

The Impact Pathways of Digital Transformation on Outward Direct Investment in Shandong Province's Manufacturing Sector

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Abstract

Against the backdrop of rapid digital technology development, digital transformation has increasingly become a key pathway for enterprises to enhance their international operational capabilities. Based on data from Shandong Province's manufacturing A-share listed companies from 2011 to 2023, this study employs empirical methods such as the two-way fixed effects model, Probit model, and two-stage least squares method to explore the impact pathways of digital transformation on enterprises' foreign direct investment. The results indicate that digital transformation significantly promotes the scale of enterprises' foreign direct investment, and this conclusion remains valid after robustness and endogeneity tests. Mechanism analysis shows that digital transformation indirectly promotes enterprises' foreign investment behavior by improving supply chain operational efficiency. Heterogeneity tests further reveal that this promotional effect is more pronounced in state-owned enterprises and large enterprises, while it is not significant in non-state-owned enterprises and small and medium-sized enterprises. The study reveals the intrinsic logic between digital capability development and corporate internationalization, providing valuable insights for policymakers and business managers on how to effectively expand overseas markets through digital transformation.

Keywords

Digital transformation; foreign direct investment; supply chain operational efficiency; Shandong manufacturing; heterogeneity analysis.

1. Introduction

With the implementation of China's "going global" strategy, the level of China's foreign direct investment has increased significantly. China is committed to forming a broader, wider, and deeper pattern of opening up, which requires China to accelerate its transformation from a major foreign investor to a strong foreign investor. Actively promoting China's foreign direct investment is an important part of accelerating the construction of a new development pattern and an important strategic choice for promoting high-quality economic development in China. At this time, driven by a new round of technological revolution and industrial transformation, the innovation and development of new-generation digital technologies have reshaped the form of social and economic development, and the traditional industrial economy is entering a new era centered on digital technology. Digital transformation has become an inevitable path for enterprises to adapt to the development of new technologies. This paper takes Shandong Province's manufacturing industry as a case study to examine how digital transformation influences foreign direct investment and explore the underlying mechanisms. This not only enriches theoretical research on digital transformation and foreign direct investment but also holds practical significance for countries prioritizing digital technology development and building modern information platforms to drive foreign investment.

2. Theoretical Analysis and Research Hypotheses

2.1. Theoretical Analysis

With the rapid development of the digital economy, the digital economy has become a new driving force for foreign direct investment. According to transaction cost theory, digital transformation can reduce information search costs and contract enforcement costs in cross-border investment, enabling enterprises to more accurately assess international market risks and reduce information asymmetry. By leveraging digital technologies, enterprises can dynamically analyze factors such as international policies and exchange rate fluctuations, reduce trial-and-error costs in investment decisions, optimize investment decisions, and thereby promote foreign direct investment. According to the resource-based view theory, digital resources serve as a competitive advantage for enterprises, enabling them to provide precise analysis in overseas differentiated competition and reduce the interference caused by information asymmetry. Second, digital transformation can enhance supply chain coordination and improve supply chain operational efficiency. The use of digital emerging technologies can significantly enhance production capacity and accelerate product inventory turnover efficiency. Digital technologies enable enterprises to promptly obtain international demand, adjust product strategies in a timely manner, anticipate risks, and enhance supply chain operational efficiency, thereby strengthening enterprises' adaptability to the international environment and increasing the scale of foreign direct investment.

2.2. Research Hypotheses

Based on the above theoretical analysis, digital transformation can significantly reduce transaction costs and mitigate information asymmetry in cross-border investments. Through digital transformation, enterprises can accelerate product turnover efficiency, effectively enhance supply chain collaboration capabilities, and improve supply chain operational efficiency. The improvement in supply chain operational efficiency, in turn, can effectively increase the scale of foreign direct investment. In summary, this paper proposes the following hypothesis:

H_1 : Digital transformation can effectively promote foreign direct investment.

H_2 : Digital transformation of enterprises promotes foreign investment by improving supply chain operational efficiency.

3. Research Design

3.1. Research Sample and Data Sources

Based on the research content of this paper, all manufacturing enterprises listed on the A-share market in Shandong Province from 2011 to 2023 were selected as the research sample. The sample was processed as follows: (1) Only listed companies with Shandong Province as their province were retained as the research sample. (2) Only samples from the manufacturing industry were retained. (3) Samples of listed companies with poor performance (ST and PT companies) were excluded. (4) Samples with missing or abnormal data were excluded. (5) To reduce the impact of extreme values on the empirical results, the data were trimmed using the Winsor2 command to remove the 1% and 99% percentiles. All data used in this study were obtained from the CSMAR database. After the above data processing, a total of 1,755 sample data points were obtained.

