

Policy Paper

Indonesia in an Era of Goeconomic Fragmentation:

Industrial Transformation through
Indonesia–Thailand Cooperation and
ASEAN Supply Chains

CSIS Indonesia



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Indonesia in an Era of Goeconomic Fragmentation:

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Thailand Cooperation and ASEAN Supply Chains**

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Abstract

Goeconomic fragmentation is reshaping global value chains (GVCs) as trade, investment, and production decisions become increasingly influenced by resilience, economic security, technological competition, and geopolitical alignment, rather than efficiency alone. This transformation creates both opportunities and risks for emerging economies, such as Indonesia and Thailand, seeking to attract investment and strengthen their positions within regional production networks.

Indonesia enters this period with several strategic advantages, including a large domestic market, a sizeable working-age population, abundant critical minerals, and geopolitical flexibility. Its policies on mineral downstreaming, electric-vehicle ecosystem development, investment reform, infrastructure expansion, and regional economic engagement have attracted investment and expanded domestic processing capacity. These achievements, however, have not automatically generated technological upgrading. Indonesia remains constrained by shallow GVC integration, weak domestic supplier networks, skills shortages, limited research and development, high logistics costs, and regulatory uncertainty.

Against this background, the paper examines how Indonesia can leverage global supply chain restructuring to advance industrial transformation while deepening cooperation with Thailand and strengthening ASEAN-centered production networks. It argues that Indonesia and Thailand will continue to compete for investment and production, but that selective cooperation can generate mutual gains where their capabilities occupy complementary stages of regional value chains. Indonesia's resource base, battery materials, market scale, and emerging downstream industries can complement Thailand's manufacturing capabilities, supplier networks, logistics, and processing expertise. By enabling greater specialization, scale, and supply-chain resilience, such cooperation could strengthen ASEAN's competitiveness as an integrated production platform.

The paper concludes that goeconomic fragmentation offers Indonesia a significant but limited opportunity for industrial transformation. Realizing it will require shifting from investment attraction toward domestic capability building while using regional cooperation to translate Indonesia–Thailand complementarities into more integrated, technologically capable, and resilient ASEAN supply chains.

Keywords: goeconomic fragmentation; global value chains; industrial transformation; Indonesia; Thailand; ASEAN supply chains.

Executive Summary

Geoeconomic fragmentation is reshaping global trade, investment, and production. It produces a more regionalized and strategically managed system in which resilience, economic security, technological rivalry, and sustainability increasingly influence policy and corporate decisions. Multinational firms are diversifying production across locations to reduce concentration and geopolitical risks, creating opportunities for emerging economies while intensifying competition for investment, technology, and markets.

Indonesia enters this period with several strategic advantages. It has ASEAN's largest domestic market, a large working-age population, and substantial reserves of critical minerals, particularly nickel, copper, and bauxite. These assets have strengthened its position in electric-vehicle, battery, and clean-energy value chains. Its relatively non-aligned foreign policy also allows it to maintain economic relations with China, the United States, Japan, South Korea, the European Union, and other partners amid intensifying geopolitical competition.

However, these advantages do not automatically translate into industrial transformation. Indonesia remains relatively weakly integrated into sophisticated global and regional value chains. Stronger forward linkages largely reflect the use of Indonesian commodities in production elsewhere, while limited backward participation indicates weaker integration into complex manufacturing networks. High logistics costs, skills shortages, weak innovation and supplier capabilities, uneven infrastructure, and regulatory uncertainty continue to constrain industrial upgrading.

Indonesia has responded through mineral downstreaming, EV ecosystem development, investment liberalization, industrial estates, infrastructure expansion, and regional economic engagement. These policies have attracted substantial investment and expanded processing and battery-related capacity. However, investment attraction and processing are not equivalent to technological upgrading. Much of the downstream sector remains dependent on foreign capital, imported technology, external expertise, and carbon-intensive energy, while linkages with domestic suppliers and SMEs remain limited. The central challenge is therefore to convert investment into domestic productive and technological capabilities.

Meanwhile, geoeconomic fragmentation also changes the geography of competition. As firms distribute sourcing, processing, components, assembly, and logistics across multiple locations, competitiveness increasingly depends not only on individual economies but also on the production ecosystems in which they operate. In this regard, regional cooperation should be integrated into Indonesia's industrial strategy.

Indonesia and Thailand illustrate the potential for such cooperation. Although the two countries will continue to compete for investment and manufacturing activity, they also

possess complementary capabilities. Indonesia contributes critical minerals, battery materials, agricultural resources, market scale, and emerging downstream industries, while Thailand offers established automotive manufacturing, supplier networks, food processing, logistics, and export capabilities. Where these strengths occupy connected stages of value chains, selective cooperation can generate economies of scale, diversify supply-chain risks, strengthen ASEAN's attractiveness as a production platform, and reduce inefficient subsidy competition.

In addition, third-country corporate networks can help translate these complementarities into production linkages. Multinational firms already operating across ASEAN can distribute production stages between Indonesia and Thailand. As a result, governments need not design these value chains from the top down. Their key role is to reduce regulatory and coordination costs. ASEAN frameworks such as ATIGA, RCEP, ACIA, and DEFA, together with bilateral mechanisms such as the Joint Trade Commission, provide an institutional foundation for deepening cooperation between the two countries.

The paper identifies EVs and automotive production, agro-industry, digital services, and trade facilitation as priorities for bilateral cooperation. Indonesia's battery resources could complement Thailand's automotive ecosystem, while Indonesia's agricultural base could connect with Thailand's processing, logistics, and export capabilities. Digital payments, e-commerce, standards harmonization, customs facilitation, and stronger business networks could further support integration.

The paper, moreover, suggests Indonesia should shift from investment attraction to capability building, using incentives to promote technology transfer, local sourcing, workforce development, innovation, and cleaner production. Bilaterally, Indonesia and Thailand should establish a focused supply chain mechanism under the Joint Trade Commission to identify viable complementarities, engage firms, coordinate on standards and investment facilitation, and monitor implementation. The objective is not to replace competition with cooperation, but to combine domestic capability building with selective regional integration to create more technologically capable, competitive, and resilient ASEAN production networks.

Introduction

Over the past decade, the global economy has undergone a profound transformation driven by interconnected megatrends. Geopolitical tensions, technological change, the climate transition, and demographic shifts are reshaping global production networks. As a result, the era of hyper-globalization that dominated the post-Cold War period is gradually giving way to a more fragmented geoeconomic order. In this new environment, international trade and investment are no longer driven solely by efficiency and comparative advantage, but increasingly by resilience, national security, and geopolitical alignment (Aiyar, et al., 2023; Farrell & Newman, 2019).

The intensifying rivalry between the United States and China has become a major driver of this transformation. Trade restrictions, technology controls, industrial subsidies, and competing technological standards have accelerated the fragmentation of global production networks. Meanwhile, the COVID-19 pandemic also exposed the vulnerabilities of highly concentrated supply chains, prompting governments and multinational corporations to prioritize resilience alongside efficiency.

Consequently, trade patterns, investment flows, and global value chains (GVCs) are being restructured, creating both opportunities and risks for emerging economies. Firms are increasingly adopting diversification strategies, such as China+1, near-shoring, and friend-shoring, to reduce geopolitical and operational risks. Global supply chains are therefore becoming more diversified, regionalized, and resilient (OECD, 2021a; World Economic Forum, 2023).

These developments may marginalize some economies through technological exclusion and supply-chain polarization, while allowing others to attract manufacturing relocation and foreign direct investment (FDI). The World Bank (2020) argues that the benefits of this transition will depend largely on countries' ability to upgrade their productive capabilities and adapt policy frameworks to the changing global environment.

In this context, Southeast Asia has become one of the principal beneficiaries of global supply chain diversification. Competitive labor costs, expanding consumer markets, improving infrastructure, and regional integration have made ASEAN an increasingly attractive production platform (Asian Development Bank, 2023). However, ASEAN supply chains remain fragmented due to regulatory differences, uneven infrastructure, and limited industrial coordination. The region must therefore strengthen production networks that support industrial upgrading and economic resilience (Kimura & Chen, 2018).

Among ASEAN economies, Indonesia occupies a particularly strategic position. As Southeast Asia's largest economy, it benefits from abundant natural resources, a large domestic market, favorable demographics, and a relatively non-aligned geopolitical

posture. Indonesia is also well-positioned to benefit from the global energy transition because of its vast reserves of nickel, copper, and bauxite, which are increasingly important for electric vehicle batteries and clean-energy technologies (International Energy Agency, 2021).

Recognizing these opportunities, the Indonesian government has pursued industrial policies aimed at reducing dependence on commodities. These include mineral downstreaming, investment reforms, infrastructure expansion, and the development of an EV battery ecosystem. The objective is to capture greater value added within GVCs and strengthen Indonesia's position in strategic manufacturing industries.

However, Indonesia's industrial transformation remains far from assured. Manufacturing exports remain less sophisticated than those of several regional competitors, while high logistics costs, regulatory uncertainty, skills shortages, and limited capacity for innovation continue to hinder industrial upgrading (OECD, 2021b; World Bank, 2026a). Questions also remain over whether current downstreaming policies can foster technological learning and domestic industrial capabilities or merely deepen dependence on foreign capital and technology.

