

Labor Costs, Tariffs, and China's Outward Investment in ASEAN

Yuxin Hou

Department of Economics, Nankai University

peggyhou0223@gmail.com

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Abstract

This paper investigates how the joint effect of host-country tariffs and home-country labor costs reshapes firms' internationalization decisions. We build a heterogeneous-firm model in which firms choose between exporting and outward FDI, with profits determined by productivity, target-market tariffs, and domestic labor costs. The model predicts that an increase in either tariffs or labor costs alone raises the export cutoff and lowers the FDI cutoff; when both rise simultaneously, a pronounced synergistic effect emerges, accelerating the reallocation of medium- to high-productivity firms from exporting toward FDI. This mechanism offers a micro-level explanation for the surge of China's FDI to ASEAN after the U.S.–China trade war. Using Chinese manufacturing firm data, we will calibrate the model and conduct counterfactual simulations, complemented by econometric evidence to assess the consistency between the model's implications and the data.

1 INTRODUCTION

The operation of the world economy has never been insulated from the profound imprint of geopolitics, and international direct investment (FDI) offers a critical lens through which to observe this interaction. Since acceding to the WTO in 2001, China has leveraged preferential market access to achieve a leap in exports: its global market share rose markedly from about 4% in 2001 to roughly 14% in 2024, with the United States and Europe emerging as its core export destinations. In the process, China consolidated its role as the “world’s factory,” embedding itself deeply in the core links of global value chains.

In recent years, however, intensifying U.S.–China strategic competition and geopolitical conflicts such as the Ukraine crisis have rapidly altered the established international economic order. Motivated by supply-chain security and the preservation of technological leadership, the United States has led a strategic recalibration of trade policy toward China, sharply increasing tariff barriers on key Chinese goods and thereby raising the systematic trade costs faced by Chinese exporters. At the same time, structural changes in China’s domestic labor market have become increasingly salient. The expansion of compulsory education has significantly improved labor quality, while the demographic effects of long-term family-planning policies have begun to materialize. Together, these forces have driven sustained increases in labor costs, gradually eroding China’s traditional “demographic dividend.”

Confronted with the twin pressures of rising trade and labor costs, Chinese firms are charting a new course in their internationalization strategies. Preliminary survey evidence indicates a notable trend: a large number of small and medium-sized enterprises—especially privately owned firms—are accelerating capacity relocation to regions such as Southeast Asia, primarily via greenfield investment. This stands in sharp contrast to the pre-trade-war pattern of China’s outward FDI, which was dominated by large state-owned enterprises and leading private conglomerates and was geared toward mergers and acquisitions in advanced economies to acquire technology and brands.

Against this backdrop, the present study addresses several core questions. First, what key factors are driving the structural shift in Chinese firms’ outward investment preferences? Second, do tariff barriers and rising labor costs interact synergistically to produce nonlinear, deep-seated effects on firms’ investment decisions? Building on these questions, we further ask: under a potential “Trump 2.0” administration and its proposed “reciprocal tariffs,” how might the geography of Chinese investment evolve? Moreover, will the concentration of Chinese capital in ASEAN push up local price levels and reshape these economies’ industrialization trajectories? By exploring these issues, the study aims to provide new theoretical and empirical insights into firm behavior at the intersection of geopolitics and economics.

2 THE RESEARCH QUESTION

2.1 Definition of Terms

- **Reshoring:** Reshoring refers to the return of manufacturing activities and jobs from a foreign country back to the home country (de2016reshoring).
- **Nearshoring:** Nearshoring refers to the relocation of business processes to countries that are geographically closer to the home economy, but not necessarily the home country itself (de2016reshoring).
- **Friend-shoring:** Friend-shoring refers to the reconfiguration of supply chains towards trusted allies and away from geopolitical rivals (aiyar2023geoeconomic).
- **Connector:** Those with strong ties to multiple major blocs—could play a crucial role in preserving cross-bloc economic links and reducing the efficiency losses of fragmentation (aiyar2023geoeconomic).

2.2 Background

Since China's accession to the World Trade Organization (WTO) in 2001, it has deepened its integration with the global economy. On the one hand, China has actively attracted foreign direct investment (FDI), providing strong momentum for domestic industrialization and industrial upgrading. On the other hand, Chinese firms have accelerated their “going global” strategy, using outward investment to participate proactively in global resource allocation and economic governance.

Figure 1 depicts the trend in China's outward foreign direct investment (OFDI) flows and stock from 2002 to 2024. The data show a remarkable expansion over the past two decades, with OFDI flows increasing by a factor of 43, reflecting the accelerating internationalization of Chinese capital. Notably, during 2016–2019, OFDI flows experienced a temporary pullback amid policy uncertainty arising from U.S.–China trade frictions and volatility in the international economic environment. This episode underscores the high sensitivity of cross-border investment to macroeconomic conditions and geopolitical risks.

Among the diverse actors in China's outward investment, manufacturing firms have consistently played a leading role. As shown in Figure 2, from 2007 to 2024 the share of China's manufacturing FDI flows in total FDI flows exhibits an overall upward trend, reaching 19.53% in 2024. A closer look indicates that fluctuations in manufacturing FDI are strongly influenced by international political-economic uncertainty. Specifically, during 2016–2019—the period in Figure 1 when China's overall OFDI flows were volatile—manufacturing FDI likewise weakened, with flows experiencing a temporary

decline. This synchronized movement highlights the high sensitivity of Chinese manufacturing firms' cross-border investment to the global macro environment and underscores how external risks constrain the overseas expansion of the real economy.

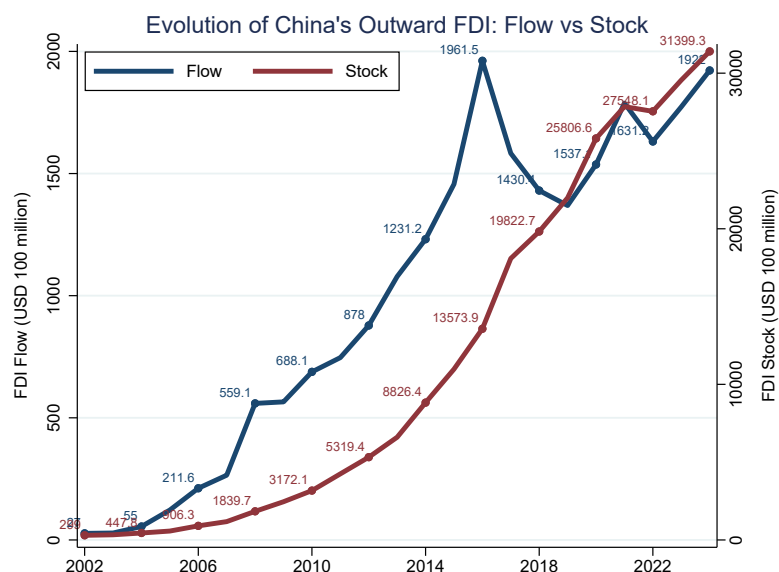


Figure 1: Evolution of China's Outward FDI: Flow vs Stock, 2002 - 2024

Source: Compiled by the author based on data from the Statistical Bulletin of China's Outward Foreign Direct Investment, 2002-2024.

