AI-Powered Global Expansion: The Impact of Artificial Intelligence Adoption on Firms' Outward Foreign Direct Investment

Ren Jinyi[1]*, Di Chunyu[2], Xing Yuecong[3]

[1] Beijing Huixian School, Beijing, China
[2] Beijing Jiaotong University, Beijing, China
[3] King's College London, UK
* Correspondence: Beijing Huixian School, Beijing, China.

https://doi.org/10.53104/j.acad.res.adv.2026.06004

Citation: Ren, J., Di, C., & Xing, Y. (2026) 'AI-Powered Global Expansion: The Impact of Artificial Intelligence Adoption on Firms' Outward Foreign Direct Investment', *Journal of Academic Research and Advances*, 2(2), pp. 32-50.

Copyright: © 2026 by the authors. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (https://creativecommons.org/licenses/by/4.0/).

Abstract: Against the backdrop of profound shifts in the global economic landscape and rapid advances in digital technologies, artificial intelligence (AI) offers firms new opportunities to expand into international markets and improve the allocation of resources across borders. Drawing on a sample of Chinese A-share listed firms from 2009 to 2024, this study empirically examines the relationship between AI adoption and outward foreign direct investment (OFDI), with particular attention to the mechanisms underlying this relationship.

The findings indicate that AI adoption is positively and significantly associated with firms' OFDI activities. This result remains robust across a range of alternative specifications, including different measures of AI adoption, adjustments to fixed effects and standard-error clustering, and the exclusion of selected observations. Heterogeneity analyses suggest that the positive relationship is more pronounced among technology-intensive firms and larger enterprises. Further analysis identifies two potential channels through which AI adoption may facilitate OFDI: technological innovation and the alleviation of financial constraints. Together, these mechanisms may strengthen firms' technological capabilities and improve their access to the financial resources required for international expansion.

By examining OFDI through the lens of firm-level AI adoption, this study extends the literature on the determinants of international investment and provides further insight into how AI may shape firms' internationalization strategies. The findings also offer empirical evidence relevant to the integration of AI into the real economy, the enhancement of firms' international competitiveness, and China's efforts to pursue higher-standard economic opening-up.

Keywords: artificial intelligence adoption; outward foreign direct investment; technological innovation; financial constraints; firm internationalization

1. Introduction

In recent years, shifts in the drivers of global economic growth have coincided with significant changes in the international trade and investment landscape. Rising protectionism, geopolitical tensions, and the restructuring of global value chains and supply networks have continued to reshape the environment in which firms operate internationally (Fajgelbaum et al., 2024; Freund et al., 2024). Against this backdrop, the internationalization of Chinese firms has increasingly extended beyond conventional merchandise exports to encompass overseas production, cross-border mergers and acquisitions, and the global allocation of resources. Outward foreign direct investment (OFDI) has consequently become an important means through which firms enter foreign markets, acquire strategic assets, and develop competitive advantages internationally. Yet, compared with domestic operations, OFDI entails not only the fixed costs of entering foreign markets but also additional challenges arising from institutional differences, information asymmetries, and the coordination of activities across national borders (Zaheer, 1995; Helpman et al., 2004). As uncertainty in international markets intensifies, understanding how firms can reduce the costs of overseas investment and strengthen their cross-border operating capabilities has become increasingly important, particularly in the context of China's efforts to pursue higher-standard economic opening-up.

At the same time, a new wave of technological change, driven in large part by artificial intelligence (AI), is transforming business operations and reshaping the foundations of international competition. As a general-purpose technology with applications across a wide range of industries, AI can improve productivity through automation and intelligent production systems while enhancing information acquisition, resource allocation, and managerial decision-making through machine learning, natural language processing, and predictive analytics (Acemoglu & Restrepo, 2018; Czarnitzki et al., 2023). Unlike earlier forms of technological progress, whose effects on firms' comparative advantages were largely associated with improvements in production efficiency, AI is increasingly being deployed in market demand forecasting, investment project evaluation, risk identification, and organizational management. These applications enable firms to process complex and dispersed information at relatively low cost (Duan et al., 2019). For firms seeking to expand internationally, AI may therefore help overcome informational and organizational constraints that have traditionally limited overseas investment, allowing them to identify potential opportunities and allocate resources more efficiently across markets. Nevertheless, the relationship is not necessarily unidirectional. By reducing domestic production costs, AI may also diminish firms' incentives to relocate production abroad in search of lower-cost inputs, potentially altering the geographical distribution of their operations (Faber, 2020). Whether AI ultimately encourages overseas investment thus depends on the relative strength of the international competitive advantages it creates and the incentives it generates to retain production domestically. Examining the relationship between AI adoption and OFDI, together with the mechanisms through which this relationship operates, is therefore important for understanding how advances in digital technology influence firms' international investment decisions.

The first strand of literature relevant to this study examines the determinants of firms' outward foreign direct investment. Traditional theories of international investment emphasize the interaction

of ownership, location, and internalization advantages, while heterogeneous-firm models highlight the importance of productivity, resource endowments, and organizational capabilities in shaping firms' choices regarding international market entry (Dunning, 1988; Helpman et al., 2004). One central argument is that firms must possess sufficient productivity and profitability to absorb the fixed costs of establishing operations abroad. More productive firms are therefore more likely to undertake OFDI rather than rely exclusively on exports to serve foreign markets (Helpman et al., 2004; Yeaple, 2009). Beyond productivity, international investment decisions are also shaped by access to finance, prior international experience, and conditions in host-country markets. Overseas investment projects typically involve greater information search costs, transaction costs, and operational uncertainty than domestic investments. Consequently, firms' ability to secure external financing and acquire reliable knowledge of foreign markets plays an important role in determining their international investment activities (Johanson & Vahlne, 1977; Erel et al., 2012). More recently, as digital technologies have become increasingly embedded in global business activities, researchers have begun to examine their implications for firm internationalization. Evidence suggests that digital transformation can facilitate overseas expansion by reducing information frictions, improving cross-border coordination, and lowering market entry costs (Luo, 2021; Qiao et al., 2024). However, much of the existing literature continues to explain OFDI primarily through firm productivity, institutional conditions, or broad measures of digitalization. The specific ways in which AI adoption may reshape firms' overseas investment decisions remain less fully understood.

