Inward FDI and Host Country Entrepreneurship: Mechanisms Based on Entrepreneurial Types

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Abstract: *This paper explores the impact of inward foreign direct investment (FDI) on entrepreneurial activity in host countries. It argues that inward FDI affects different types of entrepreneurship in distinct ways, with its impact varying depending on the level of formal institutional development in the host country. On the one hand, inward FDI's market spillover effects increase opportunities for imitative entrepreneurship and reduce entrepreneurial risk. On the other hand, inward FDI has a mixed blessing for innovative entrepreneurship: it fuels innovation through knowledge spillovers but simultaneously intensifies competition, creating uncertainty. Using 268 observations from 59 countries between 2010 and 2018, our empirical evidence reveals a striking dichotomy: inward FDI fuels imitative entrepreneurship where formal institutions are weak, yet only fosters innovative entrepreneurship where institutions are robust. Further analysis identifies key factors - such as host country R&D investment, intellectual property protection, financial development, and entrepreneurial support - that influence whether inward FDI can effectively foster innovative entrepreneurship.*

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1. Introduction

Concerns have been raised about intensifying technological barriers by some countries that could have the effect of hindering China's economic upgrading. In this context, China needs to better utilize international circulation to enhance the substitutability and resilience of its domestic key technologies and important industrial chains (Liu, 2021). Openness to foreign investment is crucial for international circulation. However, past experience shows that inward foreign direct investment (FDI) is a double-edged sword (Chen et al., 2021; Li et al., 2017). China's economic landscape has been transformed since the launch of reform and opening-up in 1978. A key driver of this transformation has been the substantial inflow of foreign capital, which has not only provided funds and technology but has also stimulated market demand and boosted the dynamism of Chinese businesses. However, inward FDI may also lead

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to over-reliance on foreign technology, inhibiting host country technological capabilities, innovation, and entrepreneurial dynamism, thereby hindering long-term economic development. With China's economic development shifting towards quality and innovation, indigenous innovation and entrepreneurship have become key drivers of national technological upgrading and industrial transformation. In response, policymakers are urgently exploring how to harness inward FDI to foster high-quality innovation and entrepreneurship.

Recent years have seen a rise in research on the link between inward FDI and host country entrepreneurship (Hong et al., 2021). However, the findings remain inconclusive. Two main perspectives dominate the literature. The "spillover" perspective argues that inward FDI fosters local entrepreneurship in several ways: demonstrating successful business models, establishing supply chain connections, and facilitating employee mobility (Acs et al., 2012; Zhang et al., 2018). These mechanisms are believed to generate positive externalities that stimulate entrepreneurial activity. In contrast, the "competition" perspective suggests that inward FDI can crowd out domestic entrepreneurship by intensifying competition (Goel, 2018; Wang, 2014). This negative effect is often more evident in developing economies (Danakol et al., 2017). Attempts to reconcile these conflicting views by incorporating the role of institutional context have also yielded mixed results. Some studies suggest that inward FDI acts as a substitute for weak institutions, thus promoting entrepreneurship particularly in regions with underdeveloped institutional frameworks (Kim & Li, 2014). Conversely, other research indicates that inward FDI only has a positive impact on local entrepreneurship when robust institutions are already in place (Slesman et al., 2021).

This paper contends that a crucial reason why existing research fails to break the deadlock and resolve contradictory conclusions is the lack of distinction among different types of entrepreneurship . Prior studies have largely examined inward FDI's impact on aggregate entrepreneurial activity in host economies, neglecting the potentially divergent mechanisms through which inward FDI affects various types of ventures. Given the fundamental differences in the origin and nature of these ventures (Alvarez & Barney, 2007), the role of foreign direct investment (FDI) involves not only various positive spillover mechanisms but also a complex interweaving of positive spillovers and negative competitive mechanisms (Spencer, 2008). This leads to the possibility that the impact of FDI on different types of entrepreneurial activities may fundamentally differ in both direction and degree. Consequently, incorporating this crucial distinction offers a promising avenue for reconciling the existing discrepancies in the literature.

Building on this premise, this paper introduces a typology of entrepreneurial activity to the study of inward FDI's effects, seeking to disentangle the mechanisms through which inward FDI influences different forms of entrepreneurship in host economies. Furthermore, it explores the key institutional factors that foster innovative entrepreneurial ventures. This paper's theoretical contributions are threefold. First, it advances our theoretical understanding of the relationship between inward FDI and host country entrepreneurship. While this topic has garnered increasing scholarly attention, prior research has largely treated entrepreneurial activity as a homogenous phenomenon (Kim & Li, 2014; Slesman et al., 2021), hindering progress in resolving ongoing debates. Drawing on the distinct origins and characteristics of different types of ventures (Alvarez & Barney, 2007), this paper highlights the underlying mechanisms and contingent institutional factors shaping inward FDI's impact on these diverse forms of entrepreneurship. This nuanced perspective offers a valuable framework for integrating existing findings and contributing to the advancement of this research area. Second, this study provides an in-depth examination of the complex mechanisms through which inward FDI influences innovative entrepreneurship. We identify two conflicting mechanisms through which inward FDI affects innovative entrepreneurship - positive knowledge spillovers and negative competition - and clarify the contextual conditions that strengthen or weaken these mechanisms. This provides a clear articulation of the pathways through which inward FDI impacts innovative entrepreneurship, particularly highlighting the high degree of context dependence of its effects. Third, our research contributes to a richer understanding

of how emerging economies develop indigenous innovative entrepreneurship. Previous research based on spillover theory has emphasized that knowledge spillovers from existing large domestic institutions are a key source of entrepreneurial opportunities (Kirschning & Mrożewski, 2023; Fotopoulos, 2022). However, how emerging economies lacking such endowments can stimulate local innovative entrepreneurship remains poorly understood (Iftikhar et al., 2020). This study reveals that inward FDI, as a source of external knowledge, is another important driver of the emergence of innovative entrepreneurship. This has significant implications for extending the application of knowledge spillover theory in the context of globalized economic activity and also enriches the discussion of innovative entrepreneurship from the perspective of innovation sources.

2. Literature Review

2.1 Inward FDI and Spillover Effects

For a long time, academia has conducted extensive research on the relationship between foreign direct investment (FDI) and host country economic development, emphasizing that the spillover effects brought by inward FDI will help improve the innovation capabilities of host country enterprises and overall social productivity. These spillover effects are mainly realized through four mechanisms (Spencer, 2008; Meyer & Sinani, 2009): First, inward FDI provides host country enterprises with opportunities for close observation and learning, enabling them to emulate advanced technologies, organizational practices, and management strategies in their operations. Second, the vertical linkages established between foreign-invested enterprises and host country supply chains provide direct channels for knowledge transfer. Suppliers and distributors who establish trade relationships with foreign-invested enterprises will not only benefit directly from the cooperation but also play an intermediary role in transferring knowledge to other enterprises in the host country. Furthermore, spillover effects can also occur through employee mobility. When former employees of foreign-invested enterprises join local companies, their technical and managerial practices will diffuse to these local companies. Finally, the increased competition caused by inward FDI may also force domestic enterprises to carry out technological and managerial innovations to meet the challenges. Of course, inward FDI may also bring more competitive products, leading to negative competitive effects such as a shortage of supply chain products, increased demand in the labor market, and rising raw material costs. Therefore, the overall effect of inward FDI will depend on the strength of the linkages between foreign-invested enterprises and local enterprises (Yang, 2019), and the ability of host country enterprises to absorb spillovers and resist competition (Lu, 2008).

