

The Impact of the Belt and Road Initiative on ASEAN's Investment Environment

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ABSTRACT

The Belt and Road Initiative (BRI), launched in 2013, has become a defining framework for China-ASEAN economic cooperation, reshaping regional investment patterns through large-scale infrastructure development, trade facilitation, and financial integration. This paper examines the multidimensional impact of BRI on ASEAN's investment environment across four mechanisms: infrastructure connectivity, trade and investment facilitation, industrial park agglomeration, and financial support. Drawing on official trade and investment data from 2013 to 2025, the study employs a combination of descriptive statistical analysis and in-depth case studies of three landmark projects—the China-Laos Railway, the Jakarta-Bandung High-Speed Railway, and the Thai-Chinese Rayong Industrial Park—to identify the specific channels through which BRI influences host-country investment attractiveness. The findings reveal that BRI infrastructure projects generate substantial investment multiplier effects, reducing logistics costs by 30%-40% along key corridors and catalyzing follow-on industrial investment. Industrial parks established under the BRI framework create agglomeration economies that lower entry barriers for foreign investors, while complementary financial mechanisms, including the Asian Infrastructure Investment Bank (AIIB) and expanded RMB settlement networks, address long-standing financing gaps in the region. The comparative case analysis further demonstrates that BRI's impact follows differentiated pathways depending on host countries' development levels: transport connectivity as a catalyst for least-developed economies, technology demonstration effects for emerging industrial nations, and industrial park deepening for institutionally mature markets. The paper concludes with policy recommendations for enhancing the quality and sustainability of BRI-driven investment in ASEAN.

KEYWORDS

Belt and Road Initiative; ASEAN; Investment Environment; Foreign Direct Investment; Infrastructure Connectivity; Case Study Analysis

1. INTRODUCTION

1.1. Research Background

The Association of Southeast Asian Nations (ASEAN) represents one of the world's most dynamic economic regions, comprising ten member states with a combined population of approximately 690 million and an aggregate GDP approaching USD 4 trillion in 2024 [1]. The region has consistently outpaced global average growth rates, driven by favorable demographics, deepening regional integration, and expanding participation in global value chains. China's economic relationship with ASEAN has deepened dramatically over the past decade: bilateral trade reached USD 982.35 billion in 2024 and further climbed to approximately USD 1,042 billion in 2025, with China maintaining its position as ASEAN's largest trading partner for over fifteen consecutive years [1]. By the end of 2025, China's cumulative outward foreign direct investment (OFDI) stock in ASEAN exceeded USD 175

billion, spanning manufacturing, infrastructure development, the digital economy, and green technology [2].

The BRI, announced in 2013 and centered on five cooperation priorities—policy coordination, facility connectivity, unimpeded trade, financial integration, and people-to-people bonds—has provided an overarching institutional framework for deepening China-ASEAN economic ties [3]. Geographically, ASEAN occupies a pivotal position at the intersection of the 21st Century Maritime Silk Road, making it a natural priority region for BRI implementation. The initiative's emphasis on infrastructure development directly addresses one of the most significant constraints on ASEAN's investment attractiveness: the region's well-documented infrastructure deficit, which the Asian Development Bank has identified as a persistent obstacle to sustainable growth [4].

Understanding how BRI influences ASEAN's investment environment carries both theoretical and practical significance. From a theoretical perspective, BRI represents a novel mode of international economic cooperation that differs substantially from traditional North-South aid frameworks or purely market-driven investment flows. Its combination of state-backed financing, infrastructure-led development, and industrial park-based capacity cooperation constitutes a distinct approach to shaping host-country investment conditions. From a practical standpoint, as BRI enters its second decade, policymakers require evidence-based assessments of its effectiveness to inform the design of subsequent phases of cooperation.

1.2. Research Methods and Contributions

This paper employs a mixed-methods approach combining literature review, descriptive statistical analysis, and comparative case study methodology. The quantitative component draws on official trade and investment statistics from China's Ministry of Commerce (MOFCOM), the General Administration of Customs of China, the ASEAN Secretariat's statistical database, UNCTAD's World Investment Report series, and World Bank datasets covering the period 2013 to 2025. Descriptive trend analysis is used to examine the evolution of key indicators including bilateral trade volumes, FDI flows and stocks, and logistics performance metrics.

The qualitative component consists of three in-depth case studies selected to represent distinct BRI cooperation modalities: the China-Laos Railway (infrastructure connectivity model), the Jakarta-Bandung High-Speed Railway (technology and standard export model), and the Thai-Chinese Rayong Industrial Park (industrial park and agglomeration model). Each case is examined along multiple dimensions including investment multiplier effects, employment creation, logistics cost reduction, institutional improvement, and replicability. The contribution of this paper lies in its integration of data-driven trend analysis with structured case comparison to identify the specific causal mechanisms through which different types of BRI projects affect host countries' investment environments.

2. LITERATURE REVIEW

2.1. Economic Effects of the Belt and Road Initiative

A substantial body of scholarship has examined the economic rationale and effects of BRI since its inception. Huang (2016) provided one of the earliest comprehensive assessments, analyzing the initiative across its motivational, institutional, and economic dimensions and arguing that BRI's primary economic logic rests on reducing trade costs and investment barriers in participating countries through coordinated infrastructure development [3]. Du and Zhang (2018) employed firm-level data to empirically test BRI's impact on Chinese OFDI, finding that the initiative significantly promoted both greenfield investment and cross-border mergers and acquisitions in route countries, with effects particularly pronounced in infrastructure-related sectors [5]. Liu and Dunford (2016)

situated BRI within the broader context of China’s evolving globalization strategy, characterizing it as an effort to construct an “inclusive” model of globalization that emphasizes infrastructure connectivity as a foundation for trade and investment [6].