A second strand of research focuses on the economic consequences of AI and its implications for firms' international activities. On the one hand, existing studies have documented the potential benefits of AI for productivity, labor allocation, and innovation. By automating routine tasks, improving production processes, and enhancing information-processing capabilities, AI can contribute to productivity growth and changes in business organization (Acemoglu & Restrepo, 2018; Yang, 2022; Czarnitzki et al., 2023). AI may also support research and development by expanding the scope of knowledge search, improving firms' ability to identify technological opportunities, and facilitating the recombination of existing knowledge, thereby contributing to innovation and competitive advantage (Helfat & Raubitschek, 2018; Kemp, 2024). On the other hand, a growing body of research has begun to incorporate intelligent technologies into analyses of firm internationalization. Faber (2020), for example, finds that robot adoption in advanced economies can influence the international relocation of production by changing relative production costs. Using data on Chinese firms' robot imports and overseas investment, Ma et al. (2025) show that robot adoption can increase firms' propensity to undertake OFDI by facilitating production expansion. From a broader digitalization perspective, Qiao et al. (2024) examine how digital technologies promote OFDI among small and medium-sized enterprises. Collectively, these studies provide an important foundation for understanding the relationship between intelligent technologies and firms' international expansion.

Despite these advances, several issues warrant further investigation. First, existing studies have employed different indicators of technological development, including industrial robot adoption, AI patents, and broader measures of firm digitalization. Although related, these indicators capture distinct dimensions of technological activity. Industrial robot adoption primarily reflects automation in production, while AI patents measure technological innovation output. Neither necessarily captures the extent to which AI features in firms' day-to-day operations, organizational management, and strategic decision-making. Examining AI adoption from the perspective of firms' business activities may therefore offer additional insights into its relationship with overseas investment. Second, previous research has

largely emphasized improvements in productivity and dynamic capabilities as mechanisms linking intelligent technologies to OFDI. Yet technological innovation and access to finance are also fundamental to international expansion: the former helps firms establish competitive advantages, while the latter provides the resources required to meet the substantial costs of investing abroad. Whether AI adoption facilitates OFDI by strengthening technological innovation and alleviating financial constraints deserves more direct empirical examination. Third, the benefits of AI may vary considerably across firms. Differences in technological capabilities, organizational resources, and access to finance may influence firms' ability to translate AI adoption into international investment. It therefore remains unclear whether the positive relationship between AI and OFDI extends broadly across firms or is concentrated among enterprises with particular resource endowments.

To address these questions, this study examines Chinese A-share listed firms on the Shanghai and Shenzhen stock exchanges over the period 2009–2024. We construct a firm-level proxy for AI adoption based on the frequency of AI-related keywords in companies' annual reports and combine this measure with information on outward foreign direct investment and firm financial characteristics obtained from the China Stock Market & Accounting Research (CSMAR) database. OFDI activity is measured as the natural logarithm of one plus the number of outward investment events undertaken by a firm in a given year. We then estimate a two-way fixed-effects model incorporating firm and year fixed effects to investigate the relationship between AI adoption and OFDI. The results indicate a statistically significant positive association between AI adoption and firms' overseas investment activities. This finding remains stable after progressively controlling for financial characteristics, corporate governance, and regional economic conditions. It is also robust to alternative measures of AI adoption, changes in fixed-effects specifications, different levels of standard-error clustering, and the exclusion of selected observations. Further analyses reveal positive associations across firms of different technological intensities and sizes, although the estimated magnitudes vary between groups. Finally, the mechanism analyses suggest that AI adoption is associated with greater technological innovation and reduced financial constraints, providing evidence consistent with two potential channels through which AI may support overseas investment.

This study makes three contributions to the existing literature. First, it extends research on digital technologies and firm internationalization by focusing specifically on firm-level AI adoption. Previous studies have investigated the implications of industrial robots, AI-related technological innovation, and broader digital transformation for OFDI (Faber, 2020; Qiao et al., 2024; Ma et al., 2025; Yang et al., 2026). Although these studies have advanced our understanding of technology-driven internationalization, robot adoption, AI patenting, and the incorporation of AI into business activities represent different aspects of technological change and should not be treated as interchangeable. By using AI-related disclosures in listed firms' annual reports to construct a measure of AI adoption, this study offers complementary evidence on how the integration of intelligent technologies into business operations relates to firms' cross-border investment activities.

Second, this study contributes to the understanding of the mechanisms linking AI adoption to international investment by examining technological innovation and financial constraints within a common analytical framework. Existing research has primarily emphasized total factor productivity, dynamic capabilities, and production expansion as channels through which intelligent technologies influence OFDI (Ma et al., 2025; Yang et al., 2026). However, successful international expansion requires both competitive advantages that enable firms to operate in foreign markets and sufficient financial resources to absorb the fixed costs of cross-border investment. By considering technological innovation and financial constraints

together, this study provides evidence on two complementary dimensions of the relationship: the development of firm-specific competitive advantages and improvements in financing conditions. In doing so, it sheds further light on how the economic benefits of AI may extend beyond internal business operations to the international allocation of capital.

Third, the study investigates heterogeneity in the relationship between AI adoption and OFDI, offering firm-level evidence on the conditions under which this relationship may be stronger. The economic value derived from AI depends not only on the technology itself but also on firms' existing resources, technological capabilities, and organizational structures (Helfat & Raubitschek, 2018; Kemp, 2024). By examining differences across technological intensity and firm size, this study explores how firm characteristics shape the extent to which AI adoption is associated with international investment. The findings help explain why firms may respond differently to similar technological developments and offer empirical insights into the integration of AI adoption with international business strategies.

2. Theoretical Framework and Research Hypotheses

2.1 Artificial Intelligence Adoption and Outward Foreign Direct Investment

Outward foreign direct investment (OFDI) represents an important means through which firms expand into international markets and optimize the allocation of resources across countries. Investment decisions are shaped not only by the locational advantages of host countries but also by firms' technological capabilities, productivity, and ability to manage cross-border operations. According to heterogeneous-firm theory, undertaking OFDI involves higher fixed costs and greater organizational complexity than conventional exporting. As a result, only firms with sufficiently high productivity and competitive advantages are generally able to overcome the barriers associated with establishing operations abroad (Helpman et al., 2004). The eclectic paradigm of international production further suggests that firms' international investment decisions are jointly determined by ownership, location, and internalization advantages (Dunning, 1988). As a general-purpose technology with applications across a wide range of business activities, artificial intelligence (AI) has the potential to strengthen firms' international competitiveness by improving production efficiency, reducing information frictions, and enhancing organizational management. These improvements may, in turn, influence firms' decisions to invest overseas.

AI adoption may strengthen firms' ownership advantages by improving operational efficiency and resource allocation. Through machine learning, predictive analytics, and related technologies, AI enables firms to optimize production processes, allocate inputs more efficiently, and reduce operating costs, thereby improving productivity and profitability (Yang, 2022; Czarnitzki et al., 2023). Greater operational efficiency can enhance firms' capacity to absorb the fixed costs of overseas investment, making international market entry more feasible. AI may also reduce the information search and organizational coordination costs associated with cross-border investment. Operating across national borders requires firms to navigate differences in market conditions, legal institutions, and consumer preferences, while information asymmetries and the liability of foreignness often constrain international expansion (Zaheer, 1995). By integrating information from foreign markets, identifying investment opportunities, and forecasting operational risks, AI can improve the efficiency of location selection and strategic decision-making (Duan et al., 2019). Moreover, AI can facilitate information sharing and operational coordination between parent companies and their overseas subsidiaries, reducing the costs of managing geographically dispersed activities and reinforcing firms' internalization advantages (Luo, 2021).

