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The Impact of Overseas Mergers and Acquisitions on Corporate Business Risk——An Empirical Analysis Based on Chinese Listed Enterprises

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Abstract— *Overseas mergers and acquisitions (M&A) has become an important route for companies to enter the international market, but there is a lack of clear answers in the existing literature on how overseas M&A affects corporate business risk. This paper empirically examines the impact of overseas M&A on corporate business risk based on propensity score matching and difference-in-difference method using financial data of Chinese listed companies matched with cross-border M&A transaction data from Wind database from 2010 to 2019. The findings show that overseas M&A significantly reduce corporate business risk through the diversification risk dispersion effect; the heterogeneity analysis shows that overseas M&A have a more significant effect on reducing business risk for private enterprises compared to state-owned enterprises. The findings of the study provide more direct empirical evidence for the government's strategy of encouraging and supporting enterprises to "go global".*

Keywords— *Overseas merger and acquisition; business risk; propensity score matching; difference-in-difference.*

I. Introduction

With the deepening of economic globalization, enterprises have gone abroad to optimize resource allocation and improve international competitiveness through outward foreign direct investment across borders and regions. According to the statistical data of the Statistical Bulletin on China's Outward Foreign Direct Investment in 2020, China's outward foreign direct investment in 2020 was US$153.71 billion, an increase of 12.3% year-on-year, and the flow scale ranked first in the world for the first time. Overseas M&A is the main outward foreign direct investment activity for companies, and is a more effective and rapid foreign market entry strategy than greenfield investment. Overseas M&A enables companies to enter new markets quickly, gain access to key natural resources and strategic assets, and achieve economies of scale and scope.

Successful overseas acquisitions can bring immeasurable benefits to the acquiring company. Theoretically, overseas M&A can help companies achieve their goals of global industry chain layout, building a resource and experience base and strategic transformation. Overseas M&A takes advantage of the low correlation between economic fluctuations in different countries, reducing the risk of volatility in expected returns by weakening the correlation between revenues of different branches in international markets (Krapl, 2015). However, as a highly complex economic activity, overseas M&A is often costly, time-consuming and complex to operate, all of which can lead to increased risks for companies and thus affect the effectiveness of their acquisitions. In addition, increasing global economic uncertainty due to rising protectionism, bicultural differences and the spread of the COVID-19 may also raise M&A costs and financial risks for companies and impede the internal transfer of resources and capabilities, which in turn may affect the operational stability of the merging companies. Therefore, it is necessary to pay attention to the changes in corporate business risks brought by overseas M&A. This paper focuses on the overseas M&A behaviour of Chinese listed enterprises, divides listed enterprises into experimental and control groups based on whether overseas M&A activities have occurred or not, matches the sample of overseas M&A enterprises 1:1 year by year based on the propensity score matching (PSM) method, and empirically examines the impact of overseas M&A on enterprise business risk using the difference-in-difference (DID) method on this basis. The research expands the research perspective of overseas M&A activities, and provides a useful reference for Chinese enterprises to further implement their internationalization strategy.

II. Theoretical Analysis

An accurate definition of overseas M&A is an important prerequisite for analysing how it affects the business risks of a company. An overseas M&A is a merger or acquisition of a certain percentage of the equity of an enterprise in another country by a multinational operating company through certain channels and means of payment, thereby gaining control of the enterprise. As the largest developing country in the world, the large-scale overseas mergers and acquisitions by Chinese enterprises in recent years have attracted widespread attention from scholars at home and abroad. Zhao Jianbo and Lü Tie (2016) found that Chinese companies acquire new knowledge and key technologies needed for innovation through overseas M&A, breaking the technological monopoly of developed countries and further improving their position in the global value chain division of labor and industrial transformation.

Wei Dongming et al. (2021) point out that the "Belt and Road" initiative provides financial support for enterprises' internationalisation strategies, reduces their investment risks in foreign markets, and helps to improve their overseas M&A performance.