Zhai (2018) conducted a preliminary quantitative assessment of BRI’s economic effects using computable general equilibrium modeling, estimating that full implementation of BRI-related infrastructure improvements could increase global GDP by approximately 0.7% and boost trade among participating countries by up to 9.7% [7]. These macroeconomic projections underscore the scale of potential economic transformation that large-scale infrastructure investment can generate. Since commencing operations in 2016, the AIIB has approved over 200 projects globally, providing a significant financing complement to existing multilateral development banks and specifically targeting sectors—transport, energy, and urban infrastructure—that have historically been underserved in Asia [8].

2.2. ASEAN Investment Environment and BRI Engagement

Research on ASEAN’s investment environment has highlighted both the region’s attractiveness and its persistent structural challenges. The World Bank’s Doing Business 2020 report documented the substantial variation in business regulatory environments across ASEAN member states, with rankings ranging from 2nd globally (Singapore) to 165th (Myanmar) [9]. This heterogeneity creates a complex landscape for foreign investors, requiring differentiated strategies across markets.

The ASEAN Investment Report 2023 noted that total FDI inflows to ASEAN reached a historic high of USD 224 billion in 2022, driven by strong manufacturing investment and a recovery in services-sector FDI following pandemic disruptions [1]. UNCTAD’s World Investment Report 2024 further noted that developing economies’ share of global FDI exceeded 60% in 2023, with ASEAN serving as a key growth pole alongside other Asian economies [10]. Within this context, China’s share of FDI flows to ASEAN has steadily increased, reflecting both the gravitational pull of the region’s markets and the enabling effect of BRI-related connectivity improvements.

2.3. Research Gaps

While existing literature has made significant contributions, several gaps remain. First, much of the empirical work on BRI and FDI has focused on econometric estimation of average treatment effects, with relatively less attention to the specific causal mechanisms and transmission channels operating at the project level. Second, comparative case analysis that systematically examines how different types of BRI projects affect different categories of host countries remains underdeveloped. Third, the interaction effects between infrastructure projects and industrial park development—how transport connectivity creates conditions for subsequent manufacturing investment—have received insufficient analytical attention. This paper seeks to address these gaps through structured case comparison and mechanism-focused analysis.

3. ASEAN’S INVESTMENT ENVIRONMENT AND BRI COOPERATION PROGRESS

3.1. Basic Characteristics of ASEAN’s Investment Environment

ASEAN’s ten member states exhibit remarkable economic diversity. While Singapore’s GDP per capita exceeds USD 80,000, placing it among the world’s most advanced economies, Myanmar and Cambodia remain classified as least-developed countries by the United Nations. In 2024, aggregate ASEAN GDP reached approximately USD 3.9 trillion, with a regional growth rate of approximately 4.7% that significantly exceeded the global average of around 3.2% [1, 10]. This growth has been underpinned by favorable demographic trends—over 60% of ASEAN’s population is of working

age—and the region’s deepening integration into global manufacturing networks, particularly in electronics, automotive, and textile supply chains.

The World Bank’s Doing Business 2020 report, while now superseded by the B-READY framework, provides a useful snapshot of the regulatory environment faced by investors across ASEAN (see Table 1) [9].

Table 1. ASEAN Business Environment Rankings (Doing Business 2020)

Country	Global Rank	Score (0-100)	Key Strengths	Key Weaknesses
Singapore	2	86.2	Starting a business, enforcing contracts	—
Malaysia	12	81.5	Construction permits, getting electricity	Cross-border trade
Thailand	21	80.1	Investor protection, getting credit	Enforcing contracts
Vietnam	70	69.8	Cross-border trade	Resolving insolvency
Indonesia	73	69.6	Minority investor protection	Starting a business
Philippines	95	62.8	Paying taxes	Enforcing contracts
Cambodia	144	53.4	—	Getting electricity, contract enforcement
Laos	154	51.3	—	Starting a business, construction permits
Myanmar	165	46.8	—	Starting a business, cross-border trade
Brunei	66	70.1	Paying taxes	Construction permits

Source: World Bank, Doing Business 2020

The investment environments across ASEAN can be classified into four tiers. Singapore represents the first tier with world-class institutions, a highly developed financial sector, and advanced physical infrastructure. Malaysia and Thailand constitute a second tier characterized by relatively favorable business conditions, established manufacturing bases, and moderate production costs. Vietnam and Indonesia form a third tier where abundant and affordable labor provides significant cost advantages, though administrative efficiency and infrastructure quality require improvement. Cambodia, Laos, and Myanmar occupy a fourth tier where both hard and soft infrastructure remain significant constraints on investment, creating both challenges and high-return opportunities for infrastructure-focused development cooperation.

3.2. China-ASEAN Trade and Investment Dynamics

China-ASEAN economic relations have undergone a structural transformation over the past twelve years. Table 2 presents the evolution of bilateral trade and China’s FDI to ASEAN from 2013 through 2025, drawing on official Chinese and ASEAN statistical sources [1, 2].

