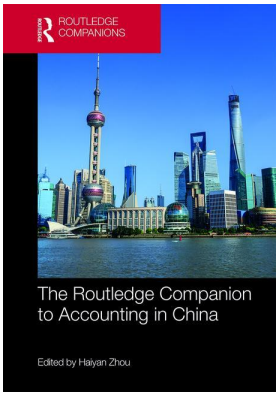

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The Influence of Firm Location on the Choice of Payment Methods in Merger and Acquisition

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THE INFLUENCE OF FIRM LOCATION ON THE CHOICE OF PAYMENT METHODS IN MERGER AND ACQUISITION

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1. Introduction

Merger and acquisition (M&A) is the important topic in capital market, which has attracted interest from academic scholars. In recent years, an increasing number of firms participate in M&A and the size of transactions increase rapidly, which indicates that M&A has become more important in resources allocation. There have been studies on M&A and focusing the choice of M&A payment method (Amaro de Matos and Mergulhão, 2012; Nikolaos et al., 2014). Normally, acquirer firms pay by issuing shares or by cash which is financed by debt. If the size of M&A is enormous, payment method may affect the acquirer' ownership structure, financial leverage, control right, risk-taking, taxes and the decision of cash-holdings for both the acquirer and target firms (Faccio and Masulis, 2005). In this sense, payment method choice is an important financial decision in the M&A process. However, it is unclear how managers made decisions on M&A payment.

The geographical factors imply the potential information superiority, political resources, social relationship and business environment and hence have profound impacts on a company's behavior. The literature documents the impact of geographical factors on financial behavior and the related economic consequences. For instance, some studies examine the effects of geographical factors in corporate investment (Kang and Kim, 2008; Cai and Jiang, 2013), financing activities (Arena and Dewally, 2012), dividend policy (John et al., 2011), liquidity management (Almazan et al., 2007), corporate governance (Francis et al., 2007; Knyazeva et al., 2010) and firm performance (Kim et al., 2012). Further, Koutmos et al. (2014) find that the geographical location of acquirer firms significantly affected the payment method of M&A in the US compared to other developed countries. Regional development in China is unbalanced; the geographical difference exists not only between urban and rural areas, but also between eastern and western regions. As a transition economy, the problem of information asymmetry is serious in China because of the imperfect institutions. Under this circumstance, informal institutions such as political resources and social ties are often used to deal with business problem under policy uncertainty. That suggests

a rich potential economic information, political resources and social ties implied in geographical factors would lead more significant impact on corporate behavior.

To achieve this aim, we examine M&A transactions of acquirer firms listed in the A-share market between 2009 and 2013. We find that acquirer firms located in the remote rural areas are more likely to choose stock payment compared with those located in the urban areas. Furthermore, we study the influences of geographical factors on M&A payment methods from the aspects of large shareholder's control rights, financing constraints, property rights and information asymmetry, and we find that the probability of stock payment for the acquirer firms located in the remote rural areas will be reduced when the large shareholder's control right is between 20% and 60%, when the acquirer firms have less severe financial constraints, when the acquirer firms are State-owned and when information asymmetry risk is low.

Our study has the following contributions: first, although the impact of geographical location on corporate finance has attracted wide interests, few studies examine this topic in the emerging market of China. We document that in the emerging market geographical factors play critical roles in the M&A payment method. Second, this essay can also enrich the M&A payment method choice literature by the further exploration of the influential mechanism from the aspects of large shareholders control rights, financing constraints, property rights and information asymmetry.

The rest of the essay is organized as follows: the second part is a literature review and hypothesis development, the third part is research design and sample selection, the fourth part is empirical results, the fifth part is additional research and the sixth part concludes this paper.

2. Literature review and hypothesis development

Undoubtedly, significant difference between urban and rural areas may affect the financial behavior of companies. On one hand, compared with the remote rural areas, there are more professional institutional investors and securities analysts, richer political resources and social ties in the urban areas (Coval and Moskowitz, 1999; Loughran and Schultz, 2005). As a result, firms located in or near the urban areas have a lesser degree of information asymmetry, especially soft information that requires close observation (Loughran, 2008), lower cost of equity capital (Kim et al., 2012) and more political resources, thus it is easier for them to access debt financing, particularly bank loans (Arena and Dewally, 2012). On the other hand, it costs much higher for the firms located in the remote rural areas to access information and resources because of the undeveloped transportation, so they are often at information disadvantages when making financial decisions (Loughran, 2008; Koutmos et al., 2014).

