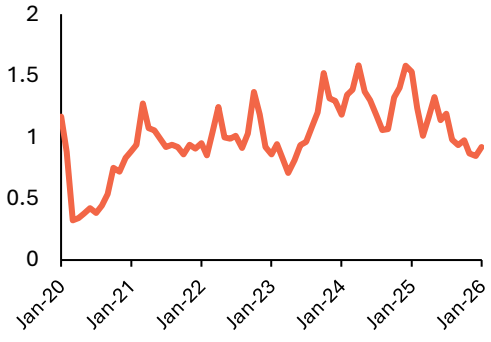
Global capital is losing faith in the "US Premium," shrinking the safety buffer to historic lows.

The spread between US Treasury yields and G7 ex-US sovereign bonds has narrowed from roughly 1.5 percentage points at its peak to around 1 percentage point today. Investors seem less willing to grant the US an outsized safety premium when volatility increasingly originates domestically.

If that trend continues, bonds may no longer be enough to protect capital on their own. Investors may need assets with true convexity: positions with a floor underneath them, but explosive upside if the macro regime deteriorates.

Figure 2: The U.S. yield advantage is beginning to narrow

US vs G7 ex-US 10-Year Government Bonds



Source: Bloomberg

Senior Miners are now disciplined cash machines sitting on hidden "waste" reserves.

Gold is the historical alternative, but physical bullion lacks operational leverage. To capture that leverage, capital historically turned to senior gold producers. Unlike previous bull cycles characterized by reckless spending, today's mining industry operates with ruthless capital discipline.

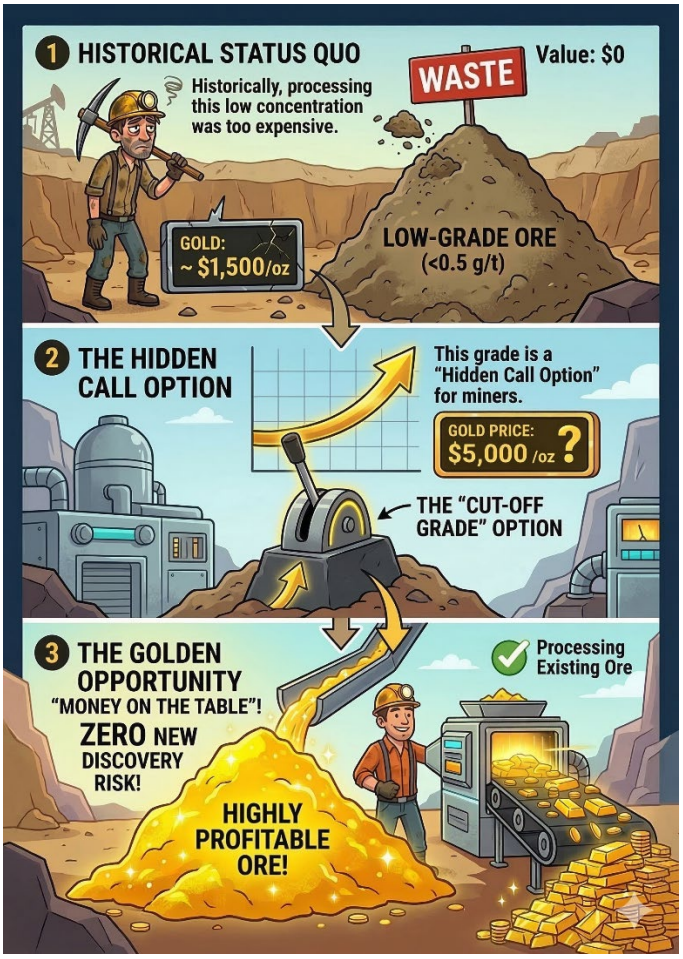
These companies have transformed into absolute cash cows, some boasting Nvidia-like EBITDA margins, focused entirely on paying dividends and executing stock buybacks rather than chasing overpriced M&A premiums.

Furthermore, these miners hold a massive, hidden call option: the math of the "cut-off grade."

By design, mine plans always target the highest-grade ore first to maximize immediate returns (IRR), meaning a mine's average grade naturally declines over time. But the definition of what constitutes "waste" is entirely dependent on the price of gold.

At a $2,000 to $2,500 gold price, senior miners typically set their cut-off grade assumption at roughly 0.4 to 0.5 grams per tonne (g/t). Anything below that is considered dirt and valued at zero on the balance sheet. Under these baseline assumptions, a standard deposit might book 1 to 2 million ounces of economic resource.