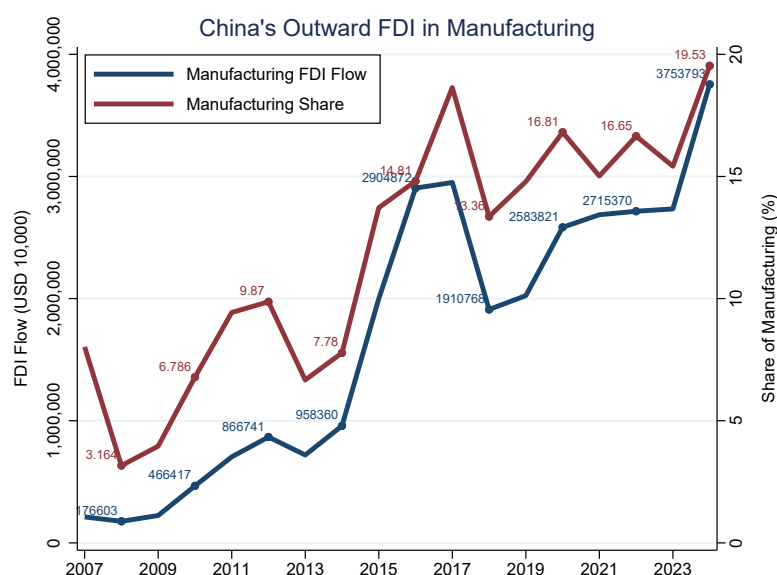


Figure 2: China's Outward FDI in Manufacturing

Note: Data on outward FDI in the financial sector are unavailable for 2006 and earlier years. Due to this lack of comparability, manufacturing FDI data are presented from 2007 onward.

Source: Compiled by the author based on data from the Statistical Bulletin of China's Outward Foreign Direct Investment, 2006-2024.

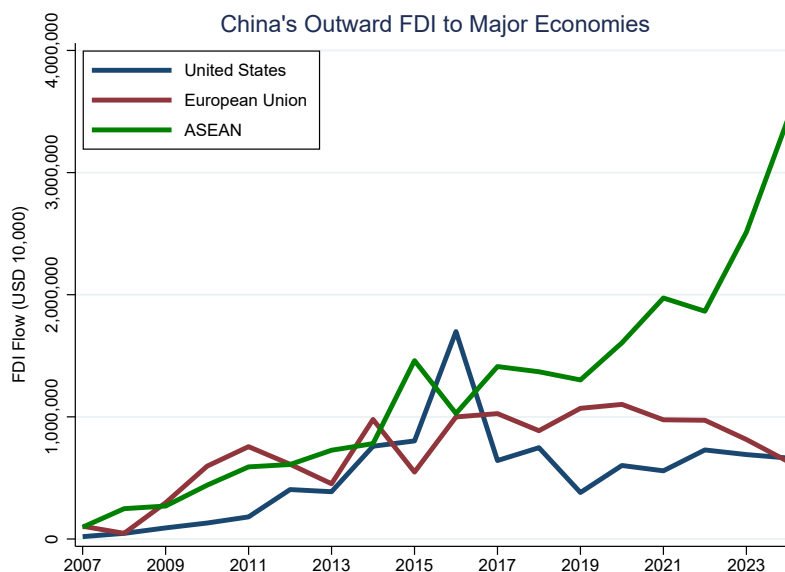


Figure 3: China's Outward FDI to Major Economies

Note: Data on outward FDI in the financial sector are unavailable for 2006 and earlier years. Due to this lack of comparability, manufacturing FDI data are presented from 2007 onward. To ensure comparability over time, the data for China's FDI to the EU from 2020 onward are aggregated with FDI to the UK.

Source: Compiled by the author based on data from the Statistical Bulletin of China's Outward Foreign Direct Investment, 2006-2024.

Chinese outward investment has not followed a uniform trajectory across all host countries; rather, its patterns have been significantly shaped by regional characteristics and bilateral relations, shown in Figure 3. Among China's three primary destinations for outward foreign direct investment (OFDI)—the United States, the European Union, and ASEAN—the divergences are particularly striking (Figure 3). Specifically, China's investment in the EU has been dominated by cross-border mergers and acquisitions, driven primarily by the pursuit of technology, brands, and strategic assets. However, as the EU has tightened its foreign investment screening mechanisms in recent years, the overall scale of Chinese investment in Europe has stabilized and slightly declined.

In contrast, Chinese investment in the United States has been motivated by a broader set of factors, combining strategic asset acquisition with market entry and tariff-avoidance objectives. Yet, affected by U.S.–China trade frictions and increasingly strained bilateral relations, Chinese investment in the U.S. contracted sharply after peaking around 2015 and has remained subdued in subsequent years.

By comparison, Chinese investment in ASEAN has shown robust counter-cyclical growth. Between 2016 and 2019 it remained stable, and since 2019 it has risen rapidly, underscoring ASEAN's growing role as a key hub for absorbing China's industrial relocation and supply chain restructuring. This trend is closely tied to the predominance of green-field investment by Chinese firms in ASEAN. Against the backdrop of U.S.–China trade tensions, many manufacturing enterprises have chosen to establish production facilities

in ASEAN to circumvent high tariffs and reconfigure regional supply chains.

A closer analysis of Figure 4 reveals that between 2008 and 2024, not only did the scale of China's manufacturing investment flows into ASEAN continue to expand, but their share in China's total investment in ASEAN also rose significantly—from 10% in 2008 to 45% in 2024. At the same time, the industrial composition has gradually improved, shifting from labor-intensive sectors such as textiles in the early years toward capital- and technology-intensive industries, including telecommunications equipment, electronics manufacturing, and new energy vehicles. This trend indicates that, against the backdrop of U.S.–China trade frictions, ASEAN has actively absorbed Chinese industries affected by high U.S. tariffs and is gradually becoming a critical link in the restructuring of regional supply chains.

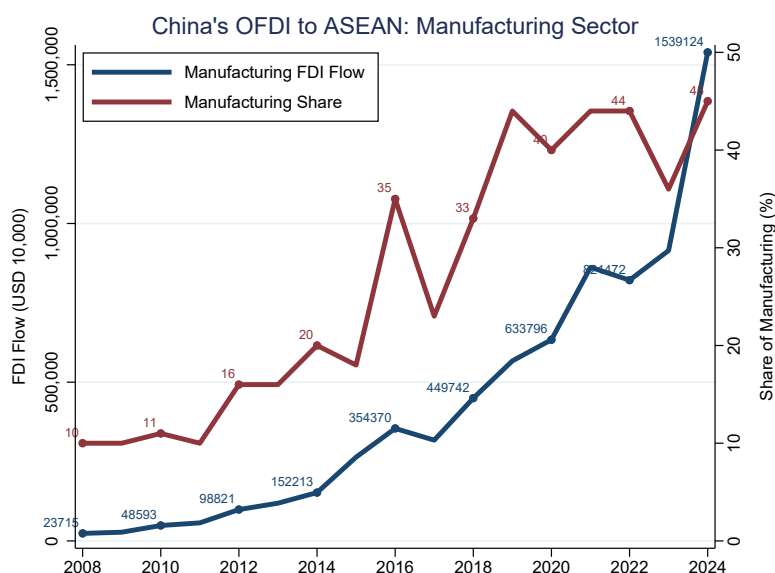


Figure 4: China's OFDI to ASEAN: Manufacturing Sector

Note: Data on manufacturing FDI to ASEAN are unavailable for 2007 and earlier years; the time series therefore begins in 2008.