The diversification risk diversification effect refers to enterprises reducing their own business risks through business diversification, geographical diversification and market diversification, etc. From the research on the impact of overseas M&A on business risk, some scholars believe that overseas M&A as a kind of internationalization activity reduces business risks through diversification risk diversification effect. The diversification of risk has long been considered an important motivation for overseas M&A (Wang zhe and Jiang Dianchun, 2021). Koerniadi et al. (2015) used a sample of 375 US M&A firms to examine the effect of overseas M&A on the default risk of the acquirer and found that overseas M&A helped to reduce the default risk level of the acquirer. In addition, overseas M&A is also considered to be an important way for firms to address policy risks in their home economies. Ren Shuming et al. (2021) found that firms would use overseas M&A as an alternative strategy to local M&A in order to hedge risks arising from economic policy fluctuations and improve the stability of their business operations. Bonaime et al. (2018) found that local political and regulatory uncertainty was closely related to firms' overseas M&A activities. Cao et al. (2019) found that when domestic political uncertainty increases, more firms tend to achieve risk aversion through overseas M&A. Based on the above analysis, this paper proposes that:

H1: Overseas M&A significantly reduces business risks through diversification risk dispersion effect.

The relationship between overseas M&A and business risk of enterprises will be affected by corporate ownership. Due to the "non-market motivation" and low efficiency of state-owned enterprises, overseas M&A has a limited effect on reducing the level of business risk of state-owned enterprises. On the one hand, state-owned enterprises play a crucial role in the strategic layout of the country's foreign investment and their overseas M&A activities are often not only focused on economic interests, but rather on strategic asset sectors such as energy resources and infrastructure. As a result, compared to private enterprises, overseas M&A activities led by state-owned enterprises are likely to attract political sensitivity and public skepticism from host governments and face more stringent security scrutiny, thus affecting M&A performance and operational risks. On the other hand, agency issues are an internal risk factor for overseas M&A and are prevalent in the process of management actively promoting M&A activities. State-owned enterprises have higher agency costs than private enterprises and over-investment due to the lack of principals and abuse of agent power. Therefore, the level of operational risk is lower for private enterprises after overseas M&A compared to state-owned enterprises after overseas M&A. Based on the above analysis, this paper proposes that:

H2: Other things being equal, the negative impact of overseas M&A on the business risk of private enterprises is more significant.

III. Research Design

A. Sample Selection and Data Sources

The data in this paper are from Wind financial database of listed companies and cross-border M&A transaction database of enterprises. Considering that China's overseas M&A has entered a period of rapid expansion after the global financial crisis, the sample period of this paper is set as 2010-2019. A sample of overseas M&A was selected based on the following criteria: (1) The M&A transactions with the status of "completed" and "expected to be completed" during the period are retained; (2) Considering the degree of M&A influence, this paper only retains M&A events in which the M&A stake is greater than 10% and the M&A party has a greater influence on the target company's business decisions; (3) Excluding financial and real estate listed companies due to the significant difference between their business operations and those of other industries; (4) Retaining the sample of overseas M&A through the establishment of joint ventures, and considering all Chinese companies involved in the establishment of joint ventures as having conducted an overseas M&A activity; (5) Excluding the sample of enterprises with serious missing data and abnormal indicators such as age and listing time of enterprises; (6) Affiliated transactions are transactions between the company or subsidiaries and related parties who have direct or indirect interests in the company and have powerful relationships, which are essentially intra-group transaction arrangements, therefore, excluding M&A transactions implemented by companies in China to their overseas subsidiaries; (7) Excluding enterprises that had been special treatment or particular transfer during 2010-2019, such enterprises generally have financial or other abnormal conditions; (8) This paper mainly examines the first overseas M&A behavior during the sample period, and if an enterprise has multiple overseas M&A events during the sample period, the earliest overseas M&A activity that occurred is selected as the study sample based on the date of the first disclosure of the enterprise's overseas M&A. After strict screening, the obtained M&A enterprise samples were matched with Wind's financial data of listed companies, and finally 29,012 preliminary samples of 3,563 listed companies were obtained, among which 430 enterprises had their first overseas M&A activities in 2010-2019.

B. Variable Selection

1.Corporate business risk

Drawing on existing studies in the literature (Jiang, Guanhong, 2015), this paper uses the rolling standard deviation and extreme deviation of the return on total assets to measure the business risk of the firm. First, the annual industry average is subtracted from the firm's return on total assets for each year to remove the effect of industry systematic risk, from which the adjusted return on total assets is obtained, and then calculate the rolling standard deviation (*Risk*1) and extreme deviation (*Risk*2) of the adjusted return on total assets in each observation period, respectively. The calculation formula is as follows.

