



Transformation of Indonesia's Trade Policy on Nickel Commodities

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ABSTRACT: This article examines the direction and dynamics of Indonesia's trade policy on nickel commodities since 2020, particularly after the implementation of the nickel ore export ban. Indonesia's transformation from a major raw nickel ore exporter to the world's leading supplier of processed nickel products represents a striking example of how industrial policy can drive economic transformation in resource-rich countries. This policy not only signaled a shift in the management of natural resources but also triggered reactions from global actors, including a formal lawsuit by the European Union through the WTO's dispute settlement mechanism. Using a qualitative approach and comprehensive literature review, this article aims to explain how the nickel downstreaming policy has been positioned as a strategic instrument to achieve national interests in the global economy. The research demonstrates that Indonesia's assertive trade policy has tested the boundaries of the international trading system, reflecting broader trends of resource nationalism among developing countries seeking greater control over their natural resources. By analyzing official documents, government statements, and extensive academic studies, this article highlights the relationship between economic nationalism, international trade dynamics, and the challenges facing developing countries in asserting resource sovereignty. The findings demonstrate that while downstreaming boosts macro-economic metrics and strengthens Indonesia's position in global value chains, it creates significant distributional, environmental, and geopolitical challenges that require careful policy refinement to balance economic nationalism with sustainability and international trade obligations.

Keywords: Trade Policy, Nickel, Downstreaming, WTO, Economic Nationalism, Resource Sovereignty, Sustainable Development, Industrial Policy, Foreign Direct Investment.



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INTRODUCTION

Indonesia, as the world's largest holder of lateritic nickel reserves with an estimated 55 million metric tons accounting for 42 percent of global reserves, occupies a strategic position in the ongoing global energy transition (Falak Medina, 2025; Randrikasari et al., 2025). The country's nickel production has surged dramatically, from 1.6 million metric tons in 2022 to 2.2 million metric tons in 2024, positioning

Indonesia as a dominant force in the global nickel market ([Falak Medina, 2025](#)). This exponential growth reflects Indonesia's successful transition from exporting raw materials to becoming a major supplier of processed nickel products, fundamentally altering global supply chains ([Jia et al., 2024](#)).

Historically, Indonesia's role in the nickel supply chain was limited to the export of raw ore, resulting in minimal domestic value capture and leaving the economic benefits to be reaped primarily by processing countries abroad ([Guberman et al., 2024](#)). This upstream orientation contributed little to national industrialization and economic diversification, exemplifying the traditional pattern of resource-rich developing countries that export raw materials while importing manufactured goods ([Hailu & Shiferaw, 2018](#)). The country's participation in global value chains was characterized by what scholars term "resource curse" dynamics, where abundant natural resources paradoxically hindered rather than facilitated economic development ([Altenburg, 2011](#)).

Recognizing these limitations and drawing from successful experiences of other resource-rich countries that implemented industrial policies, the Indonesian government enacted a landmark policy through Regulation of the Minister of Energy and Mineral Resources No. 11 of 2019 ([Setyagama et al., 2024](#)).

This regulation imposed a comprehensive ban on nickel ore exports effective January 1, 2020, representing a decisive shift toward resource nationalism and economic sovereignty ([Karkare, 2024](#); [Simbolon et al., 2024](#)). The primary objectives of this policy were to accelerate the development of domestic refining and processing capacity, attract foreign direct investment in smelter construction, and enhance Indonesia's bargaining power within global value chains ([Lahadalia et al., 2024](#); [Saragih et al., 2024](#)).

The policy aligns with broader theoretical frameworks of developmental state theory and industrial policy literature, which emphasize the role of state intervention in driving structural transformation ([Altenburg, 2011](#); [Lahadalia et al., 2024](#)). Indonesia's approach reflects what scholars describe as a "new developmental state model" that considers not only economic growth but also environmental and social concerns in the context of global sustainability challenges ([Lahadalia et al., 2024](#)). This strategy represents a departure from the Washington Consensus approach toward a more interventionist model that prioritizes domestic value addition and industrial upgrading ([Reed, 2024](#)).