However, although the complex effects of inward FDI on incumbent firms have been widely validated, it is questionable whether this logic applies to analyzing entrepreneurial entry. On the one hand, compared to incumbent firms, entrepreneurial ventures face greater difficulty in benefiting from the positive spillovers of inward FDI. Lacking direct channels for establishing connections with foreign-invested enterprises, entrepreneurs, especially nascent entrepreneurs without industry experience, are less likely to be direct beneficiaries of knowledge spillovers and also lack sufficient resources for learning. On the other hand, entrepreneurial ventures may experience stronger negative competitive effects from inward FDI. Higher levels of slack resources provide incumbent firms with room for strategic responses; even with intense competition, they can adopt imitation and follow-the-leader strategies. Unfortunately, such strategies are not feasible for resource-constrained entrepreneurial ventures (Feinberg & Gupta, 2009). The influx of foreign companies can lead to a “brain drain” from entrepreneurship as increased competition and attractive job opportunities draw skilled labor into the established job market (Wang, 2014). In summary, existing research has not yet fully explored how inward FDI spillovers affect entrepreneurs’ ability to identify and capitalize on opportunities, nor has it adequately addressed the combined influence of positive and negative spillovers on entrepreneurial choices.

2.2 Imitative and Innovative Entrepreneurship

Entrepreneurship is the process through which entrepreneurs identify, evaluate, and capitalize on opportunities to offer goods and services that can potentially generate profits (Shane & Venkataraman, 2000). While much of the existing literature tends to frame entrepreneurship as a primarily innovation-driven endeavor, it is important to recognize that innovation often requires significant resource investment and is fraught with substantial risks and challenges. In practice, however, many entrepreneurial ventures may take simpler forms (Autio, 2007). When assessing the socioeconomic impact of entrepreneurship, it is crucial to focus not only on the sheer number of new ventures but also on the level of innovation entrepreneurs bring to the market. The value of entrepreneurial activity lies in how creatively entrepreneurs meet customer needs and adapt their offerings, often in pursuit of growth and innovation. Thus, a more meaningful analysis of entrepreneurship should prioritize the quality of ventures - particularly those that emphasize innovation and long-term growth - rather than simply counting the number of new startups.

When considering the impact of entrepreneurship on economic growth, the distinction between imitative and innovative entrepreneurship is particularly important (Minniti & Levesque, 2010; Lafuente et al., 2020). Imitative entrepreneurship involves entrepreneurs increasing market competition and product supply by imitating or replicating existing products or services. It represents a rational approach to exploiting existing market opportunities. Imitative entrepreneurial opportunities often stem from exogenous market imperfections (Alvarez & Barney, 2007) - that is, competitive deficiencies caused by changes in technology, consumer preferences, or other external environmental factors. These imperfections represent untapped market potential within the existing production framework, with opportunities often existing independently of the entrepreneur's involvement. In these types of entrepreneurial activities, the entrepreneur's task is to identify and exploit opportunities, developing them to maximize returns. In this process, entrepreneurs can gather information, conduct cost-benefit analyses, and understand various outcomes and possibilities related to potential entrepreneurial opportunities. Therefore, imitative entrepreneurial decisions are based on risk assessment as the primary decision criterion, with relatively less uncertainty involved (Young et al., 2018).

Innovative entrepreneurship, on the other hand, involves entrepreneurs introducing new products or services to the market, thereby driving technological change and productivity growth (Tang et al., 2021). It is often described as an act of creative destruction by entrepreneurs. Unlike imitative entrepreneurship, opportunities in innovative entrepreneurship arise from endogenous market imperfections (Alvarez & Barney, 2007) - that is, the opportunities do not necessarily pre-exist in the market or have an obvious connection to existing markets but are instead the product of the entrepreneur's endogenous creation. It is the entrepreneur's ingenuity - their ambition, creativity, and judgment - that drives the constant search for and recombination of resources in the face of market realities (Lafuente et al., 2020). As opportunities are largely created by entrepreneurs who can't easily judge the probability distribution of outcomes due to limited pre-action information collection, innovative entrepreneurship is an act that pursues opportunities under uncertainty (Young et al., 2018).

Objectively, both imitative and innovative entrepreneurship contribute to economic growth and boost overall productivity. But they work in different ways, generating distinct benefits. Imitative ventures capitalize on existing market imbalances. More of these ventures can improve market efficiency, allowing economies to use resources more effectively and move closer to equilibrium under the existing production function. In many developing countries, this boost to supply and competitive efficiency is enough to drive economic growth (Minniti & Levesque, 2010). Innovative entrepreneurship, however, disrupts existing market equilibria - a process often called "creative destruction". This creates greater added value (Bradley et al., 2021) and pushes a nation's technological frontier forward. When breakthrough technologies are urgently needed, entrepreneurial firms are often more driven than established companies to pursue radical change. This makes innovative entrepreneurship a key engine for national leapfrog development.

3. Research Hypothesis

3.1 Inward FDI and Entrepreneurship in Host Countries

This paper argues that there is heterogeneity in the impact mechanisms of foreign direct investment (FDI) on different types of entrepreneurial activity in host countries (Table 1). On the one hand, because imitative entrepreneurship is a risk-based decision driven by arbitrage opportunities, inward FDI will help increase market demand and alter existing market equilibria in the host country, enabling potential entrepreneurs to profit through product replication or simple imitation (market spillover effect). On the other hand, because innovative entrepreneurship is an uncertainty-based decision driven by endogenously created opportunities, inward FDI will help increase the overall social knowledge stock and knowledge diversity, encouraging potential entrepreneurs to explore and integrate new knowledge to form innovative opportunities (knowledge spillover effect). However, due to direct competition in areas such as talent, markets, and resources, innovative entrepreneurship will also be the primary victim of inward FDI's negative effects (competition effect). These inherent differences in mechanisms will cause inward FDI to exhibit heterogeneous impacts on different types of entrepreneurial activity, and these impacts will be further accentuated under different levels of formal institutional development in the host country.

Table 1: FDI and Imitative/Innovative Entrepreneurship

	Imitative Entrepreneurship	Innovative Entrepreneurship
Source of opportunity	Objectively existing, awaiting discovery	Endogenous creation by the entrepreneur
Nature of entrepreneurship	Risk-based decision	Uncertainty-based decision
FDI and Opportunity Source	Direct utilization of market spillovers	Creative construction utilizing knowledge spillovers
Competitive Relationship with inward FDI	Relatively weak	Relatively strong; competition for talent, markets, and resources
Inward FDI and Entrepreneurial Decision	Reduces entrepreneurial risk	Increases entrepreneurial uncertainty

3.1.1 Foreign direct investment and imitative entrepreneurship

Market spillovers from inward FDI create new business opportunities and stimulate local entrepreneurship by increasing demand for products and services due to new or improved inputs. Some scholars also refer to this as the demand-creation effect (Kim & Li, 2014; Ayyagari & Kosová, 2010).

First, the direct manifestation of the market spillover effect is vertical spillovers within the supply chain, generated through backward and forward linkages (Kim & Li, 2014). Among these, backward linkages refer to procurement relationships with *upstream* enterprises in the host country. Host country governments often mandate that foreign-invested enterprises source a certain proportion of their inputs locally. Additionally, local firms may offer raw materials or components at a lower cost. As a result, increased inward FDI can drive the expansion of upstream market demand (Mei, 2021), creating opportunities that stimulate entrepreneurial entry to address market gaps. Forward linkages, on the other hand, refer to production and sales relationships with *downstream* enterprises. Compared to outsiders, local entrepreneurs have advantages in social embeddedness and relationship networks, and foreign-invested enterprises often need to cooperate with them in various ways (such as building distribution networks) to rapidly expand their markets. At the same time, the supply of high-quality products by foreign-invested enterprises will enhance the product quality of downstream industries, which, in turn, will stimulate latent demand for these products and attract new entrepreneurial ventures (Ayyagari & Kosová, 2010).