3.2. Variable Definitions

3.2.1. Dependent Variable: Outward Direct Investment (OFDI)

Following the research by Sun Li and Chang Tianhui [1], this study aggregates the overseas affiliated enterprises of the sample firms and sums the total end-of-period investment of these affiliated enterprises to obtain the annual overseas investment total of the sample firms. The overseas affiliated enterprises included in this study are: subsidiaries, joint ventures, and associated enterprises of the sample firms, as well as enterprises registered outside China's mainland where the sample firm holds more than 10% of the controlling equity. The total investment of overseas affiliated entities is aggregated, and the logarithm of the total overseas investment is taken to construct the foreign direct investment variable.

3.2.2. Explanatory Variable: Digital Transformation (DCG)

According to the research by Lv Hongjun and Wei Xiuxiu [2], there are three methods for defining digital transformation. First, text analysis is used to identify the frequency of terms related to digital transformation in annual reports, and a digital transformation variable is constructed. Second, a survey questionnaire is designed to collect relevant information and construct a digital transformation variable. Third, a comprehensive evaluation index system is designed to construct the enterprise digital transformation variable. Referring to the research by Wu Fei et al. (2021) [3], this study adopts the text analysis method to construct the digital transformation variable. Based on the "14th Five-Year Plan for the Development of the Digital Economy," this study selects five key dimensions related to digital transformation as the core indicators for constructing the digital transformation keyword database, namely: artificial intelligence, big data, cloud computing, blockchain, and digital technology application. Using Python web scraping technology, this study extracts the frequency of keywords matching the keyword database from the annual reports of listed manufacturing companies in Shandong Province during the sample period. The frequencies are then summed and log-transformed to construct digital transformation indicators.

3.2.3. Mediating Variable: Supply Chain Operation Efficiency (Scoe)

Based on the research by Zhang Yong and Tian Yajie [4], this study measures supply chain operational efficiency using the logarithmic value of inventory turnover days. This is calculated by taking the logarithm of the ratio between the number of days and the inventory turnover rate. A smaller value indicates higher supply chain operational efficiency.

3.2.4. Control Variables

Based on the research by Li Shaolin and Meng Ze [5], this study selects firm size (Size), debt-to-equity ratio (Lev), return on assets (ROA), cash collection ability (Cash), firm age (Age), top 10 ownership concentration (Top10), Tobin's Q (TobinQ), and management shareholding ratio (Share) as the control variables in this study. The specific variable definitions are shown in Table 1.

3.3. Model Design

3.3.1. Benchmark Regression Model

To test the first hypothesis of this paper, we construct the following two-way fixed effects benchmark regression model:

$$Ofdi_{i,t} = \alpha_0 + \alpha_1 DCG_{i,t} + \sum \alpha_k Controls_{i,t} + \mu_i + \vartheta_t + \varepsilon_{i,t} \quad (1)$$

Where i represents the firm, t represents the year. Ofdi denotes the firm's direct investment, DCG represents the digital transformation indicator, Controls are control variables, and α_0 are

constant terms; μ_i represent individual fixed effects, ϑ_t represent time fixed effects, and $\varepsilon_{i,t}$ are error terms.

Table 1. Variable Definitions

Variable Type	Variable Name	Variable Symbol	Variable Definition
Dependent Variable	Foreign Direct Investment	OFDI	Sum of the total overseas investment of overseas enterprises associated with the sample enterprises, then take the logarithm
Explanatory variable	Digital transformation	DCG	Log of the sum of the word frequencies related to digital transformation
Mediating variable	Supply chain operational efficiency	Scoe	Ratio of days to inventory turnover rate
Control variables	Enterprise scale	Size	Log of total assets at year-end plus one
	Debt-to-asset ratio	Lev	Ratio of total liabilities at year-end to total assets
	Return on Total Assets	ROA	The ratio of net profit at the end of the period to average total assets
	Age of the company	Age	Number of years since establishment plus one, then take the logarithm
	Cash flow ratio	Cash	Cash flow ratio at the end of the period
	Equity concentration	Top 10	Shareholding ratio of the top 10 shareholders
	Management Shareholding Ratio	Share	Ratio of management shareholding to total shares
	Tobin Q	Tobin Q	A measure of the ratio of a company's market value to its asset replacement cost