Although AI may weaken the incentives for certain forms of efficiency-seeking OFDI by lowering

domestic production costs, the combined benefits of greater productivity, improved information processing, and more effective cross-border management may increase the expected returns to overseas investment. AI adoption may therefore enhance firms' ability to compete internationally while reducing the costs of entering and operating in foreign markets. Taken together, these considerations suggest that AI adoption is likely to encourage firms to undertake OFDI. Accordingly, we propose the following hypothesis:

Hypothesis 1 (H1): AI adoption has a significant positive effect on firms' outward foreign direct investment.

2.2 Artificial Intelligence Adoption, Technological Innovation, and Outward Foreign Direct Investment

Technological innovation provides an important foundation for firms seeking to establish competitive advantages and expand into international markets. From a resource-based perspective, proprietary technologies, patents, and research and development (R&D) capabilities constitute valuable resources that are difficult for competitors to replicate. These resources can help firms overcome foreign market entry barriers and sustain their competitive positions internationally. Heterogeneous-firm theory further suggests that technological progress enhances firms' ability to bear the fixed costs of overseas investment by improving productivity and profitability (Helpman et al., 2004). As a new generation of general-purpose technology, AI can do more than improve production efficiency. It may also transform how firms acquire knowledge, conduct R&D, and allocate innovation-related resources. By strengthening technological innovation, AI adoption may consequently increase firms' capacity and incentives to invest abroad.

One important channel through which AI can foster technological innovation is by expanding the scope of knowledge search and improving R&D efficiency. Innovation depends on firms' ability to exploit existing knowledge while exploring new sources of information, and both the depth and breadth of knowledge search influence innovation outcomes (Katila & Ahuja, 2002). Through natural language processing, machine learning, and intelligent recognition technologies, AI enables firms to analyze patent documents, research data, and technical information more efficiently. These capabilities can help identify connections across technological fields, reduce the costs of knowledge acquisition, and limit the time and resources devoted to unsuccessful experimentation. AI can also support the evaluation of alternative technological solutions through simulation and predictive analysis, reducing redundant R&D activities and improving the allocation of research resources (Johnson et al., 2022). Beyond knowledge search, AI may facilitate the integration of knowledge and technological resources within firms. By connecting information across R&D, production, and marketing functions, AI can reduce organizational information barriers and encourage the recombination of knowledge from different technical domains. This, in turn, may improve firms' ability to identify innovation opportunities and translate knowledge into technological outcomes (Helfat & Raubitschek, 2018).

Improvements in technological innovation can subsequently facilitate OFDI through several related mechanisms. First, innovation can enhance product quality and technological sophistication, allowing firms to develop differentiated competitive advantages in international markets and mitigate some of the disadvantages associated with operating abroad. Second, technological innovation can raise productivity and expected operating returns, strengthening firms' ability to absorb the fixed costs of establishing overseas operations. Third, as firms develop more advanced technological capabilities, their demand for international R&D resources, frontier technologies, and access to foreign markets may increase. This can reinforce their incentives to pursue strategic asset-seeking investment and international market expansion through OFDI (Luo & Tung, 2007). AI adoption may therefore encourage overseas

investment by fostering technological innovation, strengthening international competitiveness, and improving firms' capacity to undertake cross-border investment. Based on these arguments, we propose the following hypothesis:

Hypothesis 2 (H2): AI adoption promotes firms' outward foreign direct investment by enhancing technological innovation.

2.3 Artificial Intelligence Adoption, Financial Constraints, and Outward Foreign Direct Investment

Financial constraints are another important determinant of firms' outward foreign direct investment decisions. Compared with conventional exporting, OFDI typically involves activities such as establishing overseas production facilities, undertaking cross-border mergers and acquisitions, and developing foreign distribution networks. These investments often require substantial upfront capital, involve relatively long payback periods, and expose firms to greater operational uncertainty. Information asymmetries and incomplete contracts can make it difficult for external capital providers to accurately assess the expected returns and potential risks of overseas investment projects. Consequently, firms may face higher financing costs or restricted access to credit. Previous research has shown that financial constraints can significantly discourage firms from undertaking OFDI (Yan et al., 2018). By improving operational efficiency, strengthening information-processing capabilities, and enhancing risk management, AI adoption may help alleviate both internal and external financing constraints, thereby increasing firms' capacity to invest internationally.

AI may alleviate internal financing constraints by improving operational efficiency and the allocation of financial resources. Through predictive analytics, process optimization, and data-driven decision-making, AI can help firms improve production efficiency, reduce excess inventory, and limit the inefficient use of working capital. These improvements may strengthen profitability and internal cash flow (Yang, 2022; Czarnitzki et al., 2023). As internally generated funds increase, firms may become less dependent on costly external financing and gain access to a more stable source of capital for overseas investment. AI may also ease external financing constraints by improving information processing and risk assessment. Information asymmetry is a major source of financing frictions, as financial institutions often lack complete information about firms' underlying operating conditions and the risks associated with their investment projects. Such uncertainty may lead to higher borrowing costs or insufficient credit supply. By integrating financial records, operational data, and investment project information, AI can enhance firms' forecasting and risk assessment capabilities, potentially improving the quality of information available to external capital providers (Duan et al., 2019). At the same time, AI can assist firms in identifying risks associated with overseas investments, refining investment plans, and improving financial arrangements. These applications may reduce losses arising from poorly informed investment decisions and resource misallocation, while improving the overall efficiency of capital utilization.

As firms accumulate more internal funds, gain better access to external financing, and strengthen their ability to manage investment risks, the financial barriers to international expansion may become less restrictive. Firms may consequently be better positioned to meet the fixed costs of foreign market entry and secure the resources necessary to sustain overseas operations, increasing both the feasibility and attractiveness of OFDI. Although AI adoption itself may require considerable initial investment, the longer-term benefits associated with operational improvements and more efficient financial resource allocation may help ease the financial pressures firms face when investing abroad. AI adoption may therefore facilitate outward foreign direct investment by alleviating financial constraints. On this basis, we propose the following hypothesis:

Hypothesis 3 (H3): AI adoption promotes firms' outward foreign direct investment by alleviating financial constraints.

3. Research Design

3.1 Model Specification

To systematically examine the impact of artificial intelligence (AI) adoption on firms' outward foreign direct investment (OFDI), this study follows the approach of Ma et al. (2025) and develops the following regression model using firm-level panel data covering the period 2009–2024.

$$Ofdi_{it} = \alpha_0 + \alpha_1 AI_{it} + \sum Controls_{it} + \theta_i + \mu_t + \varepsilon_{it} \quad (1)$$

where $Ofdi_{it}$ represents the level of outward foreign direct investment undertaken by firm i in year t, and AI_{it} denotes the firm's level of AI adoption. $Controls_{it}$ represents the firm-level control variables that may influence outward foreign direct investment. The terms θ_i and μ_t denote firm and year fixed effects, respectively, while ε_{it} is the error term.

