

Can Technological Innovation Promote Internationalization of Enterprises: Empirical Evidence Based on Chinese A-Share Listed Companies

Wang Siyi

Jiangxi University of Finance and Economics, Nanchang, Jiangxi, China

Abstract: Technological innovation is not only an important manifestation of a company's core competitiveness, but also a key means for international expansion. This article takes Chinese A-share listed companies as samples to empirically test the impact and mechanism of technological innovation on corporate internationalization. Research has found that technological innovation can significantly promote the internationalization of enterprises. Mechanism testing shows that technological innovation can promote internationalization of enterprises by reducing information asymmetry and facilitating digital transformation. Further research has found that the positive effect of technological innovation on corporate internationalization is more pronounced in large-scale, state-owned, and non-overseas executive enterprises. Based on this, suggestions are made for the government and enterprises: the government should encourage enterprises to engage in technological innovation and formulate differentiated policies according to regional and enterprise characteristics; Enterprises should attach importance to the application of digital technology and adopt an internationalization strategy.

Keywords: Technological Innovation; Internationalization of Enterprises; Information Asymmetry; Digital Transformation

1. Introduction

Since the implementation of the "going global" strategy and China's accession to the World Trade Organization (WTO), China's connection with the international market has deepened, demonstrating a strong endogenous drive to participate in the international market. According to data from the World Trade

Organization, in 2021, China's total import and export of goods accounted for 13.5% of the global total of goods trade, making it the world's largest trading country. In 2022, China's cumulative exports reached nearly 24 trillion yuan, cumulative imports reached 18.1 trillion yuan, and the final total foreign trade reached 42.1 trillion yuan, a year-on-year increase of 7.7%, with a trade surplus of 5.9 trillion yuan. However, the internationalization of enterprises is not always smooth sailing. On the one hand, the external environment of Chinese enterprises has deteriorated. In 2018, Sino US trade frictions, rising trade protectionism, and the global spread of the COVID-19. High inflation and tightening financial conditions in major economies around the world have weakened the prospects for economic growth, causing a certain negative impact on enterprises participating in the international market. In 2022, China's outward foreign direct investment was 163.12 billion US dollars, resulting in a 14% decrease in global foreign direct investment outflows and a significant decline in cross-border mergers and acquisitions. On the other hand, with the rapid development of the Chinese economy, the comparative advantage of factor costs in some industries has decreased. In the face of risks and challenges brought by internal and external environments, the report pointed out that efforts should be made to promote high-quality development and build a new development pattern. The report emphasizes the need to adhere to the principle that science and technology are the primary productive forces, talent is the primary resource, and innovation is the primary driving force. We must deeply implement the strategies of rejuvenating the country through science and education, strengthening the country through talent, and innovation driven development, open up new fields and tracks for development, and continuously shape new driving forces and

advantages for development. With the proposal of a high-quality development strategy, how to enhance the international competitiveness of enterprises will be the key to achieving high-quality development in the future.

Driven by the "the Belt and Road" construction and the new development pattern of "domestic and international double circulation", internationalization has become an important strategy for enterprises. Internationalization of enterprises refers to the process of expanding business scope, entering international markets, and engaging in global competition and cooperation. Internationalization of enterprises not only requires a stable external environment, but also requires good financing capabilities to invest more funds and resources, strong research and development capabilities to generate distinctive brands and values, extensive cooperation and negotiation abilities, and information gathering capabilities to adapt to different legal environments and regulations, as well as language and cultural differences. Up to now, there is still a lack of research on the impact of technological innovation on internationalization. Previous studies have explored the influencing factors of enterprise internationalization from the perspectives of environment (Ren et al., 2019) [12], internal corporate governance (Yuan and Wei, 2022), and development capacity (Yang et al., 2023) [14]. Although the role of innovation in corporate performance has long been emphasized (Zhou and Zhang, 2022), domestic research ignores the direct impact of technological innovation on internationalization (Bagheri et al., 2018) [17]. According to the statistical data, China's effective patent licensing rate in 2019 was 6.1%, indicating that a large number of patents were idle, and the research results did not produce actual value. In fact, the most important products and business activities for enterprises to participate in the international market have international competitiveness, and an enterprise with research and development capabilities to innovate technology and transform it into practical results becomes the key to its international competitiveness, which will affect its internationalization. In summary, under the background of the new development pattern, studying how Chinese enterprise technological innovation affects the internationalization development of enterprises and its mechanism has important practical value and enlightening

significance.