In this context, regional cooperation becomes increasingly important. Thailand, one of ASEAN's more advanced manufacturing economies, possesses strong capabilities in automotive production, electronics, agro-industry, and logistics. Greater Indonesia–Thailand cooperation could strengthen ASEAN-centered production networks and support industrial upgrading in both economies. By combining Indonesia's resources and market scale with Thailand's manufacturing expertise, the two countries could contribute to more resilient regional supply chains in electric vehicles, agro-processing, green technology, and digital trade.

This paper argues that geoeconomic fragmentation offers Indonesia an opportunity to move beyond commodity dependence toward higher-value industrialization, but this requires stronger domestic capabilities and a regional strategy built around production ecosystems. While Indonesia and Thailand will continue to compete, their complementary strengths—from Indonesia's critical minerals and market scale to Thailand's automotive and supplier networks—create scope for selective cooperation. Reducing regulatory frictions and facilitating cross-border production could strengthen both countries and ASEAN's position in global value chains.

Against this backdrop, the paper asks: How can Indonesia leverage global supply-chain restructuring to achieve sustainable industrial transformation while strengthening economic cooperation with Thailand and ASEAN? Using a qualitative, desk-based approach combining literature review, secondary data analysis, and policy assessment, the paper examines Indonesia's structural advantages and constraints, evaluates current policy responses, explores opportunities for Indonesia–Thailand cooperation, and

proposes recommendations to strengthen industrial upgrading, regional integration, and economic resilience in an increasingly fragmented global economy.

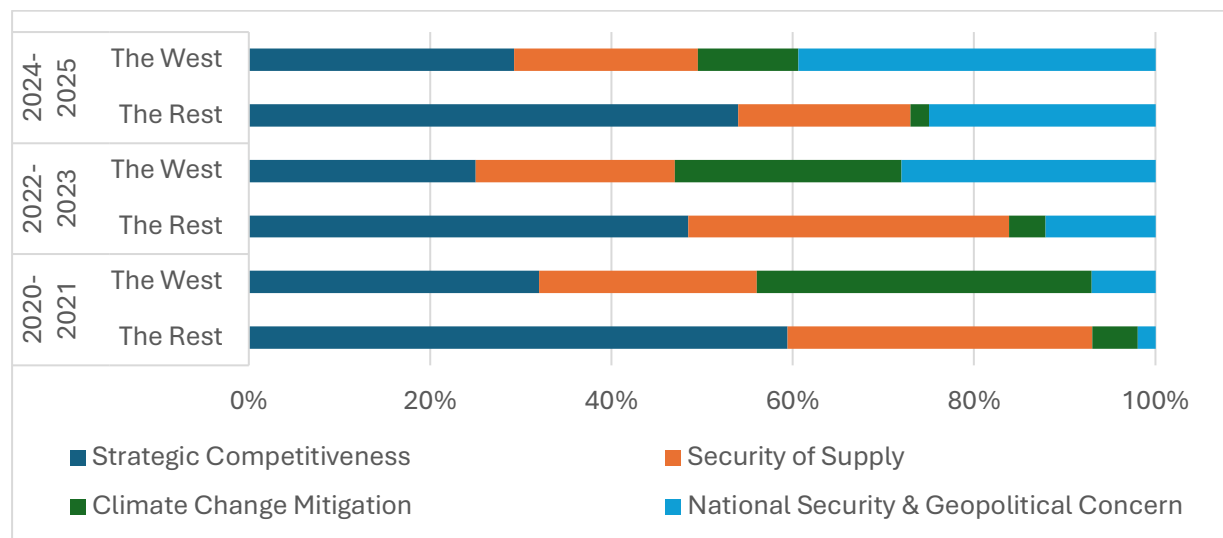
Goeconomic Fragmentation and Global Value Chain Restructuring

From Hyper-Globalization to Goeconomics Fragmentation

The contemporary global economy is increasingly shaped by goeconomic competition rather than the liberal globalization paradigm that defined the post-Cold War era. During the 1990s and early 2000s, falling transport and communication costs, trade liberalization, and China's accession to the World Trade Organization enabled firms to fragment production across borders according to comparative advantage, giving rise to increasingly complex global value chains (GVCs). Baldwin (2016) describes this as the "second unbundling," while Rodrik (2011) characterizes it as an era of "hyper-globalization." By the mid-2000s, trade in intermediate goods had become a defining feature of the global economy, generating efficiency gains and supporting rapid industrialization among economies integrated into GVCs (OECD, 2013).

Nevertheless, the foundations of hyper-globalization have come under increasing strain. The global financial crisis, the COVID-19 pandemic, and other supply chain disruptions exposed the fragility of highly interconnected production networks (World Economic Forum, 2023). At the same time, intensifying US–China rivalry transformed economic interdependence into an instrument of geopolitical competition through export controls, sanctions, and industrial subsidies in strategic sectors, such as semiconductors, artificial intelligence, and critical minerals. Farrell and Newman (2019) characterize this as "weaponized interdependence," marking a broader shift from efficiency-oriented globalization toward resilience- and security-driven goeconomics.

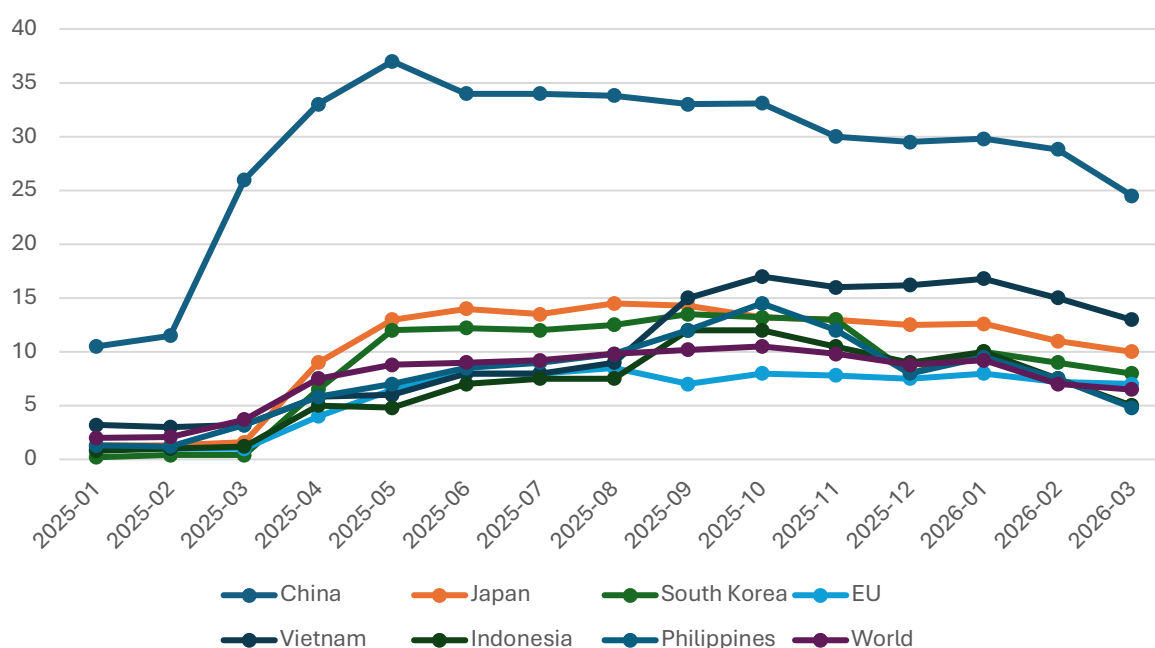
Figure 1 illustrates this shift in policy priorities over the past five years. While competitiveness and economic efficiency previously dominated international economic policymaking, governments are increasingly adopting policies motivated by national security, supply-chain resilience, and geopolitical considerations.

Figure 1. Stated Motives of Industrial Actions by Period (%)

Source: NIPO, IMF (2026)

This transformation has also revived industrial policy as a central component of economic strategy. The United States introduced the CHIPS and Science Act and the Inflation Reduction Act, the European Union advanced its strategic autonomy agenda and green industrial policies, while China continued its industrial upgrading efforts through initiatives such as *Made in China 2025*. The distinction between trade policy and industrial policy has consequently become increasingly blurred. Rather than maximizing efficiency alone, governments are now seeking to secure critical supply chains, reduce strategic dependencies, and strengthen economic resilience (Aiyar, et al., 2023).

Figure 2 below highlights the growing concentration of U.S. tariff pressures on Asian economies following the escalation of tariff measures throughout 2025. It suggests that Asian economies, particularly those deeply integrated into manufacturing and global value chains, have borne a disproportionate share of the adjustment costs associated with the United States' more protectionist and security-oriented trade policy. This development underscores the increasing vulnerability of export-dependent economies in the region to geopolitical tensions and highlights the importance of market diversification, regional integration, and supply chain resilience as strategies to mitigate future trade-related shocks.

Figure 2. The US' monthly tariff revenue as percent of monthly total import value (CIF)

Notes: Tariff revenue data are calculated duties estimated by the United States International Trade Commission (USITC), based on US tariff rates and any special import statuses claimed by importers. The CIF value is the total cost paid to the foreign seller, insurance paid to cover the risk of loss in transit, and freight paid to the ocean shipping, air transport, or trucking firm.

Source: Hufbauer & Zhang (2026)

Overlaying these geopolitical shifts is a wave of technological change that is reshaping the geography of production. Advances in artificial intelligence, automation, advanced semiconductors, and digital infrastructure are altering traditional sources of comparative advantage. While automation threatens labor-intensive industrialization pathways, digitalization simultaneously creates new opportunities through digital trade and services, provided countries possess adequate infrastructure, regulatory frameworks, and human capital (World Bank, 2020; UNCTAD, 2021). The emerging digital economy, therefore, presents both a challenge to conventional development models and a new avenue for participation in global production networks.