3.3.2. Mediating Effect Model

To examine the mediating effect of supply chain operational efficiency, the following model is constructed based on the baseline regression model:

$$Scoe_{i,t} = \beta_0 + \beta_1 DCG_{i,t} + \sum \beta_k Controls_{i,t} + \mu_i + \vartheta_t + \varepsilon_{i,t} \quad (2)$$

$$Ofdi_{i,t} = \gamma_0 + \gamma_1 DCG_{i,t} + \gamma_2 Scoe_{i,t} + \sum \gamma_k Controls_{i,t} + \mu_i + \vartheta_t + \varepsilon_{i,t} \quad (3)$$

Where Scoe is the mediating variable supply chain operational efficiency, and the remaining variables are consistent with model (1).

4. Empirical Results and Analysis

4.1. Descriptive Statistics

For the sample selected in this study, this section conducts descriptive statistical analysis, with the specific results shown in Table 2. Among the 1,755 samples of Shandong Province manufacturing companies listed on the A-share market selected in this study, the minimum value of the firm's level of foreign direct investment (OFDI) is 0, the median is 0, indicating that some firms in the sample did not engage in foreign direct investment during the sample period; the mean is 0.781, the maximum value is 3.076, and the standard deviation is 1.252, indicating significant variation among the samples. The minimum value of the explanatory variable digital

transformation (DCG) is 0, indicating that the sample did not undergo digital transformation in the year under review; the mean and median of the digital transformation level are 0, the maximum value is 4.700, and the standard deviation is 1.094, indicating that there is significant variation in the digital transformation level among firms. Based on the descriptive statistics of the control variables, the values of all variables are within a reasonable range.

Table 2. Descriptive Statistics

Statistical Variables	Sample Size	Minimum	Median	Maximum	Standard deviation	Mean
Ofdi	1,755	0	0	3.076	1.252	0.781
DCG	1,755	0	0	4.700	1.196	1.094
Size	1,755	20.14	20.14	25.74	1.161	22.21
Lev	1,755	0.0567	0.0567	0.763	0.179	0.383
ROA	1,755	-0.171	-0.171	0.192	0.0540	0.0476
Top 10	1,755	25.50	25.50	86.59	14.49	56.60
Age	1,755	1.946	1.946	3.466	0.310	2.921
Tobin Q	1,755	0.799	0.799	7.738	1.066	1.842
BM	1,755	0.129	0.129	1.252	0.236	0.656
Share	1,755	0	0	61.30	15.30	9.425
Cash	1,755	-0.129	-0.129	0.227	0.0635	0.0565

4.2. Baseline Regression Results and Analysis

The benchmark regression results of this study are presented in Table 3. Column (1) of Table 3 represents the regression results without controlling for control variables and annual fixed effects and firm fixed effects. Column (2) represents the regression results controlling for fixed effects but without controlling for control variables. Column (3) represents the regression results controlling for control variables but without controlling for fixed effects. Column (4) shows the regression results with control variables and fixed effects. According to Table 3, the core explanatory variables are significantly positive at the 1% level, indicating that corporate digital transformation significantly promotes the level of foreign direct investment, thereby validating the hypothesis that " H_1 ".

4.3. Robustness Tests and Endogeneity Tests

4.3.1. Replacing the Explanatory Variable

Referring to Li Wei, Guan Xiaoxiao (2025) [6], this paper uses a dummy variable to replace the dependent variable in this paper based on whether the firm engaged in outward foreign direct investment (OFDI_d) in the current year. If the firm engaged in outward foreign direct investment in the current year, OFDI_d is set to 1; otherwise, it is set to 0. Since the dependent variable is a dummy variable, this paper uses the probit model for regression analysis. The specific results are shown in Table 4: Column (1) presents the regression results with control variables but without controlling for annual fixed effects; Column (2) presents the regression results with annual fixed effects but without control variables; Column (3) presents the regression results with control variables but without controlling for annual fixed effects; Column (4) presents the regression results without control variables but with annual fixed effects. All regression coefficients are significantly positive at the 1% level, indicating that after replacing the dependent variable, digital transformation still has a significant positive impact on a firm's foreign investment. The hypothesis of this paper, " H_1 ," is further validated.