The impact of this policy has been profound and multifaceted. By 2024, investment in Indonesia's nickel sector reached IDR 153.2 trillion, accounting for more than 62% of total mineral sector investment ([Handayani, 2025](#)). This massive influx of capital has spurred the rapid growth of integrated industrial zones such as Morowali and Weda Bay, creating what economists term "industrial clusters" that generate significant multiplier effects ([Falak Medina, 2025](#); [Setyagama et al., 2024](#)). The export ban has led to a dramatic increase in the export value of processed nickel products, with official data indicating a 745% surge in 2022 compared to pre-ban levels, reaching USD 33.81 billion ([Handayani, 2025](#); [Indonesia Powers Global Nickel Supply, Contributing 70% to World Market, 2024](#)).

Indonesia's dominance in the global nickel market has continued to expand, with the country supplying 59% of global nickel demand in 2023 and projections suggesting a 70% share by 2024 ([Indonesia Powers Global Nickel Supply, Contributing 70% to World Market, 2024](#)).

This market position provides Indonesia with unprecedented leverage in global nickel pricing and supply chain negotiations, fundamentally altering the geopolitical dynamics of critical mineral markets (Jia et al., 2024). The transformation has enabled Indonesia to capture significantly higher value from its natural resources, with nickel export revenues increasing from USD 3.3 billion in 2017-2018 to USD 35.6 billion in 2022 ([Indonesia Powers Global Nickel Supply, Contributing 70% to World Market, 2024](#)).

Despite these achievements, the downstreaming strategy has introduced new challenges and trade-offs. The dominance of foreign ownership in processing facilities, particularly by Chinese companies controlling approximately 90% of Indonesia's nickel industry, raises concerns about national resource sovereignty and equitable distribution of economic benefits ([China Controls Indonesia's Nickel Industry | Indonesia Business Post, 2022](#); [Singgih, 2024](#)). Research indicates that while Chinese investment has brought capital and technology, it has also led to dependency relationships that may limit Indonesia's long-term industrial sovereignty ([Ahtali Grasia et al., 2024](#); [Rosada et al., 2023](#)).

Environmental and social concerns have become increasingly prominent as the policy has been implemented. Studies show that nickel mining operations have resulted in significant deforestation, with villages near nickel mines experiencing deforestation at nearly double the rate of non-mining areas ([Lo et al., 2025](#); [Nasution et al., 2024](#)). The environmental impact extends beyond forest loss to include water contamination, air pollution, and biodiversity destruction in ecologically sensitive areas such as Sulawesi's biodiversity hotspots ([Deni & Kristanto, 2024](#); [Taufik et al., 2025](#)).

On the international stage, Indonesia's export ban has provoked disputes with major trading partners, most notably the European Union, which initiated proceedings at the World Trade Organization (WTO) in 2019. The EU contended that Indonesia's policy contravened Article XI:1 of the General Agreement on Tariffs and Trade (GATT) 1994, which prohibits quantitative export restrictions ([Krustiyati et al., 2022](#); [Putri, 2024](#)). Indonesia, in turn, argued that the ban was justified under Article XX of GATT, which allows exceptions for the conservation of exhaustible natural resources ([Simbolon et al., 2024](#)).

The WTO panel ultimately ruled against Indonesia in December 2022, finding that the export ban and domestic processing requirements violated WTO rules. The panel rejected Indonesia's arguments under both Article XI:2(a) regarding critical shortages and Article XX(d) concerning compliance with domestic laws. However, Indonesia filed an appeal, demonstrating its commitment to maintaining the policy despite international legal challenges.

This case exemplifies broader tensions between national regulatory autonomy and international trade liberalization principles, particularly relevant for developing countries seeking to assert greater control over their natural resources ([Karkare, 2024](#); [Simbolon et al., 2024](#)). The dispute reflects what scholars describe as the "resource nationalism" phenomenon, where countries implement policies to maximize

domestic benefits from natural resource extraction while challenging traditional patterns of global trade ([Karkare, 2024](#)).

