Historical Factors, National Distance and Cross-border M&A

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Abstract. Cross-border M&A can enable enterprises to obtain the core technology and management system required for transformation and upgrading,. Therefore, the issue of how to better guarantee the implementation of cross-border M&A by enterprises is becoming increasingly important. This paper collects the data of cross-border mergers and acquisitions from SDC database from 1975-2021 as the research sample, selects the national factors of cultural distance, institutional distance, geographical distance, colonial experience and other dimensions, and enterprise-level factors such as the cost of starting enterprises, the time spent in starting enterprises, and uses fixed effects to control the size of national GDP and population, and uses OLS, Probit, Poisson regression method studies the influence mechanism of historical factors and national distance on cross-border M&A of enterprises, hoping to provide reference for the decision-making process of cross-border M&A.

Keywords: Historical Factors; M&A; National Distance

1 Introduction

As one of the most violent political conflicts among countries, international war has a significant and lasting impact on the historical memory of a country(Gokmen,2020)[1]. Guiso et al. (2009) [2]found that many years after the war between the two countries ended, the scale of trade and investment was still small. The main purpose of historical conflicts is to plunder a large number of resources and wealth. One of its manifestations is to seize colonies. The colonial experience will not only affect the economic performance of the economy when it was colonized, but also affect its development after independence (Zhao Qiuyun, 2021)[3]. Wang Junzhou (2008)[4], through studying the British colonial rule over India, believes that the colonial history will break the barriers of communication between the two countries and promote the modernization process of the colony.

As the mainstream form of international direct investment, cross-border M&A is considered by some scholars from the perspective of institutional distance. Wang Shixiang et al. (2022)[5] believe that the institutional differences between the host country and the home country will have a negative impact on the acquisition results. Many scholars uses the WGI to measure the differences between the two countries (Zhou Nan[7], 2023; Wang Lin, et al., 2022 [6]; Xie Yue, 2022 [8]).

The institutional and cultural distance formed between the two countries is often related to the history of the war. The existing studies mostly focus on the relationship between the institutional

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distance and the cross-border M&A unilaterally from the perspective of the institutional distance or cultural distance. Therefore, this study constructs the four dimensions of language difference, legal difference, religious belief, institutional distance as a whole, that is, national distance, as an intermediary variable to analyze the impact of colonial history on cross-border mergers and acquisitions through this intermediary variable.

2 Research design

2.1 Sample selection and data source

This study selects global cross-border M&A data from 1975-2021 as the research sample. The data comes from Thomson SDC database. The main variables are shown in the table 1.

Table 1. Definition of main variables

Variable		Symbol	description	Data sources
Inter-preted	Merger Deals	m_deals	The number of corss-borderM&A transactions yearly	SDC
Interme-diary	Institutional distance	indis	Degree of institutional difference between home country and host country	WGI
	Cultural dis-tance	comleg	There was a common legal source before 1991	CEPII_BACI
		com-lang	Whether the pair countries have a common offi-cial or main language	CEPII_BACI
	Religious origin	relig	Religious proximity index	CEPII_BACI
Explana-tory	Colonial his-tory	sibling	There used to be common colonists (including before 1948)	CEPII_BACI
		heg_o	The home country was or is now the hegemon of the host country	CEPII_BACI
		heg_d	The host country was or is now the hegemon of the home country	CEPII_BACI
Control	Geographic distance	lndist	The distance between the most populous cities of the two countries	CEPII_BACI
	RTA	rta	Whether the two sides have a common regional trade agreement	CEPII_BACI
	enterprise cost	en-try_proc	Cost of start-up procedures for enterprises in the host country	CEPII_BACI

2.2 Model construction

This paper first puts forward the research hypothesis that the colonial history will affect the distance between the two countries, and then affect the M&A volume of the two countries. Referring to Jiang Ting (2022)[9], the following model is constructed

$$\mathrm{m}_{\mathrm{deals}} = \alpha_0 + \alpha_1 sib_{his} + \varepsilon_{\mathrm{m}_{\mathrm{deals}}} \quad (1)$$

$$\mathrm{m}_{\mathrm{deals}} = \beta_0 + \beta_1 sib_{his} + \beta_2 dis_t + \varepsilon_{\mathrm{m}_{\mathrm{deals}}} \quad (2)$$

$$dis_t = \gamma_0 + \gamma_1 sib_{his} + \varepsilon_{\mathrm{dis}_t} \quad (3)$$

Among them, m_{deals} is the explained variable, indicating the number of M&A transactions between the two countries, sib_{his} is the processing variable, indicating the colonial history between the two countries, and dis_t the intermediary variable, indicating the national distance. (1) Formula indicates that sib_{his} has a causal effect on m_{deals}; (3) Formula indicates that sib_{his} has a causal effect on dis_t; (2) On the one hand, dis_t has a causal influence on m_{deals}, thus establishing a causal chain of D→M→Y; on the other hand, sib_{his} may independently influence m_{deals} besides dis_t.

