Global Supply Chain Restructuring under China-US Trade Friction - An Analysis Based on the Rare Earth Industry

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Abstract: In the context of escalating trade friction between China and the U.S. and intensified geopolitical competition, rare earths have become a key variable in the global supply chain restructuring. Rare earths face challenges due to China's dominant position in the upstream global rare earth sector and structural contradictions. The U.S., through policy and international alliances, is pushing the "decoupling from China" strategy, aiming to weaken China's influence in the rare earth field. This article, through a comparative analysis of Northern Rare Earth and MP Materials, uses qualitative analysis and case studies to reveal two approaches: the former consolidates its dominant position through "domestic demand-driven + technology upgrading + regional alliances" based on resource scale and smelting advantages; the latter creates a "U.mining-ally processing-local application" closed loop through policy subsidies and allied coordination. According to 2024 production data, Northern Rare Earth accounts for about 69% of global separation capacity, while MP Materials has achieved 100% rare earth separation capacity in the U.S. With the growth of emerging demands such as AI chips and new energy vehicles, the rare earth industry chain is shifting from "efficiency-oriented" to "security-oriented." Technological breakthroughs, regional alliances, and digital governance are becoming three pathways for restructuring. This article suggests strengthening heavy rare earth reserves, accelerating magnetic material technology upgrades, promoting green smelting, establishing multi-node trade networks, and enhancing rare earth diplomacy to address global supply chain restructuring challenges, drive industrial upgrades, and move towards becoming a "rare earth power."

Keywords: China-US Trade Friction; Rare Earths; Supply Chain Restructuring; Value Chain Security; Technological Breakthroughs

1. Introduction

Against the backdrop of globalization and geopolitical rivalry, the operation logic of global value chains (GVC) is undergoing a significant transformation from "efficiency first" to "security first." The China-US trade friction has not only significantly increased the risks of supply chain disruptions but also highlighted the strategic position of rare earths as a pivotal resource in great power competition. Known as "industrial vitamins," the security of the rare earth supply chain is directly related to the competitive advantage of strategic emerging industries such as new energy vehicles, wind power generation, and precision-guided systems. Since 2018, the United States, through measures like the "301 Tariffs," the Defense Production Act, and the Rare Earth Magnet Manufacturing Tax Credit Act, has worked with its allies to push for the "de-China" strategy in the rare earth industry. In contrast, China has countered with its advantages in reserves, export controls, and strategic reserves, striving to solidify its dominance in the industry. This paper focuses on the rare earth industry and employs the "power-dependence" analysis framework from geopolitics and supply chain resilience theory to systematically analyze how the China-US rivalry drives the structural adjustment of the global rare earth industry chain. By comparing the cases of Northern Rare Earth and MP Materials, this paper reveals their different development paths. Based on this, three policy optimizations are proposed: promoting the intensive development of light rare earths and strategic reserves of heavy rare earths in terms of capacity structure, breaking through the bottleneck in permanent magnet materials from a technological dimension, and constructing a "Belt and Road" rare earth cooperation network at the strategic level. The innovation of this paper lies in integrating strategic resource security with global supply chain restructuring, filling the gap in traditional research on the "resource-geopolitical" interaction mechanism, and providing theoretical support and policy recommendations for China's transition from a "rare earth power" to a "rare earth strong nation." Furthermore, the study places global industrial chain restructuring within the context of rapidly expanding emerging demands, emphasizing the strategic position of rare earths in frontier fields like AI chips, intelligent manufacturing, and green energy. It highlights that rare earths have transcended the narrow scope of resource issues and have become a critical factor in national security and the reshaping of international rules.

2. Literature Review

2.1 Trade Friction and the Mechanism of Global Supply Chain Restructuring

In recent years, the escalation of China-US trade friction has made the security and resilience of global supply chains a key focus of both academic and policy circles. The global value chain logic, which was previously efficiency-driven, is gradually being replaced by a new logic centered on security and strategic autonomy.