Source: Compiled by the author based on data from the Statistical Bulletin of China's Outward Foreign Direct Investment, 2006-2024.

Data from Figure 5 show that between 2011 and 2024, the number of manufacturing firms engaged in outward foreign direct investment (OFDI) has generally trended upward. Except for a slight dip in 2013, the number of firms continued to grow, with two periods of notably faster expansion observed during 2013–2016 and 2022–2024. Looking further into the composition of investing entities, Figure 6 indicates that from 2005 to 2024, the share of private enterprises among China's outward-investing firms has steadily increased. This structural shift aligns with the author's earlier fieldwork findings, namely that an increasing number of private firms view internationalization as a critical path for survival and growth, giving rise to the widespread perception that “if you don't go global, you will be left behind.”



Figure 5: Number of Manufacturing Firms in China's OFDI

Note: Data on the number of firms are available from 2011 onward.

Source: Compiled by the author based on data from the Statistical Bulletin of China's Outward Foreign Direct Investment, 2006-2024.

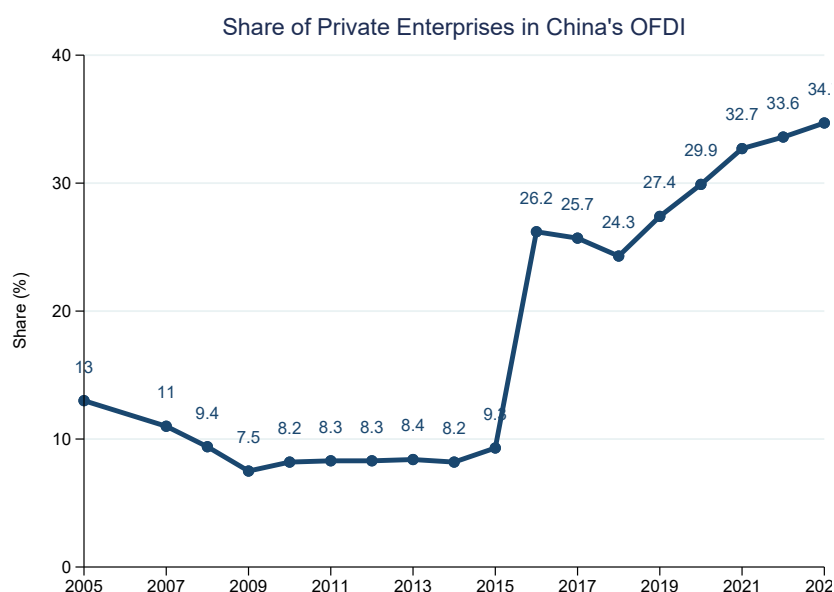


Figure 6: Share of Private Enterprises in China's OFDI

Source: Compiled by the author based on data from the Statistical Bulletin of China's Outward Foreign Direct Investment, 2006-2024.

2.3 Central Questions

From the background analysis, it is evident that China's direct investment in ASEAN has experienced two waves of rapid growth. The second wave, in particular, surged following the U.S.–China trade frictions, in sharp contrast to the decline of China's

investment in developed economies. This striking divergence leads to the central research question of this study: How do the fundamental nature and driving logic of these two investment waves differ? Specifically, the study seeks to examine which key factors have prompted Chinese investors to strategically shift their focus toward ASEAN in the aftermath of the trade frictions with the United States.

- **Q1: What structural changes have occurred in the target industries during the two waves of Chinese OFDI booms in ASEAN?**

This study focuses on the structural differences in industry choices made by Chinese investors across the two periods of rapid outward FDI growth in ASEAN. According to the China Outward Foreign Direct Investment Statistical Bulletin, in 2024 manufacturing emerged as the primary target sector, with an investment volume of USD 15.39 billion, accounting for 44.8% of total flows. These investments exhibited a clear orientation toward technology-intensive and strategic industries, particularly in segments such as electric vehicles and lithium battery supply chains, electronic products and digital economy hardware, and green technologies and renewable energy equipment.

In contrast, looking back at the 2014 investment landscape, Chinese investment in ASEAN manufacturing was still dominated by traditional labor-intensive industries, typically textiles and garments, footwear and bags, and furniture manufacturing. At that time, the core motivation of investors was to relocate production capacity in order to rebuild comparative advantages that had been gradually eroded by rising domestic factor costs.

- **Q2: How did China's OFDI modes in ASEAN change after the U.S.-China trade friction?**

In the early stage, Chinese enterprises were largely driven by strategic asset-seeking motives, relying on cross-border mergers and acquisitions to quickly acquire technologies, brands, and market channels. For instance, Geely's acquisition of Malaysia's Proton and investment in the UK-based Lotus enabled rapid expansion into Southeast Asia and global markets.

After the U.S.-China trade frictions, however, the logic of Chinese outward investment shifted. To mitigate tariff barriers and supply chain risks, more firms turned to greenfield investment in ASEAN countries such as Vietnam, Thailand, and Indonesia, aiming to leverage lower factor costs and build regional production networks. In the EV industry chain, companies like BYD, Great Wall Motors, and CATL invested heavily in Thailand and Malaysia to establish gigafactories, reflecting a focus on long-term control and supply chain autonomy.

- **Q3: How has the composition of investing entities in China's manufacturing OFDI to ASEAN changed after the U.S.-China trade war?**

Based on the collation and analysis of data from the China Foreign Direct Investment Statistics Bulletin from 2005 to 2024, this study finds that the proportion of private enterprises within the composition of Chinese investors in ASEAN has shown a continuous upward trend. This finding aligns with information obtained during the author's field research, reflecting that a growing number of private enterprises, recognizing the increasingly intense competition in the domestic market, are actively turning to overseas markets to expand their development space. However, limited by data availability, existing statistical materials lack a systematic depiction of the specific composition of investing entities within the manufacturing sector—a area significantly impacted by the U.S.-China trade friction. Therefore, this paper intends to construct an analytical model and combine the collection and processing of multi-source data to clarify the changing characteristics and underlying mechanisms of the investor composition in China's direct investment in ASEAN's manufacturing sector following the U.S.-China trade friction.

- **Q4: What is the impact of rising labor costs in China on its OFDI in manufacturing to ASEAN?**

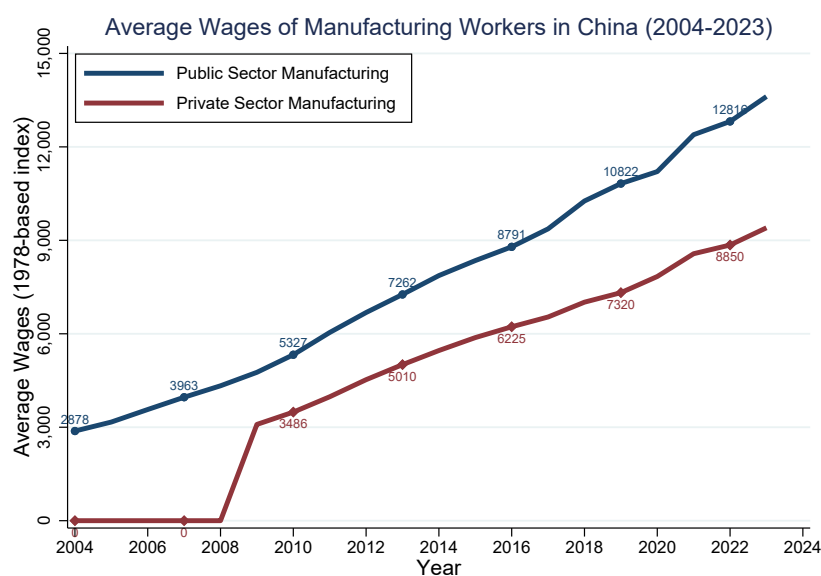


Figure 7: Average Wages of Manufacturing Workers in China (2004-2023)

Note: The average wage of urban workers in the manufacturing sector is adjusted for purchasing power using 1978 as the base year and deflated by the Consumer Price Index (CPI). Data on the average wage of urban private enterprises' workers in manufacturing are available from 2009 onward due to statistical availability.