In recent years, the impact of geographic location on financial behavior and the related economic consequences has attracted much academic interest. For example, Kedia et al. (2005), Kang and Kim (2008) and Cai et al. (2014) find that the positive returns due to geographical proximity will be reduced when the acquirer firms are located in remote rural areas, and further when there are traffic disadvantages between the acquirer and target firms. Meanwhile, firms located in urban areas are more likely to become target firms, and the probability of success is also higher. In addition, Arena and Dewally (2012) find that firms in rural areas face higher financing costs and receive fewer loans from banks. John et al. (2011) find that the agency problem is more severe for the firms located in remote areas because of a lack of observability of management action, so they are willing to pay a relatively higher cash dividend to alleviate conflicts. Furthermore, Almazan et al. (2007) find that firms located in industrial concentration areas tend to reserve excess cash for the future M&A. Additionally, some scholars find that the location of corporate headquarters often affected a CEO's power and the composition of the board of directors (Francis et al., 2007; Knyazeva et al., 2010). Finally, political geography will have a combined effect on the

firm's stock returns, and firms located in the region with high PAI (Political Alignment Index) have significantly better returns than those located in the region with low PAI (Kim et al., 2012).

M&A is an important corporate behavior that attracts widespread attention from academic scholars. The M&A literature has covered motives, payment method choices, accounting methods, earnings management, tax policies and economic consequences. The payment method choice in the M&A process becomes a research focus because it can directly impact acquirers' cash flow and capital structure. Typical payment methods include cash, stock and cash-stock mixed payment.

Compared to full stock payment, full cash payment can reduce free cash flow and thus reduce agency costs of equity (Jensen, 1986). Acquirer firms will choose stock payment when their share price is overvalued. Stock payment in this situation will lead to adverse selection (Shleifer and Vishny, 2003), thus cash payment can lead to higher yields for both acquirer and target firms (Travlos, 1987). And even when stock payment can bring short-term excess returns, it will damage the value of shareholders in the long-term (Song et al., 2008). Moreover, cash payment can also avoid the equity dilution of the acquirer firms. Based on the asymmetric information theory, early researchers argued that management has a negative attitude toward stock payment in order to avoid the dilution of the company's control, and they prefer cash payment (Amihud et al.,1990; Martin,1996; Ghosh and Ruland, 1998). However, cash payment is subject to several restrictions. First, cash payment requires a large amount of cash, which is difficult for acquirer firms with financing constraints and high investment opportunities to obtain (Faccio and Masulis, 2005). Second, cash payment preference is also influenced by the information accessed by acquirer firms. That means that if acquirer firms consider themselves at the information disadvantage, one-time cash payment may lead to excessive premiums. Therefore in order to avoid this situation, the acquirer firms would tend to choose stock payment (Hansen, 1987).

Large amounts of soft information are involved in the M&A process (Coff, 1999). Unlike hard information, soft information is more difficult to encode and transmit. Therefore soft information communication, such as valuation of knowledge-based assets and management skills, requires close interaction between the acquirer and the target firms (Cai et al., 2014). In this sense, geographical locations are important to both acquirer and target companies. A firm's physical location determines convenience of traffic, which will affect the transmission of soft information (Cai et al., 2014) and the means to acquire information. It is more convenient for the acquirer firms located in the urban area to obtain information and to have a more comprehensive and profound understanding of the target companies, thus achieving a more accurate valuation of target firms and paying less excessive premiums due to information asymmetry. Therefore, the acquirer firms located in the urban area prefer cash payment.

Moreover, economic information, political resources, social ties and business environment are also implied in the geographical location of the acquirer firms, which directly affect the firms' debt financing and influence the choice of M&A payment method. In general, the acquirer firms located in the urban area are more capable of debt financing because of the richer political resources and social ties, so they prefer cash payment in enjoying excess return. In line with this, Koutmos et al. (2014) find that compared to unban acquirer firms, the acquirer firms located in the rural area are more likely to choose full stock payment.

Similar to other developing countries, regional development in China is more unbalanced compared with other developed countries. Such difference exists not only between urban and rural areas, but also between eastern and western regions. The level of transportation development is highly unbalanced, and the transportation of most areas still under development (Cao et al., 2007). In addition, as a transition economy, asymmetry information problem is more serious due to the imperfect institutions, where political resources and social ties are used to deal with policy uncertainty circumstance. Geographical factors will affect the choice of M&A

payment methods more significantly in such settings than the developed countries. We propose the following hypothesis:

Hypothesis 1: In the process of M&A, acquirer firms located in central city or close to central city are more likely to choose cash payment.