Table 2. China-ASEAN Bilateral Trade and China’s OFDI to ASEAN (2013-2025)

Year	Trade Volume (100M USD)	China’s FDI Flow (100M USD)	China’s FDI Stock (100M USD)
2013	4436.1	72.7	356.7
2014	4803.9	78.1	476.3
2015	4721.6	146.0	627.2
2016	4523.8	102.8	715.5
2017	5148.2	141.2	890.1
2018	5878.7	136.9	1028.3
2019	6414.6	130.2	1098.9
2020	6846.0	160.6	1276.6
2021	8782.1	197.3	1402.8
2022	9753.4	186.5	1546.6
2023	9117.0	195.4	1620.0
2024	9823.5	208.5	1780.0
2025	10420.0	225.0	1950.0

Sources: China Customs, MOFCOM Statistical Bulletin of China’s OFDI [2], ASEANstats [1]

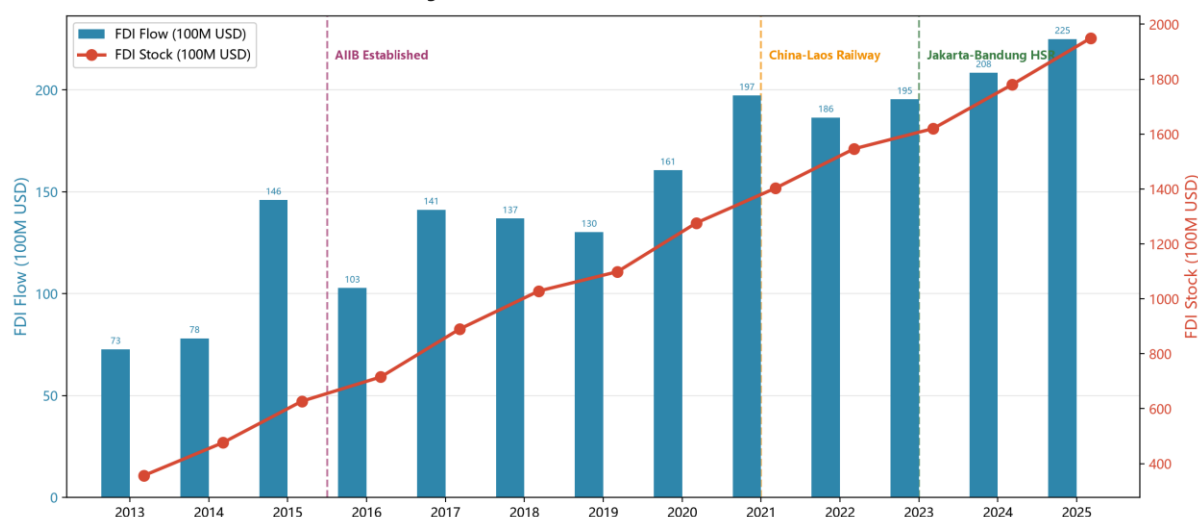
Figure 1: China FDI to ASEAN (2013-2025)**Figure 1.** China’s FDI to ASEAN and Bilateral Trade Trends (2013-2025)

Figure 1 Note: FDI flow and stock data in 100 million USD. Source: MOFCOM annual statistical bulletins.

Several patterns emerge from these data. First, bilateral trade has more than doubled over the period, from USD 443.6 billion in 2013 to USD 1,042 billion in 2025, reflecting both the expansion of regional supply chains and the progressive reduction of trade barriers under the ASEAN-China Free Trade Area (ACFTA) and subsequently RCEP. Second, China’s FDI to ASEAN has exhibited strong growth, with cumulative stock increasing more than fivefold from USD 356.7 billion in 2013 to an estimated USD 1,950 billion in 2025. Third, the composition of China’s investment has shifted from a traditional focus on resource extraction and energy toward manufacturing, services, digital economy, and green technology, reflecting both structural transformation in China’s own economy and the evolving absorptive capacity of ASEAN host countries.

3.3. Distribution and Characteristics of BRI Projects in ASEAN

By the end of 2025, China had deployed nearly 100 key BRI projects across ASEAN member states, spanning three principal sectors: transport infrastructure, energy and power generation, and industrial parks and special economic zones. Table 3 presents a representative selection of these projects with their current operational status.

Table 3. Representative BRI Projects in ASEAN

Project	Country	Sector	Investment (100M USD)	Status
China-Laos Railway	Laos	Transport	59.86	Opened Dec 2021; cross-border passenger service operational
Jakarta-Bandung HSR	Indonesia	Transport	73.0	Opened Oct 2023; cumulative ridership >8 million
China-Thailand Railway Phase I	Thailand	Transport	54.0	Under construction; ~45% complete
East Coast Rail Link	Malaysia	Transport	106.0	Under construction; ~72% complete
Phnom Penh-Sihanoukville Expressway	Cambodia	Transport	20.0	Opened Oct 2022
China-Myanmar Oil & Gas Pipeline	Myanmar	Energy	25.1	Operational
Thai-Chinese Rayong Industrial Park	Thailand	Industrial Park	8.0	Operational
Cambodia Sihanoukville SEZ	Cambodia	Industrial Park	10.0	Operational

Source: National Development and Reform Commission (NDRC), MOFCOM public disclosures

The geographic distribution of these projects reflects the strategic logic of the China-Indochina Peninsula Economic Corridor, one of the six major BRI economic corridors. Transport connectivity projects are concentrated in mainland Southeast Asian countries—Laos, Thailand, Cambodia, and Malaysia—that form a contiguous land bridge between southern China and the maritime trade routes of the Strait of Malacca. Industrial park projects, by contrast, tend to cluster in countries with more developed manufacturing ecosystems, reflecting the complementary roles of infrastructure and industrial investment within the broader BRI framework.