However, in a regime where gold approaches $5,000 an ounce, the economics shift violently. At that price, a miner can profitably lower the cut-off grade to 0.2 or 0.3 g/t. Suddenly, millions of tons of "waste" become highly profitable ore, potentially expanding the on-paper resource to 3 or 4 million ounces without a single new drill hole.



Source: Heyokha Research

This triggers a compounding effect on valuation: Net Present Value (NPV) explodes not just because the realized gold price is higher, but because the absolute size of the mine's reserves has drastically increased.

This allows miners to either significantly extend the life of the mine or increase annual production throughput, leaving billions of dollars of "money on the table" that can be captured with zero new discovery risk.

However, while senior producers offer phenomenal free cash flow and this hidden resource leverage, capturing *extreme* asymmetry requires moving further down the food chain. That is exactly where junior gold explorers enter the conversation.

Heyokha Recs:

Gold (2016) is a gritty adventure-drama inspired by true events, starring Matthew McConaughey as Kenny Wells, a desperate prospector who teams up with a geologist to find gold deep in the jungles of Indonesia.

Their discovery triggers a whirlwind of fame, fortune, and Wall Street frenzy until things unravel in a web of greed, illusion, and betrayal. The film captures the highs and lows of chasing wealth, reminding us how thin the line is between striking it rich and losing everything

A Junior Explorer is a "Convex" Asset: Limited Downside, Explosive Upside

To understand why we prefer gold explorers over bonds, you have to understand Convexity. Most assets are linear: if a stock goes up 10%, you make 10%. A "convex" asset has a curved payoff. Think of it like a skewed bet:

The Floor: The most you can lose is the price of the ticket (your initial investment).

The Explosion: If the underlying thesis plays out, the payoff can be highly asymmetric, sometimes producing multi-bagger returns.

Junior mining equities often display this profile because of operating leverage to the gold price.

Consider a simplified example. Imagine a deposit containing 2 million ounces of gold with an estimated all-in sustaining cost of around $1,900 per ounce, reflecting a marginal or technically challenging project.

- At a gold price of $2,000/oz, the project generates only $100 per ounce of margin.
- If gold rises 20% to $2,400/oz, the margin jumps to $500 per ounce.

That is a five-fold increase in project margin, even though the gold price rose only modestly.

The "Lassonde Curve" creates a rare window where you can buy a safer asset for a cheaper price.