The marginal contribution of this article lies in: firstly, as a core factor for studying the high-quality development of enterprises, technological innovation is used as a starting point to study the impact of technological innovation on enterprise internationalization. This not only enriches the relevant research on the impact of technological innovation on enterprise behavior, but also further expands the research on internationalization as an influencing factor of enterprise strategy; Secondly, an in-depth analysis of the channels through which technological innovation affects the internationalization of enterprises was conducted from the perspectives of information asymmetry and digital transformation. This helps enterprises to formulate effective international strategies and enhance their international competitiveness. Thirdly, the different impacts of technological innovation on the internationalization of enterprises were discussed under specific situational factors, in order to help the government and enterprises provide reasonable suggestions and efficiently and comprehensively promote the internationalization development of China's real economy.

2. Theoretical Analysis and Research Hypotheses

Technological innovation, as one of the important driving forces within enterprises, aims to continuously improve and optimize production technology and management models, thereby promoting enterprise transformation and upgrading, enhancing product quality, meeting diverse needs with differentiated products, increasing market share, and promoting high-quality development of enterprises (Zhang et al., 2023) [4]. According to the theory of new economics, companies should adopt more internationalization strategies in terms of markets and resources to achieve excellent performance in global market competition (Zhou and Zhang, 2022) [6]. The premise of the new economy is to be led by high-tech, effectively integrating the virtual economy and the real economy through technological innovation, achieving efficient allocation of various economic factors, and thus realizing a new paradigm of economic growth, promoting the internationalization of enterprises. Enterprises generate organizational resilience through

innovative activities, improve resource integration and risk response capabilities, promote industrial chain upgrading, enhance international competitiveness of enterprises (Guo et al., 2021) [10], and promote internationalization of enterprises. Therefore, based on the above analysis, the following hypotheses are proposed:

H₁: Technological innovation can promote the internationalization of enterprises.

Furthermore, based on existing theories and research conclusions, this article explores the potential mechanism of technological innovation on enterprise internationalization from the perspectives of financing incentives and digital transformation.

Technological innovation in enterprises is beneficial for improving external and internal information asymmetry, thereby promoting the internationalization of enterprises. In the process of international expansion of enterprises, high information asymmetry is not conducive to the market obtaining business information of enterprises and hinders the sales of enterprise products in overseas markets. In addition, financing constraints caused by information asymmetry can also lead to financial constraints for international expansion of enterprises. Furthermore, the information disclosure process added by enterprises in the process of technological innovation helps the external market to understand the true business situation of the enterprise and reduce information asymmetry. Specifically, the increase in technological innovation often means that enterprises have more new technologies. Based on new technologies, enterprises can more accurately assess market and credit risks and take corresponding risk management measures. The improvement of this ability helps companies to more actively disclose their true profit situation, further enhance information transparency, and ultimately assist in their international expansion. Therefore, based on the above analysis, the following hypotheses are proposed:

H₂: Technological innovation promotes enterprise internationalization by reducing information asymmetry.