4. IMPACT MECHANISMS OF BRI ON ASEAN’S INVESTMENT ENVIRONMENT

4.1. Infrastructure Connectivity Effect

Infrastructure deficiency has long been identified as a primary constraint on FDI attraction in developing ASEAN economies. The ADB’s landmark 2017 assessment, *Meeting Asia’s Infrastructure Needs*, documented a significant regional infrastructure financing gap, particularly in transport and energy sectors [4]. Poor road and rail connectivity raises logistics costs, increases inventory requirements, and limits market access—all of which reduce the effective return on investment for foreign enterprises considering market entry. For landlocked Laos, infrastructure constraints were particularly acute: prior to the China-Laos Railway, the country possessed only 3.5

kilometers of operational railway track, and overland freight transport from the capital Vientiane to the Chinese border took two to three days.

BRI has directly targeted this constraint through the construction of transformative transport infrastructure. The China-Laos Railway, a 1,035-kilometer electrified railway connecting Kunming in China's Yunnan Province with Vientiane, represents the most comprehensive example. Completed at a cost of approximately USD 5.986 billion and opened in December 2021, the railway reduced Vientiane-Kunming transit time from over 48 hours to under 10 hours, cutting logistics costs by an estimated 30%-40% [11]. The World Bank's 2024 assessment of the project's economic impact estimated that, in the long term, the railway could increase Laos' aggregate GDP by up to 21% through a combination of enhanced transit trade, tourism development, and agricultural market integration.

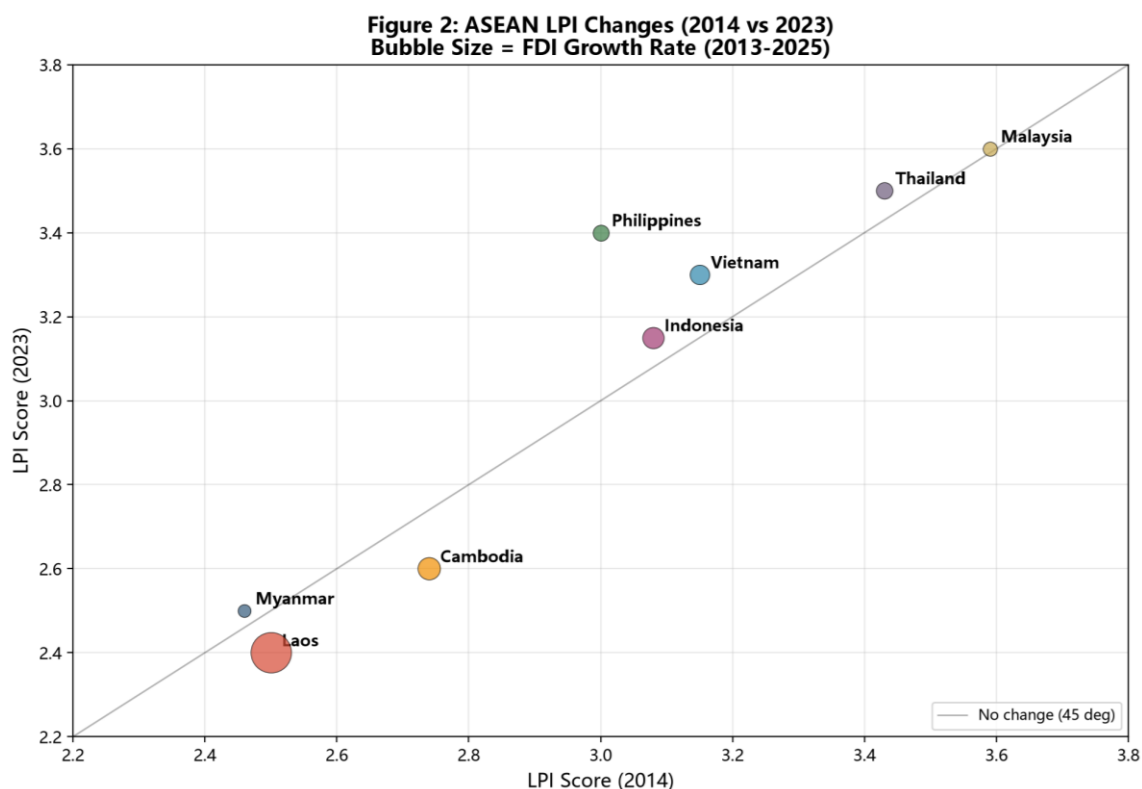


Figure 2. ASEAN Logistics Performance Index Changes (2014 vs 2023)

Note: The World Bank's Logistics Performance Index (LPI) measures countries' trade logistics efficiency on a scale of 1-5. Bubble size represents cumulative FDI growth over the period. Most ASEAN countries lie above the 45-degree line, indicating improvement. Source: World Bank LPI database (2014, 2023 editions).

The impact of infrastructure improvement on investment attractiveness operates through multiple channels. First, reduced transport costs lower the effective distance between production sites and end markets, expanding the geographic scope within which manufacturing operations remain economically viable. Second, improved connectivity reduces supply chain uncertainty by enabling more reliable delivery schedules and lower inventory holding costs. Third, large-scale infrastructure projects themselves generate significant demand for construction materials, equipment, and services, creating immediate investment opportunities in upstream and downstream sectors.

4.2. Trade and Investment Facilitation Effect

Beyond physical infrastructure, BRI has contributed to reducing institutional barriers to cross-border investment in ASEAN through progressive policy coordination and regulatory convergence. The

number of bilateral investment treaties and double taxation avoidance agreements between China and individual ASEAN members has grown substantially since 2013, providing investors with greater legal certainty regarding property rights, dispute resolution, and tax treatment of cross-border income.