Source: National Bureau of Statistics of China

The universalization of compulsory education and the steady rise in higher education enrollment in China, together with the effective implementation of the one-child policy, have collectively contributed to the gradual increase in labor costs. As shown

in Figure 7, calculated with 1978 as the base year, the average wage of urban manufacturing employees in China (covering both private and non-private enterprises) has maintained a steady upward trend. The continuous rise in labor costs has weakened China's traditional comparative advantage in labor-intensive manufacturing, prompting enterprises to reallocate resources through outward foreign direct investment (OFDI). The most direct manifestation of this shift is the relocation of industries highly sensitive to labor costs—such as textiles and garments, footwear, and toy manufacturing—toward ASEAN countries. This trend has, in effect, laid the initial foundation for the subsequent formation of a “vertical division of labor” system between China and ASEAN.

- **Q5: What is the impact of U.S. tariff increases on certain Chinese products on China's manufacturing OFDI to ASEAN?**

After the United States raised tariffs on Chinese products, many firms responded by establishing new factories in ASEAN, thereby legally changing the country of origin of their products from “China” to “ASEAN” to circumvent the higher tariffs imposed on Chinese goods. At the same time, the trade war exposed the risks of overly concentrated production, prompting Chinese enterprises to adopt a “China + ASEAN” collaborative production model to build a more resilient and coordinated regional supply chain system. As the United States remains the primary market for Chinese exports, the tariff hikes acted as a powerful external shock that accelerated and magnified an overseas expansion process which, driven by China's own development logic, would likely have occurred in any case—making it more urgent, larger in scale, and more strategically profound.

- **Q6: Does country heterogeneity influence the direction and magnitude of FTA effects?**

As shown in Figure 7, rising labor costs have been a persistent trend since China's WTO accession. While overseas expansion is a logical extension of manufacturing firms' globalization strategies, this long-term factor alone does not fully explain the sharp increase in outward investment.

The U.S.–China trade frictions, through higher U.S. tariffs on Chinese products, added an external shock to firms already under cost pressure. This study therefore hypothesizes that rising labor costs and tariff hikes produced a resonance effect: the productivity threshold for exporting increased, while that for outward investment decreased. Consequently, a segment of medium- to high-productivity manufacturers, many of them smaller private firms, were compelled to shift capacity abroad—echoing the reality that for many private enterprises it has become “go abroad or be left behind.”

- **Q7: Has the “China Plus One” strategy driven multinational corporations to invest in Southeast Asia?**

Following the U.S.–China trade frictions, a series of geopolitical events have intensified the trend of fragmentation in global trade and investment. Driven by concerns over supply chain security, countries such as the United States have actively promoted investment strategies oriented toward “friend-shoring” and “near-shoring,” gradually reducing their reliance on Chinese manufacturing. Against this backdrop, many multinational corporations have adopted the “China+1” strategy—maintaining existing production capacity and operations in China while simultaneously establishing new bases in regions such as Southeast Asia to diversify their supply chains. Given cost considerations, Southeast Asia has emerged as an ideal investment destination for these multinationals, potentially leading to greater inflows of investment into the region.

3 JUSTIFICATION FOR THE PROPOSED RESEARCH

3.1 Scale and Importance of the Research Area

ASEAN has become China’s second-largest destination for outward investment, with flows reaching USD 34.36 billion in 2024 (18% of the total), second only to Hong Kong. Meanwhile, escalating U.S.–China trade frictions have significantly reduced China’s exports to the U.S., which fell by 12.5% in 2019—the sharpest drop during the trade war. Against this backdrop, Southeast Asia, especially Vietnam, has emerged as a key transshipment hub and production base: Vietnam’s exports to the U.S. rose by 174.7% between 2017 and 2022, while China’s exports to Vietnam grew by nearly 50%. These trends highlight ASEAN’s rising role as both a re-export platform and a host for production capacity in the evolving U.S.–China trade relationship.

3.2 Gaps in the Literature.

Although the literature has widely examined China’s outward foreign direct investment (OFDI), several research gaps remain that motivate this study:

First, limited regional focus. Most studies adopt a global perspective and lack in-depth analysis of ASEAN, one of China’s most important destinations, whose investment logic and unique dynamics remain underexplored.

Second, neglect of industry heterogeneity. Existing research often relies on cross-industry samples and overlooks how U.S.–China trade frictions affect sectors differently. By focusing on export-oriented manufacturing, this study seeks to capture how external shocks reshape overseas investment behavior.

Third, insufficient attention to private firms’ dynamics. Prior work usually treats private enterprises as a static category. This study instead highlights their evolving strategies, tracing the shift from “passive response” to “proactive deployment.”

Fourth, weak theoretical integration. Empirical analyses dominate the field, but few offer frameworks that combine internal pressures with external shocks. This study proposes a model linking rising labor costs and U.S.–China trade frictions to the logic of Chinese private firms' OFDI decisions.

3.3 Methodological Innovation

Most existing studies on China's outward foreign direct investment (OFDI) emphasize empirical analysis but lack a systematic theoretical framework to explain firms' decision-making logic. To address this gap, this study develops an extended framework based on the Melitz heterogeneous-firm trade model, aiming to explain how firms adjust their internationalization strategies under rising domestic labor costs (internal pressure) and tariff shocks from geopolitical frictions (external shock).

The model endogenously derives productivity thresholds for exporting and outward investment, treating labor costs and tariffs as key parameters to identify their separate effects. It further examines the interaction of the two pressures to test for a synergistic “resonance effect”—whether their joint impact exceeds the sum of individual effects—thus revealing how combined internal and external pressures systematically reshape Chinese firms' global production layout.

3.4 Policy Relevance

This study yields several policy implications. For ASEAN host countries, the priority is to shift from passive reception to proactive guidance, attracting Chinese private capital that complements local strengths while streamlining procedures and strengthening regulation. For the Chinese government, building an integrated support system—with legal, financial, and risk advisory functions and the effective use of RCEP—is essential to protect and empower firms abroad. For Chinese private enterprises, a shift from cost avoidance to strategic deployment is needed, positioning Southeast Asia as both a key market and a supply chain hub, with localization and compliance as the foundation for sustainable growth. Together, these insights offer practical guidance for managing the restructuring of global supply chains.

4 PRELIMINARY LITERATURE REVIEW

4.1 Literature on Uncertainty and OFDI

Uncertainty has emerged as a critical determinant of global trade and investment patterns. Whether stemming from economic fluctuations or policy shifts, its dampening effect is now widely recognized in the literature. Scholars have examined this phenomenon across macro and micro levels, as well as from global and country-specific perspectives.