Second, market spillovers are also manifested in horizontal spillovers across industries. The new products introduced through inward FDI not only create fresh market demand but also open up niche

opportunities for domestic entrepreneurs to replicate and innovate upon these offerings. In particular, foreign-invested enterprises often tend to sell existing products in high-end markets, while neglecting the vast "bottom of the pyramid" potential market in developing countries. At this point, local entrepreneurs can develop untapped niche markets through simple imitation of these new products. Furthermore, inward FDI also brings knowledge necessary for penetrating overseas markets, which can further stimulate the creation of domestic enterprises when local entrepreneurs discover export market opportunities (Tian et al., 2018). Therefore, the entry of foreign-invested enterprises often generates a vanguard effect, guiding the emergence of local entrepreneurial activities and forming industrial clusters. In the early stages of China's reform and opening-up, the emergence of labor-intensive manufacturing in coastal areas provided the most vivid example of this effect. Unlike foreign-invested enterprises focusing on high-end urban consumers, numerous local entrepreneurial firms targeted low-tier domestic markets in rural towns and export markets through simple product imitation. For example, after the large-scale introduction of light manufacturing industries such as clothing and textiles from Hong Kong in the late 1980s, the number of local township enterprises in Dongguan rapidly increased by more than 4,000 in the first five years of the 1990s[1]. In summary, the following hypothesis is proposed:

H_1: Foreign direct investment (FDI) increases the rate of imitative entrepreneurship in the host country.

3.1.2 FDI and innovation-driven entrepreneurship

While market spillovers may generate increased demand, mere replication of existing products is insufficient to drive genuine innovation. Inward FDI facilitates knowledge transfer, catalyzing innovation in nascent ventures. Foreign firms operating in developing markets encounter a "liability of foreignness", compelling them to leverage their core competencies, frequently embodied in knowledge-based intangible assets, to establish a competitive advantage (Saliola & Zanfei, 2009). Unlike rivalrous physical resources, knowledge exhibits characteristics of non-rivalry and non-excludability, rendering it challenging for foreign firms to fully prevent the diffusion of their technologies and expertise to domestic enterprises. These knowledge spillovers primarily manifest through two principal mechanisms: vertical linkages within supply chains and the mobility of skilled personnel (Spencer, 2008).To begin with, foreign firms often impose stringent standards on local suppliers to improve supply chain quality and reduce costs. At the same time, they provide training, technical assistance, and even connect local partners to advanced international knowledge[2]. Such efforts benefit not only the immediate suppliers but also the entire domestic supply chain (Clark et al., 2011). Moreover, when employees leave foreign firms to join local companies or start their own ventures, valuable skills and expertise inevitably spread (Fu, 2012). This movement of talent contributes to the diffusion of knowledge across the local economy, further driving innovation and growth.

According to the knowledge spillover theory of entrepreneurship, new knowledge constitutes the fundamental source of innovative entrepreneurial opportunities (Stenholm et al., 2013; Acs et al., 2009). Incumbent firms in host countries, despite being direct beneficiaries of knowledge spillovers from foreign firms' R&D, are often constrained by strategic rigidity or risk aversion, limiting their ability to fully commercialize this new knowledge. When potential entrepreneurs recognize that new knowledge is underutilized, they may take action to explore the connection between this new knowledge and the market, thereby creating new opportunities. In this context, innovative entrepreneurship is viewed as a crucial channel linking new knowledge with the commercial market, representing an endogenous

[1] For detailed data and analysis, see: Su Bin. Foreign Investment and Dongguan's Economic Development [J]. Pearl River Economy, 2005(7): 40-49.

[2] For instance, after Volkswagen formed a joint venture with what is now SAIC Motor in 1984, the company implemented various initiatives to support the learning and development of local suppliers in China. As a result of this knowledge-sharing collaboration, the number of local suppliers meeting Volkswagen's quality standards grew dramatically - from just 2 suppliers in 1986 to 248 by 1997.

response of entrepreneurs to new knowledge (Acs et al., 2009). Concurrently, the knowledge diversity brought by inward FDI is also an important source of innovative entrepreneurial opportunities (Zhang et al., 2010), manifested not only in technology, products, and management practices, but also in diverse cultures and business models. Knowledge-based opportunity creation typically involves integrating new knowledge into existing knowledge networks or reorganizing existing knowledge in new ways (Kneeland et al., 2020). Consequently, inward FDI introduces more diverse new knowledge, expanding the space for potential entrepreneurs to utilize this new knowledge or recombine diverse knowledge to achieve innovation. Although this knowledge spillover mechanism is difficult to observe directly, research by Acs et al. (2012) found that 33% of local knowledge-based entrepreneurial firms were founded by former employees of foreign firms.

Besides positive spillover effects, foreign direct investment (FDI) also creates negative competitive pressures. Contrary to existing literature, this paper argues that innovative entrepreneurship is disproportionately affected by these negative competitive effects, including talent, market, and resource competition.

First, foreign firms typically offer more attractive working conditions and higher salaries than their domestic counterparts. This directly increases the opportunity cost of entrepreneurial activity for the highly skilled workforce. Consequently, it not only reduces the likelihood of these individuals pursuing innovative ventures but also makes it more difficult for nascent ventures to attract innovative talent (Xu & Lian et al., 2009). For instance, Wang et al. (2014) found that higher compensation reduces the probability of entrepreneurial entry by nearly 50% for individuals with prior experience at foreign firms compared to other individuals. Second, unlike imitative entrepreneurship, which often focuses on less competitive market segments and avoids direct competition with foreign firms (Spencer, 2008), innovative startups are more likely to compete with foreign firms within the same niche markets (Zhang, et al., 2018). Foreign firms, with their established brands and greater market legitimacy, exert significant competitive pressure on nascent domestic innovative ventures, which often face a “liability of newness”. Furthermore, foreign firms often leverage their access to both home and host country markets to achieve economies of scale, giving them greater bargaining power with upstream and downstream suppliers. This not only allows them to procure raw materials at lower costs but also enables them to restrict the supply of high-quality raw materials to domestic firms. As a result, innovative startups lacking established customer trust face higher costs when competing with these established players for resources. Based on these two countervailing effects, we propose the following competing hypotheses:

H_{2a}: Inward FDI will increase the rate of innovative entrepreneurship in the host country.

H_{2b}: Inward FDI will decrease the rate of innovative entrepreneurship in the host country.

3.1.3 Moderating effect of formal institutions

The strength of a host country’s institutions plays a crucial role in determining how inward FDI affects its economy and society (Kim & Li, 2014; Slesman et al., 2021). This paper aims to further clarify the aforementioned logical chain and reconcile debates in prior research (Jia et al., 2017) by analyzing the joint effects of inward FDI and formal institutions. Drawing on Webb et al. (2020), we define formal institutions as the rules and elements that constrain, incentivize, and support legitimate behavior, encompassing not only formal laws, rules, and regulations, but also supporting elements such as capital and labor markets, as well as critical infrastructure. We argue that formal institutions will exert differential moderating effects on the two types of entrepreneurial activities.

On the one hand, inward FDI has a stronger effect on fostering imitative entrepreneurship in countries with underdeveloped formal institutions. The market spillovers from inward FDI not only create stable demand but also offer local entrepreneurs opportunities to replicate the products introduced by foreign firms. Through observation of these products’ successes and failures, entrepreneurs can reduce market development costs and better predict potential opportunities, significantly lowering the risks associated with failure. As a result, in countries with weak formal institutions, inward FDI not only opens up new avenues for imitation - it also creates a favorable environment where such ventures

are more likely to be profitable (Kim & Li, 2014). Moreover, in the absence of robust institutional frameworks, foreign firms face elevated costs associated with addressing imitative practices, often strategically choosing forbearance unless such imitation poses a substantial threat to their market share. Conversely, as formal institutions strengthen and competitive pressures intensify, the returns to straightforward imitation diminish, reducing its viability as an entrepreneurial strategy.

On the other hand, for innovative entrepreneurship, inward FDI exhibits varying effects depending on the level of formal institutional development. While knowledge spillovers from inward FDI can stimulate the creation of innovative opportunities, the difficulty of knowledge integration and the accompanying intense competition also increase the uncertainty faced by ventures, leading to higher entry barriers and greater demands for flexibility (Audretsch & Belitski, 2021). In environments with weak institutions, entrepreneurs face difficulties in securing reliable returns on innovation and accessing sufficient external support. Under these circumstances, inward FDI primarily exerts a negative crowding-out effect. Conversely, robust formal institutions alleviate regulatory constraints on entrepreneurs, facilitating greater flexibility in hiring and financing, which, in turn, reduces uncertainty and provides innovative entrepreneurs with more scope for experimentation (Young et al., 2018). Consequently, the propensity for potential entrepreneurs to leverage knowledge spillovers for innovative ventures increases, amplifying the positive effects of inward FDI and establishing their dominance. Based on this, we propose the following:

H_{3a}: The level of formal institutional development in the host country moderates the effect of inward FDI on imitative entrepreneurship rates; specifically, the positive effect of inward FDI on imitative entrepreneurship rates is stronger when formal institutions are underdeveloped.