The entry into force of the Regional Comprehensive Economic Partnership (RCEP) in January 2022 marked a watershed in regional trade and investment governance [12]. Encompassing all ten ASEAN member states plus China, Japan, South Korea, Australia, and New Zealand, RCEP creates a single rulebook covering trade in goods, trade in services, investment, intellectual property, and electronic commerce across a market of approximately 2.3 billion consumers. Key provisions relevant to the investment environment include rules of origin cumulation—allowing inputs from any RCEP member to qualify for preferential tariff treatment—and commitments on investment protection and facilitation that go beyond existing ASEAN+1 agreements [10]. UNCTAD’s assessment noted that RCEP’s combined effect on trade costs and regulatory predictability is expected to facilitate increased intra-regional FDI flows, with particular benefits for infrastructure and manufacturing investment[10].

At the operational level, China and ASEAN have made progress on customs facilitation through the “Single Window” interconnectivity pilot program, initially implemented at border crossings in Guangxi and Yunnan provinces. This program enables electronic submission and processing of trade documentation, reducing clearance times and the associated costs of border delays. While systematic data on the program’s aggregate impact remain limited, available evidence from pilot ports suggests meaningful reductions in customs processing times.

4.3. Industrial Park Agglomeration Effect

Overseas economic and trade cooperation zones, commonly referred to as industrial parks, constitute a distinctive element of China’s BRI engagement with ASEAN. Drawing on China’s own experience with special economic zones as drivers of manufacturing-led development, these parks seek to create geographically concentrated environments where infrastructure, regulatory services, and supply chain linkages are provided in an integrated manner, reducing the fixed costs and coordination challenges that individual foreign investors would otherwise face.

By the end of 2025, Chinese enterprises had established multiple such cooperation zones across ASEAN member states, collectively attracting over 1,000 enterprises and generating more than 300,000 local jobs [2]. The economic logic of this model rests on agglomeration economies—the productivity benefits that arise when firms in related industries co-locate, enabling shared use of specialized infrastructure, deeper labor markets, and more efficient knowledge spillovers. For foreign investors, particularly small and medium-sized enterprises that lack the resources to independently navigate unfamiliar regulatory environments, the park model substantially reduces information costs and bureaucratic hurdles by providing pre-established facilities and streamlined administrative procedures.

4.4. Financial Support Effect

The financing dimension of BRI represents a critical enabler of the infrastructure and industrial investments described above. The AIIB, established in 2016 with an initial authorized capital of USD 100 billion, has emerged as an important source of infrastructure financing for ASEAN member states, complementing the lending activities of the World Bank, ADB, and bilateral development finance institutions. The AIIB’s project portfolio in Southeast Asia has concentrated on the transport, energy, and urban infrastructure sectors that align closely with BRI priority areas [8].

A parallel development in the financial dimension of China-ASEAN cooperation has been the progressive expansion of RMB cross-border settlement. The Cross-Border Interbank Payment System (CIPS), launched in 2015, has gradually extended its coverage to major commercial banks across all ten ASEAN member states. The availability of direct RMB settlement reduces currency

conversion costs and exchange rate risk for enterprises engaged in China-ASEAN trade and investment, incrementally lowering the effective cost of cross-border economic activity. Through 2024, China-ASEAN RMB settlement volumes continued to grow at double-digit annual rates, reflecting both policy support and increasing commercial demand [1].

5. CASE STUDY ANALYSIS

To examine how these mechanisms operate in practice, this section presents structured case studies of three representative BRI projects. Each case was selected to illustrate a distinct mechanism and host-country context: the China-Laos Railway exemplifies the infrastructure connectivity pathway in a least-developed country setting; the Jakarta-Bandung HSR demonstrates technology and standard export dynamics in an emerging industrial economy; and the Thai-Chinese Rayong Industrial Park illustrates the industrial agglomeration pathway in a relatively mature institutional environment.

5.1. China-Laos Railway: Infrastructure Connectivity as a Development Catalyst

(1) Project Overview and Accessibility Transformation

The China-Laos Railway, opened in December 2021, is the first transnational railway constructed primarily with Chinese investment under the BRI framework to adopt Chinese technical standards, use predominantly Chinese-manufactured equipment, and connect directly with China’s domestic railway network. Spanning 1,035 kilometers from Kunming to Vientiane at a total investment of USD 5.986 billion, the project represented the largest single infrastructure investment in Laos’ modern history [11].

The transformation in transport accessibility has been dramatic. Prior to the railway, Laos possessed only 3.5 kilometers of rail track—a short spur connecting to the Thai border—making it one of the least rail-connected countries on a per capita basis globally. Overland freight from Vientiane to Kunming required 2-3 days by road, with journey reliability heavily dependent on weather conditions and road quality. The railway reduced this transit time to under 10 hours for freight and approximately 10.5 hours for passenger services, with freight costs estimated at 30%-40% below road transport equivalents. The availability of affordable passenger rail—with fares approximately one-third of comparable air tickets—has also transformed personal mobility, enabling labor migration, educational travel, and tourism at scales previously unattainable.

(2) Investment Environment Effects

The railway’s impact on Laos’ investment environment can be analyzed through a phased lens, as the nature of investment response evolved from construction-phase demand effects to post-completion structural transformation (see Table 4).