Wang Ruyu et al. (2024) analyzed how China's foreign trade can achieve transformation and upgrading in the new global context from the perspective of global supply chain spatial restructuring[1]. Ye Qianlin et al. (2025) focused their research on the rare earth industry chain, exploring the motivations behind the United States' restructuring of the rare earth industry chain and analyzing its challenges to China[2]. Evenett and Baldwin (2023), when discussing global supply chains in the context of the decline of multilateralism, proposed that supply chain security has become a priority in policy-making for various countries[3]. Bown (2022) focused on the legacy effects of China-US tariff measures, analyzing the long-term impacts of the trade war on multinational companies' supply chain strategies[4]. Miroudot (2023), in the context of the post-pandemic era, deeply analyzed the trend of the geopoliticalization of supply chains, arguing that the combined effects of the pandemic and geopolitical conflicts have led countries to place more emphasis on the controllability and security of strategic materials, thus promoting the rise of "friend-shoring" and regional alliances[5].

2.2 Supply Chain Resilience, Vulnerability, and Response Strategies

In the context of escalating global geopolitics and trade friction, the issues of supply chain vulnerability and resilience have gradually become central topics in international academic and policy discussions. Traditional supply chain models, which focus on cost and efficiency, have shown significant limitations when confronted with trade barriers, pandemic shocks, and geopolitical risks.

Cui Xiaomin et al. (2022) used social network analysis methods to construct the "Export Centrality Variation Index" and the "Import Concentration Index," breaking down supply chain vulnerability into dual structural characteristics from both the supply and demand sides[6]. Zhu Xiaole and Huang Hanquan (2023) expanded their research perspective to the macro level of global supply chain evolution, emphasizing the profound impact of trade friction and regionalization trends on China's industrial security landscape[7]. Ivanov (2022), in his post-pandemic research, proposed that supply chain resilience should be systematically evaluated in terms of recovery speed, adaptability, and reconfiguration potential[8]. Sarkis (2023) explored supply chain resilience from the perspective of sustainable development in the context of de-globalization trends[9]. Sharma and Luthra (2024) focused on critical mineral supply chains and proposed a set of quantitative indicators to measure resilience[10].

2.3 Rare Earth Industry Chain Security, Competitive Landscape, and China-US Comparison

As a core component supporting new energy, semiconductors, and defense industries, the rare earth industry has become a critical focal point in global supply chain restructuring and great power rivalry. In the context of escalating China-US trade friction, rare earths are not only economic resources but also key bargaining chips in strategic competition.

Ye Qianlin et al. (2025) studied the development situation of China and the US in the rare earth industry, systematically analyzing the competitive dynamics in various segments of the industry chain[11]. Zhang Sujiang et al. (2023) focused on the resource structure and global supply chain security, reviewing the distribution and utilization of rare earth reserves[12].

Mancheri et al. (2022) analyzed the trend of diversification in the global rare earth supply chain from the perspective of international competition and policy rivalry[13]. Alonso and Sherman (2024) further focused their research on the China-US competition from the value chain perspective, arguing that the comparative advantages in different segments of the value chain determine the strategic layout of both countries[14]. Sovacool and Ali (2023) discussed the issue of rare earth supply chain security from the geopolitical perspective of critical minerals, emphasizing that rare earths are not only a focus of economic competition but also an integral part of energy transition and national security[15].

3. Analysis and Distribution of the Global Rare Earth Industry Chain

The deep impact of the China-U.S. trade friction on the global industrial chain is primarily reflected in the paradigm shift from "efficiency-oriented" to "security-oriented." The U.S., based on "national security" logic, has included rare earths in the strategic resource list through policies such as the "Defense Production Act" and "CHIPS and Science Act," using the "technology-capital-rules" triple leverage to drive the reconstruction of the domestic and allied supply chain, aiming to weaken China's dominant position. In response, China has formed countermeasures through export controls, resource reserves, and the "dual circulation" strategy, building a full-chain defense system with "resources-technology-markets." This competition has not only intensified the fragmentation of the global industrial chain but also made regional alliances and digital governance the new focal points of competition.
The rare earth industry chain model is relatively stable (see Figure 1: Rare Earth Industry Chain and Recycling Flowchart), covering five links: mining and beneficiation, smelting and separation, material preparation, end-user applications, and recycling. Figure 1 clearly shows the key links of the rare earth industry chain, where China holds an absolute advantage in resource reserves and smelting and separation, but has weaknesses in high-end permanent magnet materials and patents. The U.S., on the other hand, has advantages in downstream applications and technical standards, but has long depended on China for midstream raw materials (see Table 1: Global Rare Earth Resource Distribution Overview). This has resulted in a structural pattern of "China-dependent in upstream and midstream, U.S.-dependent in downstream," where any change in any link can amplify the effects of their competition and profoundly impact the stability and leadership of the global industry chain. Moreover, the regional distribution of the rare earth industry chain and the global supply chain security demonstrate the key links of China and the U.S. in the rare earth industry chain and their interdependence (see Figure 2: Global Rare Earth Resource Distribution Percentage Chart). From Figure 2, we can clearly see the relative positions of the two countries in the industrial chain and their complementarity, especially in the differences in resource extraction, smelting and separation, and high-end materials manufacturing. At the same time, Figure 2 also highlights the main risk points facing the rare earth supply chain, such as China's advantage in resource reserves and the U.S's advantage in technical standards, and reveals the potential challenges to global supply chain security, including policy interventions, technological barriers, and market fluctuations.