3. Research design and sample

3.1 Research design

We establish model (1) to test our hypotheses:

$$Logit(CASH\_PAY) = \alpha_0 + \alpha_1 NOCENTER(DISTANCE) + \sum_c \alpha_c CONTROLS + \varepsilon \quad (1)$$

CASH_PAY is a dummy variable, which equals one if it is the full cash payment, otherwise it equals zero. We use two ways to measure the geographical location of acquirer firms, the first measure is NOCENTER, which takes one if the acquirer firms are not located in the central city, and takes zero otherwise. We adopt this measure based on the literature. For instance, Loughran and Schultz (2005) and John et al. (2011) take the top ten cities in the United States as the center city, Cai and Jiang (2013) take the top 20 cities in China as the center city, which is ranked by *China Economic and Social Development Research Center* based on economic competitiveness in 2011. Similarly, we take the 17 cities as the center city, which are the top 20 cities excluding Hong Kong, Macao and Taipei, ranked by *China Economic and Social Development Research Center* based on economic competitiveness in 2013. These cities include Shanghai, Shenzhen, Beijing, Guangzhou, Suzhou, Qingdao, Ningbo, Wuxi, Hangzhou, Dalian, Nanjing, Foshan, Chongqing, Chengdu, Tianjin, Wuhan and Xiamen. Distance measures the remoteness of a company's location, measured as the distance to a central city. The formula is shown as follow.

$$DISTANCE = R \star ar\cos[\cos w_1 \cos w_2 \cos(j_1 - j_2) + \sin w_1 \sin w_2] \quad (2)$$

R is the radius of the Earth, and we take 6371 km in this formula; j_1 *and* j_2 are the longitude of X and Y cities; ω_1 and ω_2 are the latitudes of X and Y cities. Chinese domestic cities are all with east longitude and north latitude, so their *distance* values are all positive. Therefore if the coefficient of noncenter (distance) is significantly negative, our hypothesis will be supported.

In addition, we include some control variables in this model according to prior literatures: (1) large shareholders' Control right (*CONTORL*). Acquirer firms are likely to generate new shareholders after M&A if they choose stock payment, and which will dilute the control of a large shareholder, so the control of shareholders will influence the choice of payment methods (Faccio and Masulis, 2005; Su et al., 2009); (2) financial leverage (*DEBTRATIO)*. Acquirer firms with relatively high debt to assets ratio are more likely to choose stock payment (Faccio and Masulis, 2005); (3) firm size (*ASSET*). As firm size may affect the ability of financing, thus having impact on the choice of the methods of payment (Faccio and Masulis, 2005); (4) ratio of tangible assets (*TANGIBLE*). The proportion of tangible assets will affect the ability of borrowing (Hovakimian et al., 2004), therefore influencing the choice of the methods of payment; (5) returns on total net assets (*ROATTM*), which is the ratio of net income to total assets in the last four quarters. The company's profitability will also affect the choice of the methods of payment through the ability of financing; (6) cash ratio (*CURRENTRATI*). With the higher cash and cash equivalent

Table 3.1 Variable definitions

Type	*Variable*	*Definitions*
Dependent Variable	*CASH_PAY*	It equals to 1 if there is full cash payment, otherwise 0.
Independent Variable	*NONCENTER*	It equals to 1 if a company's location is not in the below cities, otherwise equals 0. We define 17 cities as center cities, which are the top 20 cities excluding Hong Kong, Macao and Taipei, ranked *by China Economic and Social Development Research Center* based on economic competitiveness in 2013.
	DISTANCE	a measure on distance between the location of acquirer firm and the nearest central city, using Equation (2)
	CONTROL	shareholding proportion of the actual controller of t-1 year
Control Variables	*DEBTRATIO*	the ratio of total liabilities to total assets
	ASSET	total assets
	TANGIBLE	the ratio of total intangible assets to total assets
	ROATTM	the ratio of net income to total assets
	CURRENTRATIO	the ratio of the cash and cash equivalents to total assets
	INDUSTRY	a dummy variable on industry code of the acquirer firm based on CSRC definition
	YEAR	a dummy variable of transaction year

to assets ratio, acquirer firms will be more capable to choose cash payment. Variable definitions are presented in Table 3.1.