Early studies established the theoretical underpinnings of how uncertainty affects investment. Handley and Limao (2015) demonstrate that trade policy uncertainty, independent of tariff levels, raises sunk costs and induces firms to exercise “option value of waiting,” thereby delaying or reducing investment. Extending the scope beyond trade, Julio and Yook (2016) exploit national elections as exogenous shocks to capture broad policy uncertainty. They show that elections significantly depress FDI inflows, with the effect more pronounced in countries with weaker institutional quality.

Subsequent research has further unpacked the sources and mechanisms of uncertainty. Hsieh et al. (2019) distinguish between home- and host-country policy uncertainty and highlight three transmission channels—real options, growth opportunities, and financing constraints. They find that home-country uncertainty often acts as a “push factor” for OFDI, while host-country uncertainty primarily serves as a “barrier.” Canh et al. (2020), adopting a global EPU perspective, reveal a distinct “safe haven effect”: while domestic EPU deters inward FDI, rising global EPU channels capital toward safer assets, intensifying the fragmentation of global investment. Choi et al. (2021) emphasize heterogeneity by investment type, showing that uncertainty exerts a stronger inhibitory effect on greenfield investment—where sunk costs are higher—than on mergers and acquisitions, offering robust micro-level support for the real options mechanism.

At the firm level, studies have provided more granular insights. Gulen and Ion (2016) establish a causal link between policy uncertainty and corporate investment, with stronger effects for firms facing high irreversibility or severe financing constraints. Cezar et al. (2020) extend this logic internationally, finding that host-country EPU exerts a greater deterrent effect on cross-border M&A than home-country EPU. Focusing on Chinese firms, Wu and Shao (2023) uncover a more complex dynamic: while home-country EPU encourages firms to diversify risk through OFDI, host-country EPU constrains entry into specific markets, with significant interaction effects between the two dimensions.

Attention has also been devoted to the spillover effects of uncertainty from major economies. Colombo (2013) documents that U.S. EPU negatively affects euro-area industrial production and prices via demand-side channels. Han et al. (2016) similarly show that U.S. EPU suppresses China's growth and price levels, whereas China's EPU exerts limited outward influence. Yet, with China's economic rise, this pattern is shifting. D. Zhang et al. (2019) compare the two economies and demonstrate that, while U.S. EPU remains the dominant driver of global financial volatility, China's EPU is gaining prominence, particularly in commodity markets. Consistently, L. Zhang and Colak (2022) find that China's EPU significantly discourages its OFDI without exerting long-term negative effects on inward FDI, underscoring the coexistence of China's enduring attractiveness to foreign capital and the cautious stance of its outbound investors.

Taken together, the literature delineates the multifaceted channels through which uncertainty shapes global investment, while offering rich theoretical and empirical evi-

dence on the distinctive roles of the United States and China in this evolving landscape.

4.2 Literature on Labor Cost and OFDI

The relationship between labor costs and investment has long been a central topic in international economics. Existing studies can be broadly grouped into three strands. The first examines how trade costs—including labor costs—shape firms' export and investment decisions. The second focuses on evidence from China, using micro data to assess how labor costs affect firm behavior. The third investigates FDI location choice, where labor costs are often treated as a key determinant. Together, these studies provide a solid foundation for analyzing how labor costs influence China's outward FDI in ASEAN economies.

Early investigations into labor costs and investment primarily emerged from studies on firms' export behavior. At the macro level, it was found that low wages alone are insufficient to attract market-seeking FDI but tend to encourage export-oriented investment instead (Kravis & Lipsey, 1982). Subsequent research began to incorporate firm heterogeneity into the analysis, demonstrating that productivity differences largely determine whether firms choose to export or to invest abroad (Helpman et al., 2004). This line of inquiry was later extended into a dynamic framework, providing empirical evidence that “exporting before investing” represents a common trajectory in firms' internationalization processes (Conconi et al., 2016). Further evidence from the Chinese context reinforces these insights. Using the country's minimum wage policy as an exogenous shock, Gan et al. (2016) found that wage increases significantly reduce firms' export propensity and scale.

Collectively, these findings underscore that labor costs play a crucial role in shaping firms' global expansion strategies by influencing their relative preferences for export versus investment.

Building on this foundation, more recent studies have shifted the focus from firms' export choices to the broader implications of rising labor costs for firm behavior and adjustment strategies. For instance, the increase in minimum wages has been shown to exert a modest but significant negative effect on employment, with particularly pronounced impacts on women, low-skilled workers, and private-sector employees (Fang & Lin, 2015; Huang et al., 2014). Complementary firm-level studies further suggest that when faced with higher labor costs, firms not only adjust employment but also reconfigure their product-market strategies. Evidence from Hau et al. (2020), Long and Yang (2016), and Mayneris et al. (2018) shows that wage hikes significantly increase the likelihood of firm exit and accelerate the elimination of inefficient production capacity.

Taken together, these studies reveal that labor costs affect not only employment decisions but also the long-term strategic choices of firms, including investment, innova-

tion, and market positioning.

During the 1990s, China became one of the world's largest recipients of FDI, yet its spatial distribution across provinces was highly uneven—creating a natural laboratory for studying the determinants of investment location. Empirical evidence suggests that the importance of labor costs in FDI location decisions is context-dependent. For example, early studies on the location of U.S. and Korean FDI in China found that labor costs were not a decisive factor, as the accessibility of imported intermediate inputs and logistical efficiency appeared to dominate firms' decisions (Amiti & Javorcik, 2008; Cheng & Kwan, 2000; Kang & Lee, 2007). Later research, however, revisited these conclusions by addressing the issue of endogeneity. When productivity differentials were properly controlled for using a control-function approach, labor costs emerged as a statistically significant determinant of FDI location (Liu et al., 2010). This evolution in findings reflects a broader shift in the literature—from a simple cost-minimization view to a more nuanced understanding that integrates productivity, institutional, and resource-based considerations (Wang et al., 2012). Relatedly, studies on labor-market regulations have shown that stricter labor laws tend to discourage FDI inflows, particularly those of an export-oriented nature (Negi & Bardhan, 2018).

Collectively, these contributions enrich our understanding of how labor costs, productivity, and institutional environments jointly shape both inward and outward investment patterns. As Chinese firms increasingly emerge as global investors, exploring the drivers of China's OFDI under the new global economic landscape not only extends existing theoretical frameworks but also provides fresh empirical evidence to the broader field of international investment research.

5 THEORETICAL FRAMEWORK

5.1 Current Pressure

Labor costs and policy environments are widely recognized as key determinants of firms' outward greenfield investment. According to An Assignment Theory of Foreign Direct Investment (Nocke & Yeaple, 2008), cross-country differences in wages and productivity drive firms to relocate production to lower-cost regions. This mechanism is supported by empirical evidence: Duanmu (2014) finds that rising home-country labor costs and stricter labor standards encourage firms to shift greenfield investment toward countries with lower labor costs.