4. Analysis Based on China Northern Rare Earth Co., Ltd. and MP Materials Inc

4.1 Company History and Background

The company originated from the Baogang Rare Earth No. 3 Factory in 1961, went public in 1997, and completed its integration and rebranding in 2015. Leveraging the Baiyun Obo mine, the world's largest light rare earth deposit, the company has established a production capacity of 100,000 tons of REO per year in separation, and its 2024 production is expected to account for approximately 69% of global output. The company utilizes a high-purity separation process with ≥99.999% purity, has the world-leading capacity in neodymium-iron-boron magnets, and pioneered the low-temperature roasting-exhaust gas recovery integrated technology, achieving green smelting. Through the "Rare Earth Industry Brain" blockchain traceability system, the company promotes the full-chain digitalization and greening of the industry, from mining to materials, maintaining its position as a global leader.
MP Materials, formerly known as Molycorp, underwent bankruptcy restructuring in 2015, was rebooted in 2017, and went public on the New

York Stock Exchange in 2020. The company owns the Mountain Pass mine in California, with reserves of approximately 2.3 million tons of REO. Its separation capacity is expected to reach 45,000 tons in 2024, accounting for 100% of the US domestic output. The company's "solvent extraction + continuous ion exchange" process achieves a neodymium-praseodymium recovery rate of over 92%. By acquiring Noveon Magnetics, MP Materials has entered the military and semiconductor industries. The company has received $480 million in subsidies from the US Department of Defense and the Department of Energy and is currently building a heavy rare earth separation and metallization project in Texas, which is expected to be operational in 2025, forming a localized "resource-separation-application" closed-loop.