At the same time, demographic transitions are reinforcing these changes. Aging populations in advanced economies and China are gradually reshaping the global distribution of labor supply, increasing the attractiveness of younger economies as alternative production locations. As China's working-age population contracts and labor costs rise, economies with favorable demographic profiles, including Indonesia, are better positioned to absorb manufacturing relocation and benefit from supply chain

diversification, provided they can translate demographic potential into productivity gains through investments in skills and labor market reforms (ILO, 2022).

Meanwhile, the transition to a low-carbon economy is reshaping trade, investment, and industrial competitiveness. Rising demand for electric vehicles and renewable energy technologies has increased the strategic importance of critical minerals such as nickel, lithium, and cobalt (IEA, 2021), while measures such as the European Union's Carbon Border Adjustment Mechanism (CBAM) are raising the premium on cleaner production technologies (European Commission, 2023). For resource-rich economies, the green transition represents both a competitive challenge and an opportunity for industrial upgrading.

Overall, these developments suggest that globalization is not ending but evolving into a more regionalized, politically conditioned, and strategically managed system. Geoeconomic fragmentation, therefore, represents not temporary disruptions but a profound reconfiguration of the global economy.

Supply Chain Diversification and ASEAN Production Networks

One of the most visible consequences of geoeconomic fragmentation has been the restructuring of global value chains (GVCs). As geopolitical tensions, trade disputes, and supply chain disruptions have exposed the risks of excessive concentration, multinational firms are increasingly balancing efficiency with resilience, redundancy, and strategic alignment in their location decisions (Crowe & Rawdanowicz, 2023). Rather than reversing globalization altogether, these shifts are reshaping the geography of production and investment.

Several diversification strategies have emerged. The "China+1" approach, particularly relevant for ASEAN, involves maintaining operations in China while establishing parallel production capacity elsewhere to reduce concentration risk. Firms and governments are also increasingly pursuing near-shoring and friend-shoring strategies. The former seeks to relocate production closer to end markets to shorten delivery times and enhance responsiveness, while the latter prioritizes investment in politically aligned and geopolitically trusted partners. Together, these strategies reflect the growing integration of economic security considerations into corporate investment decisions and national industrial policies (Aiyar, et al., 2023).

These developments have contributed to the emergence of more regionalized production systems. Instead of a single manufacturing hub centered on China, the global economy is gradually evolving toward overlapping regional production blocs shaped by strategic interests, technological standards, and political relationships. North America, Europe, and East Asia are increasingly consolidating regional industrial networks shaped by strategic considerations, technological standards, and political alliances. Within this evolving landscape, ASEAN has become an increasingly attractive destination for

manufacturing diversification, driven by its relatively young workforce, expanding consumer markets, improved connectivity, and a longstanding commitment to economic openness and regional integration (ASEAN Secretariat & UNCTAD, 2023).

The region has consequently experienced a surge in investment inflows. Despite a global slowdown in FDI, ASEAN attracted US\$226 billion in investment in 2024, retaining its position as the leading destination among developing economies (ASEAN Secretariat & UNCTAD, 2025). Electronics, EVs, and the digital economy drove much of this growth, underscoring the shift toward China+1 diversification. However, the benefits have been unevenly distributed. Vietnam has strengthened its position in electronics manufacturing, Thailand in automotive production, and Malaysia in semiconductor supply chains. Indonesia, meanwhile, offers considerable potential through its large domestic market and strategic role in critical mineral supply chains, particularly nickel for EV batteries.

Nevertheless, supply chain diversification does not automatically translate into industrial upgrading. Without stronger domestic capabilities, technological learning, and local supplier development, emerging economies risk remaining concentrated in lower-value activities. The challenge, therefore, is not merely to attract relocating investment but to leverage these shifts to build more sophisticated, resilient, and regionally integrated production ecosystems.

Implications for Indonesia and Thailand: Competition, Complementarity, and Regional Production Networks

The restructuring of global value chains presents Indonesia and Thailand with a narrow but significant window of opportunity for industrial upgrading. As multinational firms diversify production in response to geopolitical tensions and supply chain vulnerabilities, both countries stand to benefit from manufacturing relocation and more diversified FDI flows. However, realizing these gains will depend less on resource endowments or market size alone than on their ability to strengthen domestic capabilities, enhance competitiveness, and position themselves strategically within evolving regional production networks.

The opportunities are substantial but differ across the two economies. Indonesia's advantages lie in its large domestic market and abundant reserves of critical minerals, particularly nickel, which have elevated its role in emerging EV and battery supply chains. Thailand, by contrast, possesses more established manufacturing capabilities, especially in automotive and electronics, and remains a major regional automotive production hub (World Bank, 2024; OECD, 2024a; OECD, 2024b). These complementary strengths create scope for deeper bilateral and regional collaboration, whereby Indonesia could specialize in upstream processing and battery materials, while Thailand expands its role in downstream manufacturing and EV assembly. Such specialization would strengthen

ASEAN-centered production networks and enhance the region's collective competitiveness.

The case for closer economic ties does not mean Indonesia and Thailand should stop competing for investment or manufacturing. They will remain competitors in automotive, electronics, digital investment, and other sectors. The stronger rationale lies in linking complementary capabilities across regional value chains. As firms increasingly spread sourcing, processing, assembly, and logistics across countries, competitiveness depends not only on individual economies but also on the strength of the wider production ecosystem.

In this context, cross-border specialization can generate economies of scale, lower the costs of moving intermediate goods, and strengthen supply-chain resilience through greater regional diversification. More compatible standards, customs procedures, and rules of origin could facilitate this process, while reducing costly competition for investment incentives that may yield limited domestic spillovers. The objective is therefore not to eliminate competition but to build integrated production networks in which complementarities, scale, and shared risks make the region more competitive.

However, geoeconomic fragmentation also introduces significant risks. Competition among ASEAN economies for relocating investment may intensify pressures to offer generous incentives without generating meaningful technological spillovers. More importantly, manufacturing relocation does not automatically translate into industrial upgrading. Without investments in innovation, workforce skills, and domestic supplier development, countries risk remaining confined to lower-value activities within global production networks (UNCTAD, 2024). The growing use of export controls and technology restrictions further raises the possibility of technological exclusion, particularly in advanced sectors such as semiconductors and frontier technologies (Aiyar et al, 2023).

For both Indonesia and Thailand, therefore, the central challenge extends beyond attracting investment. It lies in leveraging geoeconomic fragmentation to build more sophisticated industrial ecosystems, strengthen domestic capabilities, and deepen regional cooperation. The countries that benefit most from the reconfiguration of GVCs will be those that transform external disruptions into opportunities for technological upgrading, economic resilience, and sustained productivity growth.

Indonesia's Economic Structure and Strategic Position in Global Value Chains

Indonesia's Strategic Advantages

Indonesia enters the era of geoeconomic fragmentation with structural advantages that few emerging economies possess. With more than 285 million people in 2026, the country combines ASEAN's largest consumer market with a sizeable production base, underpinned by resilient household consumption and a growing middle class. Around 70 percent of the population is of working age, offering a potential demographic dividend to support industrial expansion (World Bank, 2026a). Together, these characteristics enhance Indonesia's attractiveness by enabling firms to achieve economies of scale while reducing reliance on external demand.

Moreover, Indonesia's most distinctive asset lies in its endowment of critical minerals that are increasingly vital to the global energy transition. Demand for nickel, copper, and cobalt has surged due to their role in electric vehicles, battery storage, and renewable energy technologies (IEA, 2025). Indonesia holds the world's largest nickel reserves—around 55 million metric tons, or more than 40 percent of global reserves—and accounted for over 60 percent of global nickel production by 2025, while also ranking among the leading producers of copper and bauxite (USGS, 2025). These advantages position Indonesia strategically within emerging clean-energy value chains and provide an opportunity to leverage the energy transition for industrial upgrading.

Indonesia's geopolitical posture adds another layer of strategic value. Consistent with its long-standing *bebas dan aktif* ("free and active") foreign policy doctrine, Indonesia has maintained pragmatic economic relations with a diverse range of partners, including China, the United States, Japan, South Korea, and the European Union. In an era of intensifying great-power rivalry, this relative non-alignment provides the flexibility to attract diversified sources of investment and participate in multiple supply chain configurations without becoming excessively dependent on a single geopolitical bloc.

Collectively, these characteristics position Indonesia as an important node in the reconfiguration of global supply chains amid rising geopolitical uncertainty. However, strategic advantages alone do not guarantee successful industrial transformation. As Rodrik (2004) argues, sustained development depends less on factor endowments than on a country's ability to build productive capabilities. Indonesia's challenge, therefore, is to translate its strategic assets into enduring sources of technological capability, industrial competitiveness, and economic resilience.

Indonesia's Trade Structure and GVC Integration

Despite being Southeast Asia's largest economy and possessing abundant natural resources, Indonesia remains relatively weakly integrated into global value chains (GVCs) compared with regional peers. OECD TiVA data show that Indonesia's GVC participation rate is around 43 percent, below those of Malaysia (57 percent), Vietnam (55 percent), and Thailand (52 percent). This relatively low participation partly reflects limited backward integration, with foreign value added accounting for only around 16 percent of Indonesia's gross exports, substantially below the shares in Vietnam and Malaysia. By contrast, Indonesia's relatively stronger forward participation reflects the greater role of domestic inputs in other countries' exports (OECD, 2021c). This pattern is consistent with Indonesia's resource-oriented export structure: primary products and resource-based manufactures account for more than 60 percent of total exports (Montfaucon et al., 2023).