It can be said that α_1 is the total effect of sib_{his} on m_{deals}, β_1 is the direct effect of sib_{his} on m_{deals}, and $+\beta_2\gamma_1$ is the indirect effect of sib_{his} on m_{deals} (via dis_t). Obviously, there are the following relationships among them:

$$\alpha_1 = \beta_1 + \beta_2\gamma_1 \quad (4)$$

The method of testing the regression coefficient step by step is divided into three steps (Wen Zhonglin et al., 2004[10]), step 1 is to test the total effect of sib_{his} on m_{deals}; step 2 is to test the relationship between sib_{his} and the intermediate variable dis_t; step 3 is to test the coefficients β_1 and β_2 of equation (2) after controlling the intermediate variable dis_t. If α_1 is significant, that is, H0: α_1=0 is rejected, γ_1 is significant, and H0: γ_1 =0 is rejected, and β_2 is significant, that is, H0: β_2=0 is rejected. If the above two conditions are met at the same time, the mediation effect is significant.

3 Empirical research

3.1 Descriptive statistics

In this study, descriptive statistics are made for all variables, and the results are shown in the following table 2.

Table 2. Descriptive statistical results

variable	*N*	*min*	*max*	*mean*	*sd*
m_deals	47061	1	686	5.718	18.60
indis	28331	0.101	9.046	2.677	1.664
comleg	39158	0	1	0.347	0.476
comlang	38806	0	1	0.245	0.430
relig	38436	0	0.988	0.226	0.279
sibling	39152	0	1	0.202	0.402
heg o	39279	0	1	0.0270	0.162
heg d	39679	0	1	0.0440	0.205
dist	39158	8	19629	5733	4637
rta	39158	0	1	0.418	0.493
entry_proc	23347	0	935.4	8.197	21.16

3.2 Correlation analysis of variables

As can be seen from the table 3, the explanatory variables of transnational mergers and acquisitions are positively related to the explanatory variables of colonial history, while the

intermediary variables of national distance, common language and common law are also positively related to the explanatory variables, which can preliminarily verify the research hypothesis. Moreover, the multiple collinearity test was carried out for all variables in the whole sample, and the average variance expansion factor (VIF) was 1.38. Therefore, there is no multicollinearity problem in the whole sample data.

Table 3. Spearman correlation coefficient of variable

	m_deals	indis	com-leg	com-lang	relig	sib-ling	heg o	heg d	dist	rta	en-try_proc
m_deals	1										
indis	-0.178	1									
comleg	0.038	-0.080	1								
comlang	0.054	-0.063	0.483	1							
relig	0.089	-0.347	0.219	0.304	1						
sibling	0.042	0.0246	0.396	0.540	0.144	1					
heg o	0.075	-0.026	0.104	0.142	0.034	-0.050	1				
heg d	0.062	-0.0171	0.177	0.231	0.080	-0.075	-0.031	1			
dist	-0.085	0.255	-0.058	0.0003	-0.216	0.031	0.024	0.031	1		
rta	0.060	-0.297	0.059	0.024	0.214	-0.046	-0.037	-0.059	-0.613	1	
en-try_proc	-0.188	-0.029	0.083	-0.014	0.005	0.021	0.020	-0.095	-0.116	0.081	1

3.3 Empirical results

3.3.1 Intermediary Effect Test

Since the explained variable m_deals' M&A transaction volume belongs to counting data, this study firstly adopts Poisson regression to analyze the relationship between the explained variable and the explanatory variable sib_his, and the second step analyzes the relationship between the explanatory variable sib_his and the intermediary variable dis_t due to the large difference in M&A transaction volume in different years. The third step is to add dis_t to analyze the relationship between m_deals and sib_his, and the regression results are shown in the table 4.

Column (1) is the first step of intermediary effect test, which shows that the explained variable, the number of M&A transactions and colonial history, is significantly positive at the level of 1%, indicating that there are more M&A transactions between countries that have had a common colonial hegemony or that the host country and the home country used to have colonial relations with each other.

Column (2)-(5) shows the relationship between the intermediary variable and the explanatory variable. As can be seen from the following table, the colonial history and the national distance are significantly positive at the level of 1%, indicating that through observation coefficient, it is found that the common colonial history plays a greater role in forming a common language and law between the two countries than in the index of institutional distance and religious proximity between the two countries. This study thinks that it is because the institutional distance between the two countries is more independent. The coefficient of dummy variable heg_o in observation column (2) is negative, which shows that the home country was the colonial overlord of the host country, which will shorten the institutional distance between the two countries to some extent, and verify hypothesis 2.

Column (6) is the third step of the mediation effect test, and the four dimensions of the national distance are all significant at the level of 1%, but both the coefficient values and the significance of the three variables explaining the colonial history are lower than those of model (1), which verifies hypotheses 1 and 3. The other countries' distance variables do have a significant part of intermediary effect in the influence of colonial history on M&A transactions. The intermediary effect of institutional distance is 14%, the intermediary effect of common legal origin is 25%, and the intermediary effect of common language is 32%.