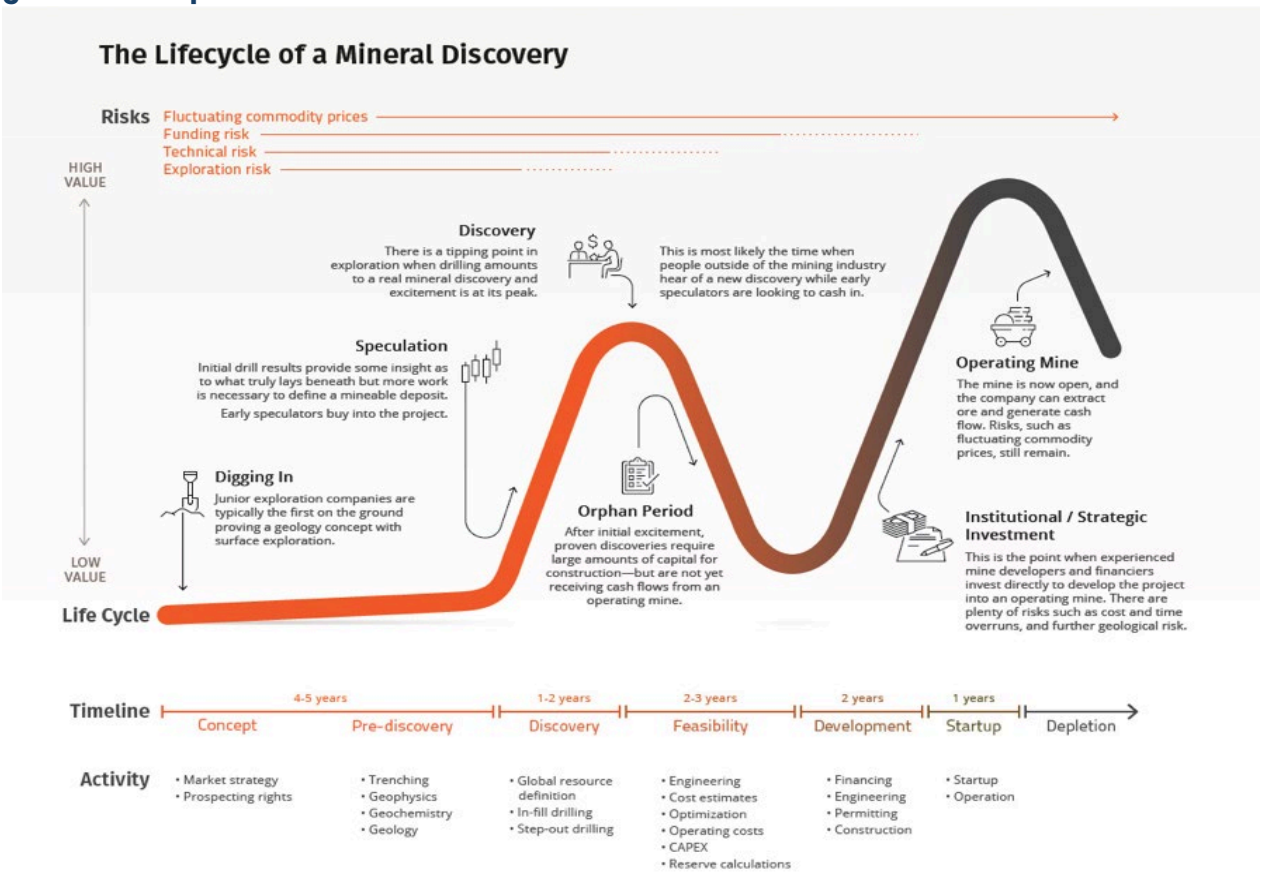
Mining stocks follow a predictable lifecycle called the Lassonde Curve. The most confusing and profitable part of this cycle is the "Orphan Period." Here is the mechanism:

1. Phase 1 (Discovery): A company finds gold. The stock spikes on hype. (High Price, High Risk).
2. Phase 2 (The Orphan Period): The company spends years conducting the grueling engineering and permitting work required to prove the mine is buildable.

Most investors are inherently impatient, their internal rate of return (IRR) clocks keep ticking. Frustrated by this period of minimum price action and a lack of immediate catalysts, speculators capitulate and sell off. However, the fundamental risk is materially falling as the engineers are technically de-risking the project.

You are effectively buying a house that is 50% built for less than the price of the empty lot. You buy the "engineering value" while the broader market ignores it.

Figure 3: The Orphan Period is where it's at



Source: Small Cap Investor

Additionally, structurally higher gold prices fundamentally alter the math of bringing a new mine online. In the past, explorers struggled to secure financing for construction.

Today, capital access is frictionless because the economics are overwhelmingly attractive. At a $5,000 gold price, a tier-one project can generate an IRR exceeding 40%, with payback periods compressed to as little as one year. This abundance of capital dramatically accelerates the timeline to production, shortening the wait for the ultimate payoff.

"Strategic Adjacency" mitigates geological risk by leveraging the infrastructure of neighbors.

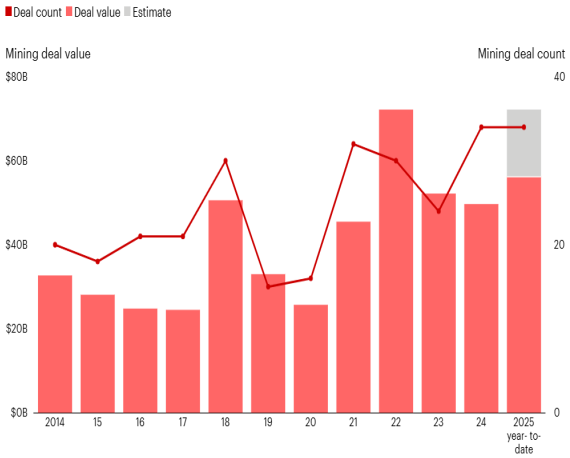
Finding a new mine is statistically improbable, roughly 1 in 1,000 odds, so sophisticated investors mitigate this by using a real estate strategy known as Strategic Adjacency.

Geology is continuous and massive gold systems rarely stop at property lines. The investment thesis is based on the inevitable depletion of the Major's reserves.