Indonesia's trade patterns further underscore these structural constraints. China accounted for nearly one-third of Indonesia's total trade in 2025, highlighting the country's continued reliance on commodity exports and Chinese machinery and intermediate inputs (BPS, 2026a). While the United States, India, Japan, and Singapore remain important economic partners, ASEAN accounted for only around 22–23 percent of Indonesia's merchandise trade despite ongoing regional integration initiatives (ASEAN Secretariat & UNCTAD, 2025). Persistent non-tariff barriers, regulatory divergence, and connectivity gaps continue to constrain the development of deeper ASEAN production networks (ASEAN Secretariat & UNCTAD, 2025; Asian Development Bank [ADB], 2023).

The composition of Indonesia's manufactured exports also points to limited upgrading. While the country has established meaningful export positions in processed palm oil, basic chemicals, and labor-intensive products such as textiles and footwear, it has struggled to develop competitiveness in higher-technology sectors. The country's exports in electronics, machinery, and automotives, which are typically associated with deeper GVC integration and stronger productivity spillovers, remain concentrated in lower- or medium-value-added activities. Unlike Vietnam and Malaysia, which have become more deeply integrated into regional electronics and semiconductor supply chains, Indonesia remains largely an assembler and importer of intermediate technology products, constrained by weak domestic supplier networks, limited technological capabilities, and low R&D intensity (OECD, 2021b).

Recently, however, the global energy transition has begun to reshape Indonesia's position in international trade. The growing demand for critical minerals used in electric vehicles and renewable energy technologies has enhanced Indonesia's strategic importance in emerging clean-energy value chains, owing to its abundant reserves of nickel, copper, and bauxite (IEA, 2021). Despite the advantages, the broader challenge for Indonesia remains unchanged: whether the country can transform its resource advantages into sustained

industrial upgrading and move beyond commodity dependence toward deeper participation in technologically sophisticated manufacturing networks.

Indonesia's Structural Constraints

Indonesia's continued commodity dependence and shallow participation in regional production networks reflect deeper structural bottlenecks, particularly high logistics costs. As an archipelagic nation of more than 17,000 islands, Indonesia faces connectivity challenges that raise transportation costs and reduce supply chain efficiency. Although infrastructure development has improved Indonesia's Logistics Performance Index ranking from 63rd in 2016 to 46th in 2023, significant gaps remain in port efficiency, inter-island connectivity, transport networks, and energy reliability (World Bank, 2023). These shortcomings are especially pronounced outside Java, where much of Indonesia's resource base is concentrated, constraining the scale and efficiency needed for deeper integration into regional production networks (OECD, 2021b).

Moreover, human capital remains a critical constraint. Although around 70 percent of Indonesia's population is of working age, educational outcomes and technical skills lag behind the needs of higher-value manufacturing. In PISA 2022, Indonesia scored 366 in mathematics, 359 in reading, and 383 in science, compared with OECD averages of 472, 476, and 485, respectively (OECD, 2023). Skills shortages persist in engineering, advanced manufacturing, digital, and research-intensive sectors (World Bank, 2026a). BPS (2026b), meanwhile, shows that informal employment still accounted for 56.6 percent of total employment in February 2026, limiting productivity gains and firms' incentives to invest in workforce upgrading.

These challenges are compounded by a weak innovation ecosystem. Indonesia's R&D expenditure remains low at around 0.24 percent of GDP, compared with approximately 0.5 percent in Vietnam, 1.0 percent in Malaysia, 1.3 percent in Thailand, and more than 2 percent in Singapore (UNESCO Institute for Statistics, 2025; World Bank, 2025). Limited university–industry collaboration and firms' continued reliance on imported technologies constrain domestic innovation and capability building (OECD, 2021b). As a result, Indonesia risks attracting investment without generating the indigenous capabilities necessary for sustained industrial upgrading.

Lastly, regulatory and institutional weaknesses further complicate the investment climate. Although the Omnibus Law on Job Creation, enacted in 2020, sought to streamline licensing procedures and improve business certainty, investors continue to cite overlapping regulations, bureaucratic complexity, inconsistent implementation, and legal uncertainty as barriers to long-term investment. Such unpredictability can discourage technology-intensive investment and hinder industrial transformation, both of which require stable policy horizons and coordinated institutional support.

Overall, these constraints suggest that Indonesia's future position within GVCs will depend not only on its resource endowments and market size, but also on its ability to strengthen institutions, upgrade workforce capabilities, and foster innovation to support more sophisticated and resilient industrial ecosystems.

Indonesia's National Policy Responses

Downstreaming Strategy and Electric Vehicle-Battery Ecosystem Development

Indonesia's response to the changing global economic environment has increasingly centered on a more active industrial policy, most notably through industrial downstreaming (locally known as *hilirisasi*) and the development of an electric vehicle (EV) and battery ecosystem. Confronted with persistent commodity dependence and shallow integration into higher-value manufacturing, the Indonesian government has sought to leverage its critical mineral endowments to capture a larger share of emerging clean-energy value chains. The government aims to reposition the country as a regional hub for mineral processing, battery production, and EV manufacturing.

The cornerstone of this strategy has been the progressive restriction of raw mineral exports, complemented by tax holidays, fiscal incentives, investment facilitation, and industrial clustering policies (see Table 1). Building on domestic processing requirements under Law No. 4/2009 on Mineral and Coal Mining, Indonesia imposed a nickel ore export ban in 2020 and extended similar restrictions to bauxite in 2023, with further measures planned for copper and other strategic minerals. These minerals constitute critical inputs for EV batteries and other clean-energy technologies. The objective has been to stimulate domestic smelting and processing industries, increase value added, generate employment, and reduce Indonesia's dependence on volatile commodity exports.

Table 1: Government Policies Supporting Industrial Downstreaming

Government Policies Supporting Industrial Downstreaming	Key Measures
Legislative Framework	The government enacted several laws to provide the legal foundation for industrial downstreaming in Indonesia, including: 1. Law No. 3/2020 on Mineral and Coal Mining, which mandates the domestic processing and refining of mineral resources and restricts the export of raw minerals. 2. Law No. 3/2014 on Industry, which promotes industrial development and value addition through downstream activities.

Government Policies Supporting Industrial Downstreaming	Key Measures
Fiscal Incentives	The government supports downstream investment through various tax and customs incentives, including import duty exemptions, tax holidays, and tax allowances , aimed at encouraging investment in processing and manufacturing activities.
Financial Sector Policies	The Financial Services Authority (OJK) introduced measures to support the acceleration of the Battery Electric Vehicle (BEV) ecosystem and related upstream industries, including: 1. Relaxation of credit quality assessment for loans related to BEV production and purchases. 2. Provision of financing facilities for both consumers and producers in the BEV industry.
Other Supporting Policies	The government implemented a series of raw mineral export restrictions to encourage domestic processing. The nickel ore export ban took full effect in 2020 , followed by the bauxite export ban in 2023 . Further restrictions on selected mineral exports have been considered to support downstream industrialization.

Source: Ministry of Industry and Various Media

In several respects, these measures have produced significant results. The export ban and domestic processing requirements have been accompanied by a substantial increase in FDI and the development of numerous new nickel smelters (OECD, 2024a). Much of this investment has been concentrated in integrated industrial parks such as the Indonesia Morowali Industrial Park (IMIP) and Indonesia Weda Bay Industrial Park (IWIP), supporting the expansion of stainless steel, nickel processing, and increasingly battery-material production (Tritto, 2023; PT Indonesia Weda Bay Industrial Park, 2024). As a result, Indonesia's exports of processed nickel products have risen sharply following the introduction of the nickel export ban and related industrial policy measures. By 2025, the country accounted for more than 60 percent of global nickel production, strengthening its position within emerging clean-energy supply chains (USGS, 2025).

The EV ecosystem development strategy extends the logic of downstreaming beyond mineral processing toward higher-value manufacturing. As seen Table 2, Presidential Regulation No. 55/2019, subsequently strengthened by Presidential Regulation No. 79/2023, established the framework for accelerating battery electric vehicle development through a combination of fiscal incentives (including VAT reductions, luxury tax and import-duty exemptions, and tax holidays) and non-fiscal measures such as local content

requirements, charging infrastructure development, licensing facilitation, and government procurement support (Government of Indonesia, 2019; Government of Indonesia, 2023). The objective is to move progressively from mining and smelting into battery materials, cell production, battery packs, EV assembly, and eventually broader automotive and energy-storage capabilities.