H_{3b}: The level of formal institutional development in the host country moderates the effect of inward FDI on innovative entrepreneurship rates; specifically, inward FDI exerts a negative effect on innovative entrepreneurship rates when formal institutions are underdeveloped, whereas it exerts a positive effect when formal institutions are well-developed.

3.2 Inward FDI and Innovative Entrepreneurship: Further Mechanism Analysis

Given the more critical role of innovative entrepreneurship in driving high-quality economic development, it is essential to further explore the complex relationship between inward FDI and innovative entrepreneurship. This includes identifying key institutions that foster innovation and help shape successful ventures. Such an analysis will provide valuable insights for crafting policies that can better harness the potential of inward FDI in today's global economy. Ultimately, the impact of inward FDI on innovative entrepreneurship - whether positive or negative - depends on the ability and motivation of local firms to absorb knowledge spillovers and compete effectively. These factors are largely shaped by the host country's institutional environment (Figure 1).

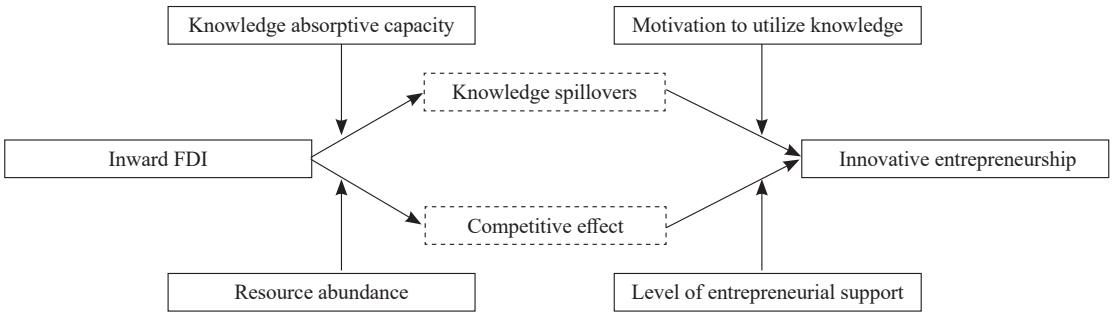

Figure 1: Theoretical Model of Inward FDI's Impact on Innovative Entrepreneurship[3]

[3] Dashed boxes indicate potential causal mechanisms.

3.2.1 Knowledge spillover mechanisms and their contextual conditions

While the "technology gap" between developing countries and foreign firms creates opportunities for knowledge spillovers, these spillovers are not sufficient to drive innovative entrepreneurship; their impact hinges on the absorptive capacity and motivation of host-country entrepreneurs to exploit the acquired knowledge (Meyer & Sinani, 2009).

First, absorptive capacity, defined as the ability of knowledge recipients to effectively identify the value of new knowledge and subsequently absorb and utilize it, determines the extent to which host-country entrepreneurs can capture knowledge spillovers (Kirschning & Mrożewski, 2022). In countries with weaker absorptive capacity, even if inward FDI brings more advanced and diverse new knowledge, local entrepreneurs, constrained by their own knowledge stock, may struggle to recognize the value of this new knowledge. Conversely, stronger absorptive capacity empowers host-country entrepreneurs to better leverage knowledge spillovers, enabling them to effectively absorb external new knowledge and integrate it with their existing knowledge to achieve innovation (Jin et al., 2018).At the national level, absorptive capacity stems from a country's knowledge stock. Stenholm et al. (2013) argue that a nation's existing knowledge is a crucial "conducive" institution for fostering innovative entrepreneurship, providing a foundational support for the introduction and dissemination of innovations. Furthermore, a robust national knowledge base enhances the attractiveness of a region for foreign firms seeking to establish high-technology operations. This strategic decision facilitates the outsourcing of technical tasks and the production of high-quality intermediate goods to local companies, thereby fostering greater knowledge synergy (Castellani et al., 2022). As absorptive capacity typically depends on the existing knowledge level and innovative capabilities of the host country's workforce, this paper uses national R&D expenditure as a proxy measure (Meyer & Sinani, 2009).

Second, entrepreneurs' drive to harness knowledge spillovers for innovative ventures is deeply influenced by their evaluation of the potential profits, which, in turn, hinges on the strength of the national intellectual property protection regime (Autio & Acs, 2010). Unlike imitative entrepreneurship, which primarily involves physical capital, innovative entrepreneurship is more likely to involve intellectual property that is difficult to protect. For such entrepreneurs, the lack of clear intellectual property protection implies that the returns from innovation are more vulnerable to exploitation by vested interests and infringement by imitators, leading to significant uncertainty in the expected returns of entrepreneurial activities (Zhou, 2018). In this context, highly skilled professionals are more likely to pursue alternative avenues for applying their knowledge and innovation, such as seeking employment in foreign firms or established large enterprises to gain internal institutional protection. Conversely, robust intellectual property protection enhances the likelihood of individuals engaging in innovative entrepreneurship by facilitating knowledge spillovers (Yi & Alireza, 2017). As Rodrik (2000) points out, unless entrepreneurs have sufficient control over the returns on the assets they create, they lack the incentive for wealth accumulation and innovation. Based on this, we propose:

H_4: The positive effect of inward FDI on innovative entrepreneurial activity is amplified by higher levels of host country R&D investment.

H_5: The positive effect of inward FDI on innovative entrepreneurial activity is amplified by stronger intellectual property protection in the host country.

3.2.2 Competitive effects and their contextual factors

While innovative startups are especially vulnerable to the competitive pressures brought about by inward FDI, the resource endowment of the host country plays a key role in moderating the degree of crowding out experienced by potential entrepreneurs. At the same time, proactive support for entrepreneurship by the host country helps ensure access to stable resources, even in highly competitive markets.

First, the level of resource abundance in the host country significantly shapes the impact of inward

FDI competition on domestic entrepreneurs. Previous studies have highlighted national financial development as a key institutional determinant of entrepreneurs' access to resources (Chowdhury et al., 2019). At the macro level, financial development enhances the dynamism of the host country's private sector, while at the micro level, it affects entrepreneurs' ability to secure external finance to overcome entry barriers and address financial constraints. While entrepreneurs may tap into informal networks (e.g., family, friends, and peers) for initial funding, weak financial development presents substantial obstacles to securing additional capital, particularly for high-growth, innovative startups (Young et al., 2018). In such environments, the entry of foreign firms - who typically have greater legitimacy than new ventures - intensifies competition for external funding, thereby crowding out local innovative ventures (Jude, 2019). In contrast, as financial development advances, the ability of foreign and established domestic firms to absorb all available capital diminishes, allowing more capital to be directed toward higher-yielding, innovative startups and thereby reducing the competitive pressure from inward FDI.

Second, the level of entrepreneurial support plays a crucial role in determining the resources available to entrepreneurs in highly competitive markets. Given the inherent uncertainty surrounding the returns from innovation and the challenges faced by new ventures in rapidly establishing social capital and trust, startups often experience market selection biases that hinder their access to adequate funding (Chang & Wu, 2014). These disadvantages are further compounded by increased competition resulting from inward FDI. To alleviate these pressures, governments worldwide implement a variety of entrepreneurial support measures, such as incubation programs, tax breaks, rent exemptions, microloans, and assistance with market access. Unlike the market forces, government support serves as a stabilizing buffer, ensuring a more consistent flow of resources even in highly competitive environments (Chowdhury et al., 2019). Additionally, government backing can enhance a startup's legitimacy, improving its chances of securing further external financing (Stevenson et al., 2021). As a result, robust entrepreneurial support systems empower domestic entrepreneurs to continue pursuing innovative ventures despite the intensified competition posed by inward FDI. This leads to the following propositions:

H_6: The positive effect of inward FDI on innovative entrepreneurial activity is amplified by higher levels of financial development in the host country.