When a senior miner runs out of ore, it is far cheaper and faster to acquire the neighbor's deposit ("knock down the fence") and process it through their existing mill than to explore a new region.

Figure 4: Thesis is proven by increasing M&A deals

2014 to 2025 estimate YTD Mining deal count and Mining deal value



Notes: Strategic M&A includes corporate M&A deals (which includes private equity exits) and add-ons and excludes deals having an acquirer in a second-level industry such as government/public banks as well as private equity acquisitions; all years show full-year data except 2025, which includes January through October and estimates November through December (shown as 2025 estimate).

Source: Dealogic as of November 7, 2025; Bain Analysis

Swapping the Shield for the Sword

The era of "set it and forget it" asset allocation is over. With government bonds transforming from a shield into a source of volatility, the defensive portion of a portfolio must evolve.

The Aluminum Industry is Being Starved by AI

Aluminum is entering a structural bull market because the world needs more of it every year, but the electricity required to produce it is being monopolized by AI

To understand this trade, you must ignore the metal and focus on the power plug.

Aluminum demand is growing effectively on autopilot, but we physically cannot build enough new supply because smelting requires enormous, cheap, 24/7 electricity. That electricity is now being swallowed by data centers, and there is no easy way to fix the imbalance.

> *To meet annual demand for aluminum, the world must add the energy equivalent of three nuclear reactors every year.*

Most people miss the physics of this industry: Aluminum is effectively "congealed electricity," with power accounting for 30–40% of the production cost. Global demand grows at 3–4% annually, roughly requiring an extra 2 million tonnes of metal every single year. To make that extra metal, we need 3–4 gigawatts (GW) of continuous, baseload power added to the grid annually.

That is roughly the energy output of 3 to 4 nuclear reactors (or 15–20 massive data center campuses), running 24/7, forever. If you don't build the power plants, you can't process the metal.

Smelters are being priced out of the grid by AI data centers in a zero-sum game for power.

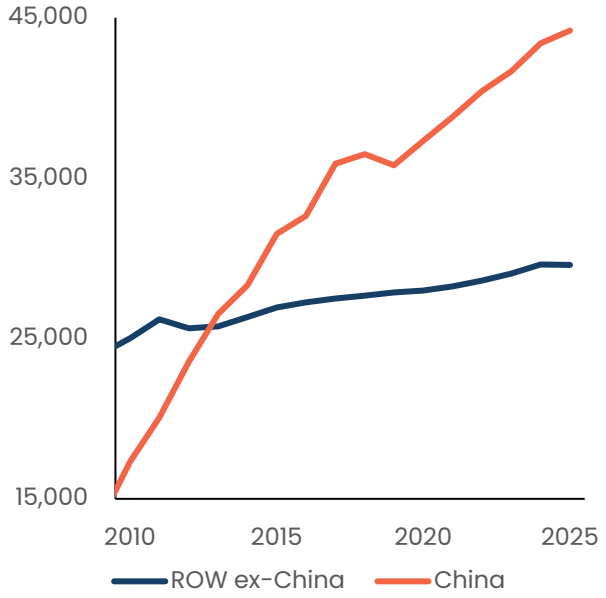
In the past, we just built more power plants; today, that new power is being diverted. McKinsey estimates U.S. data center electricity demand will triple over the next five years, jumping from 3–4% of total consumption today to 11–12% by 2030. This creates a direct auction for the grid that aluminum cannot win. A smelter needs cheap power ($30–40/MWh) to survive, while a data center can pay premiums up to $100 per MWh because reliability is everything. In a constrained grid, governments and utilities are prioritizing AI (national security) over industrial smelting.

China has capped its output, and offshore alternatives in Indonesia cannot fill the gap.

Historically, whenever the world needed more metal, China built a new coal plant and a new smelter. That engine has been switched off. Beijing has placed a hard "cap" on domestic capacity at 45 million tonnes for environmental reasons. While Chinese producers are attempting to export capacity to Indonesia, these complex offshore projects cannot replicate the speed or scale of domestic build-outs. With China capped and the West priced out by AI, the supply pipeline is structurally broken.

Figure 5: It would take decades for the rest of the world to catch up to China

China vs Rest of the World's Aluminum Production in thousand metric tonnes



Source: International Aluminum Org

High copper prices are forcing a structural shift to aluminum, regardless of the power shortage.