Table 2: Indonesia's EV incentives

Available Incentives		
 Supply	Corporate Tax & Tax Allowance	- Corporate tax exemption of 5-20 years applicable on investment value from US \$7.2 million to US \$2.1 billion + 2 years of tax reduction - Up to 30% from investment value calculated based on valuation of tangible fixed assets + reduction of corporate income tax by 5% per year, for 6 years (total 30%)
	Import duty on machinery	- Exemption of import duty on imported capital goods (machines) for 2 years during construction period - Exemption of import duty on imported goods and material for production for 2 years during initial production (or 4 years if locally produced machines min. 30% from total value)
	Capabilities building	Gross income tax deduction of up to 300% of costs incurred in R&D; 200% of funds spent for vocational training program; 60% of invested capital for fixed assets in labor-intensive industries
 Demand	Subsidy	Subsidies of US \$5,130 for locally manufactured 4Ws and of US \$469 for e2W made with at least 40% local content
	Luxury & Import Tax	- Tax exemption from previous 10% for BEV (ICE's tax of 15%-40%) - Tax exemption for SKD imported BEVs with 4 wheels or more
	Transfer & Circulation tax	Maximum tax ceiling of 10% of each (specific rates depends on each provincial government)
	Preferential Access	EVs are not restricted by the odd-even number plate traffic restriction (only in Jakarta)
 Others	Charging Infrastructure	- A ceiling rate of US \$0.16/kWh of service costs for charging, with planned similar ceiling rates for fast and ultra-fast charging - Subsidized EV charging of US \$0.05/kWh

Source: Indonesia Presidential Regulation No.55/2019

Implementation has combined upstream resource control through the nickel export ban, targeted investment incentives, and direct state participation through PT Industri Baterai Indonesia (IBC), a state-owned company established to support the development of an integrated domestic EV-battery ecosystem (Ministry of State-Owned Enterprises, 2021). Strategic partnerships with global firms, particularly Hyundai-LG Energy Solution and CATL, have further advanced these ambitions (Hyundai Motor Group, 2021; Reuters, 2024). The inauguration of the Hyundai-LG battery cell plant in Karawang in 2024 marked a significant milestone in the establishment of domestic battery-cell manufacturing capacity (Ministry of Investment/BKPM, 2024).

Nevertheless, the developmental impact of downstreaming policies remains uncertain. Much of the sector continues to depend heavily on foreign capital, imported technologies, and overseas managerial expertise, particularly from Chinese-led investment networks. Moreover, linkages with domestic suppliers and SMEs remain limited, raising concerns that downstreaming could evolve into a new form of enclave industrialization with weak technological spillovers (OECD, 2024a). Environmental sustainability presents an additional challenge, as nickel processing remains heavily reliant on coal-fired power, while evolving battery technologies and global nickel oversupply expose the risks of excessive dependence on a single commodity.

Investment Liberalization, Industrial Estates, and Infrastructure Developments

Beyond downstreaming, Indonesia has also pursued investment liberalization, industrial clustering, and infrastructure expansion to strengthen its attractiveness as a manufacturing destination amid global supply chain diversification. The centerpiece of these reforms was the 2020 Omnibus Law on Job Creation, enacted under President Joko Widodo, which streamlined business licensing, liberalized investment restrictions, and simplified land acquisition and spatial planning procedures to address longstanding concerns over regulatory fragmentation and bureaucratic inefficiency (OECD, 2021b). Subsequently, under President Prabowo Subianto, these efforts have continued with a stronger emphasis on investment coordination and downstream industrial development, with the 2025–2029 National Medium-Term Development Plan (RPJMN) prioritizing sectors such as the digital economy, green manufacturing, and food processing.

At the same time, Special Economic Zones (SEZs) and industrial estates have been expanded as instruments of industrial clustering and investment attraction. Indonesia has established 25 SEZs across sectors, including manufacturing, logistics, tourism, digital industries, and downstream processing (National Council for Special Economic Zones, 2026). Their performance, however, remains uneven (Kechichian & Shin, 2025). Integrated industrial parks such as Morowali in Central Sulawesi and Weda Bay in North Maluku have emerged as major centers for nickel processing and downstream

production, supported heavily by foreign investment and technology (IEA, 2022; Lazar, et al., 2026).

Infrastructure development has constituted another pillar of this strategy. Successive administrations have prioritized roads, ports, airports, energy projects, and logistics connectivity to reduce business costs and strengthen participation in regional production networks. Although Indonesia's Logistics Performance Index ranking improved from 63rd in 2016 to 46th in 2023, infrastructure gaps, land acquisition challenges, and uneven industrial services continue to constrain competitiveness relative to regional peers (World Bank, 2023; OECD, 2021b).

These reforms have been accompanied by robust investment growth. Realized investment reached IDR 1,714.2 trillion in 2024 and increased further to around IDR 1,931 trillion in 2025, with manufacturing—particularly metals processing, chemicals, and food and beverage—accounting for a significant share of new investment (Ministry of Investment/BKPM, 2026). However, the quality and distribution of investment remain concerns. Recent FDI has been concentrated in resource-processing industries and the digital economy, limiting broader employment and technological spillovers. Combined with the concentration of investment in Java and selected nickel-producing regions, as well as persistent regulatory uncertainty, this suggests that investment liberalization alone cannot ensure sustained industrial upgrading.

Regional Trade Engagement and Economic Partnership Agreements

Indonesia has increasingly used regional and international economic partnerships to respond to geoeconomic fragmentation, reduce commodity dependence, and deepen integration into higher-value manufacturing. Beyond market access, trade agreements are increasingly viewed as instruments for attracting investment, securing critical inputs, and embedding Indonesia within regional production networks. Through the ASEAN Economic Community (AEC) and the Regional Comprehensive Economic Partnership (RCEP), Indonesia has benefited from harmonized rules of origin and cumulation provisions that facilitate participation in regional value chains and improve the attractiveness of Indonesia as a manufacturing base serving a market representing around 30 percent of global GDP and trade (RCEP Secretariat, 2023).

More recently, Indonesia has sought to shape regional cooperation in support of its ambition to become an EV and battery production hub. At the 2026 ASEAN Summit in the Philippines, Indonesia promoted closer collaboration on critical minerals and regional EV supply chains, including an ASEAN critical minerals corridor to strengthen supply security amid geoeconomic fragmentation (Jakarta Globe, 2026). The Indonesia–Philippines "Nickel Corridor" initiative similarly aims to secure raw material supplies for regional

battery industries by leveraging the two countries' dominant positions in global nickel production (Antara News, 2026).

Indonesia has also supported the harmonization of regional EV standards and investment facilitation under the ASEAN Leaders' Declaration on Developing Regional Electric Vehicle Ecosystem (ASEAN Secretariat, 2023b). In parallel, the ASEAN Minerals Cooperation Action Plan (AMCAP-IV) 2026–2030 provides a regional framework for expanding cooperation across upstream and downstream minerals development and strengthening sustainable investment and trade in critical-mineral value chains (ASEAN Secretariat, 2025).

Beyond ASEAN, Indonesia has pursued strategic partnerships to secure inputs, technology, and markets. Cooperation with Australia seeks to leverage complementarities between Australia's lithium resources and Indonesia's nickel resources and downstream processing capabilities to develop more integrated EV and battery supply chains (Australian Government, 2023; Walker & Palaon, 2025). Meanwhile, partnerships with South Korea, China, and Japan have supported investment and technology transfer through projects involving Hyundai, LG Energy Solution, CATL, and Panasonic (Ministry of Investment/BKPM, 2024). Meanwhile, initiatives such as the IEU–CEPA negotiations and Indonesia's OECD accession process reflect broader efforts to diversify export markets and promote regulatory convergence.

Nevertheless, external partnerships alone cannot guarantee industrial upgrading. Their effectiveness ultimately depends on Indonesia's ability to strengthen domestic capabilities so that regional integration becomes a catalyst for technological upgrading rather than merely an extension of commodity dependence.

Indonesia-Thailand Bilateral Trade and Investment

Indonesia-Thailand Bilateral and Regional Cooperation Architecture

As seen in Table 3, Indonesia–Thailand economic cooperation operates through a multilayered architecture combining legally binding regional agreements with bilateral coordination mechanisms. The regional layer provides the formal rules governing market access, investment protection, and sectoral integration, while the bilateral layer seeks to translate these commitments into practical cooperation. However, the two layers have not yet been fully integrated into an operational strategy for the development of a bilateral supply chain.

Trade liberalization is delivered primarily through ASEAN rather than through a dedicated Indonesia–Thailand free trade agreement. The ASEAN Trade in Goods Agreement (ATIGA)

provides preferential tariff treatment for bilateral merchandise trade, while the Regional Comprehensive Economic Partnership (RCEP) extends market access and rules-of-origin cumulation across a wider East Asian production network. These provisions allow inputs sourced from participating economies to qualify for preferential treatment, creating an institutional basis for cross-border production sharing. For Indonesia and Thailand, this is particularly relevant in sectors such as automotive components, electrical equipment, agro-processing, and battery-related manufacturing, where production can be distributed across multiple locations.

These frameworks is important because Indonesia–Thailand cooperation depends on whether firms can treat both economies as parts of a connected production system. Complementary capabilities alone are insufficient as firms must be able to move inputs, meet compatible standards, cumulate rules of origin, and coordinate production across borders. Regional and bilateral institutions, therefore, help turn potential complementarities into actual cross-border production by reducing transaction and coordination costs.