3.2 Variable Definitions and Measurement

3.2.1 Dependent Variable

The dependent variable in this study is firms' outward foreign direct investment (OFDI). Following Yang et al. (2026), we measure overseas investment activity using the annual number of outward foreign direct investment events undertaken by each firm. Specifically, we count the number of OFDI events recorded for each firm in a given year and take the natural logarithm of this count plus one to construct the OFDI indicator.

This measure captures the frequency of firms' cross-border investment activities, with higher values indicating greater engagement in OFDI. Compared with a binary indicator that merely distinguishes between firms that undertake outward investment and those that do not, the number of investment events provides a more detailed account of variation along the intensive margin of overseas investment. It therefore offers a more nuanced basis for examining how AI adoption relates to firms' international expansion.

3.2.2 Core Explanatory Variable

The core explanatory variable is firm-level artificial intelligence adoption (AI). Existing studies have commonly measured firms' engagement with intelligent technologies using indicators such as industrial robot penetration, AI-related patent counts, or AI-related information disclosed in corporate reports (Yang et al., 2022; Czarnitzki et al., 2023).

However, these indicators capture different aspects of technological development. Industrial robot measures primarily reflect automation in production processes, while AI patent counts focus on technological research and innovation output. Neither fully captures firms' attention to and adoption of AI technologies in their broader business operations and management activities.

To address this limitation, we construct a firm-level AI adoption indicator based on the frequency of AI-related keywords appearing in listed companies' annual reports. This text-based indicator serves as a proxy for AI adoption, reflecting firms' attention to AI technologies and their strategic orientation toward AI-related activities rather than directly measuring the extent of actual implementation.

Specifically, we employ textual analysis to identify AI-related terms in corporate annual reports and count their frequency of occurrence. The AI indicator is then constructed by taking the natural logarithm of one plus the total number of AI-related keyword occurrences in each firm's annual report.

This measure captures the extent to which AI technologies are reflected in firms' disclosed strategic priorities, production activities, business operations, and management practices. In general, a higher frequency of AI-related keywords suggests greater corporate attention to AI and a stronger emphasis on its potential applications.

It should be acknowledged, however, that annual-report-based measures primarily reflect disclosed AI-related activities and may be influenced by firms' disclosure strategies. Accordingly, we employ an

alternative measure in the robustness analysis to mitigate potential measurement error associated with the core explanatory variable.

3.3 Data Sources and Sample Construction

This study examines Chinese A-share listed firms on the Shanghai and Shenzhen stock exchanges over the period 2009–2024 to investigate the impact of AI adoption on outward foreign direct investment.

Data on firms' outward foreign direct investment, financial characteristics, and corporate governance are primarily obtained from the China Stock Market & Accounting Research (CSMAR) database. Firm-level AI adoption is measured using the frequency of AI-related keywords appearing in listed companies' annual reports.

The dataset is constructed through several steps. First, data from different sources are matched by stock code and reporting year to establish a firm-year panel dataset. Second, financial firms are excluded because of the distinctive characteristics of their business models, asset structures, and overseas investment activities. Firms classified as ST or *ST are also excluded, as their special treatment status may reflect abnormal operating conditions.

Finally, the main continuous variables are winsorized to reduce the potential influence of extreme observations on the regression estimates.

3.4 Descriptive Statistics

Table 1 presents the descriptive statistics for the main variables used in this study.

The dependent variable, outward foreign direct investment (Ofdi), has a mean of 0.3267 and a standard deviation of 0.5855, with values ranging from 0 to 2.4849. These figures indicate considerable variation in OFDI activity across the sample firms. While some firms have not undertaken any overseas investment, others exhibit relatively high levels of international investment activity.

The core explanatory variable, AI adoption (AI), has a mean of 0.3099 and a standard deviation of 0.7384, with a minimum of 0 and a maximum of 4.4067. This variation suggests substantial differences in firms' engagement with AI-related technologies. Some firms make no reference to AI in their annual reports, whereas others demonstrate a relatively strong emphasis on AI technologies in their disclosed strategic and operational activities.

These descriptive patterns provide a basis for further examining the relationship between AI adoption and firms' outward foreign direct investment. The remaining variables also vary within their respective ranges, with no extreme values observed.

Table 1. Descriptive Statistics of the Main Variables

Variable	Obs	Mean	Std dev	Min	Max
Ofdi	40,143	0.3267	0.5855	0.0000	2.4849
AI	40,143	0.3099	0.7384	0.0000	4.4067
Soe	40,143	0.3579	0.4794	0.0000	1.0000
Age	40,143	2.9525	0.3433	1.9459	3.6109
Lev	40,143	0.4198	0.2097	0.0559	0.8927
Roe	40,143	0.0545	0.1354	-0.6250	0.3368
Cashflow	40,143	0.0455	0.0682	-0.1520	0.2297
Indep	40,143	0.3773	0.0533	0.3333	0.5714
Dual	40,143	0.2927	0.4550	0.0000	1.0000
Board	40,143	2.1131	0.1990	1.6094	2.6391
Gdp	40,143	27.5082	1.1367	24.6293	29.2373
Indg	40,143	1.7745	1.1748	0.4565	5.7166
Gov	40,143	0.1533	0.5167	0.0747	0.3573

4. Empirical Results and Analysis

4.1 Baseline Regression Results

Table 2 presents the baseline regression results for the relationship between artificial intelligence (AI) adoption and firms' outward foreign direct investment (OFDI). Columns (1) through (5) progressively introduce control variables covering firm characteristics, financial conditions, corporate governance, and regional economic factors.

The results show that the estimated coefficients on AI adoption are consistently positive and statistically significant at the 1% level across all specifications. In Column (5), which includes the full set of control variables, the estimated coefficient on AI is 0.0359, indicating a significant positive

association between AI adoption and firms' outward foreign direct investment activities.

Notably, the estimated coefficients remain relatively stable as additional controls are introduced, suggesting that the baseline findings are not sensitive to the inclusion of these observable characteristics. The results therefore provide preliminary empirical support for Hypothesis 1 (H1).