In the context of the development of the digital economy, digital technologies such as big data, cloud computing, and artificial intelligence are deeply integrated with various aspects and fields of enterprises. After extensive research, existing

literature has confirmed the empowering effect of digital transformation on enterprises to carry out high-quality internationalization activities (Wang et al., 2022) [7]. This is because digital transformation helps overcome the disadvantages of external competition, continuously optimize internal and external resource allocation, improve the dynamic adjustment ability of enterprises, and further promote internationalization. In addition, digital transformation helps to build a healthy business ecosystem, reduce transaction costs, enhance value creation capabilities, and promote enterprise internationalization. In the process of innovating digital productivity tools, technological innovation has become the key to digital transformation. Technological innovation can enhance the research and development capabilities of enterprises (Su et al., 2017) [15], generate spillover effects, and drive digital transformation of enterprises. Technological innovation, as an external innovation element of the industry, affects multiple aspects of the value chain, such as management processes, patent research and development, and production. The innovation of existing technologies and the application of emerging technologies can help shorten the research and development cycle, promote the application of emerging technologies, enhance the digital sustainability of enterprises, obtain excess returns, and promote the full cycle development of enterprises (Lin, 2023) [8]. Technological innovation will optimize the resource allocation of enterprises, improve their efficiency, and directly promote their digital transformation. Meanwhile, technological innovation indirectly drives the digital transformation of enterprises through two paths: industrial characteristics and talent advantages (Xu, 2023) [9]. Therefore, based on the above analysis, the following hypotheses are proposed:

H₃: Technological innovation promotes internationalization of enterprises by driving digital transformation.

3. Research Design

3.1 Sample Selection and Data Sources

To avoid the impact of empirical results from financial crises and public health events, this article takes Chinese A-share listed companies from 2010 to 2010 as the initial research sample. The basic characteristics and financial data of

listed companies are sourced from the CSMAR database. To ensure the effectiveness of empirical testing, this article processed the research sample as follows: (1) excluded ST and * ST enterprise samples; (2) Exclude samples of financial and real estate enterprises; (3) Delete samples with missing variable observations; (4) Exclude samples with an asset liability ratio greater than 1 and those listed in the first year. To avoid the influence of extreme values, this article applies a 1% truncation to all continuous variables. After the above screening, a total of 25254 samples were obtained in this article.

3.2 Indicator Selection and Variable Definition

Explained variable: Corporate Internationalization (FSTS). According to the research of Zhou et al. (2017) and Yuan and Wei (2022), this article uses the ratio of overseas operating revenue to total operating revenue to measure the internationalization of enterprises (FSTS) [1,2], thereby reflecting the degree of resource investment of enterprises in overseas markets.

Explanatory variables: Technological innovation (Tech). In existing literature, common indicators for measuring technological innovation mainly include patents and R&D investment. Among them, patents focus more on the achievements of technological innovation, highlighting the creativity and innovation of enterprises in new technologies. Referring to the research of Chang et al. (2022) [3], this article selects the number of domestic patent applications and performs natural logarithmic processing to measure the degree of technological innovation.

Control variables: Based on previous research, this article selects the following control variables: enterprise size (Size, natural logarithm of total assets), current ratio (Liqu, ratio of total current assets to owner's equity), enterprise age (Age, natural logarithm of the difference between the current year and the year of establishment), enterprise performance (ROA, return on total assets), enterprise growth (Growth, growth rate of operating income), board size (Board, natural logarithm of board size), and proportion of independent directors (Indep, ratio of independent directors to board size). In addition, this article also controls for fixed effects of year and industry.

3.3 Model Construction

To study the impact of technological innovation on enterprise internationalization, this article constructs the following econometric model:

$$FSTS_{i,t} = \alpha_0 + \alpha_1 Tech_{i,t} + Controls_{i,t} + Year + Industry + \varepsilon_{i,t} \quad (1)$$

In model (1), i represents the individual enterprise and t represents the year; FSTS is the dependent variable, representing the degree of internationalization of listed company i in year t ; Tech is the explanatory variable, representing the technological innovation level of listed company i in year t ; Controls is the main control variable selected in this article; Year and Industry represent the fixed effects of year and industry, respectively; ε is a random perturbation term.