3.2 Sample

We use M&A transactions whose acquirer firms were listed in A-share market between 2009 and 2013 as the initial sample. We obtain M&A transaction information from the CSMAR (*China Stock Market Accounting Research*) database. First we get 32,996 transactions of acquirer firms who are public firms. Then we delete: (1) failed transactions; (2) transactions described as bankruptcy acquisitions, divestitures, privatization, leveraged buyouts, repurchases, restructurings and anti-takeovers; (3) transactions missing necessary payment data in the CSMAR Database; (4) transactions that choose assets payment, debt payment or mixed payment; (5) transactions missing financial information of parent firm in the CSMAR database; (6) firms issuing B shares. When several target firms are involved at the same time, we combine all these transactions together as one sample. When a branch office participate in M&A, we treat it as its headquarters. Our final sample includes 5060 transactions.

We obtain center city data from the *Development Research 2013* issued by the China Economic and Social Development Research Center. Cities' location data are obtained from *National Geometrics Center of China*.

Table 3.2 reports the yearly distribution of sample firms. The results show that although cash payment accounts for the vast majority, the proportion of stock payment increased year by year,

Table 3.2 The year distribution of sample firms

	2009	*2010*	*2011*	*2012*	*2013*	*Total*
Cash	723	911	994	973	927	4528
%	14.29	18.01	19.65	19.23	18.32	89.50
Stock	132	104	67	83	145	531
%	2.61	1.12	0.81	1.15	2.37	10.50
Total	855	1015	1061	1056	1072	5059
%	16.90	20.06	20.97	20.87	21.19	100.00

especially in 2013, in which the proportion of stock payment reached 2.37%. In total, cash payment accounted for 89.5% and stock payment accounted for 10.5%.

4. Empirical test

4.1 Univariate test

In order to observe the difference between the sample firms located in the non-central and central city, we divide the sample into two groups according to whether they choose cash payment. In Table 3.3, 47.81% sample firms are located in non-central city, in which 47.21% choose full cash payment, 52.91% choose stock payment. The t-statistic of their difference is 2.4894, which is significant at the 5% level. It indicate that the proportion of firms choosing cash payment in central cities is significantly higher than those in non-central cities. Second, the result of distance to central city (*DISTANCE*) shows that the average distance between acquirer firms choosing cash payment and central city is 160.27, which is significantly lower than those choosing stock payment at the 1% level. This indicates that listed firms located far from center city are more likely to use their stocks to pay in M&A.

4.2 Multiple regression analysis

4.2.1 Descriptive statistics

Table 3.4 provides the result of descriptive statistics for the control variables. The return on total assets (*ROAITM*) of the cash payment group is 0.07, performing significantly better than 0.04 of the non-cash payment group at the level of less than 1%. In addition, the tangible asset ratio of the cash payment group (*TANGIBLE*) is 0.955, which is slightly higher than 0.93 in the stock payment group. The average assets size (*ASSET*) of the cash payment group is 3.25 billion RMB, which is significantly higher than that of the stock payment group (1.16 billion) at the 1% level. The cash ratio (*CURRENTRATIO*) of the cash payment group is 1.74%, also significantly higher than 1.55% of the non-cash payment group. The asset-liability ratio (*DEBTRATIO*) of cash payment group is 42%, which is significantly much lower than 88% of the non-cash payment group at the 1% level. In sum, the financial position of cash payment group seems better than the stock payment group, e.g. higher profitability and more cash flow. Meanwhile, the cash payment group also has better financing capability and faced with lower financing constraints because they usually have bigger size, higher tangible assets ratio and lower debt ratio. In addition, firms with higher large shareholder control are more likely to choose cash payment with the concern of control dilution.