Table 3. Baseline Regression Results

Statistical variables and their parameters	(1) OFDI	(2) OFDI	(3) OFDI	(4) OFDI
DCG	0.1155*** (0.0248)	0.1252*** (0.0254)	0.0694*** (0.0253)	0.0798*** (0.0257)
Size			0.1762*** (0.0349)	0.2041*** (0.0345)
Lev			0.5711*** (0.2158)	0.5506*** (0.2132)
ROA			0.6773 (0.6553)	0.8353 (0.6486)
Top 10			0.0061*** (0.0022)	0.0059*** (0.0021)
Tobin Q			-0.0134 (0.0495)	0.0219 (0.0487)
BM			-0.3066 (0.2360)	-0.3359 (0.2347)
Share			-0.0046** (0.0021)	-0.0037* (0.0021)
Age			0.0723 (0.1010)	0.0876 (0.1118)
Constant term	0.6546*** (0.0403)	0.6990*** (0.1285)	-3.7448*** (0.7462)	-4.3319*** (0.7454)
Sample size	1,755	1,755	1,755	1,755
R-squared	0.0122	0.0725	0.0616	0.1272
Annual fixed effect	NO	YES	NO	YES
Individual fixed effects	NO	YES	NO	YES

Table 4. Replacement of the dependent variable

variables	(1) OFDI_d	(2) OFDI_d	(3) OFDI_d	(4) OFDI_d
DCG	0.1961*** (0.0432)	0.2352*** (0.0474)	0.1294*** (0.0463)	0.1618*** (0.0982)
Size			0.2522*** (0.0644)	0.3191*** (0.1405)
Lev			1.2411*** (0.4063)	1.2956*** (0.8002)
ROA			1.3563 (1.2053)	1.8393 (2.0573)
Top 10			0.0112*** (0.0042)	0.0112*** (0.0081)
Tobin Q			-0.0194 (0.0942)	0.0483 (0.1322)
BM			-0.4202 (0.4410)	-0.4633 (0.6644)
Share			-0.0114** (0.0043)	-0.0103* (0.0091)
Age			0.0713 (0.1940)	0.0923 (0.5222)
Constant term	-1.1683*** (0.0753)	-1.0802*** (0.243)	-7.6954*** (1.3832)	-9.241*** (3.0143)
Sample size	1,755	1,755	1,755	1,755
R-squared	0.0122	0.0725	0.0616	0.1022
Annual fixed effect	NO	YES	NO	YES

4.3.2. Replacing explanatory variables

Following the approach of Liu Shuchun et al. (2021) [7], this study constructs a dummy variable (DCG_d) to indicate whether a firm undertook digital transformation in the current year, and

uses this variable to replace the explanatory variables. If the firm undertook digital transformation in the current year, the value is 1; if not, the value is 0. The specific regression results are shown in Column (1) of Table 5: The regression coefficient of the dummy variable DCG_d is 0.1878, which is significantly positive at the 1% level, indicating that after replacing the explanatory variables, the firm's digital transformation still has a significant positive impact on its foreign direct investment. The hypothesis of this paper, " H_1 ," is once again validated.

4.3.3. Instrumental Variables Method

This study uses the lagged values of the explanatory variable by one period and two periods as instrumental variables to mitigate the endogeneity issue caused by sample selection. Since the instrumental variables selected are the lagged values of the explanatory variable by one period and two periods, they satisfy the correlation assumption with the explanatory variables in this study. Additionally, the instrumental variables are uncorrelated with the disturbance term, thus satisfying the exogeneity assumption. Therefore, the selected alternative explanatory variables—one lag and two lags of private enterprise reverse mixed-ownership reform—are used as instrumental variables, satisfying the assumptions of correlation and exogeneity. Additionally, these instrumental variables pass the weak instrumental variable test and the exclusion property test. This paper uses two-stage least squares regression to test the instrumental variables. The results of the instrumental variable test are shown in column (2) of Table 5: The regression coefficient of DCG in the two-stage least squares regression is 0.0723, which is significantly positive at the 5% level, indicating that after controlling for omitted variables and measurement errors, digital transformation has a positive effect on firms' outward direct investment. Thus, the research hypothesis of this paper, " H_1 " holds.