4. Empirical Results and Analysis

4.1 Descriptive Statistics

Table 1 presents the descriptive statistical results of the main variables in this article. The average degree of internationalization of enterprises is 0.126, indicating that overseas sales revenue accounts for an average of 12.6% of total sales revenue. The minimum value of enterprise internationalization is 0, the maximum value is 0.822, and the standard deviation is -0.207 indicates that there are significant differences in the degree of internationalization among different enterprises. Some enterprises have already moved towards internationalization and have a high degree of internationalization, while others have not yet adopted an internationalization development strategy. This indicates that the internationalization of Chinese enterprises needs to be further strengthened. The average level of technological innovation is 2.427, with a minimum value of 0 and a maximum value of 6.558. The mean is much higher than the minimum value, indicating that the overall level of technological innovation in enterprises is relatively high. However, the range indicates that there are significant differences in the level of technological innovation among different enterprises. The descriptive statistical results of the remaining control variables are basically consistent with existing literature and will not be further elaborated.

4.2 Benchmark Regression

Table 2 shows the results of the benchmark regression in this article. Column (1) shows the regression results with only the core explanatory

variable Tech included, and the regression coefficient of Tech is 0.0198, which is positively significant at the 1% level. Columns (2)-(3) include control variables, year, and industry fixed effects in the regression based on column (1). The regression coefficients for the explanatory variable Tech are 0.0236 and 0.085, respectively, which are also positively significant at the 1% level. Based on column (3),

it can be observed that for every one standard deviation (1.749) increase in Tech, the internationalization level of the company will increase by 7.18% standard deviations ($1.749 \times 0.0085/0.207 \times 100\%$). This indicates that technological innovation helps to improve the internationalization level of enterprises. Thus, hypothesis 1 of this article has been confirmed.

Table 1. Descriptive Statistical Results of Variables

Variable	Number	Mean	Std	Median	Min	Max
FSTS	22809	0.126	0.207	0.014	0	0.882
Tech	22809	2.427	1.749	2.565	0	6.558
Size	22809	22.090	1.303	21.907	19.484	26.031
Liqu	22809	0.172	0.139	0.130	0.009	0.677
Age	22809	2.809	0.369	2.890	1.386	3.434
ROA	22809	0.042	0.056	0.039	-0.224	0.199
Growth	22809	0.174	0.462	0.101	-0.595	3.246
Board	22809	2.134	0.198	2.197	1.609	2.708
Indep	22809	0.374	0.054	0.333	0.300	0.571

Table 2. Benchmark Regression

	(1)	(2)	(3)
	FSTS	FSTS	FSTS
Tech	0.0198*** (28.103)	0.0236*** (14.169)	0.0085*** (3.970)
Size		-0.0178*** (-6.892)	-0.0059** (-2.047)
Liqu		-0.0174 (-0.825)	0.0270 (1.261)
Age		-0.0242*** (-2.705)	-0.0225** (-2.186)
ROA		-0.0585 (-1.398)	-0.0594 (-1.454)
Growth		-0.0032 (-1.113)	-0.0008 (-0.289)
Board		-0.0381** (-2.267)	-0.0226 (-1.346)
Indep		-0.0233 (-0.404)	0.0189 (0.333)
Year	No	No	Yes
Industry	No	No	Yes
N	22809	22809	22809
Adj-R2	0.1610	0.1604	0.1600