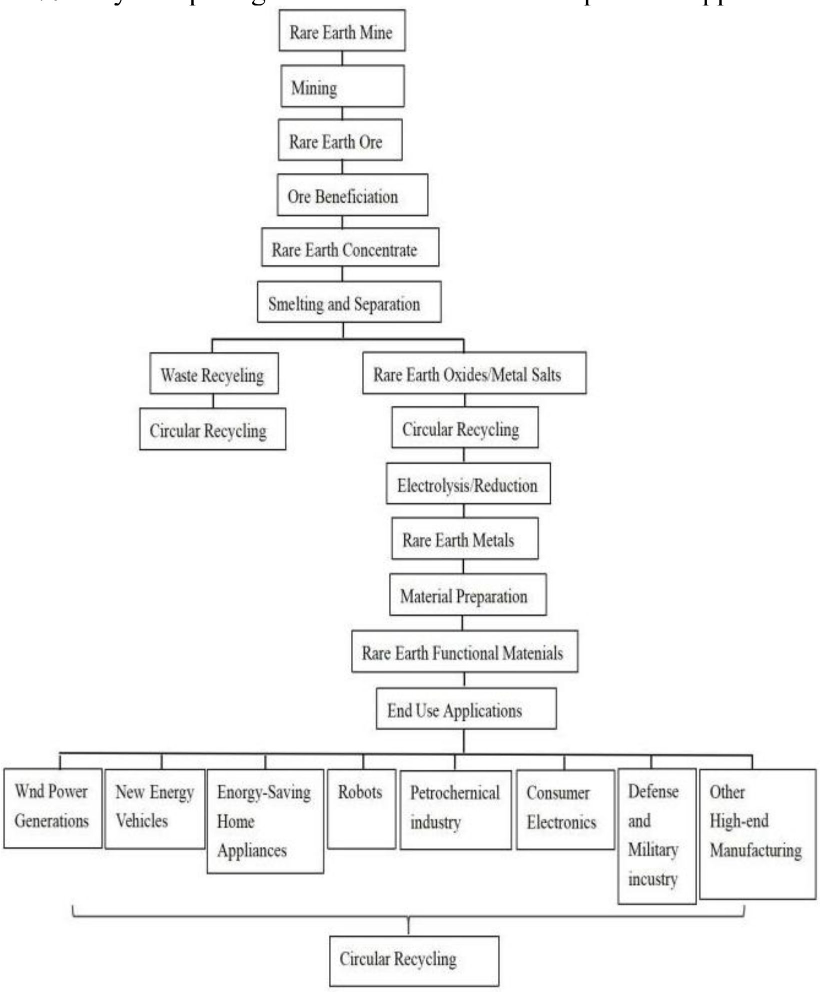

Figure 1. Flowchart of the REE Supply Chain and Recycling Process

Table 1. Global Rare Earth Resource Distribution Overview

Country/Region	Total Reserves (10,000 tons REO)	Percentage of Global Total Reserves	Light Rare Earth Reserves (10,000 tons)	Percentage of Global Light Rare Earth Total	Heavy Rare Earth Reserves (10,000 tons)	Percentage of Global Heavy Rare Earth Total	2024 Production (10,000 tons REO)	Percentage of Global Production
China	4 400	48.9 %	3 960	44.0 %	440	48.9 %	27.0	69.2 %
Vietnam	2 200	24.4 %	2 090	23.2 %	110	12.2 %	3.1	7.9 %
Brazil	2 200	24.4 %	2 145	23.8 %	55	6.1 %	<0.5	<1 %
Russia	1 200	13.3 %	1 080	12.0 %	120	13.3 %	<1	<2 %
Australia	340	3.8 %	330	3.7 %	10	1.1 %	1.8	4.6 %
United States	140	1.6 %	135	1.5 %	5	0.6 %	4.5	11.5 %
India	690	7.7 %	655	7.3 %	35	3.9 %	<0.5	<1 %
Global Total	9 000	100 %	8 100	90.0 %	900	10.0 %	39.0	100 %

Data Source: USGS Mineral Commodity Summary 2024

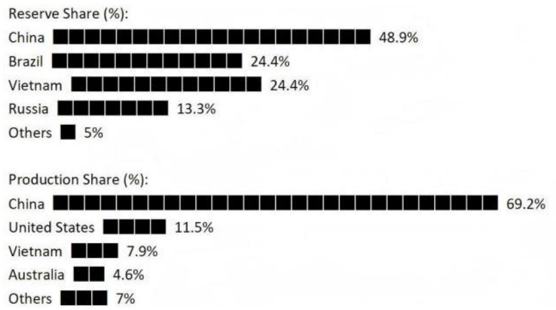

Figure 2. Global Distribution of Rare Earth Resources

4.2 Development Scale and Impact under China-US Trade Friction

In terms of development scale and strategic positioning, the differences between the two companies in China and the US have become increasingly apparent. China Northern Rare Earth, relying on the Baiyun Obo mine, the world's largest rare earth deposit, has long maintained the top global position in terms of production and separation capacity. The company has gradually shifted from "resource export" to "domestic demand-driven," prioritizing the needs of high-end manufacturing industries such as new energy vehicles, wind power, and robotics. At the same time, it is upgrading technology to reduce reliance on heavy rare earths and expanding its overseas resource presence in regions like Africa and Australia to strengthen its risk resilience. In contrast, MP Materials, the only operating rare earth mine in the US, has restarted its separation capacity with the help of financial subsidies from the Department of Defense and the Department of Energy under the "de-China" policy. It is also planning to build a neodymium-praseodymium separation and metallization project in Texas to establish an integrated "resource-separation-application" closed-loop, gradually reducing its reliance on China for the smelting process.