This article seeks to analyze the direction and dynamics of Indonesia's nickel trade policy since the implementation of the export ban in 2020. Employing a qualitative approach and systematic literature review, the study examines the formulation and execution of the policy within the frameworks of economic nationalism and national interest. It further explores Indonesia's evolving position in the international trade system and the state's strategies for responding to external pressures. Through this analysis, the article aims to provide a comprehensive understanding of the interplay between domestic policy, global economic politics, and the bargaining power of developing countries like Indonesia in the era of economic globalization.

METHOD

This study adopts a qualitative descriptive approach to analyze the dynamics of Indonesia's nickel trade policy since the implementation of the nickel ore export ban in 2020. The qualitative approach was chosen to enable an in-depth understanding of the processes, meanings, and contexts underlying complex policy decisions, particularly the interaction between domestic policy and the international trade system. A systematic literature review was conducted, focusing on the collection and analysis of secondary data from a variety of published and authoritative sources, including peer-reviewed journal articles, government policy documents, and international organization reports.

The research design incorporates elements of policy analysis and comparative institutional analysis, drawing from theoretical frameworks of developmental state theory and resource nationalism. This methodological approach allows for comprehensive examination of the multidimensional impacts of Indonesia's nickel policy, including economic, social, environmental, and international legal dimensions.

The research does not involve human participants directly but relies on documentary analysis. The “population” in this context consists of official government policy documents, investment realization reports, legal documents from the World Trade Organization (WTO), and academic articles relevant to Indonesia's nickel downstream policy. Selection criteria emphasized the relevance, authority, and recency of documents, particularly those addressing the themes of nickel downstreaming, strategic trade policy, and Indonesia-EU relations in the context of the WTO.

The research was conducted remotely, with all data collection and analysis performed by the researcher at home using a personal computer. Since the study is based on secondary data and literature review, there is no specific physical field location; the location is best described as a virtual research environment facilitated by digital access to scholarly databases, government portals, and online repositories.

The main instruments used in this research are document analysis protocols and literature review matrices. Data were gathered using keyword searches on academic databases (e.g., Scopus, Web of

Science, Google Scholar), official government portals (such as Kementerian ESDM, BKPM, Indonesia.go.id), and the World Trade Organization's legal document archive. Data management and thematic coding were facilitated using spreadsheet software and qualitative analysis tools.

Data were collected through systematic search and review of published literature and official documents. The process involved identifying, screening, and selecting documents based on the study's focus areas: policy background, economic impacts, legal disputes, and international responses. Only documents published within the last ten years and deemed authoritative were included. The researcher ensured the inclusion of the most recent data and policy developments up to July 2025.

The collected data were subjected to thematic analysis, involving data reduction, categorization, and narrative interpretation. Key themes—such as policy rationale, economic outcomes, legal challenges, and environmental impacts—were identified and analyzed in relation to the frameworks of economic nationalism and national interest. The analysis followed established qualitative research standards to ensure rigor and transparency.

RESULT AND DISCUSSION

Since the implementation of the nickel ore export ban through Minister of Energy and Mineral Resources Regulation No. 11 of 2019, Indonesia has experienced a remarkable transformation in the structure and value of its nickel exports. The country's transition from a raw material exporter to a processor has fundamentally altered its position in global value chains, demonstrating the potential for resource-rich countries to upgrade their economic structures through strategic industrial policy. According to data from Indonesia.go.id, the export value of processed nickel products in 2022 reached USD 33.81 billion, or approximately IDR 504.2 trillion—marking a 745% increase compared to the period before the export ban was enforced ([Ananda & Nurul Tri Wahyuni, 2024; Sutrisno, 2023](#)). This surge highlights the success of Indonesia's downstreaming policy in generating substantial added value for the national economy and shifting the country's export orientation toward higher-value, technology-intensive products.