Table 4. Variable regression result

VARIABLES	(1) m_deals	(2) indis	(3) comlang	(4) comleg	(5) relig	(6) m_deals
indis						-0.184***
						(0.00858)
comleg						0.141***
						(0.0288)
comlang						0.697***
						(0.0446)
relig						0.601***
						(0.0472)
sibling	0.410***	-0.0171	5.428***	2.283***	0.0696***	-0.161***
	(0.0553)	(0.0264)	(0.670)	(0.0387)	(0.00451)	(0.0520)
heg_o	0.940***	-0.437***	4.960***	2.014***	0.0781***	0.460***
	(0.0744)	(0.0720)	(0.632)	(0.0999)	(0.0123)	(0.0851)
heg_d	0.325***	0.00377	5.825***	2.470***	0.135***	-0.131**
	(0.0606)	(0.0534)	(0.727)	(0.0773)	(0.00892)	(0.0626)
lndist	-0.243***	0.221***	-0.00775	-0.171***	-0.0566***	-0.206***
	(0.0193)	(0.0122)	(0.0344)	(0.0181)	(0.00208)	(0.0191)
rta	-0.362***	-0.737***	0.790***	0.278***	0.0722***	-0.389***
	(0.0439)	(0.0271)	(0.125)	(0.0407)	(0.00459)	(0.0386)
entry_proc	-0.0175***	0.00305***	0.00841***	0.00469***	4.39e-05	-0.0163***
	(0.00156)	(0.000525)	(0.00178)	(0.000874)	(8.49e-05)	(0.00146)
Year	control	control	control	control	control	control
Observations	22,957	22,519	22,856	22,957	22,546	22,144

R-squared		0.112			0.110	
Sobel	——	-0.257*** (z=3.59008)	0.33733*** (z= 4.70895)	0.19247*** (z=5.69771)		——

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

3.3.2 Robustness test

The explained variable in this paper is the number of M&A transactions. Referring to the practice of Zhou Nan (2022)[6], the number of M&A transactions between the two countries is replaced by the trade flows and the logarithm lntrade is taken. The other variables remain unchanged. It can be seen that the replaced explained variables are significantly related to the explanatory variables, the national distance and the intermediate variables, and the conclusion of this paper is still valid(Table 5).

Table 5. Robustness test result

VARIABLES	(1) lntrade	(2) indis	(3) comlang	(4) comleg	(5) relig	(6) lntrade
indis						-0.251***
						(0.0122)
comleg						0.267***
						(0.0406)
comlang						0.563***
						(0.0585)
relig						0.348***
						(0.0614)
sibling	-0.983***	-0.0171	5.428***	2.283***	0.0696***	-0.711***
	(0.0489)	(0.0264)	(0.670)	(0.0387)	(0.00451)	(0.0612)
heg_o	1.396***	-0.437***	4.960***	2.014***	0.0781***	1.401***
	(0.0782)	(0.0720)	(0.632)	(0.0999)	(0.0123)	(0.0832)
heg_d	-0.160*	-0.00377	5.825***	2.470***	0.135***	0.226***
	(0.0837)	(0.0534)	(0.727)	(0.0773)	(0.00892)	(0.0857)
lndist	-0.281***	0.221***	-0.00775	-0.171***	-0.0566***	-0.247***
	(0.0187)	(0.0122)	(0.0344)	(0.0181)	(0.00208)	(0.0185)
rta	0.599***	-0.737***	0.790***	0.278***	0.0722***	0.329***
	(0.0434)	(0.0271)	(0.125)	(0.0407)	(0.00459)	(0.0437)
entry_proc	-0.00749***	0.00305***	0.00841***	0.00469***	4.39e-05	-0.00700***
	(0.00107)	(0.000525)	(0.00178)	(0.000874)	(8.49e-05)	(0.00119)
Observations	22,601	22,519	22,856	22,957	22,546	21,961
R-squared	0.073	0.112			0.110	0.095

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

It can be seen that the replaced explained variables are significantly related to the explanatory variables, the national distance and the intermediate variables, and the conclusion of this paper is still valid.

4 Conclusions and suggestions

This study focuses on the influence of colonial history on the volume of M&A transactions between the two countries, and selects the distance between countries as an intermediary

variable. Through the empirical study of global M&A transaction data from 1975 to 2021 and CEPII gravity model data, the main conclusions are as follows:

First, the colonial history will shorten the institutional and cultural distance between the two countries, and it will have a positive and significant impact. If the two countries were once dependent countries or colonies, the communication costs and institutional obstacles between the two countries will be reduced. Second, the common colonial history will affect the merger and acquisition of the two countries through some intermediary effects caused by institutional and cultural distances; Third, differences in institutional environment will have a significant negative impact on cross-border M&A transactions, and having common or similar languages and laws will help to complete M&A transactions.

The contribution of this study is to explore the reasons behind the national distance, that is, the institutional distance caused by colonial historical differences, which has an impact on cross-border mergers and acquisitions between enterprises.

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