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$$Risk1_{it} = \sqrt{\frac{1}{T-1}\sum_{i=1}^{T}(Adj\_ROA_{it} - \frac{1}{T}\sum_{i=1}^{T}Adj\_ROA_{it})^2} \quad (1)$$

$$Risk2_{it} = \mathrm{Max}(Adj\_ROA_{it}) - \mathrm{Min}(Adj\_ROA_{it}) \quad (2)$$

where *i* represents the firm and *t* represents the year; this paper takes three years as an observation period, T = 3. The industry classification is based on the industry classification standard of the China Securities Regulatory Commission.

2.Control variables

According to the existing research theoretical and empirical literature (Wu Xianming and Zhang Yumei, 2019), the control variables selected in this paper include: (1) Firm size (*Size*), which is the logarithm of the total assets of the firm at the end of the period; (2) Labor productivity (*Lp*), which is the logarithm of the ratio of total operating income to the number of employees; (3) Capital intensity (*Capital*), which is the logarithm of the ratio of fixed assets to the number of employees; (4) Gearing ratio (*Lever*), expressed as the proportion of total liabilities to total assets at the end of the period, the higher the value indicates the lower the solvency of the enterprise and the more serious the imbalance of the enterprise's debt structure; (5) Profitability (*Profit*), the ratio of net profit to total operating income; (6) Financing constraint (*Cflow*), the ratio of financial expenses to total operating income; (7)Openness (*Open*), expressed by whether the enterprise has overseas income, the enterprise with overseas income has more international business activities and is easy to absorb new ideas, the enterprise with overseas income is recorded as 1, the enterprise without overseas income is recorded as 0; (8)Enterprise Age (*Age*), the age of the enterprise reflects the length of time the enterprise has been in business, this paper uses the sample year minus the year of establishment of the enterprise plus 1, and then logarithmic processing.

C. Model Setting

In order to effectively identify the impact of overseas M&A on business risk, the optimal way is to measure the treatment effect between the experimental group and the control group. In this paper, the effect of the experimental group is the risk level of the firm after overseas M&A, and the effect of the control group is the risk level of the firm without overseas M&A. The treatment effect is the difference between the effect of the experimental group and the effect of the control group, and can be obtained by the difference-in-difference (DID) method. However, in practice, it is not possible to observe the two states of overseas M&A and no overseas M&A at the same time, and a Propensity Score Matching (PSM) approach is needed to obtain the "counterfactual" treatment. Therefore, this paper adopts the PSM-DID method to empirically examine the impact of overseas M&A on business risk. This method can subtly reduce the sample selection bias and endogeneity problems of firms, and can more accurately measure the specific impact of the expansionary behavior of overseas M&A on the business risk of the acquirer.

1.Propensity score matching

In this paper, the listed enterprises that have undergone overseas M&A are used as the experimental group and the listed enterprises that have not undergone overseas M&A are used as the control group. Based on the idea of propensity score matching, the nearest neighbor matching method is used to find the most similar sample to the overseas M&A firms in the control group that never had overseas M&A in a ratio of 1:1. Moreover, the timing of overseas M&A varies across firms, so the need exists to match the overseas M&A sample year by year. The estimation method is a Logit model:

$$\mathrm{logit}(MA) = Z\beta + \varepsilon \quad (3)$$

$$PS_i = \frac{\exp(Z_i\beta)}{1+\exp(Z_i\beta)} \quad (4)$$

Equation (3) is a common logit regression, and the PS value can be calculated by first obtaining the regression coefficient matrix β through equation (3), and then bringing the regression coefficient matrix β into equation (4). Where, PS_i is the probability of overseas M&A of firm *i* in that year, and Z_i represents the set of covariates of firm *i* involved in the matching process, including firm size, labor productivity, capital intensity, gearing ratio, profitability, financing constraint, openness and firm age.

The experimental and control groups were matched together according to PS values, and finally 1240 listed companies were obtained as the study sample, including 430 experimental group companies with overseas M&A behavior and 810 control group companies without overseas M&A behavior. The sample balance was further tested and the matching process was considered valid when the bias was less than 20% according to the empirical criteria given in the existing studies.