The transformation is even more striking when viewed in historical context. Before the ban, Indonesia exported 64 million metric tons of nickel ore annually, but this shift triggered a boom in domestic smelting capacity ([Falak Medina, 2025](#)). Export revenues from nickel increased from USD 3.3 billion in 2017-2018 to USD 35.6 billion in 2022, representing a 6.6-fold increase and positioning Indonesia as the world's dominant nickel supplier. ([Indonesia Powers Global Nickel Supply, Contributing 70% to World Market, 2024](#))

Table 1. Indonesia's Nickel Export Value Since 2019

Year	Export Value of Processed Nickel (USD Billion)
2019	4,00
2020	9,30
2021	20,90
2022	33,81

Source: Indonesia.go.id (Sutrisno, 2023)

In addition to value, the volume of nickel exports also rose sharply. In 2021, Indonesia exported 166,400 tons of nickel, which soared to 778,400 tons in 2022—an increase of 367.7% ([Ananda & Nurul Tri Wahyuni, 2024](#); [Badan Pusat Statistik, 2025](#)). This growth reflects the expansion of downstream capacity, which has boosted the competitiveness of Indonesian processed nickel products in global markets. The downstreaming policy has also positively impacted Indonesia's trade balance, strengthening macroeconomic stability through increased foreign exchange reserves and a more stable exchange rate ([Kementerian Perdagangan Republik Indonesia, 2023](#)).

Domestically, the policy has driven a rapid increase in production capacity. By the end of 2023, 54 nickel smelters were operational in Indonesia, with an additional 120 under construction and 16 in the planning stage, totaling 190 smelter projects ([Shiddiq, 2024](#)). This expansion has enabled Indonesia to not only meet export demand but also begin developing value chains for battery and electric vehicle industries. The growth of supporting sectors such as logistics, energy, and industrial infrastructure has created a multiplier effect, particularly in Sulawesi and Maluku, which have become key nickel production centers ([Radhica & Wibisana, 2023](#)).

Table 2. Base Metal Sector Investment

Year	Base Metal Sector Investment (IDR Trillion)
2019	61,6
2020	94,8
2021	117,5
2022	171,2
2023	200,3

Source: Media Nikel Indonesia (Handayani, 2025)

Foreign direct investment in nickel processing has surged, with investment in the basic metals sector rising from IDR 61.6 trillion in 2019 to IDR 200.3 trillion in 2023. In 2024, investment in the nickel sector reached IDR 153.2 trillion, accounting for 62% of total mineral sector investment ([Handayani, 2025](#)). However, this influx of foreign capital, particularly from companies like China's Tsingshan Holding Group, has raised concerns about technology transfer, domestic market control, and the equitable distribution of economic benefits ([Syarif, 2025](#)).

The downstreaming policy has also had significant social and environmental implications. In Kabaena Island, over 3,700 hectares of forest have been cleared for mining, impacting local livelihoods. Reports

of water contamination by hexavalent chromium (Cr6) in industrial areas highlight potential health risks associated with rapid industrial expansion. Labor absorption has increased markedly, with the Weda Bay Industrial Park in North Maluku employing over 82,000 workers as of 2024, projected to reach 120,000 by 2026 ([Levitt, 2025; Wahil & Milko, 2024](#)).

Internationally, the export ban has triggered disputes, most notably with the European Union, which filed a complaint at the World Trade Organization (WTO). Although the WTO ruled against Indonesia, the government has maintained its downstreaming policy, emphasizing the right to manage non-renewable resources in line with national interests ([World Trade Organization, 2022](#)).

However, the social impacts have been complex and sometimes contradictory. While the policy has created employment opportunities, it has also led to social disruption and displacement in some areas ([Deni & Kristanto, 2024; Lo et al., 2025](#)). Research indicates that mining operations have affected local communities, with reports of land acquisition conflicts and changes in traditional livelihoods ([Taufik et al., 2025](#)). The rapid population growth in mining areas has created both opportunities and challenges for local communities. While some residents have benefited from employment opportunities and economic development, others have experienced negative impacts from environmental degradation and social disruption.