Table 2. Baseline Regression Results

	(1)	(2)	(3)	(4)	(5)
Variables	Ofdi	Ofdi	Ofdi	Ofdi	Ofdi
AI	0.0381***	0.0358***	0.0349***	0.0347***	0.0359***
	(0.0093)	(0.0094)	(0.0094)	(0.0094)	(0.0094)
Soe		-0.0497**	-0.0562**	-0.0612***	-0.0615***
		(0.0237)	(0.0237)	(0.0236)	(0.0237)
Age		0.2351***	0.1997***	0.2041***	0.2072***
		(0.0724)	(0.0729)	(0.0727)	(0.0727)
Lev			0.1081***	0.1064***	0.1070***
			(0.0317)	(0.0316)	(0.0317)
Roe			-0.0104	-0.0115	-0.0140
			(0.0243)	(0.0243)	(0.0244)
Cashflow			0.0451	0.0452	0.0406
			(0.0416)	(0.0415)	(0.0416)
Indep				0.1553	0.1607
				(0.1098)	(0.1100)
Dual				-0.0136	-0.0131
				(0.0098)	(0.0098)
Board				0.0885**	0.0893**
				(0.0373)	(0.0372)
Gdp					-0.0132
					(0.0337)
Indg					-0.0389***
					(0.0140)
Gov					-0.3187
					(0.1950)
Constant	0.3149***	-0.3608*	-0.3004	-0.5525**	-0.0842
	(0.0029)	(0.2133)	(0.2137)	(0.2333)	(0.9488)
Firm FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
N	40,143	40,143	40,143	40,143	40,143
R^2	0.611	0.612	0.612	0.613	0.613

*Notes: Standard errors are reported in parentheses. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively. To account for potential heteroskedasticity and within-firm serial correlation, standard errors are clustered at the firm level.*

4.2 Robustness Checks

4.2.1 Alternative Measure of the Explanatory Variable

To assess the robustness of the baseline findings, we replace the original AI keyword frequency measure (AI) with an alternative indicator, AIrat, defined as the proportion of AI-related keyword occurrences relative to the total word count in a firm's annual report. This adjustment is intended to reduce potential measurement differences arising from variations in the length of corporate annual reports. Table 3 reports the corresponding regression results. The estimated coefficients on AIrat in Columns (1) and (2) are both positive and statistically significant at the 5% level, consistent with the baseline estimates.

These findings suggest that the positive relationship between AI adoption and firms' outward foreign direct investment remains evident when AI adoption is measured relative to the length of corporate disclosures. The results thus provide further support for the robustness of the baseline findings.

Table 3. Robustness Check: Alternative Measure of AI Adoption

	(1)	(2)
Variables	Ofdi	Ofdi
AIrat	0.0379**	0.0368**
	(0.0162)	(0.0163)

Constant	0.3223***	-0.1630
	(0.0019)	(0.9495)
Controls	Yes	Yes
Firm FE	Yes	Yes
Year FE	Yes	Yes
N	40,143	40,143
R^2	0.611	0.613

4.2.2 Alternative Fixed-Effects Specifications

To further address the potential influence of unobserved factors on the estimation results, we examine the robustness of the baseline findings under alternative fixed-effects specifications.

Building on the baseline model with firm and year fixed effects, Column (1) of Table 4 additionally incorporates industry fixed effects, while Column (2) introduces city fixed effects. Column (3) employs firm fixed effects together with industry-by-year fixed effects to account for common shocks affecting firms within the same industry over time.

The regression results show that the estimated coefficients on AI adoption remain positive and statistically significant at the 1% level across all three specifications. These findings indicate that the positive relationship between AI adoption and OFDI persists under alternative fixed-effects structures, providing further evidence of the robustness of the baseline results.

Table 4. Robustness Check: Alternative Fixed-Effects Specifications

	(1)	(2)	(3)
Variables	Ofdi	Ofdi	Ofdi
AI	0.0359***	0.0359***	0.0287***
	(0.0094)	(0.0094)	(0.0095)
Constant	-0.0842	-0.0842	0.0773
	(0.9497)	(0.9518)	(0.9736)
Controls	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes
Year FE	Yes	Yes	
Ind FE	Yes		
CityCode FE		Yes	
IndYear FE			Yes
N	40,143	40,143	40,083
R^2	0.613	0.613	0.633

4.2.3 Alternative Clustering Specifications

As an additional robustness check, we vary the level at which standard errors are clustered to account for potential correlations in regression disturbances across different dimensions of the data.

Specifically, Columns (1) through (5) of Table 5 report estimates with standard errors clustered at the industry, city, industry-year, city-industry, and city-year levels, respectively.

Across all five clustering specifications, the estimated coefficient on AI adoption remains positive and statistically significant at the 1% level. Although the estimated standard errors vary with the clustering structure, neither the coefficient estimates nor their statistical significance changes materially.

These results suggest that the positive association between AI adoption and firms' outward foreign direct investment is not driven by a particular choice of standard-error clustering, further reinforcing the robustness of the baseline findings.

Table 5. Robustness Check: Alternative Clustering Specifications

	(1)	(2)	(3)	(4)	(5)
Variables	Ofdi	Ofdi	Ofdi	Ofdi	Ofdi
AI	0.0359***	0.0359***	0.0359***	0.0359***	0.0359***
	(0.0120)	(0.0096)	(0.0093)	(0.0091)	(0.0073)
Constant	-0.0842	-0.0842	-0.0842	-0.0842	-0.0842
	(0.8386)	(1.1689)	(0.7135)	(0.9977)	(0.7378)
Controls	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Cluster	Ind	CityCode	IndYear	CityInd	CityYear
N	40,143	40,143	40,143	40,143	40,143
R^2	0.613	0.613	0.613	0.613	0.613

OPEN ACCESS

4.2.4 Exclusion of Selected Observations

To assess whether the baseline findings are influenced by economic shocks during particular periods or by the distinctive characteristics of certain regions, we conduct additional robustness checks using restricted samples.

First, given that the effects of the 2008 global financial crisis may have persisted in subsequent years and influenced firms' financing conditions and international investment decisions, we exclude observations from 2009 to 2011. The corresponding results are reported in Column (1) of Table 6.

Second, we exclude firms located in China's four directly administered municipalities—Beijing, Shanghai, Tianjin, and Chongqing—which differ from other regions in terms of economic development, policy support, and international integration. The results of this restricted-sample estimation are presented in Column (2).

In both specifications, the estimated coefficients on AI adoption remain positive and statistically significant at the 1% level. The findings therefore suggest that the positive relationship between AI adoption and firms' outward foreign direct investment is not driven by the lingering effects of the global financial crisis or by observations from the four municipalities. This provides further support for the robustness of the baseline results.

Table 6. Robustness Check: Exclusion of Selected Observations

	(1)	(2)
Variables	Ofdi	Ofdi
AI	0.0364***	0.0380***
	(0.0091)	(0.0115)
Constant	0.1802	0.2906
	(1.0360)	(1.0115)
Controls	Yes	Yes
Firm FE	Yes	Yes
Year FE	Yes	Yes
N	35,408	31,301
R^2	0.627	0.611

4.3 Heterogeneity Analysis

4.3.1 Heterogeneity by Technological Intensity

Firms operating in industries with different levels of technological intensity often differ substantially in their technological capabilities, R&D requirements, and approaches to resource allocation. Such differences may lead to heterogeneous relationships between AI adoption and outward foreign direct investment.