We tested the sample balance based on the empirical criteria given in the existing studies, and the matching process was considered valid when the bias was less than 20%. Taking 2010 as an example (see Table I), the bias of the matched variables are all less than 20%, and the p-values also show that the variables are not significantly different after matching, thus indicating that the year-by-year matching process conducted in this paper is valid.

TABLE I. Propensity Score Matching Equilibrium Test Results (2010).

Variable	U/M	Sample Means		bias (%)	T	p-values
		Experiment	Control			
Size	U	21.369	21.353	1.10	0.18	0.858
	M	21.364	21.250	8.00	0.63	0.532
Lp	U	13.486	13.563	-9.00	-1.45	0.147
	M	13.48	13.549	-8.10	-0.68	0.496
Capital	U	11.909	12.219	-26.70	-4.26	0.000
	M	11.909	11.889	-1.80	0.15	0.883
Lever	U	37.932	41.475	-17.10	-2.79	0.005
	M	38.035	38.115	-0.40	-0.03	0.975
Profit	U	0.148	0.126	20.8	3.38	0.001
	M	0.148	0.142	5.70	0.46	0.646
Cflow	U	0.009	0.011	-13.0	-1.99	0.047
	M	0.009	0.008	6.40	0.61	0.541
Open	U	0.671	0.544	26.3	4.16	0.000
	M	0.670	0.632	7.80	0.66	0.512
Age	U	2.507	2.541	-8.60	-1.37	0.170
	M	2.507	2.518	-2.80	-0.24	0.814

Considering the possible existence of extreme values

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affecting the empirical findings, this paper applies a two-sided 1% tail reduction to all variables, and Table II reports the results of descriptive statistics for all variables after matching.

TABLE II. Descriptive Statistics.

Variables	Observations	Average	Standard deviation	Min	Max
*Risk*1	5230	2.3159	2.443	0.0776	14.6684
*Risk*2	5230	4.1671	4.308	0.1199	25.4552
Size	5230	22.1269	1.485	18.7884	25.8116
Lp	5230	13.6726	0.804	12.0848	16.1094
Capital	5230	12.2619	1.127	8.9086	15.5095
Lever	5230	40.1955	19.359	5.2066	82.9543
Profit	5230	0.1056	0.116	-0.3422	0.4758
Cflow	5230	0.0117	0.028	-0.0575	0.1423
Open	5230	0.8027	0.398	0.0000	1.0000
Age	5230	2.7778	0.377	0.6931	4.1271

2.Difference-in-difference

This paper uses a difference-in-difference model to explore the effect of overseas mergers and acquisitions on corporate business risk. The initial model is as follows.

$$RISK_{it} = \alpha_0 + \alpha_1 MA_i + \alpha_2 Time_t + \alpha_3 MA_i \times Time_t + \alpha_4 X_{it} + \varepsilon_{it} \quad (5)$$

Among them, the explanatory variables $Risk_{it}$ represents the enterprise business risk; *MA* indicates whether the company has made an overseas acquisition, *MA* = 1 if there is an overseas acquisition, *MA* = 0 if there is no overseas acquisition; *i* and *t* denote the individual enterprise and year, respectively; and X_{it} represents a vector composed of multiple control variables; *Time* is a dummy variable reflecting the process of overseas M&A of the enterprise, and *Time* = 1 in the year when the enterprise makes overseas M&A and subsequent years, otherwise *Time* = 0. The essence of exploring the impact of overseas M&A on enterprise business risk is to reveal the observation of the difference between the business risk of an enterprise before and after an overseas M&A.

In addition, the standard difference-in-difference model requires that the experimental groups receive policy shocks at the same point in time. Since the experimental groups of overseas M&A firms in this paper have different points in time when they carry out overseas M&A activities, the following multi-point DID model is constructed to assess the effect of overseas M&A on enterprise business risk.

$$RISK_{it} = \alpha_0 + \alpha_1 MA_i \times Time_t + \alpha_2 X_{it} + year + firm + \varepsilon_{it} \quad (6)$$

Where, *year* and *firm* denote time and firm fixed effects, respectively. The coefficient α1 indicates the actual impact of overseas M&A on the change in the level of business risk of the firm. If α1 < 0 indicates that the increase in business risk level of the experimental group firms before and after the overseas M&A is smaller than that of the control group firms, this indicates that the overseas M&A reduces the business risk of the firms, thus indicating that the overseas M&A promotes the reduction of the risk level of the firms.