Table 5. Robustness and Endogeneity Tests

variables	(1) OFDI	(2) OFDI
DCG_d	0.1878*** (0.0620)	
DCG		0.0723** 0.0352
Size	0.2104*** (0.0343)	0.1927*** (0.0457)
Lev	0.5540*** (0.2131)	0.5325** (0.2521)
ROA	0.7162 (0.6470)	0.4657 (0.6867)
Top 10	0.0055*** (0.0021)	0.0058** (0.0025)
Tobin Q	0.0149 (0.0487)	0.0447 (0.0538)
BM	-0.4250* (0.2325)	-0.3149 (0.2644)
Share	-0.0035* (0.0021)	-0.0038 (0.0028)
Age	0.0622 (0.1113)	0.2960** (0.1484)
Constant term	-4.3173*** (0.7458)	-4.1928*** (1.0233)
Sample size	1,755	1,297
R-squared	0.1269	0.1280
Annual fixed effect	YES	YES
Industry fixed effects	YES	YES

5. Mechanism Testing

Following the approach of Jiang Muchen (2023) [8], this study selects supply chain operational efficiency as the mediating variable for testing. Given that the previous section has demonstrated that digital transformation significantly promotes foreign direct investment, and supply chain operational efficiency may play a mediating role, this study further validates this mechanism through a mediation effect model. The results of the mediation effect regression are shown in Table 6: Column (1) shows the regression results of digital transformation on supply chain operational efficiency. The results indicate that digital transformation has a significant negative effect on inventory turnover days at the 1% level, suggesting that digital transformation can significantly reduce inventory turnover days and enhance supply chain operational efficiency. Column (2) shows that the coefficient of inventory turnover days on foreign direct investment is significantly negative, indicating that reducing inventory turnover days helps to increase the scale of foreign direct investment, i.e., supply chain operational efficiency can significantly enhance the scale of foreign direct investment. After introducing the mediating variable, digital transformation still significantly affects foreign direct investment, and the coefficient is lower than that in the baseline regression results in Table 3, indicating that supply chain operational efficiency has a partial mediating effect in the regression. Therefore, the hypothesis " H_2 " is validated.

Table 6. Mediating Effect Test

variables	(1) Scoe	(2) OFDI
DCG	-0.0413*** (0.0147)	0.0739*** (0.0258)
Scoe		-0.1134*** (0.0420)
Size	-0.0401** (0.0197)	0.2084*** (0.0345)
Kev	-0.7896*** (0.1217)	0.6398*** (0.2154)
ROA	-3.4141*** (0.3703)	1.2311* (0.6634)
Top 10	-0.0003 (0.0012)	0.0059*** (0.0021)
Tobin Q	0.0647** (0.0278)	0.0142 (0.0487)
BM	-0.0622 (0.1340)	-0.3324 (0.2344)
Share	0.0048*** (0.0012)	-0.0043** (0.0021)
Age	0.3403*** (0.0639)	0.0533 (0.1127)
Cash	-0.0672 (0.1013)	-0.0957 (0.1772)
Constant term	4.8583*** (0.4255)	-4.8835*** (0.7717)
Sample size	1,755	1,755
R-squared	0.112	0.1310
Annual fixed effect	YES	YES
Individual fixed effects	YES	YES

6. Heterogeneity Analysis

6.1. Heterogeneity in equity ownership

Following the approach of Chen Yanli and Qi Naiyuan [9], this study categorizes the sample firms into state-owned enterprises (SOEs) and non-state-owned enterprises (non-SOEs) based on equity ownership to examine the impact of equity ownership on the study's conclusions. The regression results are shown in columns (1) and (2) of Table 7: In state-owned enterprises, digital transformation has a significant positive impact on foreign direct investment; however, in non-state-owned enterprises, including foreign-invested enterprises and private enterprises, the impact of digital transformation on foreign direct investment is not significant. The possible reason is that digital transformation requires financial support, and state-owned enterprises have strong financing capabilities, enabling them to secure adequate funding for digital transformation. Additionally, with the continuous development of digital technology and the expansion of reform and opening-up, state-owned enterprises are better positioned and more willing to expand the scale of their foreign direct investment compared to other enterprises. Therefore, the promotional effect of digital transformation on foreign direct investment may be stronger in state-owned enterprises.