In China, sustained wage growth and the implementation of the Labor Contract Law in 2008 have significantly increased labor compliance costs, especially for labor-intensive manufacturers. Meanwhile, the escalation of the U.S.–China trade conflict and the resulting tariff hikes have eroded export profitability. Consequently, many firms have turned to outward FDI to bypass trade barriers. Recent evidence shows that industries

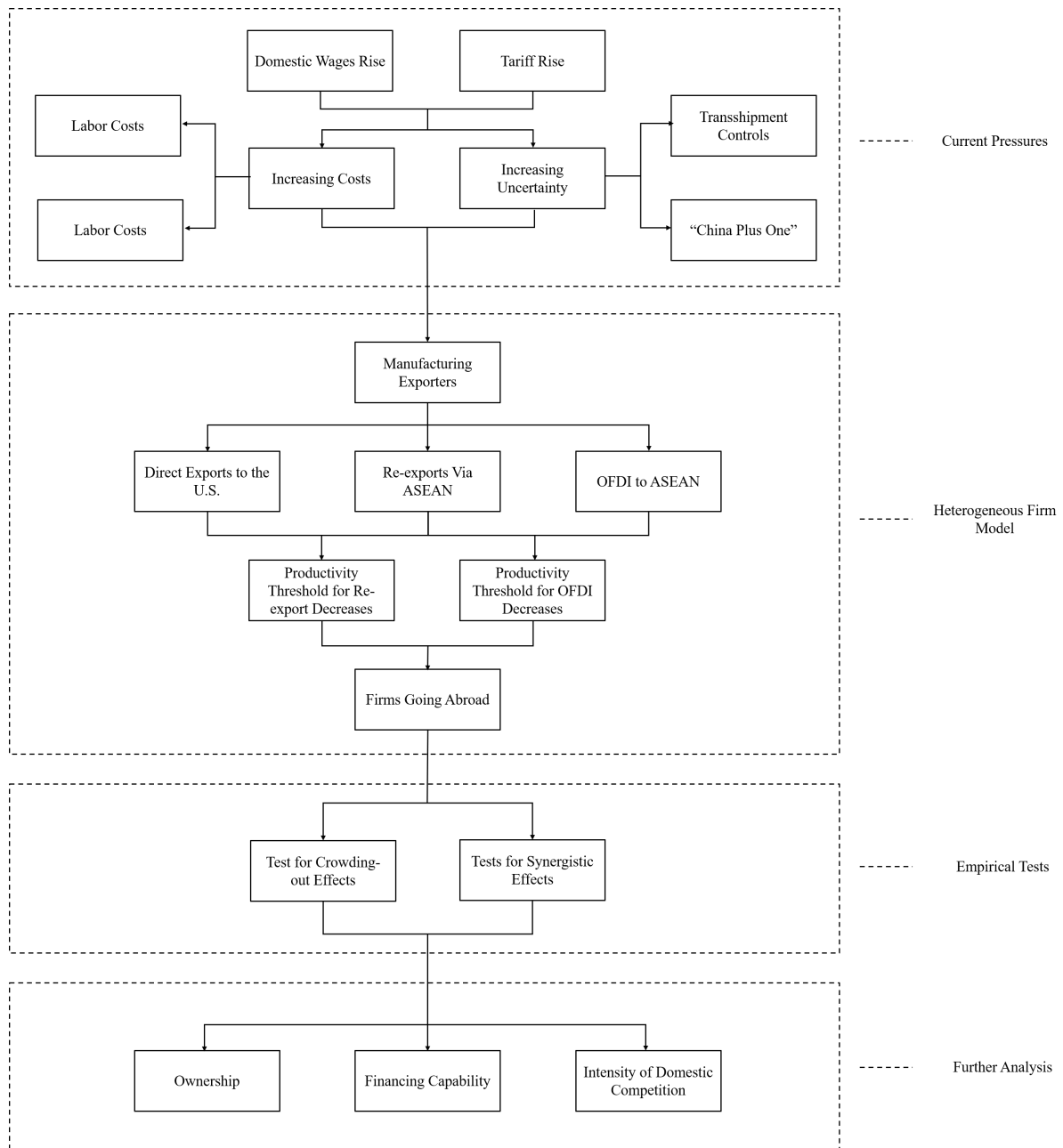


Figure 8: THEORETICAL FRAMEWORK

more exposed to U.S. tariffs reduced greenfield investment in the U.S. but increased investment in intermediary or third countries (Fan et al., 2023; Pyun, 2025).

Together, rising domestic labor costs and growing trade uncertainty have jointly driven Chinese firms—particularly in manufacturing—to undertake strategic outward investment and reorganize global production networks.

5.2 Heterogeneous Firm Model

This paper builds upon the existing heterogeneous-firm trade framework to further open the “black box” of firm decision-making, focusing on how Chinese manufacturers

choose their export paths to the U.S. market. Specifically, firms face three primary options:

- exporting directly from China to the United States;
- exporting indirectly through ASEAN as an intermediary platform; or
- undertaking direct investment in ASEAN to produce locally and then export to the United States.

The analysis draws on the heterogeneous-firm framework of Melitz (2003), incorporates the distinction between “exporting” and “FDI” proposed by Helpman et al. (2004), and further adopts the insights of Grossman et al. (2006) on how multinational firms choose between exporting, outsourcing, and FDI under different cost structures. Building on these foundations, this paper integrates realistic factors such as labor costs and tariff shocks into the model to construct a static heterogeneous-firm framework suited for analyzing firms’ export-path decisions (Helpman et al., 2010). The model is then used to derive the underlying decision mechanisms and conduct comparative static analyses under varying economic conditions.

5.3 Empirical Tests

This study tests four main hypotheses:

- Higher domestic labor costs in China increase manufacturing firms’ likelihood of investing in ASEAN.
- Higher U.S. tariffs on Chinese exports promote firms’ outward investment in ASEAN.
- Stricter U.S. enforcement on transshipment discourages re-exporting through ASEAN but encourages direct investment there.
- Rising labor costs and tariffs jointly exert a synergistic effect, with their combined impact on ASEAN investment exceeding the sum of their individual effects.

5.4 Further Analysis

This study explores firm heterogeneity in outward investment decisions from three aspects: ownership structure (Buckley et al., 2015; Ramasamy et al., 2012), financing capacity (Manova, 2013), and domestic competition (Lu et al., 2011; Tan & Meyer, 2011; Zhou et al., 2017).

6 METHODOLOGY

6.1 Environment, Preferences, and Demand

- **Regions:** Home country $H = \text{China}$; intermediary/host $F = \text{ASEAN}$; destination $U = \text{United States}$.
- **Preferences:** U.S. consumers have CES utility:

$$U = \left(\int_{\omega \in \Omega} q(\omega)^{\frac{\sigma-1}{\sigma}} d\omega \right)^{\frac{\sigma}{\sigma-1}}, \quad \sigma > 1.$$

The price index is

$$P = \left(\int p(\omega)^{1-\sigma} d\omega \right)^{\frac{1}{1-\sigma}},$$

and total nominal expenditure is denoted by E_U .

- **Demand and optimal pricing** (Dixit–Stiglitz monopolistic competition, markup $\mu = \frac{\sigma}{\sigma-1}$):

$$q(\omega) = E_U P^{\sigma-1} p(\omega)^{-\sigma}, \quad p(\omega) = \mu c(\omega).$$

Revenue is

$$r(\omega) = pq = E_U P^{\sigma-1} \mu^{1-\sigma} c(\omega)^{1-\sigma}.$$

Variable profit is

$$\pi_v = \frac{1}{\sigma} r.$$

For simplicity, define the following constant exogenous to each firm:

$$A \equiv \frac{E_U P^{\sigma-1}}{\sigma} \mu^{1-\sigma}.$$

- **Firm heterogeneity:** Each entrant draws productivity φ , with unit labor requirement a/φ . Wages are w_H and w_F .
- **Iceberg/effective trade costs:** $\tilde{\tau}_{ij} = \tau_{ij}(1+t_{ij})$ represents the combined transport and tariff cost from i to j .
- **Rules of Origin (ROO):** When exporting via ASEAN, firms satisfying ROO obtain preferential access $\tilde{\tau}_{FU}^{\text{pref}} < \tilde{\tau}_{HU}$; otherwise, the non-preferential cost applies $\tilde{\tau}_{FU}^{\text{non}} \approx \tilde{\tau}_{HU}$.