Table 3.3 Univariate test

	Total (5059)		*Stock payment (531)*		*Cash payment (4528)*		*t-Statistics*
	Mean	*Standard deviation*	*Mean*	*Standard deviation*	*Mean*	*Standard deviation*	
noncenter	0.4781	0.4995	0.5291	0.0216	0.4721	0.0074	–2.4894**
distance	167.12	4.2846	225.51	14.9014	160.27	4.4462	–4.6768***

***,**, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 3.4 Descriptive statistics of control variables

	N	*All samples*		*Stock payment*		*Cash payment*		*t-Statistics*
		Mean	*Standard deviation*	*Mean*	*Standard deviation*	*Mean*	*Standard deviation*	
ROATTM	4887	0.06	0.0027	0.04	0.0215	0.07	0.0014	2.6826***
TANGIBLE	4887	0.950	0.0011	0.93	0.0046	0.955	0.0010	1.4370
CURRENT RATIO	4887	1.55	3.44	0.82	8.96	1.74	3.70	3.0056***
ASSET	4887	3.16E+10	6.50E+09	1.16E+10	2.24E+09	3.25E+10	7.28E+09	1.1740
DEBTRATIO	4887	0.56	0.0423	0.88	0.3858	0.42	0.0058	–5.8128***
CONTROL	4847	39.22	17.45	35.54	17.75	39.66	17.36	5.1209***

***,**, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

4.2.2 Correlation analysis

Table 3.5 reports the Pearson correlation coefficient of independent variables. Consistent with the result of descriptive statistics, Table 3.5 shows that the remote firms are associated with higher return on assets, tangible assets ratio, cash ratio, assets size, large shareholder control and lower debt ratio. The largest correlation coefficient between all variables is between *DEBTRATIO* and *ROATTM*, which is –0.5679.

4.2.3 Regression results

The regression results are shown in columns 2 and 3 of Table 3.6. The coefficient of *NONCENTER* (*DISTANCE*) is –0.0855(–0.000493), significant at the 10% (1%) level, which confirms our Hypothesis 1. In addition, the coefficient of *TANGIBLE*, *CURRENTRATIO*, *ROATTM* are significantly positive, while the coefficient of *DEBERATIO* is significantly negative at the 1% level. This suggests there is a stronger financing capacity and more abundant cash reserve for acquirer firms with better performance, more adequate cash flow, higher tangible assets ratio and lower levels of debt. They tend to choose cash payment in M&A and enjoy the higher stock return that cash payment has brought. At the same time, as expected, *Control* is also positive at the 1% level, which suggests that acquirer firms are less likely to choose stock payment when their equity is more concentrated.

Table 3.5 Correlation analysis between variables

	NONCENTER	*DISTANCE*	*ROAITM*	*TANGIBLE*	*CURRENT RATIO*	*ASSET*	*DEBTRATIO*	*CONTROL*
NONCENTER	1							
DISTANCE	0.5699	1						
ROAITM	–0.0143	–0.0051	1					
TANGIBLE	–0.0849	–0.0082	0.0209	1				
CURRENT RATIO	–0.0603	–0.003	–0.0124	–0.0563	1			
ASSET	–0.0450	–0.0129	–0.014	0.0354	0.0387	1		
DEBTRATIO	0.0194	–0.007	–0.5679	–0.0042	–0.007	0.0063	1	
CONTROL	–0.0883	–0.0762	0.0451	0.0370	0.0523	0.0018	–0.0505	1

Table 3.6 Regression results

	CASH_PAY (Competitiveness)	*CASH_PAY (Competitiveness)*	*CASH_PAY (GDP)*	*CASH_PAY (GDP)*
DISTANCE	–0.000493*** (–3.85)		–0.000458***(–3.51)	
NONCENTER		–0.0855* (–1.67)		–0.164*** (–3.21)
ROATTM	1.468*** (3.12)	0.500** (2.83)	1.398*** (3.00)	0.503*** (2.84)
TANGIBLE	0.919** (1.57)	–0.854*** (–2.70)	1.432** (2.64)	–0.875*** (–2.76)
ASSET	1.19e-12 (1.08)	3.51e-13 (0.84)	1.22e-12 (1.10)	3.40e-13 (0.83)
CURRENT RATIO	0.0487** (2.13)	0.0255*** (2.74)	0.0489** (2.13)	0.0242** (2.61)
DEBTRATIO	–0.356*** (–3.79)	–0.200*** (–4.36)	–0.353*** (–3.75)	–0.198***(–4.32)
CONTROL	0.0103*** (3.66)	0.00555*** (3.82)	0.0105*** (3.73)	0.00543*** (3.74)
_CONS	1.367** (2.30)	1.915*** (5.90)	0.872 (1.57)	1.967*** (6.06)
INDUSTRY	control	control	control	control
YEAR	control	control	control	control
N	4847	4847	4847	4847
LR chi^2	176.03	164.97	175.22	172.49
P	0.0000	0.0000	0.0000	0.0000

***,**, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

4.2.4 Robustness tests

As robustness tests, we use GDP rankings to select top 20 cities and redefine NONCENTER. We repeat the logistic regression. The results are shown in Columns 4 and 5 of Table 3.6. The results qualitatively remain the same. The coefficient of NONCENTER (DISTANCE) is –0.164 (–0.000458) and significant at the 1% (1%) level. Therefore, Hypothesis 1 is supported.