The results demonstrate that Indonesia's nickel downstreaming policy has delivered impressive economic gains, including exponential growth in export value and volume, expansion of domestic processing capacity, and increased foreign investment ([Ananda & Nurul Tri Wahyuni, 2024; Handayani, 2025; Sutrisno, 2023](#)). These achievements support the argument that state intervention in strategic sectors can drive structural transformation and enhance global competitiveness, consistent with theories of economic nationalism and national interest ([Radhica & Wibisana, 2023](#)).

However, several challenges and trade-offs have emerged. The dominance of foreign ownership in nickel processing facilities raises questions about Indonesia's long-term industrial sovereignty and the risk of dependency on external actors. While the policy has succeeded in attracting investment and boosting exports, it has not fully addressed issues of technology transfer, equitable benefit distribution, or the development of robust domestic industries. Without strategic regulations—such as mandatory technology transfer and incentives for national industry participation—Indonesia risks remaining a production hub without significant influence in the global value chain ([Radhica & Wibisana, 2023](#)).

Environmental and social concerns have also become more pronounced, revealing deep inequities in how the benefits and burdens of nickel expansion are distributed among stakeholders. The rapid expansion of nickel mining and processing has created what can be understood through an environmental justice lens as a pattern of "sacrifice zones" where marginalized communities bear disproportionate environmental and social costs while global supply chains benefit from cheaper raw materials ([Harindja, 2024; Levitt, 2025](#)).

From a political ecology perspective, Indonesia's nickel boom demonstrates how global demands for "green" transition minerals reproduce colonial extraction patterns, where resource-rich developing nations export environmental degradation alongside raw materials ([World Trade Organization, 2022](#)).

The environmental impacts are severe and systematically documented: nickel mining has led to the clearing of over 75,000 hectares of forest, with deforestation rates doubling around nickel processing plants ([Lo et al., 2025](#)).

These impacts highlight the need for stronger environmental governance and community engagement to ensure that economic development does not come at the expense of ecological sustainability and social justice ([Harindja, 2024](#)).

On the global stage, Indonesia's assertive trade policy has tested the boundaries of the international trading system. The WTO dispute with the European Union underscores the tension between national resource management rights and the principles of trade liberalization ([World Trade Organization, 2022](#)). Indonesia's persistence in pursuing downstreaming, even after the adverse WTO ruling, reflects a broader trend among developing countries seeking to assert greater control over their natural resources and industrial policies.

Comparative analysis with countries like China reveals important distinctions in how states pursue "industrial sovereignty"—the capacity for national industries to control, develop, and benefit from domestic resources rather than relying on foreign actors. In China, industrial sovereignty is characterized by strong state intervention, support for domestic "national champions," and tight regulatory controls that enable Chinese firms to lead the entire mineral value chain, fostering indigenous innovation and retaining economic rents within the country ([Radhica & Wibisana, 2023](#)). By contrast, Indonesia's approach has prioritized attracting foreign direct investment and global partnerships, with multinational corporations often playing a dominant role in nickel processing and value addition. This reliance on foreign investors limits Indonesia's ability to replicate China's model of industrial sovereignty. In Indonesia, efforts at downstreaming have not been matched by equivalent state-led capacity building or protection of domestic champions—thus, domestic technological upgrading and control over mineral wealth remain constrained.

Therefore, while both countries pursue greater control over their mineral resources, the underlying mechanisms and outcomes differ: China advances state-centric industrial sovereignty, empowering domestic firms, whereas Indonesia's policy has yielded economic gains but also exposes vulnerabilities due to dependence on external actors. Strengthening Indonesia's domestic capabilities—through technology transfer, skills development, and regulations that cultivate strong local champions—will be essential if Indonesia aims to achieve a deeper, more autonomous form of industrial sovereignty comparable to China's experience.

Diversifying partnerships and strengthening domestic capabilities are essential for Indonesia to maximize the long-term benefits of downstreaming.

In summary, Indonesia's nickel downstreaming policy has achieved notable economic successes but faces ongoing challenges in ensuring sustainable, inclusive, and sovereign industrial development. Balancing economic, social, and environmental objectives, as well as navigating complex international trade dynamics, will be critical for the future trajectory of Indonesia's nickel sector.