4.3 Robustness Test

When conducting benchmark regression in this article, the natural logarithm of patent application volume is used to measure the level of technological innovation of enterprises, and the proportion of overseas operating income to total operating income is used to measure the degree of internationalization of enterprises. To

avoid bias caused by variable measurement methods on the empirical results of this article, we will conduct a robustness test on the replacement of variable measurement methods in this section. In terms of explanatory variables, we use the ratio of R&D investment to operating revenue and the natural logarithm of the number of patent authorizations to re measure the level of technological innovation in enterprises, denoted as RD and Patent, respectively. The regression results in columns (1)-(2) of Table 3 show that the regression coefficients of RD and Patent are significantly positive at the 1% level, indicating that technological innovation can still improve the internationalization level of enterprises. In terms of the dependent variables, we use the natural logarithm of overseas income and the ratio of overseas income to total assets to re measure the internationalization level of the enterprise, denoted as FSTS1 and FSTS2, respectively. Substituting FSTS1 and FSTS2 as dependent variables into econometric model (1) for regression, the results are shown in columns (3)-(4) of Table 3. The regression coefficient of Tech is still significantly positive at the 1% level, and the conclusion is consistent with the benchmark regression.

Table 3. Change Variable Measurement Method

	(1)	(2)	(3)	(4)
	FSTS	FSTS	FSTS1	FSTS2
Tech			1.0232*** (11.058)	0.0096*** (4.806)
RD	1.3192***			

	(6.390)			
Patent		0.0093***		
		(4.052)		
Size	0.0004	-0.0061**	0.7801***	-0.0041*
	(0.145)	(-2.110)	(6.075)	(-1.656)
Liqu	0.0195	0.0271	-2.6446***	-0.0123
	(0.911)	(1.263)	(-3.407)	(-0.789)
Age	-0.0189*	-0.0222**	-1.4717***	0.0014
	(-1.822)	(-2.161)	(-3.724)	(0.180)
ROA	-0.0989**	-0.0553	-3.4796**	0.0718**
	(-2.397)	(-1.353)	(-2.060)	(2.189)
Growth	0.0002	-0.0006	-0.2875**	-0.0074***
	(0.065)	(-0.205)	(-2.516)	(-3.186)
Board	-0.0224	-0.0226	-0.2429	-0.0084
	(-1.334)	(-1.347)	(-0.315)	(-0.599)
Indep	0.0176	0.0177	4.6076*	0.0082
	0.0004	(0.312)	0.7801***	-0.0041*
Year	Yes	Yes	Yes	Yes
Industry	Yes	Yes	Yes	Yes
N	25254	25254	25252	25254
Adj-R2	0.0982	0.0930	0.2888	0.0632

Considering the possible non-linear relationship between technological innovation and enterprise internationalization, this paper further introduces the quadratic term Tech_2 of technological innovation in model (1), and the regression results are shown in column (1) of Table 4. It can be seen that the estimated coefficient of Tech_2 did not pass the significance test, indicating that there is no nonlinear relationship between technological innovation and enterprise internationalization. In addition, to avoid the influence of sample selection bias on the empirical results of this article, we have carried out the following two aspects of work. On the one hand, after excluding samples affected by the stock market crash (2015) and conducting regression tests again, the results are shown in column (1) of Table 4, where the regression coefficient of Tech is significant at the 1% level. On the other hand, manufacturing is the mainstay of China's real economy, and it is also the industry with the highest proportion in the entire sample. Therefore, to eliminate the interference of specific industry factors, this article only retained sample data from manufacturing enterprises for testing. The results are shown in column (2) of Table 4, and the benchmark regression results still hold true.

Table 4. Replace Models and Samples

	(1)	(2)	(3)
	FSTS	FSTS	FSTS
Tech	0.0066	0.0085***	0.0109***
	(1.492)	(3.978)	(3.710)
Tech_2	0.0004		

	(0.447)		
Size	-0.0061**	-0.0058**	-0.0146***
	(-2.096)	(-2.030)	(-3.513)
Liqu	0.0267	0.0262	0.0160
	(1.241)	(1.227)	(0.568)
Age	-0.0226**	-0.0228**	-0.0328**
	(-2.193)	(-2.234)	(-2.306)
ROA	-0.0595	-0.0661	-0.0297
	(-1.456)	(-1.586)	(-0.545)
Growth	-0.0009	-0.0023	-0.0056
	(-0.319)	(-0.756)	(-1.328)
Board	-0.0226	-0.0246	0.0005
	(-1.342)	(-1.465)	(0.020)
Indep	0.0183	0.0117	0.0451
	(0.322)	(0.206)	(0.557)
Year	Yes	Yes	Yes
Industry	Yes	Yes	Yes
N	25254	22768	16315
Adj-R ²	0.0928	0.0929	0.0202