IV. Analysis of Empirical Results

A. PSM-DID Estimation of Overseas M&A on Corporate Business Risks

This paper empirically tests the impact of overseas M&A on business risk according to model equation (6), and the empirical results are shown in Table III. Among them, columns 1 and 3 are the estimation results controlling for firm and year fixed effects only, and columns 2 and 4 are the estimation results after adding control variables. The regression results show that the estimated coefficient of the interaction term *MA*×*Time* is significantly negative at the 1% statistical level, indicating that overseas M&A activities have a negative impact on the business risk of enterprises; after controlling for other factors affecting the business risk of enterprises, the regression coefficient of the interaction term *MA*×*Time* is still significantly negative at the 1% statistical level, indicating that the regression results have good stability.

This empirical result indicates that enterprises can reduce their business risks through overseas M&A. This may be due to the fact that overseas mergers and acquisitions by companies help companies improve the efficiency of resource allocation through business diversification and geographic diversification, thus reducing their business risks. For example, enterprises can obtain new competitive advantages from a diversified international investment environment, gain knowledge, talent and new growth opportunities, thus reducing business risks. In addition, cross-border geographic diversification of enterprises can effectively respond to the demand shock of a single market and thus effectively reduce business risks. Hypothesis 1 was verified.

TABLE III. The impact of overseas M&A on corporate business risks.

Variable	*Risk*1		*Risk*2	
MA×*Time*	-0.4669***	-0.3733***	-0.8741***	-0.7119***
	(0.1264)	(0.1242)	(0.2264)	(0.2219)
Size		-0.8483***		-1.2877***
		(0.1361)		(0.2303)
Lp		0.5758***		1.0337***
		(0.1738)		(0.2991)
Capital		-0.2536**		-0.4272**
		(0.1196)		(0.2020)
Lever		0.0107**		0.0107
		(0.0044)		(0.0076)
Profit		0.5207		0.7655
		(0.6538)		(1.1326)
Cflow		9.5633***		15.8005**
		(3.4795)		(6.1370)
Open		-0.0070		-0.0770
		(0.2011)		(0.3467)
Age		-2.3979***		-3.7915**
		(0.8724)		(1.4834)
Constant	2.7641***	21.2942***	0.0397***	31.0718***
	(0.1568)	(4.0857)	(0.0024)	(6.9106)
Control Variables	No	Yes	No	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
Firm Fixed Effects	Yes	Yes	Yes	Yes
N	5230	5230	5230	5230

Note: * * *, * * and * indicate that the estimated coefficients are significant at the levels of 1%, 5% and 10%, and the values in square brackets below the estimated coefficients are clustering standard errors at the enterprise level. Which are the same in the following tables.

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B. The Heterogeneous Impact of Overseas M&A on Corporate Business Risks

This paper classifies the samples into state-owned enterprises and private enterprises according to the ownership of enterprises, and tests whether there is heterogeneity among different enterprises in the impact of overseas M&A on business risk. Table Ⅳ reports the estimation results of the grouped regressions using the difference-in-difference model. Among them, the first and second columns report the sub-sample results of the impact of overseas M&A on state-owned enterprise business risks. It can be found that with *Risk*1 and *Risk*2 as explained variables, the estimated coefficients of overseas M&A of state-owned enterprises on business risk are both negative, but the absolute values of the coefficients are small and insignificant. The third and fourth columns report the sub-sample results of the business risk of private enterprises affected by overseas M&A. The results show that the estimated coefficients of the interaction term *MA*×*Time* on *Risk*1 and *Risk*2 in the private enterprises are both negative and significant at the statistical level of 1%. This result indicates that overseas M&A of private enterprises significantly reduces their own business risks, while the level of business risks of state-owned enterprises does not change significantly after overseas M&A. Hypothesis 2 was verified.