According to the resource-based view, technology-intensive firms typically possess more substantial technological knowledge, stronger R&D capabilities, and a greater concentration of highly skilled human capital. Their competitive advantages therefore depend more heavily on technological innovation and the effective utilization of knowledge-based resources. As a general-purpose technology, the value of AI depends partly on its complementarity with firms' existing technological capabilities, data resources, and organizational structures (Helfat & Raubitschek, 2018).

Compared with firms in less technology-intensive industries, technology-intensive firms generally have greater demand for AI applications in R&D, information processing, and the management of complex production processes. They may consequently be better positioned to translate AI adoption into improvements in operational efficiency and international competitiveness.

On the one hand, AI can help technology-intensive firms improve R&D productivity, facilitate knowledge integration, and enhance product innovation, thereby strengthening their ability to compete through differentiation in international markets. On the other hand, overseas investments undertaken by these firms frequently involve technology acquisition, international research collaboration, and expansion into markets for high-value-added products. By improving the search for technological information and the evaluation of overseas investment opportunities, AI may reduce information-related costs and strengthen firms' incentives to undertake OFDI.

In contrast, firms in less technology-intensive industries tend to rely more heavily on conventional production factors and cost-based competitive advantages. Limited technological capabilities and shortages of specialized personnel may constrain their ability to realize the full benefits of AI adoption, potentially weakening its relationship with overseas investment.

To investigate these differences, we divide the sample into high-technology-intensive and low-technology-intensive firms and estimate separate regressions for each group.

As reported in Columns (1) and (2) of Table 7, the estimated coefficients on AI adoption are 0.0354 and 0.0296, respectively. Both coefficients are positive, with statistical significance at the 1% level for high-technology-intensive firms and the 10% level for low-technology-intensive firms.

The estimated coefficient is slightly larger for high-technology-intensive firms, suggesting that the positive relationship between AI adoption and OFDI may be stronger among firms with greater technological intensity. One possible explanation is that these firms possess stronger technological absorptive and application capabilities, enabling them to use AI more effectively to improve innovation efficiency and international competitiveness.

Overall, the findings indicate that AI adoption is positively associated with OFDI among firms in both technological intensity groups, although the estimated magnitudes differ.

4.3.2 Heterogeneity by Firm Size

Firm size is another important factor that may influence the economic benefits of AI adoption and firms' decisions to undertake outward foreign direct investment.

According to heterogeneous-firm theory, OFDI involves substantial fixed costs of foreign market entry and cross-border organizational management. Firm size, together with the resources and operational capabilities it represents, can therefore influence the feasibility of international expansion (Helpman et al., 2004).

Compared with smaller firms, larger enterprises generally possess greater financial resources, more developed organizational structures, and stronger technological absorptive capabilities. These advantages provide the data infrastructure, skilled personnel, and financial support necessary for AI adoption.

First, implementing AI often requires investment in technology development, information systems, and employee training. Larger firms can spread these fixed costs across a broader range of business activities and deploy AI in more operational settings, potentially increasing the returns to technological investment.

Second, larger enterprises typically operate through more complex organizational structures and extensive business networks. AI's advantages in information processing, operational forecasting, and interdepartmental coordination may therefore be particularly valuable in reducing the organizational costs of cross-border operations.

In the context of overseas investment, larger firms can also use AI to integrate market information, operational data, and investment project assessments across countries, improving investment decision-making and global resource allocation.

Smaller firms may likewise benefit from AI through lower information search costs and improved operational efficiency. However, their more limited technological investment capacity, specialized human capital, and access to finance may prevent them from fully exploiting the economies of scale and organizational synergies associated with AI adoption. As a result, the positive relationship between AI adoption and OFDI may be weaker among smaller enterprises.

To examine this possibility, we divide the sample into large and small firms based on the median value of total assets and estimate separate regressions for each group. Columns (3) and (4) of Table 7 present the corresponding results.

For large firms, the estimated coefficient on AI adoption is 0.0382, which is positive and statistically significant at the 5% level. For small firms, the

corresponding coefficient is 0.0201 and is also significant at the 5% level.

These results indicate that AI adoption is positively associated with OFDI among firms of different sizes, although the estimated coefficient is larger for large enterprises. This difference may reflect the greater technological, financial, and organizational resources available to larger firms, which allow them to translate improvements in operational efficiency into stronger international investment capabilities.

By contrast, smaller firms may face greater resource and financing constraints, limiting their ability to fully realize the potential benefits of AI adoption. Overall, the regression results suggest a larger estimated relationship between AI adoption and OFDI among large firms.

Table 7. Heterogeneity Analysis

	(1)	(2)	(3)	(4)
	High_Tech	Low_Tech	Big_size	Small_size
Variables	Ofdi	Ofdi	Ofdi	Ofdi
AI	0.0354***	0.0296*	0.0382**	0.0201**
	(0.0119)	(0.0153)	(0.0161)	(0.0094)
Constant	-0.6315	0.3716	-0.9809	-1.7424
	(1.4136)	(1.2612)	(1.6027)	(1.0982)
Controls	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
N	18,011	22,132	19,908	19,807
R^2	0.621	0.607	0.638	0.675

4.4 Mechanism Analysis

4.4.1 Technological Innovation Channel

Technological innovation provides an important foundation for firms seeking to develop international competitive advantages and overcome barriers to foreign market entry. By improving the efficiency of knowledge search, reducing the costs of R&D experimentation, and facilitating the integration of technological resources, AI adoption may strengthen firms' innovation capabilities and provide technological support for international expansion.

To examine the technological innovation channel, we measure firm-level innovation using the natural logarithm of one plus the annual number of patent applications (PT). This variable is then employed as the dependent variable in the regression analysis.

Column (1) of Table 8 presents the results. The estimated coefficient on AI adoption is positive and statistically significant at the 1% level, providing evidence of a positive relationship between AI adoption and firms' technological innovation.

One possible explanation is that AI improves the processing of R&D information and the integration of knowledge resources while reducing the costs associated with technological experimentation, thereby encouraging patenting activity.

As firms' innovation capabilities improve, they may develop stronger advantages in product differentiation and international competitiveness, enhancing their ability to absorb the fixed costs of overseas investment.

These findings provide evidence consistent with technological innovation as a potential channel linking AI adoption to firms' OFDI activities, in line with the theoretical expectations underlying Hypothesis 2 (H2).

4.4.2 Financial Constraints Channel

Financial constraints represent another important factor influencing firms' outward foreign direct investment. Compared with domestic investment, OFDI typically requires greater upfront capital commitments and involves higher operational uncertainty, making access to finance an important consideration in overseas investment decisions.

To examine the financial constraints channel, this study draws on the SA index developed by Hadlock and Pierce (2010) to measure firms' financing constraints (FC). Constructed using firm size and age, this indicator can mitigate some of the endogeneity concerns associated with financing constraint measures based on financial variables.