4.4 Mechanism Analysis

The benchmark regression results indicate that technological innovation significantly improves the internationalization level of enterprises, but what is the transmission mechanism between the two? According to the theoretical analysis in the previous text, technological innovation may have a positive impact on the internationalization level of enterprises by alleviating information asymmetry and promoting the process of digital transformation. To verify the above logic, this article draws on the approach of Ding Yifan and Cao Huiping (2024) to conduct the following mechanism test: firstly [16], the proportion of absolute value of manipulative accruals to total assets of listed companies, Opaue, and analyst prediction error FERROR, are used to measure the degree of information asymmetry of the enterprise, denoted as. The larger the Opaue and FERROR, the higher the degree of information asymmetry in the enterprise. Using Opaue and FERROR as dependent variables in econometric model (1) for regression, the results are shown in column (1) of Table 5. It can be seen that the regression coefficient of Tech is significantly negative at the 1% level, indicating that technological innovation effectively reduces the degree of information asymmetry in enterprises. Secondly, following the approach of Wu Fei et al. (2021) [11], the natural logarithm of the frequency of digital words in the annual report of a company is used to measure its level of digitalization,

denoted as Digit. The larger the digit, the higher the degree of digital transformation of the enterprise. Substitute Digit as the dependent variable into the econometric model (1) for regression, and the results are shown in column (3) of Table 5. It can be seen that the regression coefficient of Tech is significantly positive at the 1% level, indicating that technological innovation has effectively improved the level of digital transformation of enterprises.

Overall, hypotheses 2 and 3 hold true in this article.

Table 5. Mechanism Analysis

	(1)	(2)	(3)
	<i>Opau</i>	<i>FERROR</i>	<i>Digit</i>
<i>Tech</i>	-0.0051*** (-4.727)	-0.0962*** (-3.582)	0.1221*** (13.164)
<i>Size</i>	-0.0006 (-0.400)	-0.2543*** (-6.529)	0.0476*** (3.598)
<i>Liqu</i>	-0.0117 (-0.677)	-2.1019*** (-7.307)	0.5560*** (5.636)
<i>Age</i>	0.0015 (0.254)	-0.0496 (-0.432)	-0.1194*** (-2.620)
<i>ROA</i>	0.0205 (0.814)	-22.4496*** (-29.809)	-0.1297 (-0.636)
<i>Growth</i>	0.0024 (0.970)	-0.1805* (-1.746)	0.0311* (1.928)
<i>Board</i>	-0.0374*** (-3.770)	-0.2625 (-0.921)	-0.1142 (-1.327)
<i>Indep</i>	0.0057 (0.172)	1.6269* (1.854)	0.5256* (1.751)
<i>Year</i>	Yes	Yes	Yes
<i>Industry</i>	Yes	Yes	Yes
<i>N</i>	16056	22591	25254
<i>Adj-R²</i>	0.1255	0.0934	0.4004

5. Further Discussion

The previous results mainly focused on the average effect of technological innovation on the internationalization of enterprises, ignoring whether this core research conclusion has differentiated performance in different scenarios. Therefore, this article further conducts heterogeneity tests from three aspects: scale, property rights, and executive characteristics, in order to provide more empirical evidence for understanding the impact of technological innovation on corporate internationalization.