Table 3: Regional and Bilateral Frameworks Supporting Indonesia-Thailand Economic Cooperations

Framework	Main Function	Relevance to Bilateral Integration	Key Gap
ATIGA	Preferential tariffs and customs rules	Facilitates bilateral goods trade	Persistent non-tariff measures
RCEP	Rules-of-origin cumulation and wider market access	Supports cross-border sourcing and regional production sharing	Limited firm-level utilization
ACIA	Investment protection and facilitation	Reduces regulatory risks for bilateral investment	Modest production-oriented FDI
DEFA	Digital trade, data, and payments	Supports e-commerce and digital services integration	Regulatory divergence
AMCAP 2026–2030	Critical-minerals cooperation	Links Indonesian battery inputs with Thai manufacturing	No bilateral project pipeline
Joint Commission for Bilateral Cooperation	Broad political and sectoral coordination	Sets strategic priorities for bilateral cooperation	Broad agenda and limited project-level
Joint Trade Commission	Trade facilitation, removal of trade barriers, investment promotion, and	Provides a dedicated mechanism to translate bilateral commitments into trade, investment,	Effectiveness will depend on clear work programmes, sectoral targets,

Framework	Main Function	Relevance to Bilateral Integration	Key Gap
	private-sector engagement	and supply-chain initiatives	and implementation monitoring

Source: *Author's compilation and assessment based on ASEAN Secretariat documents on ATIGA, RCEP, ACIA, DEFA, and AMCAP-IV, and official Indonesia–Thailand bilateral statements.*

Investment relations are governed mainly by the ASEAN Comprehensive Investment Agreement (ACIA), in the absence of a standalone bilateral investment treaty. ACIA provides protection against discriminatory treatment and expropriation, clarifies sectoral restrictions through a negative list approach, and offers regional dispute settlement mechanisms. Its expanded coverage under recent amendments is relevant to sectors in which Thai firms have established or growing interests in Indonesia, including agriculture, fisheries, mining, food processing, petrochemicals, and automotive components (ASEAN Secretariat, 2024). Nevertheless, ACIA should be understood as an enabling framework rather than the principal driver of investment: Indonesia's market size, resource base, and growth prospects remain the main commercial motivations.

Sector-specific ASEAN initiatives add further layers to this architecture. The ASEAN Digital Economy Framework Agreement (DEFA) is intended to facilitate cross-border digital trade, payments, data flows, and e-commerce. The ASEAN Minerals Development Vision 2045 and ASEAN Minerals Cooperation Action Plan 2026–2030 provide a framework for cooperation in critical minerals and downstream industries, directly relevant to linking Indonesia's battery-material ambitions with Thailand's automotive manufacturing base. ASEAN food-security and agriculture frameworks also support potential cooperation in fisheries, livestock, halal products, and agro-processing.

The bilateral layer performs a different function. The Joint Commission for Bilateral Cooperation, sector-specific memoranda of understanding, and the Strategic Partnership provide the broader political framework for bilateral relations. More recently, the establishment of the Indonesia–Thailand Joint Trade Commission in August 2026 created a dedicated mechanism to address trade barriers, facilitate investment, strengthen private-sector linkages, and develop cooperation in sectors such as food security, the halal industry, the digital economy, technology, and strategic investment. Unlike regional agreements, these bilateral mechanisms do not themselves provide preferential market access or binding investment protections. Their principal role is to translate regional commitments and political priorities into practical initiatives.

The central institutional gap is not the absence of agreements, but the limited conversion of existing frameworks into concrete cross-border production. Indonesia and Thailand

already have regional and bilateral mechanisms covering trade, investment, digital integration, and sectoral cooperation. However, they still face a collective action problem, as both countries have incentives to compete for mobile investment even when coordinated specialization could generate greater gains. The Joint Trade Commission (JTC) could help bridge this gap, but its role should extend beyond consultation and barrier identification toward an operational work program that identifies supply-chain projects, coordinates standards and investment facilitation, engages firms, assigns institutional responsibilities, and monitors implementation. Without these functions, bilateral cooperation risks remaining stronger in dialogue and market exchange than in integrated industrial production.

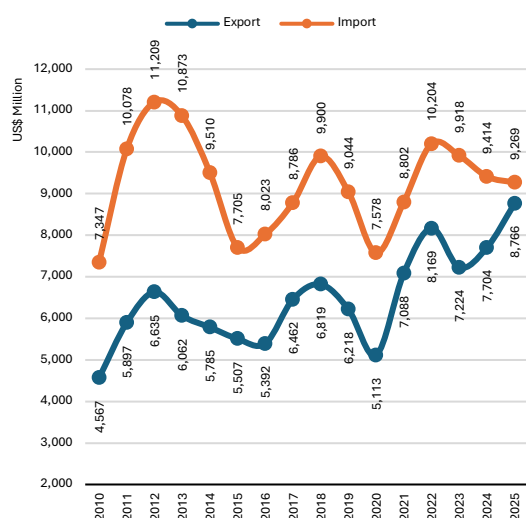
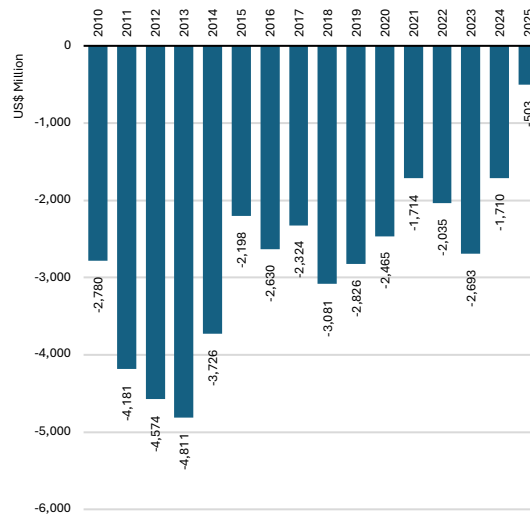
Overall, Indonesia–Thailand cooperation already rests on a substantial institutional foundation. Its weakness lies in fragmentation across separate regional and bilateral instruments. The next step is therefore not necessarily to create another comprehensive agreement, but to organize existing mechanisms around a focused bilateral production agenda aligned with the demands of geoeconomic fragmentation.

Bilateral Trade, Investment, and Corporate Linkages

Indonesia and Thailand maintain sizeable bilateral economic ties, but the relationship remains more developed in trade than in cross-border production and investment. Merchandise trade has expanded and become more balanced over time, while investment flows remain asymmetric and volatile. This suggests that the two economies are commercially connected but have not yet developed the dense corporate and supplier linkages required for an integrated bilateral production network.

Bilateral merchandise trade, as seen in Figure 3, increased from approximately US\$12.5 billion in 2010 to around US\$18 billion in 2025. Indonesia's exports to Thailand nearly doubled from US\$4.6 billion to a record US\$8.8 billion over the same period. Thailand's exports to Indonesia, meanwhile, declined from their 2012 peak of US\$11.2 billion to approximately US\$9.3 billion in 2025. Consequently, Indonesia's trade deficit with Thailand narrowed from around US\$4.8 billion in 2013 to approximately US\$503 million in 2025.

The narrowing deficit indicates a gradual rebalancing of bilateral trade, although it should not be interpreted as evidence that the two countries' industrial capabilities have converged. Indonesia's exports to Thailand remain more concentrated in upstream resources and industrial inputs, whereas Thailand exports a broader range of manufactured products.

Figure 3: Indonesia Bilateral Trade with Thailand, 2010-2025**Indonesia's Export & Import with Thailand****Indonesia Trade Balance with Thailand**

Source: UN Comtrade

Table 4 shows the structure of Indonesia-Thailand bilateral trade in 2025. On one side, Indonesia's leading exports to Thailand include mineral fuels, precious metals, copper, machinery, and selected automotive components. Mineral fuels and oils accounted for around 24.9 percent of Indonesia's exports to Thailand in 2025, although their share declined as fossil-fuel exports weakened. Precious stones and metals rose sharply to around 16.2 percent, while vehicles and parts accounted for approximately 6.9 percent. The presence of gearboxes, clutches, motorcycle parts, engine components, and copper products indicates that Indonesia already participates in selected intermediate-goods trade, even though resource-based products continue to dominate the export structure.

On the other side, Thailand's exports to Indonesia are more manufacturing-intensive. Vehicles and parts accounted for approximately 14.8 percent of total exports, followed by machinery and appliances at 14.3 percent, plastics at 11.6 percent, electrical machinery at 8.8 percent, and sugars and confectionery at 7.8 percent. This composition reflects Thailand's established automotive and manufacturing ecosystem, including its supplier networks in commercial vehicles, engines, electrical equipment, machinery, and processed products.

Table 4. Structure of Indonesia-Thailand Bilateral Trade, 2025

Indonesia's Leading Exports to Thailand	Share	Thailand's Leading Exports to Indonesia	Share
Mineral fuels and oils	24.90%	Vehicles and parts	14.80%

Indonesia's Leading Exports to Thailand	Share	Thailand's Leading Exports to Indonesia	Share
Precious stones and metals	16.20%	Machinery and appliances	14.30%
Vehicles and parts	6.90%	Plastics	11.60%
Machinery and appliances	5.60%	Electrical machinery and equipment	8.80%
Copper and articles	5.40%	Sugars and confectionery	7.80%

Source: UN Comtrade, Authors' Calculation

Recent trade developments indicate shifts in bilateral competitiveness. Indonesia's exports to Thailand grew by 13.8 percent in 2025, exceeding both Indonesia's overall export growth and Thailand's total import growth. This suggests that Indonesian exporters gained market share in the Thai market. Thailand's exports to Indonesia, by contrast, declined by approximately 1.5 percent in 2025, following contractions in 2023 and 2024. These changes may partly reflect commodity prices and domestic demand conditions, but they also indicate that the bilateral relationship is no longer defined solely by a stable exchange of Indonesian resources for Thai manufactured goods.