While supply is hitting a wall, demand is accelerating. Electric vehicles (EVs) are heavier and need to be lighter to extend range, using around 200kg of aluminum per car, roughly 50% more than gas cars.

Beyond autos, massive growth is emerging from energy storage systems and data center cooling infrastructure. Crucially, with the copper-to-aluminum price ratio hitting around 4.1x (a 20-year high, up from a trough of 1.7x in 2005), manufacturers are forced to switch to aluminum for wiring wherever physics allows.

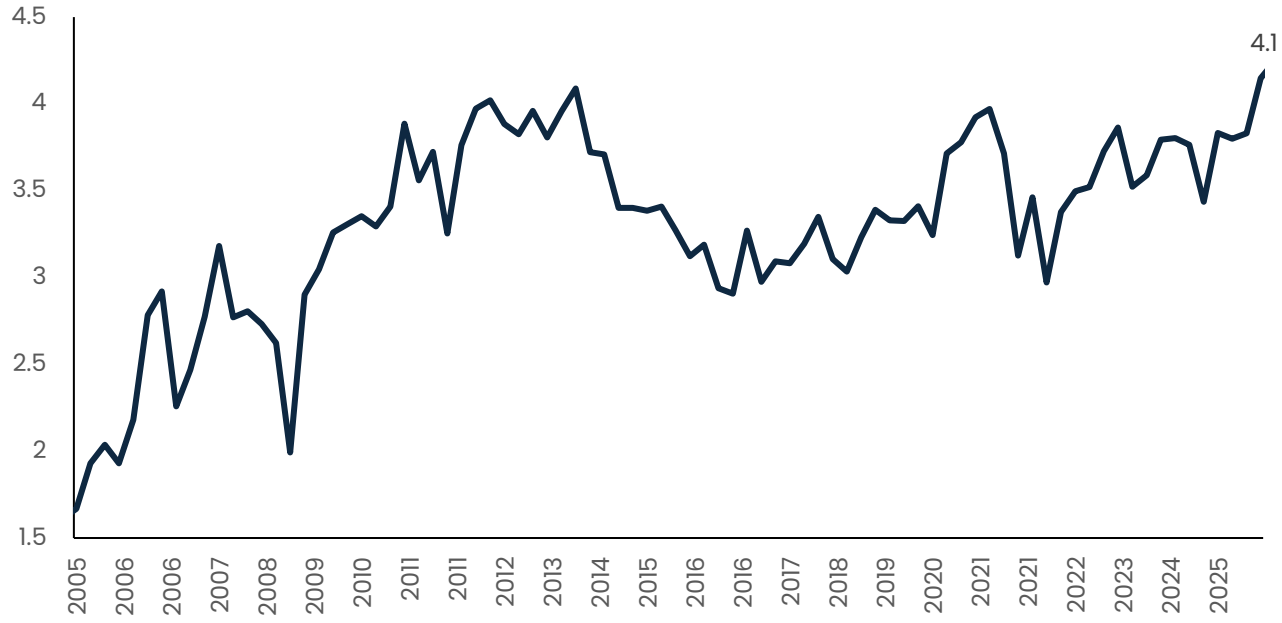
The winners will be producers with moats that insulate them from the energy bidding war.

In this environment, the metal itself is secondary; the real asset is the energy contract.

While the rest of the world fights for expensive power on the open market, these companies have a fixed cost base. We are buying their "energy privilege" in a world where electrons are the scarcest resource.

Figure 6: Aluminum is now 4x cheaper than Copper

Copper to Aluminum 3 months rolling LME price



Source: Bloomberg

China, AI, and the New Logic of Deglobalization

Artificial intelligence is not just a software trend. It is the new physical battleground for deglobalization.

For most of the globalization era, competitive advantage was built on a simple premise: efficiency. Capital chased the lowest costs, and supply chains were stretched across the globe. That world is now fracturing.

The old model of interdependence is being violently replaced by a new architecture built on security, self-sufficiency, and strategic control. The AI race is not happening in a vacuum; it is the primary vehicle through which deglobalization is accelerating.

China is not trying to "catch up" in the cloud; they are building a sovereign industrial project.

Western markets obsess over whether China's chatbots can beat ChatGPT.

That misses the point entirely.

Beijing views AI not as a consumer product, but as a critical sovereignty project tied directly to industrial upgrading and national power.