Under the continued impact of China-US trade friction, the market performance of the two companies shows significant divergence. Due to the high tariffs imposed by the United States and the suspension of orders, Northern Rare Earth has seen a sharp decline in exports to the US in the first half of 2025. As a result, the company has been forced to accelerate the adjustment of its export structure: exports of raw material products have decreased significantly, while exports of high-value-added magnetic materials have remained relatively stable, indicating that the processing segment remains firmly within China. At the same time, the Baiyun Obo mining area has been officially designated as a national "strategic pivot," and the company's self-sufficiency rate in concentrate production has rapidly increased, further enhancing the resilience of its industry chain. In contrast, MP Materials has lost its largest single market due to China's export controls on certain rare earth products. In the short term, its stock price has been under pressure. However, with the support of policy subsidies and technology acquisitions, the company is gradually expanding its presence in the military and semiconductor application sectors, becoming an important pillar in the US supply chain security strategy.

4.3 Strategic Measures to Address the China-US Trade War

In response to the escalating China-US trade friction since 2018, Northern Rare Earth and MP Materials have simultaneously implemented strategic adjustments along three main lines: "resources-technology-market," forming two distinct paths of "internalizing external pressure" and "externalizing external pressure." Firstly, in terms of resources, Northern Rare Earth increased its capital expenditure by 42% to 3.07 billion yuan in 2024, using the funds for the expansion of Baiyun Obo and the construction of a second 50,000-ton light rare earth separation line. This will raise its concentrate self-sufficiency rate from 65% in 2018 to 85% by 2025. At the same time, the company secured heavy rare earth resources in Africa, including Burundi and Tanzania, using the "resource-for-technology" model to mitigate the supply bottleneck from southern ion-type mines. MP Materials, on the other hand, leveraged the US Defense Production Act and the CHIPS and Science Act to secure a $400 million earmark from the Department of Defense. It is building a 1,000-ton heavy rare earth separation line in Fort Worth, Texas, and an additional $180 million will be invested to expand its Mountain Pass facility in California to 60,000 tons of concentrate, which will cover 30% of the US's magnet material demand once it goes into production in 2025. Secondly, in terms of technology, Northern Rare Earth invested 2.1 billion yuan to build an 8,000-ton neodymium-iron-boron magnet project (scheduled for completion in 2026) and is collaborating with the Chinese Academy of

Sciences and BYD to develop heavy rare earth reduction technologies. The goal is to increase its magnet self-sufficiency rate from 35% to 60%, upgrading from "selling minerals" to "selling components." MP Materials, through the acquisition of Noveon Magnetics and a partnership with General Electric, has entered the ultra-high-performance neodymium-iron-boron magnet sector. The company is developing heavy rare earth-free grain boundary diffusion technology, aiming to achieve a "shortcut" in military and semiconductor applications. Thirdly, in the market, Northern Rare Earth shifted its focus from exporting to the US and Europe (60%) to Japan, South Korea, and ASEAN (55%). In the first five months of 2025, its exports of magnet materials to ASEAN surged by 90%. The company is also pushing for the establishment of international rare earth standards through the "International Rare Earth Resource Alliance" initiative. MP Materials signed a 10-year, $650 million magnet supply agreement with General Motors and locked in 60% of its future praseodymium-neodymium oxide production through $500 million in convertible bonds. Additionally, it has partnered with Australia's Lynas and Canada's Search Minerals to build a "US mining-ally processing-domestic application" closed-loop system. Finally, in terms of digital governance and green transformation, Northern Rare Earth launched the "Rare Earth Industry Brain" to implement blockchain traceability from mining to magnets. MP Materials has optimized its mining and beneficiation parameters using artificial intelligence, improving its recovery rate to 92% in an effort to counteract China's environmental barriers in green smelting. The combination of resource expansion, technological breakthroughs, market diversification, and digital governance has enabled both companies to solidify their strategic initiatives, with Northern Rare Earth strengthening the "China path" and MP Materials reinforcing the "US path" in the new round of supply chain restructuring triggered by the trade war.

In summary, China Northern Rare Earth and MP Materials represent the "China path" and the "US path" of the global rare earth supply chain restructuring, respectively. The former consolidates its global leadership through "resources + scale + technology," while the latter seeks to break the monopoly with a combination of "policy + capital + technology." In the future, the competition between these two companies will not be limited to resources and production capacity, but will also intensify in three key areas: high-end magnet material patents, control of heavy rare earth resources, and green smelting technologies.