Column (2) of Table 8 reports the corresponding regression results. The estimated coefficient on AI

adoption is negative and statistically significant at the 1% level, indicating that greater AI adoption is significantly associated with lower measured financing constraints.

This relationship may arise because AI improves operational efficiency and resource allocation, enabling firms to utilize financial resources more effectively and potentially strengthening the financial support available for overseas investment.

Taken together, these findings provide preliminary evidence consistent with the financial constraints channel and align with the theoretical expectations of Hypothesis 3 (H3).

Table 8. Mechanism Analysis

	(1) Technological Innovation Channel	(2) Financial Constraints Channel
Variables	PT	FC
AI	0.0680***	-0.0195***
	(0.0217)	(0.0027)
Constant	1.5791	2.3462***
	(3.1694)	(0.4315)
Controls	Yes	Yes
Firm FE	Yes	Yes
Year FE	Yes	Yes
N	40,143	40,143
R^2	0.777	0.830

5. Conclusions and Policy Implications

5.1 Research Conclusions

Against the backdrop of profound changes in the global economic landscape and rapid advances in digital technologies, artificial intelligence (AI) adoption is becoming an increasingly important driver of firms' international competitiveness, global resource allocation, and overseas market expansion. Understanding how firms can capitalize on AI to strengthen their international operations has therefore become an important research question in the digital economy, particularly as Chinese enterprises seek to deepen their participation in international markets.

Drawing on a sample of Chinese A-share listed firms over the period 2009–2024, this study systematically examines the relationship between AI adoption and outward foreign direct investment (OFDI), as well as the potential mechanisms underlying this relationship. Firm-level AI adoption is measured using the frequency of AI-related keywords in corporate annual reports, while OFDI activity is captured by the annual number of outward investment events.

The empirical analysis yields three main findings.

First, the baseline regression results reveal a statistically significant positive relationship between AI adoption and firms' outward foreign direct investment. This finding remains robust across a series of alternative specifications and sample adjustments, suggesting that the estimated relationship is not sensitive to the particular empirical settings employed in the baseline analysis.

Second, the heterogeneity analysis indicates that the relationship between AI adoption and OFDI varies across firms with different characteristics. In particular, the estimated positive association is more pronounced among technology-intensive firms and larger enterprises. These findings suggest that firms' technological capabilities, resource endowments, and organizational structures may influence their ability to translate AI adoption into international investment activities.

Third, the mechanism analysis identifies technological innovation and financial constraints as two potential channels through which AI adoption may facilitate OFDI. The results suggest that AI adoption is positively associated with firms' technological innovation and negatively associated with their financing constraints. These relationships are consistent with the view that AI may support international expansion by strengthening firms' technological competitive advantages and improving their access to financial resources.

Overall, this study contributes to the literature on digital technological progress and international investment by examining the relationship between firm-level AI adoption and outward foreign direct investment. The findings provide micro-level

empirical evidence on the potential role of AI in supporting the internationalization of Chinese firms.

5.2 Policy Recommendations

5.2.1 Deepening AI Adoption to Strengthen Firms' International Competitiveness

Policymakers should accelerate the development of AI infrastructure and supporting public services to reduce the costs associated with firms' adoption of intelligent technologies. Greater emphasis should be placed on encouraging enterprises to integrate AI into foreign market analysis, investment risk assessment, and cross-border business management. Such applications can improve the efficiency of overseas investment decisions and strengthen firms' capacity to allocate resources across international markets.

At the same time, closer collaboration between AI technology service providers and internationally active firms should be encouraged. By facilitating the integration of intelligent technologies into international business operations, these partnerships can provide firms with the technological capabilities needed to identify overseas opportunities, manage cross-border activities, and expand their presence in foreign markets.

5.2.2 Adopting Differentiated Support Policies to Maximize the Benefits of AI

Policies designed to promote AI adoption should account for differences in firms' technological capabilities, operational scale, and resource endowments. A differentiated approach would allow support measures to better reflect the specific needs and constraints of different types of enterprises.

For technology-intensive firms and large enterprises, policy initiatives should encourage the further integration of AI into research and development, innovation activities, and international operations. These firms are generally better positioned to build on their existing technological knowledge and resource advantages, potentially generating greater returns from AI adoption.

For less technology-intensive firms and small and medium-sized enterprises (SMEs), support should focus on lowering barriers to AI adoption. Measures such as subsidies for technological services, access to shared digital platforms, and specialized workforce training can help address limitations in technological expertise and financial resources. Such initiatives may improve smaller firms' ability to employ AI in support of overseas investment and international market expansion.

5.2.3 Promoting AI-Enabled Innovation to Develop International Competitive Advantages

Firms should be encouraged to integrate AI technologies into R&D, product design, knowledge search, and technological innovation. By improving research efficiency and facilitating the commercialization of innovation outcomes, AI can help enterprises strengthen the technological capabilities underlying their international competitiveness.

Further efforts should also be directed toward improving collaborative innovation mechanisms among industry, universities, and research institutions. Strengthening cooperation in the development of core AI technologies, alongside more effective intellectual property protection, can provide a supportive environment for sustained technological innovation.

In addition, firms should be supported in accessing international innovation resources through overseas R&D centers and cross-border technological partnerships. Such initiatives can facilitate knowledge exchange, strengthen technological capabilities, and encourage complementarities between AI adoption and innovation. Together, these measures can help firms develop sustainable technological advantages that support their outward foreign direct investment activities.

5.2.4 Strengthening Financial Support to Alleviate Constraints on Overseas Investment

A more comprehensive, multi-tiered financing system should be developed to support firms' international expansion and reduce the financial constraints associated with overseas investment.

Financial institutions should be encouraged to develop financing products that better reflect firms' technological innovation capabilities and international investment needs. These may include cross-border financing arrangements, intellectual property-backed lending, and supply chain finance solutions. Diversifying financing channels can improve firms' access to capital and reduce their dependence on conventional forms of external financing.

AI technologies can also be used to improve corporate credit assessments and investment risk identification, potentially enhancing the allocation of financial resources and reducing the financing costs associated with overseas investment.

Finally, overseas investment information services and risk protection mechanisms should be further strengthened. Improving firms' access to reliable market information, financing support, and risk management services can help create a more favorable financial environment for sustained outward foreign direct investment.