This is a multi-decade geopolitical arms race, backed by overwhelming state capital. China's upcoming 15th Five-Year Plan is expected to direct roughly $130 billion into strategic sectors, targeting over 70% AI penetration in industrial systems by 2027 and mandating 7% annual R&D growth through 2035. This is not a market trend; it is a state-mandated mobilization.

> For want of a nail, the shoe was lost;
>
> For want of a shoe, the horse was lost;
>
> And for want of a horse the rider was lost,
>
> Being overtaken and slain by the enemy,
>
> All for want of care about a horse-shoe nail.

- Benjamin Franklin, in his "Poor Richard's Almanack" (1758)

Containment is forcing the creation of a fragmented, parallel tech stack.

Export controls were designed to starve China of frontier semiconductors. Instead, this containment strategy has accelerated Beijing's drive to internalize their technology stack.

With directives actively discouraging the purchase of Western hardware like Nvidia's H200 chips, and internal discussions floating $70 billion in chip-related incentives, the objective function has permanently changed. The goal is no longer to build the best global product; the goal is to control enough of the domestic stack to survive when the global market gets weaponized.

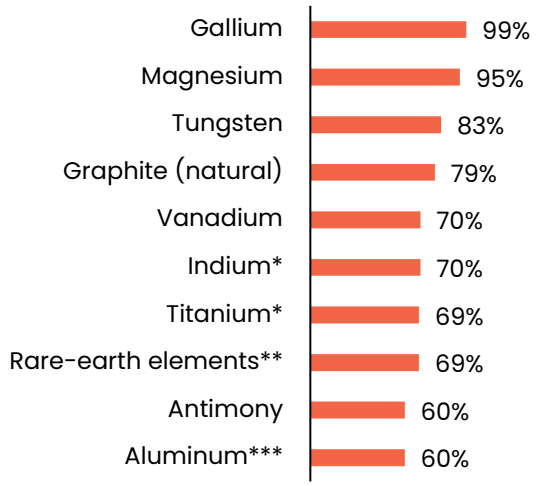
While the U.S. builds the brain, China is monopolizing the body.

The U.S. remains fixated on frontier models and software dominance. China is playing a heavier, industrial game. They are using AI to upgrade factories, logistics, electric vehicles, and robotics.

The true winner of the AI era won't just be the nation with the smartest algorithm, but the one that can embed intelligence into the physical economy at scale. And the more physical AI becomes, the more power shifts upstream to whoever controls the raw materials.

Figure 7: China's monopoly on critical minerals

China's share in the estimated global mining production of selected critical minerals 2024 (%)



**Refinery production*
***Group of 17 elements. Data include the 15 lanthanides & yttrium, but exclude most scandium*
****Smelter production*
Source: USGS Mineral Commodity Summaries 2025, Statista

This is where China's structural positioning becomes terrifyingly clear. China currently leads in 57 out of 64 critical technologies. They dominate the processing of 19 out of 20 strategic energy minerals. They control roughly 90% to 91% of global rare earth refining, and a staggering 99% of heavy rare earth separation capacity.

These are not just commercial advantages; they are unassailable geopolitical chokepoints that become infinitely more valuable as AI spills out of data centers and into real-world industrial supply chains.

The investment Playbook: Buying the monetizable bottlenecks

AI diffusion is playing out. Consider "OpenClaw" the AI agent currently sweeping China. Local governments from Shenzhen to Wuxi are aggressively subsidizing its industrial adoption, offering grants up to 5 million yuan for factory-level integration. The state is treating AI software like a basic, subsidized public utility, relentlessly driving mass adoption even amidst cybersecurity warnings.

Citizens are queuing outside tech headquarters just to get it installed for free.

This aggressive diffusion crystallizes our thesis. When the software layer becomes a ubiquitous commodity, the profit pool violently shifts to the physical infrastructure required to run it.

Forget the Super Bowl halftime show.

At the 2026 China Media Group Spring Festival Gala, the real stars were humanoid robots performing martial arts. Just a year ago, these machines were awkwardly wobbling and cautiously twirling handkerchiefs.

Fast forward to 2026?

Startups like Unitree and MagicLab unleashed machines performing synchronized Kung Fu and 3-meter aerial flips with movements that are smooth and less stiff. Others folded laundry and acted in comedy sketches.

It was a highly choreographed flex of China's physical AI ambitions, proving their bots are moving from the lab to the dojo.

Here in Heyokha, we're grabbing more popcorn, excited to see what other dance moves the robots have under their sleeves.

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