Firstly, heterogeneity analysis based on enterprise size. The scale of a company, as one of its fundamental characteristics, affects its level of internationalization. Referring to the research results of Li Xuetong (2021) [5], this

article takes the median size of the sample enterprises as the dividing point. Enterprises with a size larger than the median are classified as large-scale enterprise samples, while those with a size larger than the median are classified as small and medium-sized enterprise samples. The results of the grouped regression are shown in columns (1) and (2) of Table 6. In large-scale enterprises, the regression coefficient of Tech is significantly positive at the 1% level, while in small and medium-sized enterprises, the significance and magnitude of the regression coefficient of Tech have significantly decreased. This indicates that compared to small and medium-sized enterprises, technological innovation has a more significant effect on improving the internationalization level of large-scale enterprises. This may be due to factors such as resource scarcity and weak shock resistance, making it difficult for small and medium-sized enterprises to fully leverage the economic benefits of technological innovation.

Secondly, heterogeneity analysis based on corporate property rights. In terms of the nature of corporate equity, this article divides it into two major groups: state-owned enterprises and private enterprises. There are significant differences between state-owned enterprises and private enterprises in terms of resources, organizational structure, and status advantages, leading to different strategic choices between state-owned and non-state-owned enterprises. This article conducts grouped regression based on the nature of equity, and the regression results are shown in columns (3) - (4) of Table 6. In state-owned enterprises, the regression coefficient of Tech is significantly positive at the 1% level, while in private enterprises, the significance and magnitude of the regression coefficient of Tech have significantly decreased. This indicates that compared to private enterprises, technological innovation has a more significant effect on improving the internationalization level of state-owned enterprises. Possible reasons for this result include: state-owned enterprises relying on policy support are more likely to leverage technological innovation to empower their overseas expansion.

Thirdly, based on heterogeneity analysis of overseas executives. This article grouped the sample for regression based on whether the executives of the company had overseas backgrounds in the current year. The regression

results are shown in columns (5) - (6) of Table 6. In companies without overseas executives, the regression coefficient of Tech is significantly positive at the 1% level, while in companies with overseas executives, the regression coefficient of Tech did not pass the significance test. This indicates that compared to companies with overseas executives, technological

innovation has a more significant effect on improving the internationalization level of state-owned enterprises. Possible reasons for this result include: companies with overseas executives have more experience in international expansion, so the marginal impact of technological innovation on corporate internationalization is not significant.

Table 6. Heterogeneity analysis

	(1)	(2)	(3)	(4)	(5)	(6)
	large-scale	Small and medium-sized	state-owned	privately operated	No overseas executives	overseas executives
	<i>FSTS</i>	<i>FSTS</i>	<i>FSTS</i>	<i>FSTS</i>	<i>FSTS</i>	<i>FSTS</i>
<i>Tech</i>	0.0107*** (3.977)	0.0068** (2.187)	0.0116*** (4.064)	0.0072** (2.513)	0.0136*** (5.379)	0.0030 (1.034)
<i>Size</i>	-0.0089** (-2.054)	-0.0009 (-0.188)	-0.0036 (-0.948)	0.0030 (0.672)	-0.0133*** (-4.256)	-0.0020 (-0.501)
<i>Liqu</i>	0.0272 (0.876)	0.0355 (1.246)	0.0799* (1.795)	0.0191 (0.785)	-0.0005 (-0.020)	0.0349 (1.214)
<i>Age</i>	-0.0146 (-1.082)	-0.0310** (-2.190)	0.0190 (1.173)	-0.0200 (-1.553)	-0.0153 (-1.275)	-0.0220 (-1.606)
<i>ROA</i>	-0.2050*** (-3.595)	0.0498 (0.925)	-0.2650*** (-3.783)	-0.0346 (-0.700)	-0.0615 (-1.239)	-0.0625 (-1.102)
<i>Growth</i>	0.0071 (1.224)	-0.0033 (-1.028)	-0.0076** (-2.022)	0.0017 (0.440)	-0.0071** (-2.129)	0.0058 (1.203)
<i>Board</i>	-0.0034 (-0.161)	-0.0451* (-1.795)	-0.0028 (-0.127)	0.0053 (0.213)	-0.0175 (-1.013)	-0.0391 (-1.548)
<i>Indep</i>	-0.0179 (-0.258)	0.0531 (0.617)	-0.0198 (-0.291)	0.0899 (1.063)	-0.0269 (-0.419)	0.0512 (0.640)
<i>Year</i>	Yes	Yes	Yes	Yes	Yes	Yes
<i>Industry</i>	Yes	Yes	Yes	Yes	Yes	Yes
<i>N</i>	12627	12627	9313	15941	11718	13536
<i>Adj-R²</i>	0.0800	0.1088	0.0928	0.0916	0.0976	0.0988