References

Acemoglu, D. & Restrepo, P. (2018) 'The race between man and machine: Implications of technology for growth, factor shares, and employment', *American Economic Review*, 108(6), pp. 1488–1542. doi: https://doi.org/10.1257/aer.20160696

Buckley, P.J. & Casson, M.C. (2009) 'The internalisation theory of the multinational enterprise: A review of the progress of a research agenda after 30 years', *Journal of International Business Studies*, 40(9), pp. 1563–1580. doi: https://doi.org/10.1057/jibs.2009.49

Czarnitzki, D., Fernández, G.P. & Rammer, C. (2023) 'Artificial intelligence and firm-level productivity', *Journal of Economic Behavior & Organization*, 211, pp. 188–205. doi: https://doi.org/10.1016/j.jebo.2023.05.008

Duan, Y., Edwards, J.S. & Dwivedi, Y.K. (2019) 'Artificial intelligence for decision making in the era of Big Data: Evolution, challenges and research agenda', *International Journal of Information Management*, 48, pp. 63–71. doi: https://doi.org/10.1016/j.ijinfomgt.2019.01.021

Dunning, J.H. (1988) 'The eclectic paradigm of international production: A restatement and some possible extensions', *Journal of International Business Studies*, 19(1), pp. 1–31. doi: https://doi.org/10.1057/palgrave.jibs.8490372

Erel, I., Liao, R.C. & Weisbach, M.S. (2012) 'Determinants of cross-border mergers and acquisitions', *The Journal of Finance*, 67(3), pp. 1045–1082. doi: https://doi.org/10.1111/j.1540-6261.2012.01741.x

Faber, M. (2020) 'Robots and reshoring: Evidence from Mexican labor markets', *Journal of International Economics*, 127, 103384. doi: https://doi.org/10.1016/j.jinteco.2020.103384

Feliciano-Cestero, M.M., Ameen, N., Kotabe, M., Paul, J. & Signoret, M. (2023) 'Is digital transformation threatened? A systematic literature review of the factors influencing firms' digital transformation and internationalization', *Journal of Business Research*, 157, 113546. doi: https://doi.org/10.1016/j.jbusres.2022.113546

Hadlock, C.J. & Pierce, J.R. (2010) 'New evidence on measuring financial constraints: Moving beyond the KZ index', *The Review of Financial Studies*, 23(5), pp. 1909–1940. doi: https://doi.org/10.1093/rfs/hhq009

Helfat, C.E. & Raubitschek, R.S. (2018) 'Dynamic and integrative capabilities for profiting from innovation in digital platform-based ecosystems', *Research Policy*, 47(8), pp. 1391–1399. doi: https://doi.org/10.1016/j.respol.2018.01.019

Helpman, E., Melitz, M.J. & Yeaple, S.R. (2004) 'Export versus FDI with heterogeneous firms', *American Economic Review*, 94(1), pp. 300–316. doi: https://doi.org/10.1257/000282804322970814

Huang, K. & Liu, Q. (2024) 'Artificial intelligence and outward foreign direct investment: Evidence from China', *Journal of Asian Economics*, 92, 101745. doi: https://doi.org/10.1016/j.asieco.2024.101745

Igna, I. & Venturini, F. (2023) 'The determinants of AI innovation across European firms', *Research Policy*, 52(2), 104661. doi: https://doi.org/10.1016/j.respol.2022.104661

Johanson, J. & Vahlne, J.-E. (1977) 'The internationalization process of the firm—A model of knowledge development and increasing foreign market commitments', *Journal of International Business Studies*, 8(1), pp. 23–32. doi: https://doi.org/10.1057/palgrave.jibs.8490676

Johnson, P.C., Laurell, C., Ots, M. & Sandström, C. (2022) 'Digital innovation and the effects of artificial intelligence on firms' research and development—Automation or augmentation, exploration or exploitation?', *Technological Forecasting and Social Change*, 179, 121636. doi: https://doi.org/10.1016/j.techfore.2022.121636

Katila, R. & Ahuja, G. (2002) 'Something old, something new: A longitudinal study of search behavior and new product introduction', *Academy of Management Journal*, 45(6), pp. 1183–1194. doi: https://doi.org/10.2307/3069433

Kemp, A. (2024) 'Competitive advantage through artificial intelligence: Toward a theory of situated AI', *Academy of Management Review*, 49(3), pp. 618–635. doi: https://doi.org/10.5465/amr.2020.0205

Kleinberg, J., Lakkaraju, H., Leskovec, J., Ludwig, J. & Mullainathan, S. (2018) 'Human decisions and machine predictions', *The Quarterly Journal of Economics*, 133(1), pp. 237–293. doi: https://doi.org/10.1093/qje/qjx032

Luo, Y. (2021) 'New OLI advantages in digital globalization', *International Business Review*, 30(2), 101797. doi: https://doi.org/10.1016/j.ibusrev.2021.101797

Luo, Y. & Tung, R.L. (2007) 'International expansion of emerging market enterprises: A springboard perspective', *Journal of International Business Studies*, 38(4), pp. 481–498. doi: https://doi.org/10.1057/palgrave.jibs.8400275

Ma, S., Wu, P. & Fang, C. (2025) 'The impact of robot adoption on firm's OFDI: Evidence from China', *Journal of Asian Economics*, 97, 101901. doi: https://doi.org/10.1016/j.asieco.2025.101901

March, J.G. (1991) 'Exploration and exploitation in organizational learning', *Organization Science*, 2(1), pp. 71–87. doi: https://doi.org/10.1287/orsc.2.1.71

Qiao, P., Chang, M. & Zeng, Y. (2024) 'The influence of digitalization on SMEs' OFDI in emerging countries', *Journal of Business Research*, 177, 114633. doi: https://doi.org/10.1016/j.jbusres.2024.114633

Xing, Y., Anderson, C., Ho, D., Lefevre, G. & Lavoratori, M. (2024) 'Critical theories challenge the normative bases of contemporary global economical governance and help to imagine progressive alternatives', *Journal of World Economy*, 3(3), pp. 52–59.

Yan, B., Zhang, Y., Shen, Y. & Han, J. (2018) 'Productivity, financial constraints and outward foreign direct investment: Firm-level evidence', *China Economic Review*, 47, pp. 47–64. doi: https://doi.org/10.1016/j.chieco.2017.12.006

Yang, C.-H. (2022) 'How artificial intelligence technology affects productivity and employment: Firm-level evidence from Taiwan', *Research Policy*, 51(6), 104536. doi: https://doi.org/10.1016/j.respol.2022.104536

Yang, Z., Wu, F. & Yue, Z. (2026) 'Artificial intelligence technology and firms' OFDI: Evidence from China', *International Review of Economics & Finance*, 106, 104920. doi: https://doi.org/10.1016/j.iref.2026.104920

Yeaple, S.R. (2009) 'Firm heterogeneity and the structure of US multinational activity', *Journal of International Economics*, 78(2), pp. 206–215. doi: https://doi.org/10.1016/j.jinteco.2009.02.002

Disclaimer/Publisher's Note: The statements, opinions and data contained in all publications are solely those of the individual author(s) and contributor(s) and not of Brilliance Publishing Limited and/or the editor(s). Brilliance Publishing Limited and/or the editor(s) disclaim responsibility for any injury to people or property resulting from any ideas, methods, instructions or products referred to in the content.