Trade flows alone, however, do not establish an integrated production network. Investment and corporate linkages are needed to convert trade complementarities into longer-term supplier relationships, technological learning, and cross-border specialization. In this regard, Thai companies already maintain a significant presence in Indonesia, particularly in agribusiness, food processing, petrochemicals, rubber, construction materials, retail, banking, mining, and automotive components. Major firms include Charoen Pokphand Group, Siam Cement Group, PTT, Bangkok Bank, Banpu, Sri Trang, Central Group, and Thai Summit.

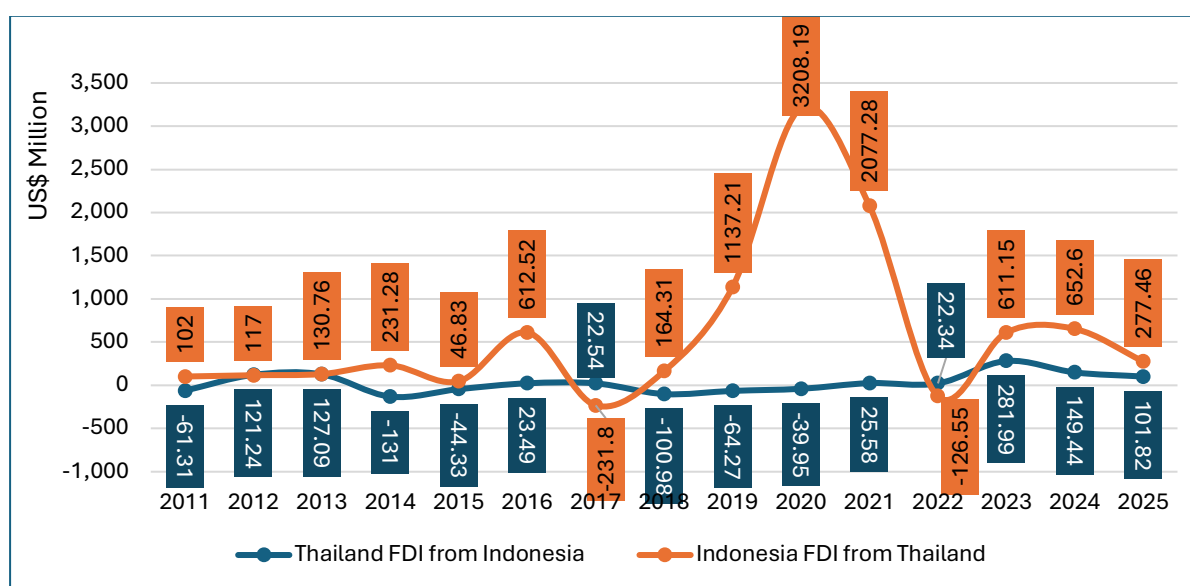
Historically, much of this investment has been market-seeking. Thai firms entered Indonesia primarily to access its large domestic market and natural-resource base rather than to establish export-oriented production networks linking the two countries. Recent sectoral data, however, suggest a gradual shift toward manufacturing. Chemicals accounted for nearly half of Thai investment realization in Indonesia in 2025, followed by rubber and plastics. Investment in motor vehicles increased almost fivefold, while investment also expanded in non-metallic minerals, paper products, machinery repair, and information services.

These developments need to be interpreted carefully. As seen in Figure 4, Thailand's net FDI flow into Indonesia turned negative by around US\$42.7 million in 2025, reflecting divestments and financial transactions in sectors such as transportation and wholesale trade. At the same time, project-level investment realization reached a record level and

became increasingly concentrated in manufacturing. The apparent contradiction illustrates why bilateral investment should be assessed using both aggregate FDI flows and sectoral realization data. Negative net flows do not necessarily mean that productive investment has stopped; they may coexist with new manufacturing projects when divestments elsewhere are larger.

Indonesian investment in Thailand remains smaller and less oriented toward manufacturing. Indonesian firms have concentrated mainly on real estate, consumer businesses, and selected resource-related activities. Reported Indonesian FDI into Thailand declined to approximately US\$101 million in 2025, while its presence in Thailand's automotive, electronics, machinery, and food-processing industries remained limited. This imbalance means that corporate learning and production integration continue to operate primarily through Thai firms investing in Indonesia rather than through reciprocal industrial expansion.

Figure 4: Indonesia and Thailand Direct Investment, 2011-2025



Source: Bank of Thailand, Bank Indonesia

A potentially more important channel of future integration lies in third-country corporate networks. Japanese automotive companies, Korean battery producers, Chinese industrial firms, and Western investors increasingly operate across multiple ASEAN locations. These firms can serve as practical connectors between Indonesia and Thailand because they already possess the managerial, technological, and supplier networks required to allocate different stages of production across countries. In this context, Indonesia can provide critical minerals, battery materials, downstream processing capacity, and market scale, while Thailand offers established automotive assembly, mature supplier networks, manufacturing expertise, and regional logistics capabilities.

The governments do not need to design a bilateral value chain from the top down. Their more important role is to reduce the frictions that prevent firms from integrating production across the two economies, through compatible standards, efficient customs procedures, predictable investment rules, logistics connectivity, and rules-of-origin utilization. Corporate networks provide the production mechanism; public policy determines how easily those networks can operate and how much domestic capability they generate.

All in all, the bilateral relationship contains the basic ingredients for deeper production integration, but these remain only partially connected. Trade reveals complementary specialization, while investment and corporate networks provide a possible mechanism for transforming that specialization into cross-border production. The central policy challenge is to ensure that these flows generate stronger supplier linkages, technology transfer, and coordinated industrial development rather than remaining a combination of commodity trade and separate market-seeking investments.

Opportunities and Constraints Bilateral Integration:

Automotive, Agro-Industry, Digital Economy, and Service Trade

The restructuring of global value chains creates scope for Indonesia and Thailand to move beyond traditional trade toward selective production cooperation. This need not eliminate competition: both will continue to compete for investment across automotive, electronics, and digital industries. The key is to identify areas where complementary capabilities enable cooperation that expands opportunities for both. In this regard, three conditions matter: complementary capabilities across value-chain stages, gains in scale, resilience, or technology beyond what national production can offer, and clear commercial incentives for firms to operate across both countries. EVs and automotive, agro-industry, and selected digital and service activities show varying degrees of potential.

Table 5 shows Indonesia–Thailand opportunities and constraints for bilateral cooperation. According to the table, the automotive and EV industries offer perhaps the clearest example of these complementarities. Thailand remains ASEAN’s leading automotive manufacturing hub, producing around 1.46 million vehicles in 2025 and supported by an extensive domestic supplier network and long-established manufacturing capabilities (Federation of Thai Industries [FTI], 2026; Thailand Board of Investment [BOI], 2024). Indonesia, meanwhile, combines ASEAN’s largest automotive market with abundant nickel reserves and growing capabilities in battery materials and cell production.

The transition to electric mobility creates opportunities for a regional value chain in which Indonesia specializes in upstream battery inputs, and Thailand focuses on downstream

vehicle assembly and component manufacturing. However, differences in technical standards, competition for the same pool of foreign investors, and concerns over the carbon intensity of battery production continue to complicate closer integration (ASEAN Secretariat, 2025).

Agro-industry represents a relatively established area of bilateral cooperation. Indonesia's strength in agricultural commodities, including palm oil, rubber, fisheries, and cocoa, complements Thailand's established capabilities in food processing, packaging, and export-oriented manufacturing (World Bank, 2026c; Malerius, 2025). Joint ventures and technology partnerships could help Indonesia move into higher-value agro-processing while strengthening ASEAN food security and export competitiveness (ASEAN Secretariat, 2025b)

Table 5: Indonesia–Thailand Opportunities and Constraints for Bilateral Cooperation

Sector	Complementary Strengths	Key Constraints
Automotive & EV	Indonesia: nickel and batteries; Thailand: EV assembly and supplier ecosystem	Standards divergence, investor competition, carbon concerns
Agro-Industry	Indonesia: raw materials; Thailand: processing and export capabilities	SPS measures, certification, logistics
Digital Economy & Services	Indonesia: market scale; Thailand: digital services and logistics technology	Data governance, regulatory fragmentation
Cross-cutting	ASEAN market and RCEP	NTMs, weak B2B networks, limited LCS usage

Source: Author's compilation from various sources

The digital economy and services trade constitute another promising frontier. Indonesia hosts Southeast Asia's largest digital economy, while Thailand has developed relatively advanced capabilities in digital government services, logistics technology, and health technology. Ongoing negotiations on the ASEAN Digital Economy Framework Agreement (DEFA) could facilitate cross-border data flows, digital payments, e-commerce, and fintech integration, lowering transaction costs and expanding opportunities for SMEs to participate in regional markets (ASEAN Secretariat, 2025).

Despite these opportunities, several constraints continue to limit deeper bilateral integration between Indonesia and Thailand. Non-tariff measures, differences in technical and sanitary requirements, and cumbersome customs procedures continue to raise cross-border transaction costs, particularly for smaller firms (ERIA, 2021; López González & Sorescu, 2019). Institutional mechanisms to translate complementarities into concrete supply chain projects remain underdeveloped, while business-to-business

networks between the two countries are less dense than their linkages with extra-regional partners such as Japan and China. Although Indonesia and Thailand have continued to expand their Local Currency Transaction Framework, wider adoption remains necessary to fully realize its potential to reduce exchange-rate exposure and transaction costs (Bank Indonesia, Bank of Thailand, & Bank Negara Malaysia, 2025).

Ultimately, the challenge for Indonesia and Thailand is not merely to expand trade and investment, but to convert their complementary strengths into deeper production linkages, technological upgrading, and stronger ASEAN-centered value chains that can thrive in an increasingly fragmented global economy.