Table 4. Phased Investment Impact of the China-Laos Railway

Phase	Period	Key Investment Sectors
Pre-construction	2013-2016	Mining, hydropower, agriculture
Construction	2017-2021	Infrastructure, building materials, logistics
Early Operation	2022-2023	Manufacturing, tourism, logistics parks
Deepened Operation	2024-2025	Digital economy, renewable energy, cross-border e-commerce

Sources: Lao Ministry of Planning and Investment, UNCTAD World Investment Report series

The sectoral composition of investment shifted substantially across these phases. During the pre-construction period, FDI into Laos was dominated by extractive industries and hydropower, reflecting the country’s natural resource endowments. The construction phase generated demand for cement,

steel, construction equipment, and logistics services, creating immediate investment opportunities in these sectors. Following the railway's completion, investment interest broadened to include manufacturing—particularly in sectors where reduced logistics costs meaningfully altered competitiveness—as well as tourism, logistics park development, and, most recently, digital economy and cross-border e-commerce enterprises that leverage the improved connectivity for both physical goods movement and data-dependent services.

(3) Industrial Linkage and Agglomeration Effects

The railway's impact on investment has been amplified by the parallel development of industrial zones along its route. The Vientiane Saysettha Comprehensive Development Zone, situated near the railway's southern terminus, had attracted over 100 enterprises by the end of 2025, spanning electronics manufacturing, new energy materials, and agricultural product processing. The Boten Special Economic Zone, located at the China-Laos border adjacent to the railway's northern entry point, has leveraged its position as a customs and logistics gateway to attract over 800 registered enterprises in logistics, cross-border trade, and financial services.

The spatial pattern of these zones illustrates the complementarity between trunk infrastructure (the railway) and nodal development (the zones). The railway provides the high-capacity transport backbone that makes long-distance manufacturing supply chains economically viable; the zones provide the localized infrastructure and regulatory environment that reduces the fixed costs of establishing individual production facilities. This “corridor + node” spatial logic is a recurring feature of BRI infrastructure investments and represents an important mechanism through which connectivity improvements translate into diversified investment flows.

5.2. Jakarta-Bandung High-Speed Railway: Technology Export and Demonstration Effects

(1) Project Overview

The Jakarta-Bandung High-Speed Railway (HSR) connects the Indonesian capital of Jakarta with the city of Bandung in West Java province over a distance of 142 kilometers. Designed for operating speeds of up to 350 kilometers per hour and constructed at a total cost of approximately USD 7.3 billion, the HSR represents the first full-system, full-industrial-chain overseas deployment of Chinese high-speed rail technology—encompassing civil works, rolling stock, signaling, power supply, and operational management systems. The service commenced commercial operations in October 2023.

(2) Investment Multiplier and Demonstration Effects

The Jakarta-Bandung HSR's impact on Indonesia's investment environment operates through both direct and indirect channels. Direct impacts include the construction-phase demand for locally sourced materials and services—steel, cement, track components, and signaling equipment—which generated approximately USD 2.5 billion in upstream and downstream supply chain investment within Indonesia. By the end of 2025, cumulative passenger trips exceeded 8 million, and the project had created approximately 50,000 local jobs during construction and early operation phases.

Perhaps more significant than the direct employment and output effects is the project's demonstration value. As the first operational HSR in the Southern Hemisphere and among G20 member states, the Jakarta-Bandung line serves as a highly visible showcase of both Chinese railway technology and the feasibility of large-scale infrastructure projects executed through international cooperation frameworks. This demonstration effect has implications beyond the immediate project: it signals to the international investment community that Indonesia possesses the institutional capacity and construction ecosystem to host complex infrastructure projects, thereby potentially improving the country's perceived risk profile for future large-scale foreign investment.

The project has also catalyzed urban development along its corridor, most notably in the Walini area located approximately midway between Jakarta and Bandung. Planned as a new urban center spanning approximately 3,000 hectares, Walini is envisioned to host commercial complexes, educational institutions, healthcare facilities, and residential development, with projected cumulative investment exceeding USD 15 billion. This pattern—where transport infrastructure creates conditions for real estate and urban service investment—is consistent with international experience from high-speed rail projects in Japan, France, and Spain.

(3) Technology Diffusion and Regional Implications

The successful delivery of the Jakarta-Bandung HSR has influenced subsequent BRI railway projects in Southeast Asia. The demonstrated operational viability of Chinese HSR technology in a tropical environment with challenging geological conditions—the Jakarta-Bandung line traverses active seismic zones and required extensive tunneling and viaduct construction—has reduced perceived technological risks for subsequent projects. The China-Thailand Railway Phase I, currently under construction with approximately 45% of roadbed works completed, and Malaysia’s East Coast Rail Link, at approximately 72% completion, have both benefited from the institutional knowledge and supply chain relationships established through the Jakarta-Bandung project. This sequential “demonstration-diffusion” dynamic represents a distinctive mechanism through which BRI transportation projects influence regional investment environments beyond their immediate host countries.

5.3. Thai-Chinese Rayong Industrial Park: Agglomeration and Institutional Improvement

(1) Project Overview and Development Trajectory

The Thai-Chinese Rayong Industrial Park, located within Thailand’s Eastern Economic Corridor (EEC)—a designated special economic zone spanning three eastern provinces—is the most mature of China’s overseas industrial park investments in ASEAN. Established in 2006 and substantially expanded following the announcement of BRI, the park had attracted approximately 180 enterprises by the end of 2025, with cumulative industrial output exceeding USD 25 billion [2].