5. Global Rare Earth Industry Chain Restructuring Path

5.1 Realistic Dilemma of Rare Earth Industry Development: From Resource Power to Technological Bottleneck

In recent years, driven by both the "dual carbon" strategy and the emerging technological revolution, the global rare earth industry has seen explosive growth. China, with its absolute advantage of holding 40% of global reserves and producing 70% of global output, has firmly maintained its dominant position in the upstream of the rare earth industry chain, forming a complete chain from mining, smelting to primary processing. However, behind this "upstream advantage" lies a structural crisis: On the one hand, long-term extensive mining of rare earth resources has led to an oversupply of light rare earths and a shortage of heavy rare earths, with a resource utilization rate of less than 50%. The cost of environmental restoration has reached hundreds of billions of yuan. On the other hand, China is severely lagging in high-end applications, with key technologies such as high-performance neodymium-iron-boron magnets and the preparation of high-purity rare earth metals still locked behind patents held by foreign companies like Hitachi Metals and Germany's VAC. As a result, the export products are mainly low- to mid-value-added oxides and alloys, with profit margins under 10%. Even more challenging is the accelerating restructuring of the global rare earth industry chain led by the United States. Through the "Mountain Pass mine revival + allied resource integration" model, US rare earth production had already accounted for 14.3% of global output by 2022. The US, in collaboration with Australia and Japan, is building a "de-China" supply chain, directly challenging China's long-standing "resource-for-market" model. This "upstream stagnation, downstream chokehold" dilemma forces the industry to shift from resource-driven growth to technological breakthroughs.

5.2 AI Chip Demand Triggers Supply Chain Restructuring: From Cost-Oriented to Security Logic

The global rare earth industry chain has entered a restructuring phase due to the explosive demand for critical materials driven by artificial intelligence (AI) and high-end manufacturing. According to the US Geological Survey (USGS, Mineral Commodity Summaries 2024), the combined demand from new energy vehicles, wind power, and industrial robots now accounts for over 60% of global neodymium-iron-boron magnet consumption. Over the past five years, the compound annual growth rate (CAGR) for magnet material demand has reached 9%. Building on this, the China Academy of Information and Communications Technology (CAICT) published the "AI Server Rare Earth Material Demand White Paper" at the end of 2023, which further estimates that emerging applications such as AI servers and humanoid robots will drive an additional 20%–30% demand for high-performance neodymium-iron-boron magnets between 2023 and 2025, effectively "creating a new market in three years" on top of an already high baseline. At the same time, the chip manufacturing sector's dependence on rare earths has been officially confirmed. The Semiconductor Industry Association (SIA) disclosed in its 2023 Report on Critical Materials that the global shortfall of high-purity cerium-based polishing slurry, essential for processes below 7nm, has reached 4,000 tons, directly restricting the scaling up of advanced production capacities. The "technological lock-in" on the demand side has rapidly triggered policy responses from various countries. The US CHIPS and Science Act mandates that by 2027, 50% of the rare earth materials used in chip production must come from domestic or "friend-shoring" sources (U.S. Department of Commerce, 2022 CHIPS Act Fact Sheet). Meanwhile, the European Union's Raw Materials Alliance has locked in heavy rare earth resources in Greenland and Ukraine, with plans to build 10,000-ton-level separation capacities by 2030 (European Commission, Critical Raw Materials Act, 2023). Faced with the dual lock-in of technology and resources, downstream giants have taken action. Companies such as Toyota and Samsung SDI have already shifted some of their neodymium-iron-boron magnet front-end production capacity to Vietnam and Indonesia, capitalizing on local rare earth resources and cost advantages while forming a dual strategy of "technological barriers + resource blockade" (Japan Ministry of Economy, Trade and Industry, 2023 Rare Earth Strategy Update). As a result, the combination of the technological demand on the demand side and security concerns on the supply side is pushing the global rare earth industry chain away from traditional "comparative advantage" logic toward a new paradigm of "self-sufficiency and control."