6.2 Unit Costs and Profit Kernels for the Three Paths

6.2.1 (D) Direct Export from China to the United States

Unit Cost:

$$c_D(\varphi) = \frac{w_H a}{\varphi} \tilde{\tau}_{HU}. \quad (1)$$

Profit (including fixed cost f_D):

$$\begin{aligned} \pi_D(\varphi) &= A c_D^{1-\sigma} \varphi^{\sigma-1} - f_D \\ &= A (w_H \tilde{\tau}_{HU})^{1-\sigma} \varphi^{\sigma-1} - f_D \\ &\equiv B_D \varphi^{\sigma-1} - f_D, \end{aligned} \quad (2)$$

where

$$B_D \equiv A (w_H \tilde{\tau}_{HU})^{1-\sigma}.$$

6.2.2 (R) Re-export from China via ASEAN with Minimal Processing (Including Enforcement Risk p)

- **“Cardboard-box” minimal processing:** A small amount of local labor input $\frac{a_R}{\varphi}$ is required in F . The first leg is China \rightarrow ASEAN with trade cost $\tilde{\tau}_{HF}$.
- **Enforcement / anti-circumvention risk:** Firms face a random probability of denial $p \in [0, 1)$ that increases with the U.S. tariff level:

$$p = p(\tilde{\tau}_{HU}), \quad \frac{\partial p}{\partial \ln \tilde{\tau}_{HU}} > 0.$$

Higher tariffs imply stronger enforcement and a higher likelihood of losing preferential access.

Effective mixed cost coefficient. The effective (expected) ASEAN–U.S. iceberg trade cost is a convex combination:

$$\tilde{\tau}_{FU}^{\text{mix}}(p) = (1 - p) \tilde{\tau}_{FU}^{\text{pref}} + p \tilde{\tau}_{FU}^{\text{non}}. \quad (3)$$

Unit cost.

$$c_R(\varphi) = \left(\frac{w_H a}{\varphi} \tilde{\tau}_{HF} + \frac{w_F a_R}{\varphi} \right) \tilde{\tau}_{FU}^{\text{mix}}(p). \quad (4)$$

Profit (including fixed cost f_R).

$$\begin{aligned}\pi_R(\varphi) &= A c_R^{1-\sigma} \varphi^{\sigma-1} - f_R \\ &= A \left(\tilde{\tau}_{FU}^{\text{mix}}(p) [w_H a \tilde{\tau}_{HF} + w_F a_R] \right)^{1-\sigma} \varphi^{\sigma-1} - f_R \\ &\equiv B_R \varphi^{\sigma-1} - f_R,\end{aligned}\tag{5}$$

where

$$B_R = A \left(\tilde{\tau}_{FU}^{\text{mix}}(p) [w_H a \tilde{\tau}_{HF} + w_F a_R] \right)^{1-\sigma}.\tag{6}$$

Key elasticity with respect to p .

$$\frac{\partial \ln B_R}{\partial p} = (1 - \sigma) \frac{\tilde{\tau}_{FU}^{\text{non}} - \tilde{\tau}_{FU}^{\text{pref}}}{\tilde{\tau}_{FU}^{\text{mix}}(p)} < 0.\tag{7}$$

Higher enforcement probability p (e.g., stronger anti-circumvention actions) reduces the expected profitability of the re-export mode.

Remark. Non-preferential access involves cost $\tilde{\tau}_{FU}^{\text{non}}$, while preferential access requires minimal processing $\frac{w_F a_R}{\varphi}$ in F . When the preferential margin $(\tilde{\tau}_{FU}^{\text{non}} - \tilde{\tau}_{FU}^{\text{pref}})$ is sufficiently large and the additional processing cost is modest, firms optimally choose the minimal-processing re-export path.

6.2.3 (I) Investment in ASEAN for Export to the United States (Greenfield FDI)

- **Production structure:** Firms are allowed to import intermediate goods from China (with share μ). The labor-equivalent value of imported intermediates is denoted by a_M .

Unit cost:

$$c_I(\varphi) = \frac{w_F(a_F + \mu a_M)}{\varphi} \tilde{\tau}_{FU}^{\text{pref}}.\tag{8}$$

Profit (including fixed cost f_I):

$$\begin{aligned}\pi_I(\varphi) &= A c_I^{1-\sigma} \varphi^{\sigma-1} - f_I \\ &= A [w_F(a_F + \mu a_M) \tilde{\tau}_{FU}^{\text{pref}}]^{1-\sigma} \varphi^{\sigma-1} - f_I \\ &\equiv B_I \varphi^{\sigma-1} - f_I,\end{aligned}\tag{9}$$

where

$$B_I \equiv A [w_F(a_F + \mu a_M) \tilde{\tau}_{FU}^{\text{pref}}]^{1-\sigma}.$$

Remark. All three paths share the linear profit form

$$\pi_m(\varphi) = B_m \varphi^{\sigma-1} - f_m,$$

which facilitates ranking by productivity thresholds and comparative statics. Typically, fixed costs satisfy

$$f_I > f_R \geq f_D.$$

6.3 Profit Cutoffs and Indifference Thresholds

Let

$$\alpha = \frac{1}{\sigma - 1} \in (0, 1).$$

6.3.1 (i) Profit Cutoffs for Entering the U.S. Market

For each path $m \in \{D, R, I\}$, the zero-profit cutoff satisfies $\pi_m(\varphi_m) = 0$:

$$\varphi_m = \left(\frac{f_m}{B_m} \right)^\alpha, \quad m \in \{D, R, I\}. \quad (10)$$

6.3.2 (ii) Pairwise Indifference Thresholds (Mode-switch Boundaries)

When $B_R > B_D$, there exists a productivity level at which a firm is indifferent between direct export and re-export:

$$\hat{\varphi}_{R,D} = \left(\frac{f_R - f_D}{B_R - B_D} \right)^\alpha, \quad (D \leftrightarrow R). \quad (11)$$

When $B_I > B_R$, there exists a threshold between re-export and investment:

$$\hat{\varphi}_{I,R} = \left(\frac{f_I - f_R}{B_I - B_R} \right)^\alpha, \quad (R \leftrightarrow I). \quad (12)$$

Typical Ordering (under standard parameters). If $B_R > B_D$ and $B_I > B_R$, and $\varphi_R \leq \hat{\varphi}_{I,R}$, then the productivity ranking follows:

Low φ : Exit (no entry); Medium φ : Re-export (R); High φ : Invest (I).

If the preferential margin or processing cost reduces B_R below B_D , the intermediate re-export region disappears; if $B_I \leq B_R$, re-export becomes the terminal mode.