5. Additional analyses

Geographical location leads to different transportation conditions, information availability, political resources and social ties, which would make a difference in acquirer firms' financing capacity and impact information asymmetry between two sides in M&A. When an acquirer firm is located in a rural area, it will more likely be faced with financial constraints and information disadvantage, and they will choose stock payment in M&A. Meanwhile, according to Faccio and Masulis (2005), M&A payment method is significantly influenced by factors such as large shareholder's control right, financing capacity and information asymmetry as well. We further investigate whether and how location and other factors interact to affect the choice of M&A payment methods.

5.1 The impact of large shareholder's control right

Acquirer firms prefer to pay cash when they are perceived to be under the threat of control dilution, and a large shareholder's control rights could affect the choice of payment method. For instance, Faccio and Masulis (2005) find that firms are more likely to pay cash when the control is between 20% and 60%. Therefore, we divide the whole sample into two subsamples according to whether the control right is between 20% and 60%. We include the interaction term

*CONTROL*NONCENTER* (*DISTANCE*) in Model (1) and run the regression. The results are presented in Columns 2–5 of Table 3.7.

Table 3.7 shows that the coefficient of *DISTANCE* is significantly –0.00113 at the level of less than 1% for firms with shareholder control right between 20% and 60%. The coefficient of *CONTROL*NONCENTER* is 0.0000211 and significant at the 5% level. In the group with shareholder control less than 20% or greater than 60%, the coefficient of *CONTROL*DISTANCE* is –0.00000435 and not significant. The regression results show a similar pattern. In the sub-sample with shareholder control right between 20% and 60%, the coefficient of *NONCENTER* is –0.00000435 and significant at 1%, and the coefficient of *CONTROL*NONCENTER* is 0.0144 which is significant at 1%. However the coefficient of interaction is not significant in the sub-sample, with control right larger than 60% or less than 20%. Thus, when shareholder control rights are between 20% and 60%, the increase in control reduces the likelihood of using stock payment. It suggests that the concern of control dilution intermediates the effect of geographic location on the payment method choice of M&A.

5.2 The impact of financing capacity

Firm's financing capacity is also an important factor affecting the payment method choice of M&A. With better financing, the acquirer firms are more inclined to pay cash (Travlos, 1987). Usually firm asset size is used to proxy for financing capability. To test the impact of the company's financing capacity on the effect of geographical location on payment method choice of M&A, we include the interaction terms *ASSET*DISTANCE* and *ASSET*NONCENTER* in the Model (1) and repeat the regression. The regression results are reported in Table 3.7 Columns 6 and 7, which show that the coefficient is –0.153(–0.000392), significantly negative at 1%. (1%) level and the coefficient of the interaction term is 1.21E-11(2.32E-14) with the significance level of 1% (5%). Therefore, we believe that firm size will increase financing capability, which in turn will decrease the probability of remotely located acquirer companies' choice of stock payment.

5.3 The nature of the property rights

As State-owned enterprises obtain more political and economic resources, they would have a lower level of likelihood to use stock payment in remote areas. In order to test this, we include *STATE*, the interaction terms *STATE*DISTANCE* and *STATE*NONCENTER* in the Model (1), in which *STATE* is a dummy variable indicating whether the firm is a State-owned enterprise. Then we run the regression of Model (1). Columns 8 and 9 of Table 3.7 show that the coefficient of *DIATANCE (NONCENTER)* is –0.000390(–0.186), which is significantly negative at the 1% (5%) level, and the coefficient of *State*distance* (*STATE*NONCENTER*) is 0.000255(0.201), which is significant and positive at the 10% (10%) level. So we can reach the conclusion that property rights would reduce the probability of acquirer firms choosing stock payment in remote areas. This means that the advantages of State-owned enterprises would increase their probability of cash payment in M&A, even if they were located in remote areas.