5.3 Three-Dimensional Path of Industry Chain Restructuring: Technological Breakthroughs, Regional Alliances, and Digital Governance

In response to the pressure of restructuring, the global rare earth industry chain is undergoing a systematic transformation, from physical space to value space. Firstly, in terms of technology, China is making breakthroughs in "bottleneck" areas. The Baotou Rare Earth Research Institute has developed "grain boundary diffusion technology," which reduces the use of heavy rare earths in neodymium-iron-boron magnets by 70% and lowers costs by 40%. Companies like Ganzhou Furui and others have integrated "acid leaching-extraction-electrodeposition" processes, enhancing the purity of high-purity yttrium oxide to 99.999%, breaking the monopoly of US-based Applied Materials. In contrast, the United States, through a collaboration between MP Materials and Texas Mineral Resources, is rebuilding a heavy rare earth separation plant in Colorado, with the goal of achieving a separation capacity of 2,000 tons per year for dysprosium and terbium by 2025, directly countering China's processing advantages. Secondly, in terms of regional alliances, there is a polarization between "resources" and "technology": China is leading the formation of the "International Rare Earth New Materials Alliance," integrating heavy rare earth resources from Myanmar and Vietnam to create a triangular cycle of "resource countries + processing countries + application countries." Meanwhile, the US, Japan, and Australia have formed the "Critical Minerals Alliance," with Lynas's Malaysian plant serving as a hub, creating a closed-loop system of "Australian mining sources-Japanese technology-US markets." Finally, digital governance has become a new battlefield for restructuring. China has launched the "Rare Earth Industry Brain," implementing a blockchain traceability system to enable full-chain data transparency from mining to magnets. The US, on the other hand, is using artificial intelligence to optimize mining and beneficiation parameters at the Mountain Pass mine, increasing recovery rates to 92%. This three-dimensional restructuring of "technology-alliances-data" is shifting the competition in the rare earth industry from capital control to a comprehensive game of technology, capital, and rules, ultimately reshaping the power map of global high-tech industries.

6. Conclusion and Recommendations

The China-US trade war has pushed rare earths, a previously "niche" strategic mineral, to the core of great power rivalry and triggered a deep restructuring of global supply chains. China, with its comprehensive advantages in reserves, production capacity, and smelting-separation technology, still dominates the upstream and midstream segments. However, vulnerabilities are increasing due to constraints in high-end magnet material patents, a structural shortage of heavy rare earth resources, and the excessive concentration of export markets. In contrast, the United States, relying on the discourse of "national security" and substantial subsidies, has quickly repaired its domestic mining-separation-materials chain and is forming a "de-China" alliance with Australia, Canada, and Japan, attempting to weaken China's influence through a triple leverage of technology, capital, and rules. As a result, the global rare earth supply chain is evolving from a "China-centered" structure to a fragmented pattern of "China-US dual hubs + allied cooperation," with short-term fluctuations intensifying and long-term risks accumulating.

To maintain the security and global competitiveness of China's rare earth industry amid this shifting landscape, this paper proposes five policy recommendations: First, implement the "Heavy Rare Earth Reserve and Supply Assurance" project, increasing exploration investments in southern ion-type mines and overseas equity mines. Establish a national strategic reserve for heavy rare earths as soon as possible to alleviate the raw material bottlenecks in high-end applications. Second, launch the "Magnet Material Leap" program, setting up a special fund to collaborate with enterprises and research institutes to tackle the development of ultra-high-performance neodymium-iron-boron and heavy rare earth-free magnet technologies. Break through patent barriers held by companies like Hitachi Metals and seize the next-generation magnet material standards. Third, create a "Rare Earth Green Smelting" demonstration line, promoting clean technologies such as non-soap extraction and low-temperature roasting to address non-tariff barriers created by the US under the guise of environmental protection issues. Fourth, build a "Multi-Node Trade Network," deepening "resource-for-technology" cooperation with ASEAN and African resource countries to diversify dependence on single markets like the US and Japan. Meanwhile, leverage RCEP tariff advantages to expand magnet material exports to emerging countries. Fifth, establish a "Rare Earth Diplomacy" coordination mechanism, proactively setting agendas in WTO and critical minerals alliance negotiations. Oppose the politicization of rare earth security and, through the "Belt and Road" industrial fund, support Chinese enterprises in building integrated smelting and magnet material industrial parks overseas. This will help counter the "friend-shoring" anti-China strategy of the US and the West by cooperating on production capacity. Only by coordinating the three dimensions of resource security, technological innovation, and international rules can China achieve industrial upgrading from a "rare earth power" to a "rare earth strong nation" in the new round of supply chain restructuring triggered by the trade war.

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