Policy Recommendations

Policy Recommendations for Indonesia

Indonesia should seize the opportunities created by geoeconomic fragmentation through a comprehensive industrial strategy that extends beyond attracting investment toward building long-term productive capabilities (see Table 6). While downstreaming policies have succeeded in drawing investment into nickel processing and battery materials, the next phase of industrial transformation should focus on deepening domestic industrial ecosystems. This requires strengthening supplier development programs, fostering linkages between foreign investors and local firms, integrating Special Economic Zones (SEZs) with local economies, and broadening the manufacturing base into sectors with greater technological spillovers and employment potential, such as electronics, automotive components, renewable energy equipment, advanced agro-processing, and digital manufacturing.

A more effective downstreaming strategy should also prioritize industrial upgrading rather than investment attraction alone. Performance-based incentives tied to technology transfer, local sourcing, workforce development, and joint research activities can help to ensure that foreign investment generates domestic learning and capability accumulation. In the case of nickel, policy support should increasingly target battery-grade processing and higher-value applications rather than expanding lower-value products with uncertain long-term prospects. Establishing a clear roadmap with measurable performance indicators would improve accountability and policy effectiveness.

Table 6: Policy recommendations for Indonesia's Industrial Transformation

Policy Pillar	Priority Actions	Intended Outcomes
Industrial Deepening	Supplier development, SEZ integration, diversified manufacturing	Stronger domestic linkages and higher value added
Innovation & Technology	R&D support, university–industry collaboration, digitalization	Technological upgrading and capability building
Institutional Reform	Regulatory certainty, inter-agency coordination	Improved investment climate and policy coherence
Human Capital	VET reform, apprenticeships, reskilling	Higher productivity and workforce readiness

Source: Author's compilation from various sources

Strengthening innovation capacity must become a parallel priority. Indonesia's R&D expenditure remains low relative to regional peers, limiting technological learning and industrial upgrading. Greater investment in research, stronger university–industry collaboration, and incentives for technology diffusion are essential, particularly in strategic sectors linked to EVs, renewable energy, advanced materials, and digital technologies. Accelerating industrial digitalization through automation, artificial intelligence, and smart manufacturing will also be increasingly important for sustaining competitiveness in future production networks.

Institutional reforms are equally critical. Regulatory simplification should be accompanied by greater policy consistency, legal certainty, and stronger coordination across ministries responsible for industry, trade, investment, labor, and infrastructure. Industrial transformation requires credible long-term policy horizons that reduce uncertainty and encourage technology-intensive investment.

Finally, Indonesia's demographic advantage can only translate into a productivity dividend through sustained investments in human capital. Expanding industry-oriented vocational education, strengthening apprenticeship systems, and promoting reskilling and upskilling in areas such as automation, engineering, digital technologies, logistics, and advanced manufacturing will help address persistent skills gaps. Labor market reforms should continue to balance flexibility with adequate worker protection to support both investment attractiveness and social cohesion.

All in all, these reforms aim not merely to increase investment but to transform Indonesia from a resource-based economy into a more diversified, innovative, and technologically capable participant in regional and global value chains.

Policy Recommendations for Indonesia-Thailand Cooperation

Beyond domestic reforms, Indonesia and Thailand should elevate their economic relationship from a broadly cooperative ASEAN partnership into a more strategic platform for regional production integration. Rather than competing for the same investment, both countries can leverage their complementary strengths to strengthen ASEAN's resilience amid geoeconomic fragmentation. Indonesia and Thailand should establish a dedicated Supply Chain Working Group under the newly created Joint Trade Commission. The working group should identify priority projects, coordinate regulatory and investment policies, engage firms and industry associations, and monitor implementation in strategic sectors.

Notably, the working group's objective should not be to comprehensively coordinate industrial policy or to completely eliminate investment competition, but to identify areas where complementary capabilities make cross-border production economically viable. The working group should map value-chain complementarities, identify specific production stages that could be distributed across the two economies, engage lead firms and supplier associations, coordinate standards and investment facilitation, and monitor the implementation of agreed projects. Such coordination could also reduce the risk of inefficient competition for subsidies. Rather than competing primarily through increasingly generous fiscal incentives for the same investment projects, both countries could jointly promote ASEAN-based production configurations in which investment in one economy generates demand for inputs, components, or services from the other.

Table 7 shows Policy matrix on Indonesia–Thailand cooperation priorities. The electric vehicle (EV) industry offers the most immediate opportunity. Indonesia's advantages in nickel resources, battery materials, and emerging cell production complement Thailand's established automotive ecosystem and supplier networks. A bilateral EV integration framework should therefore promote specialization across the value chain through harmonized technical standards, coordinated investment promotion, joint sustainability protocols aligned with international requirements, and collaboration in charging infrastructure and component manufacturing. Such an approach would strengthen ASEAN's competitiveness while reducing dependence on extra-regional supply chains.

Agro-industry provides another promising avenue for cooperation. Indonesia's agricultural resources and large domestic market can be combined with Thailand's strengths in food processing, branding, logistics, and export marketing. Joint initiatives in halal food, food technology, sustainable agriculture, and climate-resilient supply chains could enhance regional food security while moving both countries into higher-value segments of global agro-industrial markets.

The digital economy and services trade should become a new frontier of bilateral integration. Accelerating cooperation on digital payments, e-commerce regulation,

cybersecurity standards, data governance, and cross-border digital services would reduce regulatory fragmentation and lower transaction costs, particularly for SMEs seeking access to regional markets. Progress under the ASEAN Digital Economy Framework Agreement (DEFA) can provide an institutional foundation for these efforts.

Table 7: Policy matrix on Indonesia–Thailand cooperation priorities

Cooperation Area	Indonesia's Strengths	Thailand's Strengths	Priority Actions
EV & Automotive	Nickel, battery materials, large market	Automotive ecosystem, supplier base	Standards harmonization, joint investment promotion
Agro-Industry	Agricultural resources, halal market	Processing, branding, logistics	Joint ventures, food technology, climate resilience
Digital Economy	Digital market scale	Digital services and logistics capabilities	DEFA implementation, data and payment interoperability
Connectivity & Trade Facilitation	Maritime networks	Mainland ASEAN connectivity	Customs facilitation, LCS, B2B linkages

Source: Author's compilation from various sources

At the same time, both countries should improve the enabling environment for regional production networks by enhancing maritime connectivity, customs facilitation, local currency settlement, business-to-business exchanges, and stronger linkages with industry associations. Deeper corporate networks remain essential, as bilateral business ties remain less developed than each country's relationships with partners such as Japan and China.

Finally, Indonesia and Thailand should coordinate more closely within ASEAN and broader regional frameworks, including RCEP, to advance common interests in EV supply chains, digital trade, and investment facilitation. In an increasingly fragmented global economy, the ability to combine national industrial strategies with deeper bilateral cooperation will determine whether both countries emerge as passive participants or co-architects of more integrated, resilient, and competitive ASEAN production networks.

Conclusion

The transition from hyper-globalization to a more fragmented geoeconomic order is reshaping trade, investment, and production. Global value chains are increasingly influenced not only by efficiency and comparative advantage, but also by resilience,

economic security, technological rivalry, and sustainability. For emerging economies, these shifts create both opportunities and risks. ASEAN's experience suggests that geoeconomic fragmentation does not necessarily mean deglobalization; instead, it is producing more diversified, regionalized, and strategically managed production networks. Given its economic scale, resource endowments, and demographic profile, Indonesia is well-positioned to benefit from this transition.

However, those strategic advantages alone cannot guarantee industrial transformation. Although Indonesia's large domestic market, critical minerals, and relatively non-aligned geopolitical posture provide a strong foundation for attracting investment linked to China+1 diversification and the global energy transition, its shallow GVC integration, commodity dependence, high logistics costs, skills gaps, weak innovation capacity, and regulatory uncertainty continue to constrain movement into higher-value activities. The central challenge is therefore not merely to attract investment, but to convert external opportunities into domestic productive capabilities.

Indonesia's policy response reflects an increasingly active industrial strategy. Downstreaming, EV and battery ecosystem development, investment liberalization, infrastructure expansion, and regional economic engagement seek to reposition the country within emerging supply chains. These policies have generated tangible gains, including greater investment, expanded mineral-processing capacity, and a more strategic role in clean-energy value chains. Nevertheless, investment does not automatically produce technological upgrading. Without stronger domestic suppliers, innovation systems, human capital, and performance-based industrial governance, downstreaming risks creating enclave industries dependent on foreign capital and technology.

In this context, Regional cooperation should therefore not be understood as an alternative to competition. Indonesia and Thailand will continue to compete for mobile investment and industrial activities. But geoeconomic fragmentation increasingly rewards production ecosystems that combine scale, specialized capabilities, resilience, and regulatory predictability. Where the two economies possess complementary assets, selective cooperation can strengthen their joint competitiveness while allowing each to specialize in activities in which it has stronger capabilities.

Ultimately, geoeconomic fragmentation presents Indonesia with a narrow but significant opportunity. Whether it remains a supplier of commodities and assembly activities or becomes a technologically capable manufacturing economy will depend on current policy choices. Industrial transformation requires capable institutions, investment in human capital and innovation, policy coherence, and stronger regional partnerships. By combining domestic capability building with deeper Indonesia-Thailand cooperation, Indonesia can advance its Golden Indonesia 2045 ambitions while contributing to more integrated and competitive ASEAN supply chains.

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