Table 7. Heterogeneity Analysis

VARIABLES	(1) State-owned enterprises	(2) Non-state-owned enterprises	(3) Large enterprises	(4) Small and medium-sized enterprises
	OFDI	OFDI	OFDI	OFDI
DCG	0.2066*** (0.0555)	0.0375 (0.0298)	0.1395*** (0.0321)	0.0079 (0.0413)
Size	0.3638*** (0.0680)	0.1811*** (0.0427)	0.0420 (0.0622)	0.2367*** (0.0570)
Lev	-0.4247 (0.4493)	0.7683*** (0.2645)	0.7465** (0.2937)	0.1975 (0.3241)
ROA	-2.1987 (1.5335)	2.3296*** (0.8223)	1.8082** (0.7899)	-0.8992 (1.2752)
Top 10	0.0104** (0.0045)	0.0044* (0.0025)	0.0064** (0.0027)	0.0048 (0.0032)
TobinQ	-0.3624** (0.1567)	0.0746 (0.0547)	-0.0665 (0.0569)	0.1227 (0.0984)
BM	-2.0999*** (0.5786)	0.0957 (0.2739)	-0.5969* (0.3323)	-0.3890 (0.3741)
Share	0.0216 (0.0172)	-0.0056*** (0.0021)	-0.0111*** (0.0023)	0.0085** (0.0037)
Age	0.1800 (0.3146)	0.1018 (0.1290)	-0.1401 (0.1474)	0.3686** (0.1660)
Cash	-3.3959*** (1.0780)	0.5202 (0.6070)	-0.2588 (0.6614)	-0.9847 (0.7911)
Constant term	-5.6776*** (1.6066)	-4.3247*** (0.9234)	-0.1865 (1.3307)	-5.5495*** (1.2393)
Sample size	465	1,222	880	875
R-squared	0.2047	0.1333	0.1364	0.1200
Annual fixed effect	YES	YES	YES	YES
Individual fixed effects	YES	YES	YES	YES

6.2. Enterprise Scale Heterogeneity

Following the approach of Lin Yifu^[10], this paper first ranks the annual average operating revenue of firms during the sample period. The top 50% of firms with the highest annual average operating revenue are classified as large firms, while the remaining firms are classified as small and medium-sized firms (SMEs) to examine the impact of firm size on the findings of this study. The results of the grouped regression are shown in columns (3) and (4) of Table 7: In large enterprises, digital transformation has a significant positive impact on foreign direct investment (at the 1% significance level), while the coefficient for SMEs is positive but not significant, indicating that digital transformation in large enterprises effectively promotes foreign direct investment. Large enterprises have larger scales and stronger risk-bearing capabilities. Additionally, large enterprises invest more funds in digital transformation and development, and possess stronger willingness and capability for foreign investment. Therefore, digital transformation in large enterprises may have a stronger effect on promoting foreign direct investment.

7. Research Conclusions and Policy Recommendations

7.1. Research Findings

This study uses A-share listed companies in Shandong Province's manufacturing sector from 2011 to 2023 as a sample to empirically examine how corporate digital transformation affects foreign direct investment behavior. The findings indicate that digital transformation significantly increases the scale of foreign direct investment. After testing for endogeneity and robustness, the conclusions remain valid. The mechanism analysis demonstrates that digital transformation can enhance the scale of foreign investment by improving supply chain efficiency and reducing inventory turnover days. Heterogeneity analysis further reveals that this positive effect is significant in state-owned enterprises and large firms, while the positive impact is not significant in non-state-owned enterprises and small and medium-sized firms. The findings of this study contribute to the existing literature on digital transformation and foreign direct investment.

7.2. Policy Recommendations

From the government's perspective, it is necessary to improve digital infrastructure support, increase financial support for emerging digital technology fields, and provide a solid foundation for enterprise digital transformation. At the same time, cross-border data circulation platforms should be established to promote the safe and orderly flow of international data, reduce information barriers for overseas investment, and drive the growth of overseas direct investment. It is necessary to optimize international digital cooperation mechanisms, actively participate in the formulation of international digital trade rules, and promote bilateral or multilateral digital cooperation agreements to create a stable overseas investment environment for enterprises. At the same time, it is necessary to strengthen data security cooperation with other countries to reduce the policy risks of cross-border operations for enterprises.

From the perspective of enterprises, companies should actively accelerate the application of digital technologies, utilize emerging digital technologies to build digital management platforms, and enhance cross-border operational efficiency. At the same time, they should focus on strengthening the cultivation of digital talent, nurturing composite talents who are proficient in digital technologies and possess an international perspective, to enhance the team's cross-border management capabilities and promote the steady and positive development of cross-border investments.

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