5.4 Analyst following

Based on the game theory, Hansen (1987) proves that the capacity of accessing information will have an impact on the preferences of cash payment for the acquirer firms. The acquirer firms tend to choose stock payment in order to avoid excessive premiums caused by cash payment

Table 3.7 The impact of control, financing constraints, nature of the property rights and analyst tracking

	Control right				*Financial capacity*		*Property right*		*Analyst following*	
	20%=< Control<=60% (DISTANCE)	*Control>60% or Control< 20% (NONCENTER)*	*20%=< Control<=60% (DISTANCE)*	*Control>60% or Control< 20% (NONCENTEER)*	*(NONCENTER)*	*(DISTANCE)*	*(NONCENTER)*	*(DISTANCE)*	*(NONCENTER)*	*(DIATANCE)*
DISTANCE	–0.00113***	–0.000208				–0.000392***		–0.000390***		–0.000387***
	(–3.32)	(–0.91)				(–4.60)		(–3.52)		(–4.20)
CONTROL DISTANCE*	0.0000211**	–0.00000435								
	(2.49)	(–0.60)								
NONCENTER			–0.642***	–0.144	–0.153***		–0.186**		–0.165**	
			(–3.01)	(–0.93)	(–2.76)		(–2.45)		(–2.63)	
CONTROL NONCENTER*			0.0144***	0.00182						
			(2.71)	(0.52)						
ASSET NONCENTER*					1.21e-11***					
					(2.90)					
*ASSET * DISTANCE*						2.32e-14**				
						(2.47)				
STATE NONCENTER*							0.201*			
							(1.88)			
STATE							–0.180**	–0.120*		
							(–2.31)	(–1.92)		
STATE DIATANCE*								0.000255*		
								(1.70)		
ANALYST NONCENTER*									0.00624**	
									(2.35)	

(*Continued*)

Table 3.7 (Continued)

	Control right				*Financial capacity*		*Property right*		*Analyst following*	
	20%=< Control<=60% (DISTANCE)	*Control>60% or Control< 20% (NONCENTER)*	*20%=< Control<=60% (DISTANCE)*	*Control>60% or Control< 20% (NONCENTEER)*	*(NONCENTER)*	*(DISTANCE)*	*(NONCENTER)*	*(DISTANCE)*	*(NONCENTER)*	*(DIATANCE)*
ANALYST									0.00427**	0.00537***
									(2.52)	(3.58)
*ANALYST * DISTANCE*										0.00000966**
										(1.97)
ROATTM	1.233***	−0.0581	1.246***	−0.0513	0.512***	0.487***	0.384**	0.364**	0.382**	0.372**
	(4.46)	(−0.24)	(4.51)	(−0.21)	(2.89)	(2.76)	(2.16)	(2.05)	(2.17)	(2.12)
CONTROL	−0.00155	0.00656***	−0.00520	0.00523**	0.00515***	0.00520***	0.00559***	0.00526***	0.00462***	0.00455***
	(−0.50)	(3.04)	(−1.37)	(2.13)	(3.52)	(3.56)	(3.57)	(3.37)	(3.15)	(3.10)
TANGIBLE	−0.465	−1.874**	−0.446	−1.882**	−0.877***	−0.869***	−0.906***	−0.887***	−0.776**	−0.785**
	(−1.30)	(−2.60)	(−1.25)	(−2.61)	(−2.76)	(−2.73)	(−2.77)	(−2.71)	(−2.45)	(−2.47)
ASSET	1.23e−11***	−2.17e-13	1.26e−11***	−1.86e-13	1.77e-13	2.03e-13	4.18e-13	4.45e-13	9.84e-14	9.10e−14
	(3.87)	(−0.58)	(3.95)	(−0.49)	(0.58)	(0.59)	(0.81)	(0.84)	(0.55)	(0.55)
DEBTRATIO	−0.312***	−0.165**	−0.326***	−0.167**	−0.204***	−0.202***	−0.175***	−0.175***	−0.188***	−0.188***
	(−3.55)	(−2.62)	(−3.70)	(−2.65)	(−4.45)	(−4.40)	(−3.81)	(−3.80)	(−4.13)	(−4.13)
CURRENTRATIO	0.0193	0.0444*	0.0199	0.0444*	0.0275**	0.0257**	0.0379*	0.0367*	0.0268**	0.0259**
	(1.83)	(2.02)	(1.88)	(2.00)	(2.93)	(2.76)	(2.36)	(2.30)	(2.86)	(2.77)
_CONS	1.699***	3.256***	1.813***	3.250***	1.962***	1.972***	2.024***	2.013***	1.768***	1.788***
	(4.47)	(4.47)	(4.66)	(4.44)	(6.03)	(6.07)	(5.98)	(5.98)	(5.41)	(5.48)
INDUSTRY	control	control	control	control	control	control	control	control	control	control
YEAR	control	control	control	control	control	control	control	control	control	control
PSEUDO R^2	0.0754	0.0684	0.0718	0.0649	0.0528	0.0551	0.0463	0.0488	0.0599	0.0627
LR CHI2	181.95	62.23	173.16	59.06	175.51	183.05	134.52	141.87	199.25	280.5
N	3612	1235	3612	1235	4847	4847	3974	3974	4847	4847