6.4 Elasticities and Comparative Statics

Define the cost share of the China–ASEAN stage as

$$s_H \equiv \frac{w_H a_{HF} \tilde{\tau}_{HF}}{w_H a_{HF} \tilde{\tau}_{HF} + w_F a_R} \in (0, 1).$$

Then the logarithmic derivatives of B_m with respect to key parameters are:

$$\begin{aligned} \frac{\partial \ln B_D}{\partial \ln w_H} &= 1 - \sigma < 0, & \frac{\partial \ln B_D}{\partial \ln \tilde{\tau}_{HU}} &= 1 - \sigma < 0; \\ \frac{\partial \ln B_R}{\partial \ln w_H} &= (1 - \sigma)s_H < 0, & \frac{\partial \ln B_R}{\partial \ln \tilde{\tau}_{HF}} &= (1 - \sigma)s_H < 0; \\ \frac{\partial \ln B_R}{\partial \ln w_F} &= (1 - \sigma)(1 - s_H) < 0, & \frac{\partial \ln B_R}{\partial p} &= (1 - \sigma) \frac{\tilde{\tau}_{FU}^{\text{non}} - \tilde{\tau}_{FU}^{\text{pref}}}{\tilde{\tau}_{FU}^{\text{mix}}(p)} < 0; \\ \frac{\partial \ln B_I}{\partial \ln w_F} &= 1 - \sigma < 0, & \frac{\partial \ln B_I}{\partial \ln \tilde{\tau}_{FU}^{\text{pref}}} &= 1 - \sigma < 0. \end{aligned}$$

6.4.1 Derivatives of the Indifference Thresholds with respect to B

$$\begin{aligned} \frac{\partial \hat{\varphi}_{R,D}}{\partial B_D} &= \frac{\alpha \hat{\varphi}_{R,D}}{B_R - B_D} > 0, & \frac{\partial \hat{\varphi}_{R,D}}{\partial B_R} &= -\frac{\alpha \hat{\varphi}_{R,D}}{B_R - B_D} < 0; \\ \frac{\partial \hat{\varphi}_{I,R}}{\partial B_R} &= \frac{\alpha \hat{\varphi}_{I,R}}{B_I - B_R} > 0, & \frac{\partial \hat{\varphi}_{I,R}}{\partial B_I} &= -\frac{\alpha \hat{\varphi}_{I,R}}{B_I - B_R} < 0. \end{aligned}$$

6.4.2 Core Comparative Statics (from the Sign Patterns)

- **(Direct-export squeeze)** An increase in w_H or $\tilde{\tau}_{HU}$ lowers $B_D \Rightarrow \hat{\varphi}_{R,D}$ decreases. *Interpretation:* Firms are pushed out of direct export (D) into re-export (R) or investment (I).
- **(R \rightarrow I upgrade; tariff-induced promotion)** An increase in $\tilde{\tau}_{HU}$ raises p , which lowers $B_R \Rightarrow \hat{\varphi}_{I,R}$ decreases. *Interpretation:* Stronger enforcement and higher U.S. tariffs raise the cost of re-exporting, promoting FDI in ASEAN.
- **(Wage-induced investment attraction)** An increase in w_H reduces $B_R \Rightarrow \hat{\varphi}_{I,R}$ decreases. *Interpretation:* Rising home wages raise the relative attractiveness of locating production in ASEAN.

6.5 Synergy / Super-Additivity Effect (Second-Order Cross Interaction)

Let

$$x = \ln w_H, \quad y = \ln \tilde{\tau}_{HU}.$$

6.5.1 (a) D \leftrightarrow R Boundary

Because

$$\ln B_D = (1 - \sigma)(x + y) + \text{constant}$$

is additively separable, and

$$\frac{\partial \hat{\varphi}_{R,D}}{\partial B_D} > 0, \quad \frac{\partial^2 \hat{\varphi}_{R,D}}{\partial B_D^2} = \alpha(1 + \alpha) \frac{\hat{\varphi}_{R,D}}{(B_R - B_D)^2} > 0,$$

the chain rule implies

$$\frac{\partial^2 \hat{\varphi}_{R,D}}{\partial x \partial y} > 0. \quad (13)$$

Hence, the leftward shift in the cutoff $\hat{\varphi}_{R,D}$ intensifies more than linearly — exhibiting *super-additivity*.

6.5.2 (b) I \leftrightarrow R Boundary (Extended A-Driven Mechanism)

Let $B_R = B_R(x, y, p)$ be multiplicatively separable in x and y , with both partial derivatives negative:

$$\frac{\partial B_R}{\partial x} < 0, \quad \frac{\partial B_R}{\partial y} = \frac{\partial B_R}{\partial p} \cdot \frac{\partial p}{\partial y} < 0.$$

Since

$$\frac{\partial \hat{\varphi}_{I,R}}{\partial B_R} > 0, \quad \frac{\partial^2 \hat{\varphi}_{I,R}}{\partial B_R^2} > 0,$$

we obtain

$$\frac{\partial^2 \hat{\varphi}_{I,R}}{\partial x \partial y} > 0. \quad (14)$$

Joint increases in wages (w_H) and tariffs ($\tilde{\tau}_{HU}$) thus shift $\hat{\varphi}_{I,R}$ leftward more than additively, generating a *synergistic promotion effect* that strengthens the incentive for FDI in ASEAN.

6.6 Condition under which “Cardboard-box R” is Preferred to “Non-Preferential R” (Independent of φ)

Satisfying the ROO condition is more cost-efficient and hence optimal if and only if

$$(w_H a \tilde{\tau}_{HF} + w_F a_R) \tilde{\tau}_{FU}^{\text{mix}}(p) \leq w_H a \tilde{\tau}_{HF} \tilde{\tau}_{FU}^{\text{non}}. \quad (15)$$

When the preferential margin is large ($\tilde{\tau}_{FU}^{\text{pref}} \ll \tilde{\tau}_{FU}^{\text{non}}$) and the required processing cost a_R is small, this inequality holds, implying that re-exporting firms choose the “cardboard-box” (ROO-compliant) branch. Therefore, the expression for B_R derived in the main text applies under this condition.

6.7 Testable Hypotheses (Empirical Implications)

Hypothesis 1 (Ordering). If $B_R > B_D$ and $B_I > B_R$, there exist thresholds $\hat{\varphi}_{R,D} < \hat{\varphi}_{I,R}$ such that: low-productivity firms do not enter, medium-productivity firms choose re-export (R), and high-productivity firms choose investment (I).

Hypothesis 2 (Direct-export squeeze). An increase in w_H or $\tilde{\tau}_{HU} \Rightarrow \hat{\varphi}_{R,D} \downarrow$: direct exporters (D) are squeezed out and switch to R or I .

Hypothesis 3 (Tariff-induced promotion). If $p'(\tilde{\tau}_{HU}) > 0$, then $\tilde{\tau}_{HU} \uparrow \Rightarrow \hat{\varphi}_{I,R} \downarrow$: higher U.S. tariffs raise enforcement risk, promoting firm upgrading from re-exporting (R) to investment (I).

Hypothesis 4 (Synergistic effect). $\frac{\partial^2 \hat{\varphi}_{R,D}}{\partial \ln w_H \partial \ln \tilde{\tau}_{HU}} > 0$ and $\frac{\partial^2 \hat{\varphi}_{I,R}}{\partial \ln w_H \partial \ln \tilde{\tau}_{HU}} > 0$: joint increases in wages and tariffs produce a super-additive (synergistic) effect, accelerating firm exit or upgrading.

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