H_7: The positive effect of inward FDI on innovative entrepreneurial activity is amplified by higher levels of entrepreneurial support in the host country.

4. Research Design

4.1 Sample Selection and Research Methodology

A country-level dataset is constructed for this study by integrating data from multiple sources. Entrepreneurship data at the national level is sourced from the Global Entrepreneurship Monitor (GEM), while other country-level variables are obtained from the World Development Indicators (WDI), the Index of Economic Freedom (IEF), and the GEM National Entrepreneurial Context Index (GEM NECI). Compared to within-country analyses, a cross-national sample offers a wider range of inter-country heterogeneity, and the GEM database provides a robust data source for measuring various types of entrepreneurial activity. Recognizing the study's emphasis on FDI spillover effects, specifically the influence of advanced knowledge transfer on entrepreneurs in host economies, the analysis is conducted using a sample of developing countries[4]. The resulting dataset consists of 268 country-year observations spanning 59 countries from 2010 to 2018[5].

[4] Based on the 2018 International Monetary Fund (IMF) classification of countries.

[5] The most recently released GEM data is from 2019. However, due to changes in the measurement of relevant indicators in the 2019 GEM survey and to mitigate the impact of the financial crisis, data from 2010 to 2018 is used for analysis.

This study employs Ordinary Least Squares (OLS) regression with Driscoll-Kraay (D-K) standard errors to address potential issues of cross-sectional dependence and serial correlation, in line with the recommendations of Hoechle (2007). This approach is particularly suitable given the possibility of historical path dependence in a country's inward FDI volume.

4.2 Variable Measurement and Description

(1) Dependent Variable: In accordance with Schumpeter's conceptualization of innovation as the entrepreneurial process of recombining factors of production to introduce new inventions that displace existing offerings, this study defines innovative entrepreneurship as the introduction of novel products or services to the market by entrepreneurs. For measuring this variable, the approach builds on Yoon et al. (2018), where the classification of entrepreneurial type is based on responses to the GEM survey question: "*Do potential customers perceive your product or service as new or unfamiliar?*" A startup is categorized as innovative if it introduces products or services that are perceived as new or unfamiliar to at least a subset of potential customers. Conversely, a startup is categorized as imitative if all potential customers are familiar with the products or services it offers. From this classification, national-level rates of entrepreneurial activity are derived. Specifically, the imitation rate (*Imitation*) is calculated as the proportion of imitative startups relative to the surveyed national labor force (%), while the innovation rate (*Innovation*) is calculated as the proportion of innovative startups relative to the surveyed national labor force (%).

(2) Explanatory Variable. Consistent with existing literature (Slesman et al., 2021; Berrill et al., 2020), inward foreign direct investment (*IFDI*) is measured as the ratio of net FDI inflows to national GDP (%), with data sourced from the WDI. To account for the time lag of spillover effects and to mitigate potential endogeneity issues, the explanatory variable is lagged by one year.

(3) Moderating Variables. i. Formal Institutional Level (*Inst*): This variable is measured using the country-year Index of Economic Freedom (IEF), which assesses the level of formal institutional development. The IEF is calculated based on four key pillars: *Rule of Law*, *Government Size*, *Regulatory Efficiency*, and *Open Markets*. These pillars encompass 10 sub-indicators, making the IEF a commonly used metric in economics and management to gauge the quality of institutional frameworks across countries. ii. R&D Expenditure (*R&D*): R&D expenditure is measured as the ratio of national annual R&D spending to GDP, expressed as a percentage. Data for this variable is obtained from the World Development Indicators (WDI). iii. Property Rights Protection (*Property*): Based on Autio & Acs (2010), this variable is measured using the property rights sub-index from the IEF. It reflects the extent to which a country protects private property, including respect for intellectual property rights and the safeguarding of property from infringement. iv. Financial Development (*Finan*): Financial development is measured by the ratio of credit provided by the financial sector to the domestic private sector relative to GDP, expressed as a percentage (%). This metric, based on Osei & Kim (2020), reflects the availability of financial resources to support entrepreneurial ventures. Data for this variable is also sourced from the WDI. v. Entrepreneurial Support Level (*Support*): The entrepreneurial support level is calculated by averaging two indicators from the GEM National Entrepreneurship Context Index: "Taxes and Bureaucracy" and "Government Programs". The former measures the extent to which national public policies support entrepreneurial activity, while the latter assesses the quantity and quality of government programs directly supporting small and medium enterprises (SMEs) at both national and sub-national levels.

(4) Control Variables. To account for potential confounding effects of national economic, social, and cultural contextual factors on entrepreneurial activity (Kim & Li, 2014; Slesman et al., 2021), the following control variables are included in the analysis: GDP per capita, GDP growth rate, total population, population density, unemployment rate, infrastructure, entrepreneurial education, and entrepreneurial culture. Data pertaining to infrastructure, entrepreneurial education, and entrepreneurial

culture are sourced from the GEM National Entrepreneurship Context Index (NECI), whereas data for the remaining variables are obtained from the World Development Indicators (WDI). Furthermore, dummy variables are incorporated to control for the geographic region (continent) and year of observation for each sample country. A comprehensive summary of the definitions and measurement procedures for all variables is presented in Table 2.

Table 2: Variable Definitions and Measurements

Variable Type	Variable Name	Variable Symbol	Variable Measurement
Dependent Variables	Imitative Entrepreneurship Rate	*Imitation*	Proportion of imitative entrepreneurial activity relative to the surveyed national labor force (%)
	Innovative Entrepreneurship Rate	*Innovation*	Proportion of innovative entrepreneurial activity relative to the surveyed national labor force (%)
Explanatory Variable	Foreign Direct Investment	*IFDI*	Ratio of net foreign direct investment inflows to national GDP (%), lagged by one year
Modulating Variables	Formal Institutional Level	*Inst*	Country-year Index of Economic Freedom (IEF)
	R&D Expenditure	*R&D*	Ratio of national annual R&D expenditure to GDP (%)
	Property Rights Protection	*Property*	Property rights sub-index from the Index of Economic Freedom
	Financial Development	*Finan*	Ratio of credit provided by the national financial sector to the domestic private economy to GDP (%)
	Entrepreneurial Support Level	*Support*	Calculated by averaging the "Taxes and Bureaucracy" and "Government Programs" indicators from the GEM National Entrepreneurship Context Index (NECI)
Control Variables	GDP per capita	*GDP_per*	National GDP per capita, in logarithms
	GDP Growth Rate	*GDP_growth*	National GDP per capita growth rate (%)
	Total Population	*Pop_all*	National total population, in logarithms
	Population Density	*Pop_density*	Number of people per square kilometer in the country, in logarithms
	Unemployment Rate	*Unemp*	Ratio of the number of unemployed people to the labor force (%)
	Infrastructure	*Infra*	Assigned based on the "Commercial and Specialized Infrastructure" indicator from the GEM NECI
	Entrepreneurial Education	*Ent_edu*	Calculated by averaging the in-school and out-of-school "Entrepreneurial Education and Training" indicators from the GEM NECI
	Entrepreneurial Culture	*Culture*	Assigned based on the "Cultural and Social Norms" indicator from the GEM NECI

5. Empirical Test

5.1 Descriptive Statistics of Variables

Table 3 presents the descriptive statistics of the variables used in this study. The mean of *Imitation* is 9.03, and the mean of *Innovation* is 6.87, indicating a ratio of imitative to innovative entrepreneurship rates of approximately 1.31:1. Furthermore, there are notable differences in entrepreneurship rates, foreign direct investment, and institutional factors across countries. Regarding correlations, *Imitation* shows a non-significant positive correlation with *IFDI* and a significant negative correlation with *Inst*; *Innovation*, on the other hand, is significantly positively correlated with both *IFDI* and *Inst*[6].