6. Conclusion and Implications

6.1 Research Conclusion

Due to the intensification of international geopolitical competition, the shift in domestic economic growth rate, and the joint promotion of the rising international competitiveness of enterprises, Chinese enterprises should move from "going global" to "internationalization". In the current complex and ever-changing domestic and international situation, enterprises should focus on technological innovation, enhance their competitiveness, and embrace the new pattern of internationalization. This article selects Chinese A-share listed companies from 2010 to 2019 as samples to empirically test the impact of technological innovation on corporate internationalization. Research has found that firstly, technological innovation can significantly

promote the internationalization of enterprises; Secondly, technological innovation can promote enterprise internationalization by reducing information asymmetry and facilitating digital transformation; Thirdly, in terms of heterogeneity analysis, the positive effect of technological innovation on corporate internationalization is more pronounced in large-scale, state-owned, and non-overseas executive enterprises.

6.2 Policy Recommendations

Based on the above conclusions, this article proposes the following suggestions: at the government level, the government should encourage enterprises to engage in technological innovation and develop differentiated policies based on regional and enterprise characteristics. Technological innovation is one of the important driving forces for promoting economic growth

and social development. The government encourages enterprises to engage in technological innovation, promotes industrial upgrading, enhances competitiveness, and creates more employment opportunities for society. The government can formulate relevant policies to increase support for technological innovation in enterprises. Policies may include providing financial support and tax incentives, establishing innovation funds or venture capital funds, providing professional training and technology transfer services, simplifying administrative approval procedures, etc. In addition, the government can promote technology cooperation and sharing among enterprises by strengthening intellectual property protection and establishing cooperation platforms, and encourage enterprises to engage in innovative research and development. The government needs to consider the characteristics and needs of different industries and enterprises when formulating differentiated policies. The government should formulate targeted policies based on the development status, competitive environment, and market demand of different industries to meet the actual needs of enterprises and stimulate their technological innovation.

At the enterprise level, companies should realize the importance of technological innovation and enhance their internationalization level through cutting-edge technology development. In today's digital age, technological innovation has become an important tool for enterprises to improve efficiency, innovate products and services, and expand markets. Through digital data processing and automated tools, enterprises can improve production efficiency, optimize supply chain management, strengthen internal communication and collaboration. Digitization provides real-time data analysis and decision support, helping businesses better understand market demand and consumer behavior, and make accurate decisions. At the same time, through digital transformation, enterprises can interact more directly with consumers and develop innovative products and services that meet market demands, breaking traditional geographical limitations and making it easier for enterprises to enter international markets and expand global business. In addition, companies should adopt an internationalization strategy. Participating in the international market can allow enterprises to access more markets and consumer groups, and gain broader development

opportunities. While acquiring new technologies and knowledge and engaging in technological innovation and knowledge sharing with international partners, enterprises can also reduce their dependence on a single market and minimize the impact of market fluctuations on them. However, when enterprises undergo digital transformation and adopt internationalization strategies, they need to pay attention to the challenges and risks they face. Enterprises need to have the corresponding technological capabilities and resource investment to promote digital transformation and protect the security and privacy of user data. Enterprises need to understand the culture, laws, and business environment of their target market in advance, and develop corresponding strategies and measures to adapt to international market demands and competitive environments.

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