TABLE IV. The Heterogeneous Impact of Overseas M&A on Corporate Business Risks

Variable	State-owned enterprises		Private enterprises	
	*Risk*1	*Risk*2	*Risk*1	*Risk*2
MA×*Time*	-0.1821	-0.3753	-0.4298***	-0.8050***
	(0.1614)	(0.3117)	(0.1512)	(0.2687)
Size	-0.6819	-1.1049	-0.8655***	-1.3178***
	(0.4688)	(0.7769)	(0.1499)	(0.2543)
Lp	0.0294	0.0946	0.6646***	1.1864***
	(0.2036)	(0.3503)	(0.2032)	(0.3500)
Capital	-0.0823	-0.1072	-0.2555*	-0.4410*
	(0.1607)	(0.2874)	(0.1337)	(0.2259)
Lever	0.0036	0.0019	0.0113**	0.0115
	(0.0082)	(0.0143)	(0.0049)	(0.0086)
Profit	-0.5048	-0.8554	0.5913	0.8680
	(1.1187)	(1.9258)	(0.7003)	(1.2160)
Cflow	3.2324	6.4988	10.3700**	17.0463**
	(3.1167)	(5.7086)	(4.2220)	(7.4567)
Open	0.4060	0.7338	-0.0719	-0.2074
	(0.4007)	(0.6828)	(0.2248)	(0.3871)
Age	-1.2872	-1.9636	-2.6880**	-4.2785**
	(0.8817)	(1.5132)	(1.0781)	(1.8354)
Constant	20.4748*	31.7644*	21.1679***	30.9364***
	(11.3677)	(18.8507)	(4.7036)	(7.9676)
Control Variables	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
Firm Fixed Effects	Yes	Yes	Yes	Yes
N	1169	1169	4061	4061

The reason for this difference may be due to the fact that state-owned enterprises often do not take economic interests as their sole purpose in overseas M&A, but more often take up the task of strategic asset acquisitions and global investment layout, and this M&A objective tends to induce negative reactions from the host society, increasing the uncertainty of their overseas M&A, and lead to the increase of the business risk of state-owned enterprises. In addition, State-owned enterprises usually have higher agency cost due to the absence of principal, and the agency problem is more prominent in the complex environment of overseas M&A, thus increasing the business risk of state-owned enterprises. In contrast, private enterprises are more likely to gain benefits from diversification after overseas M&A, thus reducing their business risks. See Table IV.

C. Robustness Tests

Although this paper controls for individual and time fixed effects, there may still be endogeneity problems due to omitted variables and reverse causality. For example, there may be micro characteristics of enterprises that change over time to affect both business risk and overseas M&A decisions, and the level of business risk may change a firm's overseas M&A decision by affecting its business soundness.

In order to eliminate the estimation bias caused by endogeneity to the maximum extent, this paper adopts the following two strategies for robustness test: (1) One period lag. Referring to Jiang Guanhong (2017), this paper re-estimates all the control variables involved with a one-period lag to avoid possible endogeneity problems; (2) Changing the variable measures. Referring to Xiong Jian et al. (2021), this paper uses the 3-year rolling standard deviation of return on net assets (*ROE_Sd*) and the extreme deviation of return on net assets (*ROE_Range*) as proxy variables for corporate business risk to re-examine the overall impact of overseas M&A on corporate business risk.

As shown in Table Ⅴ, the first two columns show the estimation results at one period lagged for all variables, and the last two columns show the estimation results using other indicators to measure business risk. The results show that the estimated coefficients of interaction terms *MA*×*Time* are all negative, and significant at least at the statistical level of 10%, indicating that overseas M&A has a significant negative impact on enterprise business risk. This empirical result illustrates the robustness of the model and also corroborates the rationality of the previous analysis.

TABLE V. Robustness Tests

Variable	*Risk*1	*Risk*2	*ROE_sd*	*ROE_range*
MA×*Time*	-0.2162*	-0.4146*	-0.8935*	-1.8841**
	(0.1214)	(0.2207)	(0.5210)	(0.7958)
Constant	29.6354***	53.6345***	-54.9304	-127.9969
	(4.8218)	(8.4291)	(101.8363)	(191.5421)
Control Variables	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
Firm Fixed Effects	Yes	Yes	Yes	Yes
N	3760	3760	5230	5230