[6] In the interest of brevity, the correlation analysis has been omitted from this manuscript but is available upon request.

Table 3: Descriptive Statistics of Variables

Variable	Sample	Mean	Standard Deviation	Min.	Max.
Imitation	268	9.03	6.55	1.92	33.73
Innovation	268	6.87	5.04	0.20	23.88
IFDI	268	3.44	3.34	0.05	37.27
Inst	268	61.23	8.07	37.60	79.00
R&D	195	0.60	0.45	0.02	2.18
Property	268	42.90	18.40	5.00	90.00
Finan	268	59.10	37.73	10.60	157.81
Support	268	2.37	0.39	1.49	3.54
GDP_per	268	8.79	0.79	6.48	11.02
GDP_growth	268	3.63	2.76	-7.44	13.39
Pop_all	268	17.11	1.74	12.37	21.05
Pop_density	268	4.17	1.09	1.25	7.04
Unemp	268	7.74	5.85	0.14	28.01
Infra	268	2.86	0.29	1.75	3.64
Ent_edu	268	2.38	0.34	1.49	3.44
Culture	268	2.83	0.43	1.62	4.06

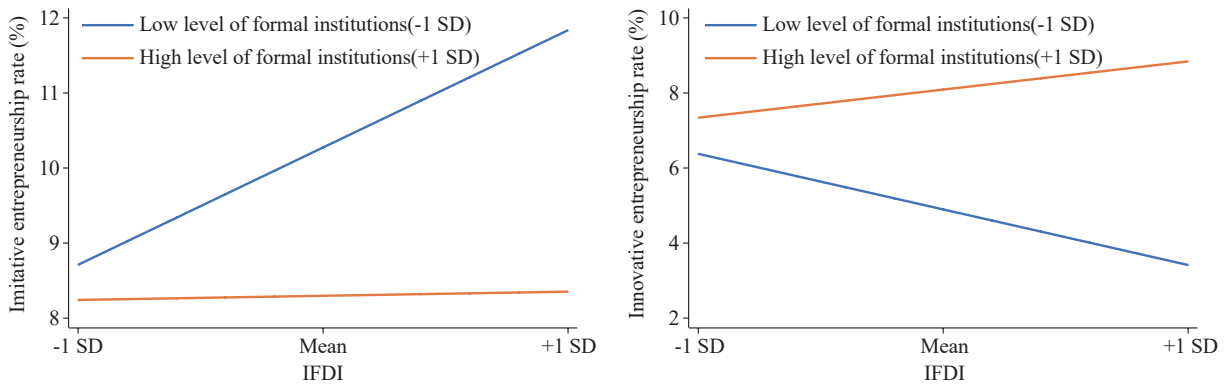

Figure 2: Inward FDI and Imitative/Innovative Entrepreneurship Rates: The Moderating Role of Formal Institutions

5.2 Analysis of Regression Results

Table 4 first examines the relationship between inward FDI and host country imitative and innovative entrepreneurship rates. The results of Model 2 show that the coefficient of *IFDI* is significantly positive for the imitative entrepreneurship rate (β=0.14, $p<0.01$), indicating that inward FDI contributes to the increase of imitative entrepreneurship in the host country, supporting Hypothesis H_1. However, the results of Model 5 show a non-significant positive correlation between *IFDI* and the innovative entrepreneurship rate (β=0.04, $p>0.1$), and this positive correlation is not robust in subsequent models.

Models 3 and 6 further examine the moderating effect of formal institutions. The results show that the coefficient of *IFDI*×*Inst* is significantly negative for the imitative entrepreneurship rate (β=-0.02, $p<0.1$). For the innovative entrepreneurship rate, the coefficient of *IFDI*×*Inst* is significantly positive (β=0.04, $p<0.05$). To visually present the test results, Figure 2 illustrates the true marginal effects of *IFDI*. As can be seen, *IFDI* effectively increases the imitative entrepreneurship rate in the host country, and this effect is more evident in countries with weaker formal institutions. Conversely, *IFDI* promotes

innovative entrepreneurship only when formal institutions are relatively well-developed. In countries with underdeveloped formal institutions, *IFDI* exhibits a significant inhibitory effect on innovative entrepreneurship. This also supports the theoretical argument proposed in this paper that innovative entrepreneurship is the main victim of the competitive effect of foreign direct investment. Thus, Hypotheses H_{3a} and H_{3b} are supported.

Table 4: Inward FDI and Entrepreneurship Types: Direct Effects and the Moderating Role of Formal Institutions

Variable	*Imitation*			*Innovation*		
	（1）	（2）	（3）	（4）	（5）	（6）
IFDI		0.14***	0.25***		0.04	-0.12
		(0.02)	(0.07)		(0.03)	(0.07)
IFDI × Inst			-0.02*			0.04**
			(0.01)			(0.01)
Inst	-0.09**	-0.10**	-0.34**	0.18***	0.17***	0.53***
	(0.04)	(0.04)	(0.14)	(0.02)	(0.02)	(0.15)
GDP_per	-2.91***	-2.87***	-2.86***	-1.07***	-1.05***	-1.07***
	(0.27)	(0.29)	(0.31)	(0.31)	(0.30)	(0.31)
GDP_growth	-0.23**	-0.25**	-0.26**	0.13*	0.12*	0.13
	(0.08)	(0.09)	(0.08)	(0.06)	(0.06)	(0.09)
Pop_all	-1.00***	-0.91***	-0.89***	0.21	0.24	0.20
	(0.17)	(0.14)	(0.15)	(0.16)	(0.17)	(0.14)
Pop_density	-0.31	-0.29	-0.32	-0.05	-0.05	-0.00
	(0.43)	(0.43)	(0.46)	(0.29)	(0.28)	(0.30)
Unemp	-0.35***	-0.35***	-0.33***	-0.06*	-0.06*	-0.09**
	(0.05)	(0.04)	(0.05)	(0.02)	(0.03)	(0.03)
Infra	-5.34***	-5.38***	-5.44***	-3.80***	-3.81***	-3.71***
	(0.94)	(0.92)	(1.01)	(0.85)	(0.83)	(0.89)
Ent_edu	2.27*	2.53*	2.43*	1.94***	2.02***	2.17**
	(1.08)	(1.12)	(1.23)	(0.51)	(0.55)	(0.65)
Culture	0.67	0.43	0.44	2.01***	1.94***	1.92***
	(0.47)	(0.43)	(0.42)	(0.45)	(0.46)	(0.45)
Region/year	Yes	Yes	Yes	Yes	Yes	Yes
Observations	268	268	268	268	268	268
Constant term	64.93***	62.47***	62.52***	15.83**	15.08**	15.01**
	(4.00)	(3.66)	(3.57)	(5.58)	(5.38)	(4.88)
Adjusted R^2	0.42	0.42	0.43	0.34	0.33	0.36

Note: *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively. Driscoll-Kraay standard errors are in parentheses. The same applies below.

Tables 5 and Table 6 further examine the moderating role of R&D investment as an institutional mechanism through which inward FDI influences innovative entrepreneurship. Hypothesis H_4 predicts that higher levels of R&D investment in the host country will strengthen the positive impact of inward FDI on innovative entrepreneurship. However, the results do not support this hypothesis. The results from Model 7 indicate a non-significant negative coefficient for the interaction term *IFDI×R&D* ($\beta = -0.18$, $p > 0.1$). This could be attributed to the fact that R&D investment influences both the host country's absorptive capacity and its potential to benefit from knowledge spillovers. A high R&D level in the host country, while enhancing its absorptive capacity, also implies a smaller knowledge gap with foreign-invested enterprises, thereby limiting the positive effects of knowledge spillovers (Boly et al., 2015). As found by Zhang et al. (2010), *knowledge spillovers are maximized when the technological gap*

between foreign and domestic firms is moderate; further increases in domestic technological capabilities diminish the value generated by these spillovers.