The park’s development trajectory provides insights into the temporal dynamics of industrial park-based investment cooperation. During its inception phase (2006-2013), tenant composition was dominated by traditional labor-intensive manufacturing—household appliances, motorcycle components—reflecting the comparative advantage of Thailand’s relatively skilled but cost-competitive workforce. Following BRI’s announcement in 2013, the pace of enterprise entry accelerated, and the sectoral composition shifted toward higher value-added activities, including automotive parts and components, new energy equipment, and electronics manufacturing. By 2025, the park had developed three dominant industrial clusters—automotive, new energy, and electronics—with inter-firm supply relationships creating economies of scale and scope that reinforce the park’s attractiveness to new investors.

(2) Mechanisms of Investment Environment Improvement

The park improves Thailand’s investment environment for foreign enterprises through several distinct mechanisms. First, it provides “plug-and-play” infrastructure—pre-built factory shells, reliable electricity and water supply, wastewater treatment, and logistics facilities—that substantially reduce the upfront capital expenditure and construction lead time required for new manufacturing investments. This is particularly valuable for small and medium-sized foreign enterprises for whom the fixed costs of independent site development would be prohibitive.

Second, the park operates as a de facto one-stop administrative service center. Thailand’s Board of Investment (BOI) maintains an on-site office within the park, enabling investors to complete company registration, tax registration, work permit applications, and import-export licensing through a single

physical location. This concentrated administrative interface significantly reduces the time and informational costs of navigating bureaucratic procedures.

Third, the park has invested in human capital development through partnerships with local vocational education institutions, creating a pipeline of trained technical workers aligned with tenant enterprises' skill requirements. This addresses a common constraint on manufacturing investment in developing countries—the availability of workers with industry-relevant technical skills—and contributes to upgrading the host country's human capital base.

(3) Replicability and Regional Diffusion

The Rayong model has been consciously replicated in other ASEAN locations. The Sihanoukville Special Economic Zone in Cambodia, developed with significant Chinese investment, had attracted over 200 enterprises by the end of 2025, predominantly in textile and garment manufacturing and light industrial assembly, industries for which Cambodia's labor cost advantages and preferential access to European and North American markets under the Everything But Arms (EBA) trade regime create strong investment incentives. The model's adaptability across country contexts—from Thailand's middle-income manufacturing base to Cambodia's labor-intensive industrialization—suggests that the industrial park approach to BRI cooperation possesses substantial transferability.

5.4. Comparative Analysis and Cross-Case Insights

Table 5 provides a structured comparison of the three cases across key dimensions of investment environment impact.

Table 5. Comparative Analysis of Investment Environment Impacts

Dimension	China-Laos Railway	Jakarta-Bandung HSR	Rayong Industrial Park
Primary mechanism	Infrastructure connectivity	Technology demonstration	Industrial agglomeration
Host country context	Least developed, landlocked	Emerging industrial economy	Upper-middle income, mature institutions
Investment scale catalyzed	Significant along-route investment growth	Large project + new city development	Cumulative output >USD 25 billion
Logistics efficiency	Transit time reduced ~90%	Travel time reduced ~70%	Integrated supply chain within park
Employment creation	~30,000 jobs	~50,000 jobs	>50,000 jobs
Institutional improvement	Customs and logistics modernization	Local procurement standards established	Administrative streamlining via one-stop service
Replicability	High (corridor extension model)	High (technology transfer model)	Very high (park replication model)

Source: Compiled from official statistics and project documentation

The comparative analysis reveals several patterns. First, all three projects exhibit a “sequencing effect” whereby infrastructure development—whether transport connectivity or industrial park facilities—creates preconditions for subsequent rounds of manufacturing and services investment. This sequencing suggests that BRI's impact on investment environments operates not as a one-time shock but as a cumulative process in which initial infrastructure improvements enable progressively more diverse and higher-value investment.

Second, the pathway through which investment environment improvement occurs differs substantially across host-country contexts. In Laos, where baseline infrastructure was minimal, the dominant mechanism was the “connectivity dividend”—the sharp reduction in effective economic

distance that made previously uneconomic production locations viable. In Indonesia, where the challenge was less about absolute infrastructure absence than about demonstrating technological and institutional capacity, the demonstration effect of a world-class HSR project played a proportionally larger role. In Thailand, where baseline infrastructure and institutions were already relatively developed, the mechanism centered on incremental improvements in administrative efficiency and supply chain integration within a geographically concentrated industrial ecosystem.

Third, all three cases generated positive spillover effects beyond their immediate economic footprint. The China-Laos Railway stimulated tourism development in cities along its route; the Jakarta-Bandung HSR catalyzed urban planning and real estate investment; and the Rayong Industrial Park contributed to upgrading the technical skills of the local workforce. These spillovers suggest that BRI investments' contribution to host-country investment environments may be substantially larger than what is captured by direct project-level metrics alone.

6. CHALLENGES AND RISKS

While the preceding analysis has documented substantial positive impacts, BRI's engagement with ASEAN's investment environment also confronts significant challenges that merit careful consideration.

(1) **Infrastructure Financing Sustainability.** Large-scale infrastructure investments involve extended construction periods, high upfront capital requirements, and long payback horizons. Where project financing relies heavily on short- to medium-term commercial loans with refinancing risk, the maturity mismatch between assets (long-lived infrastructure) and liabilities (shorter-tenor debt) can create financial vulnerabilities for both project sponsors and host-country fiscal positions. Ensuring that infrastructure projects are structured with financing terms matched to their economic life is essential for long-term sustainability [4].