***,**, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

when they think they are at an information disadvantage. Koutmos et al. (2014) suggest that the acquirer firms located in remote areas may find themselves in an information disadvantage due to difficulty in obtaining detailed information of M&A, making it difficult to value the target firms correctly. However, stock payment has contingent price characteristics which link the interests of two parties in M&A and avoid the risk of excessive premium caused by cash payment, so it is often chosen by acquirer firms located in remotely rural areas. But they did not directly test this argument in their paper.

In general, firms followed by more analysts should be higher-quality firms and have more bargaining power (Fan and Wang, 2010; Wang and Zhao, 2014). Therefore, if acquirer firms located in the remote areas are followed by more analysts, they should be in a more favorable position in the M&A negotiations, which may reduce the difficulty of obtaining information. At the same time, analyst following also helps discover the value of target firms in M&A (Xu and Tang, 2010). Therefore, we use the number of analysts following as a proxy to measure whether the acquirer firms is at the information disadvantage. So we include *analyst*, the interaction terms *analyst* ⋆*distance* (*analyst*⋆*noncenter*) in Model (1) and then repeat the regression of Model (1). The regression results are shown in Columns 9 and 10 of Table 3.7, which show that the coefficient of *distance (noncenter)* is –0.000387(–0.165) and significantly negative at the 1% (5%) level, and the coefficient of *analyst*⋆*distance* (*analyst*⋆*noncenter*) is 0.00000966(0.00624) and significantly positive at the 5% (5%) level. Thus, as expected, with more analysts following, acquirer firms are less likely to be at an information disadvantage in M&A negotiations, thus reducing the likelihood of stock payment by firms located in remote areas.

6. Conclusions

M&A is an everlasting topic in capital market. Since the payment method choice of M&A directly affects the financial position and shareholder control rights, it has attracted interest from academic scholars. Based on the argument that geographical location implies potential information asymmetry and financing capacity, we analyze the impact of geographical location on payment methods of M&A. We use M&A transactions whose acquirer firms were listed in the A-share market between 2009 and 2013, and we identify geographical location of acquirer firms as center cities if they are located in the top 20 cities excluding Hong Kong, Macao and Taipei, ranked by *China Economic and Social Development Research Center* based on economic competitiveness in 2013. After controlling for the influences of firm performance, assets size, financial leverage, control rights, cash flow and tangible assets ratio, we draw the following conclusions:

(1) The acquirer firms located in the central city or close to the central city prefer cash payment, while those located in the non-central cities or farther away from the central cities have more preference for stock payment. In addition, after replacing the central city according to the GDP rankings, the results remain unchanged.
(2) Shareholder control right, financing capacity, property right and information asymmetry will further influence the effect of geographic location on payment method choice. First, when the control of shareholders is between 20% and 60%, concentrated control will reduce the preference of stock payments of acquirer firms located in the remote area to avoid control right dilution. Second, the increase in financing capacity will also reduce the preferences of stock payments for acquirer firms located in remotely rural areas. Third, because State-owned enterprises have more political and economic resources, the preferences for stock payment will reduce when they are located in remote areas. Finally, as firms followed by more analysts should be higher-quality and have more bargaining power, and analyst

following also helps in discovering the value of the target companies, there will be lower preference of stock payment when they are located in remote areas.

Overall, we find the empirical evidence that the geographic location affects company's financing in the emerging market of China. However, the study can be expanded further. First, by including geographical location of target firms, we can also study the impact of target firms' location, the distance between acquirer and target firms and the interaction between the physical location of the target and the acquirer firms on payment method choice of M&A. Second, in the case of mixed payment methods, we did not study the influence of geographic location on the proportion of cash payment. Future study could follow this line to provide further insights on the impact of geographic location on M&A payment methods.

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