Therefore, Model 9 was employed to test this potential non-linear (i.e., inverted U-shaped) relationship. The results reveal a significantly positive coefficient for the interaction term *IFDI*×*R&D* (β=2.12, $p<0.05$) and a significantly negative coefficient for *IFDI*×*R&D*² (β=-1.63, $p<0.01$) after controlling for *R&D*². Figure 3 illustrates that the marginal effect of *IFDI* on the host country's innovative entrepreneurship rate increases as national R&D investment rises. However, beyond a certain threshold of national R&D investment, *IFDI*'s positive effect diminishes, indicating an inverted U-shaped moderating effect. In other words, inward FDI has the greatest positive impact on innovative entrepreneurship at intermediate levels of national R&D investment.

Table 5: Inward FDI and Innovative Entrepreneurship Rate: The Moderating Role of R&D Investment

Variable	*Innovation*		
	（7）	（8）	（9）
IFDI	0.04 (0.16)	0.05 (0.14)	-0.01 (0.13)
R&D	-4.46 (3.00)	-7.37*** (1.64)	11.82** (5.08)
IFDI × *R&D*	-0.18 (0.41)	-0.00 (0.35)	2.12** (0.66)
*R&D*²		2.13** (0.71)	-12.68** (4.28)
IFDI × *R&D*²			-1.63*** (0.47)
Control variables	Yes	Yes	Yes
Region/year	Yes	Yes	Yes
Observations	195	195	195
Constant term	-12.57 (7.55)	-18.58* (8.94)	-19.43* (9.19)
Adjusted R^2	0.37	0.38	0.39

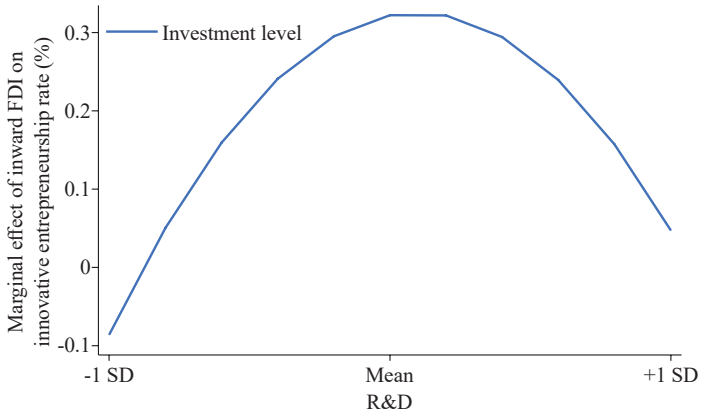

Figure 3: Inward FDI and Innovative Entrepreneurship Rate: The Moderating Role of R&D Investment

Table 6 tests Hypotheses H_5, H_6, and H_7. The results show that the interaction terms between property rights protection, financial development, and entrepreneurial support level with *IFDI* are all significantly positive (β=0.01, p<0.01; β=0.01, p<0.01; β=0.70, p<0.01), and remain robust in subsequent tests of the overall model. As shown in Figure 4, Figure 5 and Figure 6, with the improvement of national property rights protection, financial development, and entrepreneurial support level, *IFDI* will exhibit a positive effect on innovative entrepreneurship. In countries with weaker related institutional endowments, *IFDI* will even show a significant inhibitory effect. Therefore, Hypotheses H_5, H_6, and H_7 are all supported.

Table 6: Inward FDI and Innovative Entrepreneurship Rate: The Moderating Role of Property Rights Protection, Financial Development, and Entrepreneurial Support

Variable	*Innovation*			
	(10)	(11)	(12)	(13)
IFDI	-0.01 (0.08)	-0.08 (0.05)	-0.05 (0.04)	-0.15 (0.09)
Property	0.06* (0.03)			0.03 (0.01)
IFDI × *Property*	0.01*** (0.00)			0.01*** (0.00)
Finan		0.12*** (0.02)		0.10*** (0.02)
IFDI × *Finan*		0.01*** (0.00)		0.00*** (0.00)
Support			5.28** (2.12)	2.83* (1.38)
IFDI × *Support*			0.70*** (0.15)	0.48*** (0.10)
Control Variables	Yes	Yes	Yes	Yes
Region/year	Yes	Yes	Yes	Yes
Observations	268	268	268	268
Constant	10.55** (3.77)	23.90*** (5.13)	11.51** (4.43)	16.02*** (3.45)
Adjusted R-squared	0.36	0.40	0.35	0.42

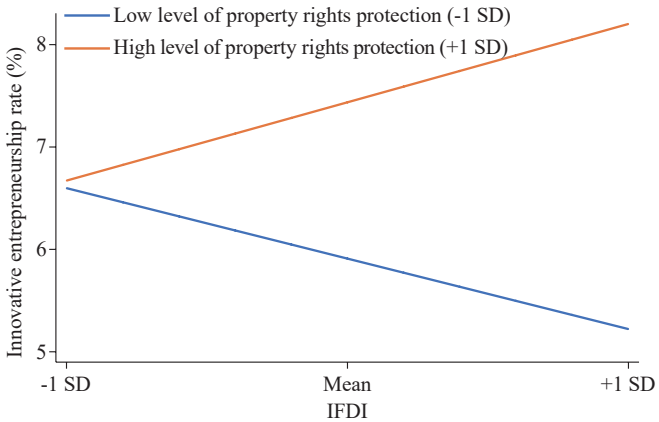

Figure 4: Inward FDI and Innovative Entrepreneurship Rate: The Moderating Role of Property Rights Protection

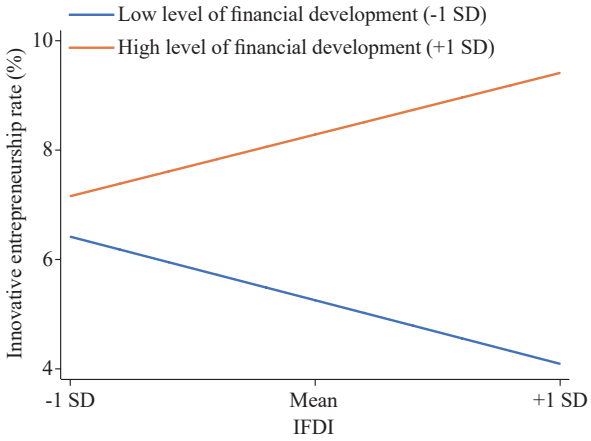

Figure 5: Inward FDI and Innovative Entrepreneurship Rate: The Moderating Role of Financial Development

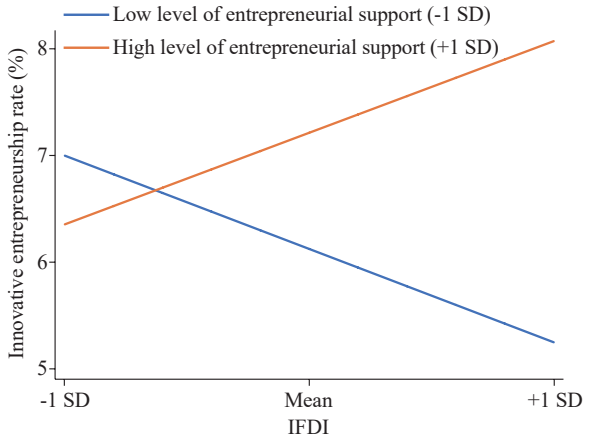

Figure 6: Inward FDI and Innovative Entrepreneurship Rate: The Moderating Role of Entrepreneurial Support

5.3 Robustness Checks

In this paper, we conduct robustness checks using a variety of methods, such as changing the time series, variable measurement, and sample selection[7].

(1) Adjusting the time series: To address potential endogeneity and account for the time lag in the impact of inward FDI, we re-examined the data using *IFDI* figures lagged by two to five years. While the direct effect of lagged *IFDI* proved unstable, its interaction with relevant institutional variables remained highly consistent with our earlier findings. This persistent institutional dependence supports our theoretical hypothesis.