V. Conclusion and Insights

Overseas M&A is an important channel for Chinese enterprises to acquire advanced technologies, resources and brands. However, in the context of highly complex economic activities, potential M&A risks cannot be ignored, which affect the efficiency and effectiveness of overseas M&A. Based on a sample of overseas M&A of Chinese listed A-share listed enterprises in Shanghai and Shenzhen from 2010-2019, this paper theoretically analyzes the role of overseas M&A on corporate business risks and proposes research hypotheses. Then we empirically test the impact of overseas

M&A on corporate business risks with the help of propensity score and difference-in-difference methods. The main conclusions are as follows: First, overseas M&A significantly reduces the business risk and enhances the stability of business operation through the diversification risk dispersion effect; Second, the heterogeneity analysis shows that there are significant differences in the influence of overseas M&A on enterprise business risk due to different enterprise ownership, and the impact of overseas M&A on business risk is more significant in private enterprises than in state-owned enterprises.

Based on the above findings, this paper gets the following policy insights: First, for overseas M&A enterprises, on the one hand, they should do a good job of preliminary risk research in the process of overseas expansion, choose a host country that matches their comprehensive strength for investment, reduce business risks and improve business stability through geographical diversification and industrial diversification; On the other hand, they should avoid the short-sighted behavior of focusing on short-term profit income and pay more attention to the complementary advantages of the acquired party and itself in terms of products, industries and markets, so as to establish a benign cooperation mechanism for mutual benefit and common development and fundamentally improve the long-term profitability of enterprises. Second, the regulatory authorities should recognize that overseas M&A is a highly complex economic activity, and prospectively assess and predict the difficulties and risks that enterprises may encounter in overseas M&A. Regulatory authorities should provide comprehensive policy support for overseas M&A, such as taxation, platform and talent training. In addition, government departments should also improve relevant laws and regulations, so as to stop and prevent the blind overseas expansion of some enterprises in a timely manner, so as to reduce the systemic financial risks.

REFERENCES

[1] Krapl A A. “Corporate international diversification and risk,” International Review of Financial Analysis, vol. 37, issue 1, pp.1-13, 2015.

[2] Zhao Jianbo, Lü Tie. “How do Chinese companies move from "reverse M&A" to "reverse absorption"? --A case study of cross-border M&A in construction machinery manufacturing,” Economic Management, vol. 38, issue 7, pp.35-47, 2016.

[3] Wei Dongming, Gu Naihua, Xu Yang. “The "Belt and Road" initiative and Chinese firms' overseas M&A: Evidence from a quasi-natural experiment,” World Economic Research, issue 12, pp.116-129+134, 2021.

[4] Wang Zhe, Jiang Dianchun. “Whether cross-border M&A raises firm risk:Evidence from Chinese listed firms,” World Economic Research, issue 3, pp.107-120+136,2021.

[5] Koerniadi H, Krishnamurti C, Tourani-Rad A. “Cross-border mergers and acquisitions and default risk,” International Review of Financial Analysis, vol. 42, pp.336-348, 2015.

[6] Ren Shuming, Chen Qiang, Wang Qian, Han Yueqi. “Why do overseas mergers and acquisitions reduce the investment efficiency of Chinese firms?” Finance and Economics Research, vol. 45, issue 6, pp.128-140, 2019.

[7] Bonaime A, Gulen H, Ion M. “Does policy uncertainty affect mergers and acquisitions?” Journal of Financial Economics, vol. 129, issue 3, pp.531-558, 2018.

[8] Cao C, Li X, Liu G. “Political uncertainty and cross-border acquisitions,” Review of Finance, vol. 23, issue 2, pp.439-470, 2019.

[9] Jiang Guanhong. “Institutional differences, cultural distance and outbound direct investment risks of Chinese enterprises,” World Economic Research, issue 8, pp.37-47+127-128, 2015.

[10] Wu Xianming, Zhang Yumei. “Whether overseas mergers and acquisitions of state-owned enterprises create value: An empirical test based on PSM and DID methods” World Economic Research, issue 5, pp.80-91+106+135-136, 2019.

[11] Jiang Guanhong. “Are Chinese enterprises' cross-border mergers and acquisitions really failing? -- A further discussion based on corporate efficiency” Financial Research, issue 4, pp.46-60, 2017.

[12] Xiong Jian, Zhang Ye, Dong Xiaolin. “The impact of financial technology on commercial banks' business performance: crowding out effect or technology spillover effect?” Economic Review, issue 3, pp.89-104, 2021.