CONCLUSION

This study investigated the transformation of Indonesia's trade policy on nickel commodities following the implementation of the nickel ore export ban in 2020. The findings demonstrate that Indonesia's nickel downstreaming policy represents a compelling case of how strategic state intervention can drive structural transformation in resource-rich developing countries. Between 2019 and 2022, the policy led to a dramatic increase in the value and volume of nickel exports—export value surged by 745% and volume by 367.7%—while fundamentally altering Indonesia's position in global nickel value chains ([Handayani, 2025; Shiddiq, 2024; Sutrisno, 2023](#)).

Indonesia's success in advancing its downstream industry can be attributed to three key factors: assertive state activism through export restrictions and industrial policy, targeted investment incentives that attracted foreign firms—particularly from China—and the development of linkages across mining, processing, and downstream industries. This coordinated framework enabled industrial upgrading from raw material exports to value-added manufacturing, fueling growth in domestic processing capacity, foreign direct investment, and employment. As a result, Indonesia has emerged as a dominant global supplier, accounting for 59% of global nickel demand in 2023 and projected to reach 70% by 2024.

However, the study also revealed persistent structural and sustainability challenges that threaten the long-term success of the policy. The dominance of foreign ownership—particularly by Chinese firms, which control approximately 90% of the sector—raises fundamental concerns about Indonesia's industrial sovereignty and equitable distribution of economic gains. While foreign capital and technology have accelerated industrial growth, they have also created dependencies that may constrain Indonesia's ability to fully benefit from its natural resources.

Environmental and social consequences also represent serious challenges. The rapid expansion of nickel mining and processing has led to deforestation, water pollution, and biodiversity loss, with affected communities—especially those near mining operations—experiencing environmental degradation at nearly double the national average. The high carbon intensity of Indonesia's nickel industry, which generates two to five times more emissions than other producing countries, raises concerns about the environmental legitimacy of the current development model and its alignment with global sustainability goals ([Levitt, 2025; Wahil & Milko, 2024](#)).

On the international stage, Indonesia's assertive trade policy has tested the boundaries of the multilateral trading system. The WTO dispute with the European Union, which culminated in a panel ruling against Indonesia, reflects broader tensions between national resource sovereignty and global trade liberalization norms ([World Trade Organization, 2022](#)). Indonesia's decision to appeal and continue the downstreaming strategy despite legal setbacks highlights a growing trend of resource nationalism among developing countries.

These findings contribute to several key theoretical and policy debates. First, they reaffirm the relevance of developmental state theory and industrial policy in today's global economy. Indonesia's case demonstrates that strategic government intervention can alter a country's position within global

value chains, challenging neoliberal assumptions about the primacy of free markets. Second, the research underscores the complex trade-offs embedded in resource nationalism policies—while they can generate economic gains, they may also entrench new dependencies, environmental risks, and geopolitical tensions that require careful management.

Third, the study emphasizes the critical importance of technology transfer and domestic capacity building. Indonesia's heavy reliance on foreign investment, without adequate requirements for domestic participation and knowledge transfer, has limited the development of indigenous technological capabilities. Fourth, the research highlights the necessity of integrating sustainability and social inclusion into industrial policy. Economic success alone is not sufficient—long-term development requires environmental stewardship and equitable benefit-sharing.

Based on these insights, several policy recommendations emerge. Indonesia should strengthen its regulatory framework to ensure meaningful technology transfer and enhance domestic participation in strategic industries. Environmental and social governance must be reinforced to address the ecological impacts of industrial expansion and protect affected communities. Finally, Indonesia should adopt an adaptive approach to trade diplomacy, balancing assertive national development goals with constructive international cooperation.

In conclusion, Indonesia's nickel downstreaming policy stands as a powerful example of state-led industrial transformation. While it has delivered substantial economic benefits and enhanced Indonesia's global bargaining position, its long-term sustainability depends on the country's ability to navigate structural, environmental, and geopolitical challenges. The Indonesian experience offers valuable lessons for other resource-rich developing nations seeking to move up the global value chain—demonstrating both the possibilities and limitations of contemporary industrial policy.

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