(2) Alternative tests for variable measurement: i. Following Lee et al. (2011), the explanatory variable *IFDI* was re-tested using its logarithm to address potential issues arising from data skewness. ii. Drawing on Fredström et al. (2021), the ratio of the innovative entrepreneurial rate to the imitative entrepreneurial rate served as the explained variable in a re-test. This metric offers a more effective measure of the overall innovativeness of entrepreneurial activity compared to the previous indicator. iii. According to Stephan et al. (2010), entrepreneurial types are characterized by the degree of customer familiarity with the product and the level of market competition. Ventures were classified as "innovative" if the product was unfamiliar to customers and few or no competitors offered similar products. In contrast, ventures were classified as "imitative" if customers were already familiar with the product and there were existing competitors in the market. Using this framework, a national-level entrepreneurial variable was created and subsequently used in a re-test. iv. The Economic Freedom of the World (EFW) index provided an alternative measure of formal institutions for re-testing. v. All control variables were lagged by one year and used in a re-test. vi. To mitigate the influence of extreme outliers, all continuous variables were winsorized at the 1st percentile. vii. In models 7 through 13, overall formal institutions were initially controlled to isolate the net effects of specific institutional dimensions. To address potential multicollinearity, these models were re-estimated without controlling for overall formal institutions.

(3) Alternative Tests for Sample Selection: i. To increase the sample size, we re-tested the models using data from 2008 to 2018. ii. Foreign capital inflows may be driven by tax avoidance motives rather than a desire for spillover effects. Therefore, following the definitions of the IMF and Dharmapala et al.

[7] Due to space constraints, the results of the robustness checks are not presented in the paper, but are available upon request.

(2009), we re-tested the models after excluding offshore financial center countries. iii. R&D expenditure, a key indicator of a country's knowledge absorption capacity, had a substantial amount of missing data in our sample, accounting for 27% of the total observations. Observation of the data suggested that this absence of data was likely due to the fact that many countries with lower R&D expenditure chose not to report these figures. To avoid potential sample selection bias, the previous analysis did not maintain a consistent sample across all models. To ensure the robustness of our conclusions, we also re-tested the other models using the sample with complete R&D data (i.e., after removing observations with missing R&D values). iv. Additionally, we employed linear interpolation and replaced the missing R&D values with values at the 10th, 20th, 30th, 40th, and 50th percentiles. All of these tests yielded results highly consistent with the main findings.

6. Concluding Remarks and Discussions

6.1 Research Conclusions

From an entrepreneurial perspective, this paper examines inward FDI's impact on entrepreneurial activity in host economies. Our findings indicate that, in terms of direct effects, inward FDI contributes to higher rates of imitative entrepreneurship, while its impact on innovative entrepreneurship is statistically insignificant. A key insight from our analysis is the moderating role of host country formal institutions. inward FDI has a more significant positive effect on imitative entrepreneurship in countries with weaker institutional frameworks. In contrast, inward FDI fosters innovative entrepreneurship in environments with stronger formal institutions but may inhibit it in countries where institutional development is less advanced. Moreover, innovative entrepreneurship both benefits from knowledge spillovers associated with inward FDI and faces competitive pressures arising from foreign investment. The balance between these opposing forces depends on the ability of local entrepreneurs to absorb and capitalize on knowledge diffusion, as well as their capacity to withstand competitive pressures - factors that are heavily shaped by the quality of formal institutions. Specifically, our analysis suggests that when national R&D investment is at a moderate level, and formal institutional factors such as property rights protection, financial market development, and support for entrepreneurial ventures are relatively strong, inward FDI has a notably positive effect on innovative entrepreneurship. Overall, our findings highlight the complex interplay between inward FDI, institutional contexts, and entrepreneurial outcomes, emphasizing the importance of robust institutional frameworks for maximizing the potential benefits of FDI, particularly in fostering innovation-driven entrepreneurship.

6.2 Policy Implications

First, this paper reveals the dynamic relationship between inward FDI and China's domestic market development since the reform and opening-up policy began. Reform and opening-up are mutually reinforcing, shifting the role of FDI from initially driving reform to now being driven by it. In the early stages, China's product and factor markets were underdeveloped, and market-oriented institutions were just emerging. FDI generated demand for better supply chains and guided domestic entrepreneurs in finding market opportunities. It also reduced risks and compensated for the weak business environment. Many domestic startups thrived by imitating foreign products and targeting underserved lower-tier and niche markets. This improved resource allocation and balanced the domestic market. As markets and institutions mature, innovative entrepreneurs experience a dual impact. They benefit from FDI's knowledge spillovers but also face greater competition. At this moment, optimizing local resources and strengthening institutions become crucial for using FDI to promote innovation, entrepreneurship, and high-quality development. Understanding this evolving relationship provides key insights for policymakers to refine their strategies for attracting and utilizing foreign capital.

Second, another finding is that "domestic-centric" institutional development is crucial for leveraging FDI to promote innovative entrepreneurship. While FDI's knowledge spillovers enhance a host country's overall knowledge stock and diversity, these spillovers will not automatically trigger higher levels of entrepreneurship. The key lies in the host country's own knowledge base and absorptive capacity. China's steadily increasing R&D investment provides a strong foundation. The government should now focus on building stronger linkages between industry, academia, and individual entrepreneurs, while also improving workforce human capital. This will bolster potential entrepreneurs' own knowledge reserves, enhancing their ability to identify, absorb, and utilize new knowledge from FDI, and to integrate diverse knowledge for innovation. Furthermore, robust intellectual property rights protection is essential to reduce uncertainty and encourage entrepreneurs to apply their knowledge. Given the resource-intensive and highly innovative nature of innovative startups, it is vital to improve inclusive micro and small enterprise (MSE) finance and technology innovation lending mechanisms. This will lower borrowing costs and improve access to finance. Governments at all levels can also increase support for these startups through measures such as R&D tax credits, rent reductions, and market promotion assistance. These measures will encourage more individuals to apply innovative ideas in their entrepreneurial ventures. Because knowledge absorption and transformation are long-term processes, FDI's impact on local innovative entrepreneurship will persist for an extended period. Therefore, a "domestic-centric" approach, focusing on building strong domestic institutions, must be maintained throughout China's high-level opening-up strategy.

Third, China's vast domestic market should be leveraged to further enhance its ability to utilize FDI. The sheer size of China's market - driven by its massive population, vast land area, diverse industrial structure, and varied market demands - provides a significant advantage in effectively utilizing FDI. A solid industrial base offers strong absorptive capacity, and diverse market structures create varied market opportunities, laying a robust foundation for FDI to promote local innovative entrepreneurship. A prime example is Tesla's Shanghai factory, which, through collaboration with the automotive industry chain in the Jiangsu and Zhejiang regions, sparked a surge in domestic entrepreneurship and investment in electric and smart vehicles. With policy support, the local new energy vehicle industry has gradually developed into a new competitive advantage for China. Therefore, the utilization and evaluation of FDI should not be limited to short-term or localized impacts. Instead, China should further improve domestic market efficiency, remove barriers to the flow of production factors, goods and services, and encourage different regions to fully leverage their potential for specialization and cooperation, thereby playing different roles in the knowledge absorption and transformation process. This will not only help China more effectively utilize FDI to drive a surge in innovation and entrepreneurship but will also contribute to building a robust domestic economic cycle and reducing regional economic imbalances.

6.3 Research Limitations and Future Directions

This study has some limitations. On the one hand, to thoroughly analyze the mechanisms through which FDI influences host-country entrepreneurial activity at a theoretical level, this paper employed a dichotomy of imitative versus innovative entrepreneurship for theoretical construction and empirical testing. However, due to the dynamic nature of the entrepreneurial process, some entrepreneurial activities are difficult to categorize simply into these two types. Moreover, many ventures transition from imitative to innovative models. For the sake of theoretical model clarity and testing feasibility, this paper did not delve into this dynamic evolution. Future research could explore this dynamic process. On the other hand, due to limitations in the availability of secondary data, it remains challenging to directly test the different mediating mechanisms within the theoretical model. Future research could explore using methods such as surveys and case studies to find more direct evidence.

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