(2) **Macroeconomic and Geopolitical Uncertainty.** The global economic environment has become increasingly characterized by supply chain restructuring, trade policy uncertainty, and geopolitical tensions that can affect investor sentiment and capital flows to developing economies. For ASEAN countries that are deeply integrated into global trade and investment networks, external shocks can transmit rapidly to domestic investment conditions, potentially affecting the viability of projects conceived under different macroeconomic assumptions.

(3) **Host-Country Institutional Heterogeneity.** The wide variation in legal systems, regulatory quality, contract enforcement, and corruption control across ASEAN member states—documented in Table 1 above—creates a complex and differentiated risk landscape for foreign investors. Countries with weaker institutional environments present elevated risks of policy discontinuity, regulatory unpredictability, and difficulties in contract enforcement, all of which increase the effective cost of investment and may deter projects with long investment horizons.

(4) **Industrial Restructuring and Competitive Dynamics.** As China's economy continues to upgrade toward higher value-added activities, the overlap between Chinese and ASEAN manufacturing capabilities is evolving. In labor-intensive sectors, some ASEAN countries now compete directly with Chinese production, raising questions about how BRI cooperation can evolve from simple relocation of excess capacity toward genuine technology collaboration and joint capability development that benefits both sides.

7. POLICY RECOMMENDATIONS

Based on the preceding analysis, the following policy directions are proposed for enhancing BRI's contribution to ASEAN's investment environment.

First, transition infrastructure cooperation from construction contracting to full-lifecycle management. Ensuring the long-term operational sustainability and economic viability of completed infrastructure projects requires moving beyond a focus on construction delivery to encompass maintenance, operational optimization, and capacity building for local management. Technical standards harmonization between Chinese and ASEAN systems would reduce interoperability costs and facilitate network effects across national infrastructure systems.

Second, upgrade the quality of industrial capacity cooperation. The next phase of BRI engagement should emphasize joint research and development, technology sharing, and co-innovation alongside traditional manufacturing investment. Priority sectors include new energy vehicles, solar photovoltaic manufacturing, digital economy platforms, and healthcare—areas where Chinese firms possess competitive capabilities and ASEAN markets offer substantial growth potential. Establishing R&D centers and technical training facilities in host countries would contribute to local innovation ecosystem development.

Third, deepen the regional financial architecture. Expanding the use of RMB for cross-border trade settlement and investment financing in ASEAN would incrementally reduce currency mismatch risks and transaction costs. The AIIB, the Silk Road Fund, and bilateral development finance institutions should increase their project pipelines in ASEAN, potentially through a dedicated China-ASEAN industrial cooperation facility that provides concessional financing for projects with high developmental impact.

Fourth, strengthen human capital and institutional cooperation. Expanding scholarship programs for ASEAN students in Chinese universities, supporting joint vocational training programs, and facilitating researcher exchange would build the human capital foundations for sustained economic cooperation. People-to-people connectivity—the fifth of the BRI priorities—has received less policy attention than physical infrastructure but is essential for the long-term sustainability of investment relationships.

Fifth, develop risk management and benefit-sharing mechanisms. Equity co-investment structures, revenue-sharing agreements, and other models that align the interests of Chinese investors with host-country stakeholders can mitigate perceptions of asymmetric benefit distribution. Establishing a dedicated China-ASEAN investment dispute mediation mechanism would provide an institutional channel for resolving differences that may arise in long-duration infrastructure and industrial projects.

8. CONCLUSION

This paper has examined the multifaceted impact of the Belt and Road Initiative on the investment environment of ASEAN member states through the analytical lenses of infrastructure connectivity, trade and investment facilitation, industrial park agglomeration, and financial support. Drawing on longitudinal trade and investment data and three structured case studies spanning different cooperation modalities and host-country contexts, the analysis yields several principal findings.

First, infrastructure connectivity constitutes the most powerful mechanism through which BRI affects ASEAN investment environments. The China-Laos Railway case demonstrates that transformative improvements in transport connectivity—reducing transit times by up to 90% and logistics costs by 30%-40%—can fundamentally alter a host country's locational advantages, enabling new categories of manufacturing and services investment that were previously precluded by prohibitive transport costs.

Second, the linked development of transport infrastructure and industrial parks creates a mutually reinforcing investment ecosystem. Transport connectivity expands the geographic scope of viable production locations, while industrial parks reduce the fixed costs and bureaucratic barriers facing foreign investors within those locations. This “corridor plus node” model represents a distinctive BRI contribution to investment environment improvement.

Third, BRI's impact follows differentiated pathways that reflect host countries' development levels and institutional contexts. For least-developed, infrastructure-poor economies, connectivity investment serves as the primary catalyst; for emerging industrial economies, technology demonstration and standard-setting projects build investor confidence; for institutionally mature markets, industrial park deepening and supply chain integration represent the most effective mode of engagement.

Fourth, the temporal dimension matters: physical infrastructure improvements deliver their primary benefits relatively quickly (typically within 1-3 years of project completion), while institutional improvements and industrial ecosystem development require longer gestation periods, suggesting that assessments of BRI's effectiveness must adopt appropriately long time horizons.

Looking forward, BRI's continued evolution in ASEAN should prioritize three strategic transitions: from hardware connectivity to institutional connectivity, leveraging frameworks such as RCEP to deepen regulatory integration; from traditional infrastructure to green, digital, and smart infrastructure that addresses twenty-first-century development priorities; and from predominantly bilateral project structures toward genuinely multilateral coordination that engages a broader range of stakeholders in project governance and financing.

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